

**A HOLISTIC PSYCHOMETRIC ANALYSIS OF THE
INDIVIDUAL RECOVERY OUTCOMES COUNTER:
BALANCING USER NEEDS IN THE USE OF
PERSONAL OUTCOME MEASURES**



A thesis submitted for the degree of Doctor of Philosophy
(PhD)

by

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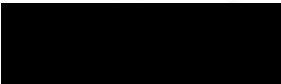
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June, 2018

Declaration

Candidate's declarations:

I, Bridey Rudd, hereby certify that this thesis submitted in partial fulfilment of the requirements for the award of Doctor of Philosophy (PhD), Abertay University, is wholly my own work unless otherwise referenced or acknowledged. This work has not been submitted for any other qualification at any other academic institution.

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Date..... 29th June 2018

Supervisor's declaration:

I, Dr Scott Hardie hereby certify that the candidate has fulfilled the conditions of the Resolution and Regulations appropriate for the degree of Doctor of Philosophy (PhD) in Abertay University and that the candidate is qualified to submit this thesis in application for that degree.

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Candidate's declarations:

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Date: **29th June 2018**

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Date.....

Certificate of Approval

I certify that this is a true and accurate version of the thesis approved by the examiners, and that all relevant ordinance regulations have been fulfilled.

Supervisor.....

Date.....

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Dedication

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Abstract

Background

The recent focus on recovery and personal outcomes in Scotland has increased pressure on mental health services to evidence that their work is achieving recovery-related outcomes. Developed in response to such pressures, the Individual Recovery Outcomes Counter (I.ROC) is used both to measure change in recovery outcomes, and effect change through use as a therapeutic tool.

Aims

This thesis aims to evaluate the extent to which I.ROC can be considered a valid, reliable and feasible measure of personal recovery for routine use in practice.

Methods

A mixed-methods action research approach was taken; data was collected in a series of studies investigating psychometric properties and stakeholder perspectives. Studies were designed to investigate structural, convergent, face and consequential validity, internal consistency and test-retest reliability. A systematic review of nine personal recovery measures was used to set a series of benchmarks against which I.ROC is evaluated.

Results

I.ROC is consistent with a broad conceptualisation of personal recovery, and is generally considered comprehensive and well-liked by people who use it, although feedback suggests some areas for improvement. Early development of I.ROC, distinctive in its organic and non-research-led approach, falls just short of standards of measure coproduction regarded as best practice; but in this it is not alone. Factor analysis revealed a three-factor model, internal consistency both for the total measure and its subscales is good, and I.ROC correlates as predicted with measures of personal and clinical recovery and recovery-related concepts (e.g. hope). Themes arising from qualitative studies with stakeholders reflect a range

of perceived benefits and barriers to using I.ROC. Used as a conversational tool, I.ROC is beneficial in establishing a recovery-focused support relationship, facilitating personal planning and reviewing progress. At a service level, I.ROC can demonstrate impact and support the embedding of recovery-oriented practice. Barriers to use were reported at the individual and service level. Service level barriers include resource restrictions, staff attitudes and service models inconsistent with recovery. Lack of engagement or honesty in answering questions stops I.ROC being used effectively, and the potential for the tool to trigger negative emotions was acknowledged.

Conclusions

Overall, this thesis provides support for the validity, reliability and usability of I.ROC as a measure of personal recovery. Results of psychometric testing shows the tool to have comparably good properties to other measures of recovery, and feedback from users is positive. Areas for further development of I.ROC are identified; future research should investigate potential improvements to scoring and question wording. I.ROC demonstrates the potential for measures of recovery to be used to both measure change and promote recovery within mental health services, but several challenges remain. Recovery-orientation requires wholesale culture change, and barriers to I.ROC use are reflective of the challenges this presents. Future research should seek to explore how barriers identified within this thesis can be overcome.

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Definitions

Carers: refers to family/friends/loved ones/advocates/peers who provide unpaid support to a person with mental health problems

Carista: A secure online data management system, on which I.ROC data is currently stored for Penumbra.

CHIME Framework: Widely accepted framework for personal recovery, labelled as Connectedness, Hope, Identity, Meaning and Empowerment (Leamy et al, 2011)

Developers: I.ROC was initially created by a core working group of practitioners within Penumbra, who are referred to as the 'developers'.

HOPE: The HOPE framework, developed by Penumbra, is a framework for recovery-oriented practice. To support implementation of this framework, Penumbra also created a suite of tools, including the HOPE toolkit.

I.ROC: The Individual Recovery Outcomes Counter; an individual-level measure of personal recovery and key working tool. The name of this tool has changed over time. In its first iteration, I.ROC was known as PROWD. This then changed to i-ROC, before becoming I.ROC. Throughout the majority of the thesis, which discusses the current version, it is referred to as I.ROC. Within Chapter 5, which outlines the development process, its earlier names are used at the appropriate times in its history.

Knowledge Transfer Partnership (KTP): A partnership-working scheme developed by the Technology Strategy Board to bring together industry and academic partners to develop innovative solutions to an industry problem.

Participants: people taking part in these research projects are referred to as participants, respondents or interviewees. Respondents is also used to refer to anyone completing an I.ROC.

Peer worker/ peer: refers to a person with personal lived experience of recovery who uses this experience to provide support to others in their recovery.

Penumbra: a charity/not for profit organisation which provides support services to people living with mental health issues in Scotland. Penumbra is the organisation which created I.ROC, and is an equal partner within this research.

People with lived experience: People who have themselves experienced personal recovery are here referred to primarily as people with lived experience (PLE). Additionally, where people are accessing or have accessed mental health services, they are referred to using the terms clients/ people using services or service users. How to refer to people with experience of recovery has been a point of contention for many years, and the accepted terms of reference have changed many times even over the course of this research project. Within Penumbra, the term of reference has changed from ‘service user’ to ‘people using Penumbra’s services’ – a rather long-winded phrase, and one still not universally agreed. A variety of terms are thus used interchangeably throughout the thesis, particularly within or when referring to quotes from third parties.

Personal outcomes: described as “what matters to the person” (Cook & Miller, 2012) in relation to the services they receive and their general wellbeing (Qureshi et al, 2001)

Personal recovery (recovery): Refers to the experience of living a full and satisfying life beyond the devastating impact of mental illness (Anthony, 1993), irrespective of whether clinical symptoms continue; personal recovery is distinguished as separate from the concept of clinical recovery

Personalisation: an organisational process of positioning the ‘customer’ and their carer(s) at the centre of the services they receive (Leadbeater, 2004).

Recovery-oriented practice (ROP): Refers to the values and practices a mental health organisation undertakes to support personal recovery.

Routine outcome measures (ROM's): Refers here to the systematic and routine use of robust measurement instruments to assess clearly defined variables within health and social care services (Monger et al, 2012).

Staff/ (recovery) worker/ (recovery) practitioner/ professional: refers to people whose job (paid or unpaid) involves providing direct support to people within mental health services. In Penumbra, front-line staff roles have changed from the title of 'support worker' to a hierarchical team system of 'recovery workers' and 'recovery practitioners'. Peer workers are included within this general staff bracket, but are also referred to separately as peer workers (see above).

The Researcher (BR): Refers to Bridey Rudd (nee Monger), the author of this thesis. The wider research group is referred to as 'the research group'. Other specific researchers are referred to using their initials (e.g. SH)

Chapter 1. Introduction

This thesis presents an applied critical evaluation of recovery measurement tool the Individual Recovery Outcomes Counter (I.ROC), aiming to answer the following questions:

1. To what extent can I.ROC be considered a valid and reliable measure of personal recovery?
2. To what extent can I.ROC be considered a feasible, efficacious and useful tool for application in mental health services?

The research was stimulated by the need for culturally relevant, psychometrically sound and practically useful measures of personal recovery (Law et al., 2012), alongside mental health charity Penumbra's desire to assess the validity of the recovery measure they had developed. The research approach was shaped by the partnership between Abertay University and Penumbra; undertaking a Knowledge Transfer Partnership (KTP) in 2011, research took place within an existing collaboration between the two organisations which necessitated an action research approach, and ultimately set the parameters for the project. Details of the Knowledge Transfer Partnership can be found in Box 1. Outputs arising from this research are referenced in standard format within the thesis, and a full list of publications related to the project can be found in the personal bibliography on page 645. Unpublished research outputs are also included in Appendix 23.

The current Chapter outlines the background and context to this research and describes the research approach taken. It is organised into four sections. First, it provides the context for the research, before describing the research approach taken. The influence of the researcher within this research is then considered. Finally, a brief summary and rationale for the remaining chapters of the thesis is given.

Ch1, Section 1. Context for the research

A key stakeholder in the recovery agenda, Scottish based mental health charity Penumbra developed the Individual Recovery Outcomes Counter (I.ROC). Designed as a key working tool, I.ROC also has the potential to measure the recovery journey of individuals, and provide aggregate data for service and organisational outcomes reporting. A more detailed description is found in Section 1:1.5.

1:1.1. What is recovery?

The meaning of recovery is discussed in detail within the literature review in Chapter 2; but a brief summary is given here for context.

A multitude of meanings of recovery exist within the context of mental health; clinically, recovery means the remission of symptoms and a return to full functioning. For many years the only accepted meaning, clinical definitions of recovery still dominate within medical models of mental illness. Yet growing interest in a second definition, which draws from the personal narratives of people who have experienced mental ill-health, now challenges the clinical concept. Personal recovery as this second conceptualisation is commonly known, is described as, “*a way of living a satisfying, hopeful and contributing life even with the limitations caused by illness*” (Anthony, 1993, p.527), and it is this second definition that is focused upon within this thesis. Personal recovery is a subjective and unique experience often described as a journey. Key recovery themes arising from first person accounts and empirical studies tend to fall into five overarching categories, summarised as Connectedness; Hope; Optimism; Meaning; and Empowerment (CHIME; Leamy et al., 2011). Debate regarding the precise definition of recovery continues however, and evidence supporting the existence of additional categories is increasing, as outlined in Chapter 2. Even more recovery domains are contained within holistic models of recovery, which separate recovery into four or more categories. Lloyd and colleagues, for example, propose a model of recovery with four dimensions: personal, clinical, social and functional recovery (Lloyd et al., 2008). This thesis largely focuses on the personal domain (herein referred to as ‘recovery’ or ‘personal recovery’) but acknowledges that this exists within a broader model of recovery such as proposed by Lloyd and colleagues.

1:1.2. Recovery in Scotland

An early adopter of recovery in policy (Bradstreet & McBrierty, 2012), Scotland’s approach has been described as “progressively consensual” (Smith et al, 2007), drawing on the learning from other countries, whilst also creating “*specifically Scottish aspects of recovery*” (Tilley & Cowan, 2011, p.98). This approach has seen Scotland develop an independent organisation (Scottish Recovery Network) whose objective is to promote recovery across the country; produce more recovery

publications per capita than any other part of the UK (see Chapter 2 for details); and receive international praise, for example for its focus on peer-work (Slade, 2009b). The success with which recovery has become embedded within Scotland has been linked to the extent to which the concept has been “*Scottishised*” (Smith-Merry & Sturdy, 2013, p. 120). Following devolution, the Scottish government endeavoured to make mental health one of the cornerstones of their new health policies. As early as 2003 recovery was established within these policies as a primary aim for mental health services (Bradstreet & McBrierty, 2012), which first saw recovery promoted through the establishment of the Scottish Recovery Network (SRN) in 2004 (Scottish Executive, 2003b). Since then, government support for recovery has been maintained through a series of key policy documents, including ‘Rights, Relationships and Recovery’ (Scottish Executive, 2006b) and ‘Delivering for Mental Health’ (Scottish Executive, 2006a). Most recently support has come from the mental health strategy 2017-2027 which outlines the vision for mental health care as: “*a Scotland where people can get the right help at the right time, expect recovery, and fully enjoy their rights, free from discrimination and stigma*” (Scottish Government, 2017, p7).

Indirectly, recovery implementation has been supported through several key strategies which promote the delivery of person-centred, outcomes focused mental health and social care services. For example, personalisation, promoted through the Changing Lives report (Scottish Executive, 2006), describes a service-level process of putting the person and their carers at the “*heart of services*” (Leadbeater, 2004, p19). The growing emphasis on personalised care has advocated the place for recovery in support services by highlighting the importance of focusing on the personal goals and desired outcomes of everyone accessing services.

The recovery movement in Scotland has also been driven by grass-roots advocacy amongst people with lived experience, and by the adoption of several key ‘recovery technologies’ including peer support, wellness recovery action planning (WRAP; Copeland, 2002) and more recently the establishment of recovery colleges (McCaig et al., 2014). The success of this holistic approach has seen recovery become embedded within the common language of mental health in Scotland, with mental health support services widely describing themselves as ‘recovery-oriented’. Scottish

authors advocate the use of strategies as diverse as ecotherapy (Wilson et al., 2010), walking football (Lamont et al., 2017), and timelines (Marland et al., 2011) under the guise of 'recovery oriented practice', however there is a growing concern that many services are adopting a recovery-orientation in name only. For a mental health service to be truly recovery-oriented, it must: focus on the individual strengths of the service user, promote empowerment and hope for recovery, and support service users to make informed choices about their support (Le Boutillier et al, 2011b). Central to recovery-oriented practice is also a support relationship built on the foundations of mutual respect, equality and humanity (Chester et al., 2016). Recovery-oriented practice is discussed in more detail within Chapter 2 (Section 2:3.4).

1:1.3. Measuring Recovery Outcomes

The current focus on recovery within mental health policy (Slade, 2010a) encourages services to adopt a recovery-orientation, and services are under increasing pressure to evidence the extent to which their work is recovery-oriented (Williams et al., 2012). Recovery measures provide an effective means of evaluating recovery orientation, assessing outcomes that are both personally meaningful and useful at a service level, fundamental properties of any routine outcomes measure (Happell, 2008c; Trauer, 2010b). Routine outcome measurement refers to *"the planned, systematic measurement and recording of clearly defined variables using specified and robust measures"* (Monger et al, 2012, p29). Within mental health, Routine Outcome Measures (ROMs) include a range of instruments measuring elements of clinical and functional recovery, as well as tools assessing wellbeing and quality of life. Trauer identifies three main reasons for using ROM's (Trauer, 2010b); firstly, they are used to evidence the impact of an organisations' work. Secondly, they can be used to help make clinical, strategic and governmental decisions about the provision of support. Finally, outcome measures were envisioned as tools to capture the service user's perspective within the support process. As discussed in Chapter 3, many of the most commonly used measures have been criticised however for not measuring personally meaningful outcomes, and for not capturing the service user's perspective; measures are often designed to be practitioner-rated instead (Happell, 2008c). As Lakeman (2004) points out, outcome measures that are not personally meaningful to service users provide little useful information:

“it is hard to see how the aggregation of such data if meaningless at the individual level could have any possible usefulness to a service ... commonly used outcome measures ... fail to capture the significance of particular issues for individuals.” (Lakeman, 2004, p.211)

The challenge is therefore to create an outcome measure which takes a user perspective and assesses outcomes that are both personally meaningful and useful at a service level. Such an opportunity is provided by the development of personal recovery measures (Slade, 2010b). Instruments have been developed to evaluate the recovery orientation of services, as well as to measure individual-level experiences of recovery. Slade (2010b) suggests that service-level measures of recovery may not only prove an effective way of auditing the extent to which a service is recovery-oriented, but also enable a process through which recovery-orientation can be accredited. However, as discussed in Chapter 3, reviews have found that no service-level measures have yet adequately evidenced that they are psychometrically sound enough to be considered gold standards (Scheyett et al., 2013; Shanks et al., 2013). Individual-level instruments measure recovery processes or stages to identify the current level of recovery a person is experiencing. Used repeatedly over a period of time, such measures can be used to map the recovery journey. Individual level measures can be used within support to encourage self-reflection on the recovery journey and identify recovery outcomes to work towards, as well as to measure progress. Most measures use a scale for responses enabling scores to be aggregated in order to identify patterns across a group of people. Several individual-level recovery measures have been developed to date, and these are reviewed in Chapter 3. As demonstrated in Chapter 3, psychometric testing of recovery measures has grown in popularity in recent years; 64% (n=32) of papers evaluating validity and reliability of personal recovery instruments have been published since the start of this research project in 2011. The number of measures has increased as well; in 2011, almost 50% of published psychometric articles concerned the Recovery Assessment Scale; RAS; Giffort, 1995), whilst today the RAS accounts for only 10% of publications. As a result of this very recent interest in psychometric properties of recovery measures, only a small number of measures have been developed that have well-established psychometric properties (RAS; Giffort, 1995), are acceptable to people in recovery (Questionnaire about the Process of Recovery; QPR; Neil et al., 2009) or can be used in a meaningful way

within practice (Mental Health Recovery Star; MHRS; MacKeith et al, 2008), and no single measure yet meets all of these criteria. This thesis explores the extent to which an alternative measure, the I.ROC, can be said to meet the same criteria.

1:1.4. Penumbra

In order to fully understand I.ROC, it is appropriate to examine the organisation that developed it. Penumbra was originally established in 1985 to provide supported accommodation for people moving out of long-stay psychiatric institutions. Now a national charity, the organisation supports approximately 1600 people per week (Penumbra, 2018a). Based in Edinburgh, the charity has services in over half of Scottish local authority areas. Penumbra is commissioned by both NHS Boards and Local Authorities to provide a broad range of support including community care and supported living for those with long-term and complex mental health needs. Service models have further diversified to support people with alcohol-related brain damage, people who self-harm, and people experiencing acute crises (Penumbra, 2018d).

As the host organisation for the Scottish Recovery Network, Penumbra has long been an advocate of personal recovery (Bradstreet & McBrierty, 2012; Smith-Merry et al., 2010). Organisational commitment to recovery is identified as a fundamental component of recovery-oriented

Box 1.1: Knowledge Transfer Partnerships

Led by Innovate UK, Knowledge Transfer Partnerships (KTP) is a UK-wide initiative which aims to help businesses increase their competitiveness and productivity by teaming them up with an academic partner for a specific project (Innovate UK, 2018). Managed by the appointed KTP associate, the partners work together to develop solutions for a particular strategic need within the business.

The Knowledge Transfer Partnership between Penumbra and Abertay University sought to assess the validity and reliability of I.ROC, and to identify best practice in relation to its implementation within the charity. In undertaking this project, Penumbra's goals were to:

- a) Maintain/improve the quality of its services to people with mental health problems
- b) Target its resources in a more cost-effective manner
- c) Give confidence to existing funders of the cost-effectiveness of its services
- d) Compete more effectively in tendering for future contracts by being able to demonstrate, through the use of a validated measure, the value of the services that Penumbra provides
- e) Generate income from sales and training associated with marketing the I.ROC to Local Authorities and other organisations involved in the field of mental health.

(For more details of the KTP, see Appendix 3)

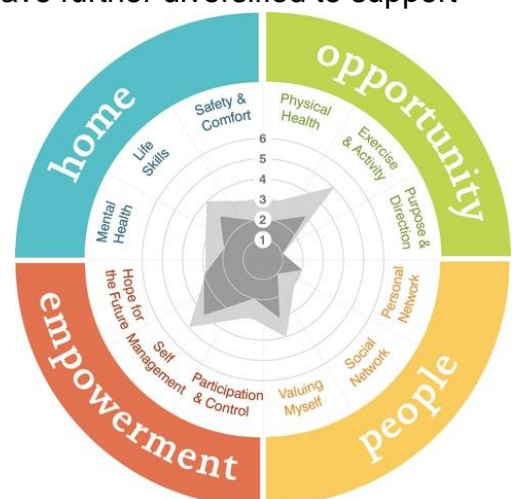


Figure 1.1: Graphical representation of the I.ROC indicators and the HOPE framework

practice; for recovery to be truly adopted across an organisation, Le Boutillier et al (2011b) argue, it must be embedded throughout all values, strategies and actions of the organisation. Such a commitment is apparent within Penumbra; recovery is listed as one of five strategic objectives, and the charity's stated vision is: "a society where people with mental health problems expect recovery and are accepted, supported and have the resources to fulfil their potential" (Penumbra, 2018a). The approach taken by Penumbra has evolved into a framework for recovery-focused practice, referred to as HOPE. The acronym HOPE (Home; Opportunity; People; Empowerment) is used to highlight four fundamental aspects of wellbeing in which Penumbra's support endeavours to make a difference (Monger et al., 2012). As shown in Figure 1.1, within these four areas are situated twelve elements of recovery: mental health, life skills, safety & comfort, physical health, exercise & activity, purpose & direction, personal network, social network, valuing myself, participation & control, self-management, hope for the future. The framework outlines a series of five practice principles which state that support should: promote personalisation, collaboration and self-management, and maintain a recovery and an outcomes focus (Rudd, 2015). Practice principles are supported by a comprehensive set of staff resources, which include supervision, staff training, e-learning, a resource toolkit (the HOPE toolkit; example pages in Appendix 5), and a measure of personal recovery – I.ROC.

1:1.5. I.ROC



Figure 1.2: Example I.ROC Question - Life Skills.

Chapter 1

The Individual Recovery Outcomes Counter (I.ROC) was developed in 2007 by a working group of Penumbra employees with knowledge of recovery established through professional and personal experience. Development of the instrument is explored in detail within Chapter 5. I.ROC consists of twelve questions relating to each of the twelve elements of recovery outlined above (see Section 1:1.3).

Respondents are prompted to reflect over their lives during the past three months (*'In the past three months, how often have you...'*), and questions are then answered using a six-point scale ranging from 'Never' to 'All the time'. A series of prompt words and illustrative graphics are provided to help the respondent think about the question. Figure 1.2 shows the format of each I.ROC questions using the example of the 'Life Skills' item; illustrative prompts and pictures are included on the left-hand page. Prompts cover a variety of elements of functional recovery include: 'cooking', 'paying bills' and 'personal care'. The question itself is then shown on the right-hand page, alongside the 1-6 scale.

I.ROC is used as a quarterly facilitated self-assessment within Penumbra's services as part of service users' on-going support. As shown in the centre of Figure 1.1, Baseline scores are charted on a 'spidergram', and review scores are superimposed on this image to provide a graphic representation of the change the person has made. During the review process, the person is encouraged to reflect on these changes to identify what they have done, and what they still want to achieve. Developers emphasise the importance of completing I.ROC collaboratively to stimulate reflection of the recovery journey, and discussion of personally identified outcomes (Monger et al., 2012). The measure is used to inform personal plan development and review progress; as discussed in Chapter 7, this distinguishes it from the majority of other individual-level recovery measures which are designed as stand-alone self-report instruments (Burgess et al., 2010). I.ROC scores are also aggregated to assess the recovery-orientation of the service, inform resource allocation, staff training and service design. As such, I.ROC can be considered a 'multilevel construct'; defined by Zumbo and Forer (2011) as:

"a phenomenon that is potentially differentially meaningful both in use and interpretation at the level of individuals and at one or more levels of aggregation." (Zumbo & Forer, 2011, p1).

The development and implementation of I.ROC, detailed in Chapter 5; describes how I.ROC is situated at the heart of the HOPE framework within a cycle of 'plan, do, review' similar to the process of action research (Lewin, 1946) used for this research project (Section 1:2.1). I.ROC's position and influence within Penumbra services has grown steadily since the start of this project, as senior managers have gathered increasing confidence in its validity. Use of the tool is now mandatory within the majority of Penumbra services, and staff attend I.ROC training as part of their induction into the charity. The integrated approach and central role of I.ROC within it makes this tool unusual (Happell, 2008c), and has necessitated a holistic evaluation approach, in which feasibility and usefulness of the tool is examined alongside traditional psychometric properties (Slade et al., 1999).

Ch1, Section 2. Research approach

The approach and objectives for this research were shaped by the partnership between Penumbra and Abertay University, and by Penumbra's intentions regarding the use and marketization of I.ROC, which was already used within several services at the start of the research. This necessitated a pragmatic research design, focused on extensively critically evaluating this existing measure, and understanding the way I.ROC fits into Penumbra and the wider recovery landscape, rather than seeking to fundamentally alter the original instrument. These objectives were achieved via an action research, mixed methods approach and evaluated through the lens of critical theory (Uzun, 2016). A holistic conceptualisation of validity was adopted.

1:2.1. Action Research

As mentioned above, this thesis was completed as part of a long-standing collaboration (KTP: see Chapter 1) between Abertay University and Penumbra, with the aim of evaluating the extent that an existing tool (I.ROC) is valid and reliable for use in routine practice. Initial steps to evaluate the tool's psychometric properties consequently resulted in an action research design. This thesis applied a pragmatic action research approach (Greenwood, 2007), a democratic process of collaborative social research applied to a practical problem (Lewin, 1946), and consisting of a circular process of "*planning*", *'action'* and *'fact finding'* about the result of the action" (Lewin, 1946, p205). The researcher was ensconced within Penumbra throughout the project and took on the position of project manager for the duration of the project.

The influence of this role on the researcher's positioning within this research is considered within Section 1:2.4. Research decisions were made democratically by a working group comprising Penumbra senior managers and the researcher's supervisors at Abertay. I.ROC stakeholders were further involved as participants, planners and researchers throughout the process. Details of stakeholder involvement are set out within the methodology (Chapter 4). The action research approach taken to I.ROC development sets it apart from that of most other recovery measures, as argued within Chapter 5 (Development of I.ROC), and has been both beneficial and detrimental to the research, as discussed within Chapter 8.

1:2.2. A holistic approach to psychometric testing

The process of validation testing is crucial to establishing a measurement tool as a robust and reliable way of collecting accurate data. Validity testing is the process of analysing a tool in a variety of ways to ensure enough scientific evidence is available to support the assumption that the measure can be used appropriately and effectively within a given setting. By evidencing the psychometric properties of a tool, any data collected using it (within the guidelines of use) may be considered reliable and scientifically robust (Sireci, 2007). Whilst traditional methods of validity testing largely focus on establishing the psychometric properties of a measurement instrument, there is increasing recognition for the importance of establishing the feasibility and meaningful application of tools designed for routine use. As described earlier, routine outcome measures have been criticised for collecting data that is meaningless to respondents, and therefore of no practical application (Happell, 2008c). Burgess and colleagues found that few published psychometric evaluations of recovery measures assess elements of utility, such as the extent to which use of the tool can be considered to promote dialogue between the service user and practitioner (Burgess et al., 2010). A growing body of authors argue that for measures designed to be used in applied settings (e.g. clinical practice), the practical significance and value of the measure to respondents and practitioners must also be considered central to the tool's validity (Happell, 2008c; Messick, 1995; Slade et al., 1999). *"General construct validity evidence may need to be buttressed in applied instances by specific evidence of relevance and utility."* (Messick, 1995, p.744). This thesis therefore seeks to further evaluate the I.ROC as a recovery measure and as a

tool for stimulating personal outcomes-focused conversations, from both a statistical and usability perspective.

In Scotland, the importance of developing outcomes tools that are both meaningful and measurable is identified as a key challenge (Miller & Barrie, 2016b; Miller, Tondora et al., 2017). I.ROC development, as evidenced in thesis, demonstrates ways in which these seemingly conflicting demands can be balanced. Findings reveal the tension between the meaningful embodiment of personal outcomes approaches in practice, and the use of valid and reliable measurement techniques (Barrie & Miller, 2015; Miller & Barrie, 2016).

1:2.3. Mixed methods

To enable a broad range of data to be collected and thus facilitate a holistic evaluation of the validity of I.ROC, a mixed methods approach was adopted. Rationale for the adoption of this paradigm fits within Greene and colleagues' (1989) description of 'expansion'; *"to extend the breadth and range of possible inquiry by using different methods for different inquiry components"* (Greene et al., 1989, p.259). The mixed methods paradigm applies both qualitative and quantitative methodologies within a study or series of related studies (Johnson et al., 2007) in order to initiate new research; or to triangulate, complement, develop, or expand research findings (Greene et al., 1989). Such an approach has well-documented advantages over the application of either of the dominant paradigms in isolation (Johnson & Onwuegbuzie, 2004) and is recommended for use within instrument development and validation in general (Collins et al., 2006), and for the development of recovery measures (Hasson-Ohayon et al., 2016). As argued by Reichardt and Cook (1979),

"There is no reason for researchers to be constrained to either one of the traditional, though largely arbitrary, paradigms when they can have the best from both." (Reichardt & Cook, 1979, p. 18-19)

1:2.4. Researcher position and influence

Rigorous analytical methods require the positioning of the people participating within the study (Coyle, 2016), both as participants and researchers, in order to address any underlying biases (see Chapter 4 for more detailed discussion). For example, the way that an interview is performed will be influenced not only by the relationship

between the interviewee and the interviewer, but also by the prior knowledge and beliefs of both parties. The same is true of the analysis of the data. Qualitative analysis involves 'meaning making' through a process of searching for themes, patterns and motifs within the source to construct or support a theory (Lyons, 2016). The experiences and beliefs of the person searching for that meaning can therefore influence the results of the study (Coyle, 2016). My personal experiences as a Penumbra employee and advocate of I.ROC and HOPE within that role may well influence my perception of the data within these studies, and as much as I can attempt to reduce this personal bias, I hope that transparency and reflexivity within this account will allow readers a more informed critical stance of the results and conclusions drawn.

My experience with I.ROC started in March 2011, when I began working with Penumbra as a research associate on a Knowledge Transfer Partnership with the University of Abertay. Initially an 18-month project to investigate the validity and reliability of I.ROC, I subsequently accepted a permanent position within Penumbra as Research and Information Officer. This post has allowed me to continue to work closely with I.ROC and through my continuing student links with Abertay, to investigate the tool and its use from within the organisation. The advantages and disadvantages of such a position have been well documented (Adler & Adler, 1987). For me, this position has provided greater access to knowledge, research, support and study participants, and aided development of trusting relationships with project partners and participants (Dwyer & Buckle, 2009); it has facilitated the adoption of a participatory action research approach (Cotterill, 1992), and has increased my influence over the development of I.ROC and accompanying resources. I found that my relationship to Penumbra, its workforce and values system was of particular merit whilst conducting interviews with I.ROC stakeholders (Project 3; for Methodology, see Chapter 4). My working knowledge of the organisation and existing relationship with participants enabled me to quickly build rapport, and to then focus the interviews on the early development of I.ROC and how the tool fits within the wider political and practice setting that Penumbra works within (Dwyer & Buckle, 2009).

Although the detailed knowledge and increased resources that my job has afforded me has in my view been beneficial, I must also acknowledge the potential for this to

have influenced the data collection and analysis process in less positive ways (e.g. bias; Kanuha, 2000). My status in Penumbra may make some participants feel uncomfortable, or may affect the answers given to some questions, for example by making participants feel that they should not speak critically of Penumbra or the tools they have developed (Miller & Bell, 2002). I have also had to work hard to override the natural compulsion towards loyalty (Brannick & Coghlan, 2007), brought about by my job, to emphasise positive results in relation to Penumbra and I.ROC, and I am aware of how difficult I have found the process of presenting a scientifically measured critique of I.ROC. Wherever possible, I have removed myself from the direct collection of data, adopted a mixed-methods approach and critical theory methodology to reduce subjectivity, and have invited additional researchers without such close ties to join me in the analytical process, to triangulate the findings (Foss & Ellefsen, 2002). Within each chapter and particularly during the discussion (Chapter 8), I will critique the findings in light of these reflections, questioning the impact of the action research approach that this project has taken, and my position within Penumbra. I will endeavour to present a balanced account of the findings, supporting all conclusions with data and evidence drawn from the wider literature, remaining mindful of the potential for any resulting impact on the decisions and conclusions I have made.

Ch1, Section 3. Organisation of the thesis

This thesis is presented in eight chapters, which cover literature review, methodology, empirical research findings and discussion.

1:3.1. Chapter two: literature review

Chapter 2 explores the extent to which the conceptualisation of recovery underpinning I.ROC fits with current theory. A scoping review of the literature on recovery in mental health is presented, with the aim of summarising and mapping the body of recovery literature, in order to identify the key concepts within this rapidly growing field. Review findings are presented in four sections; the first gives a high-level summary and map of the current recovery literature which demonstrates the extent of growth in this field of research in recent years. Conceptualisations of recovery and recovery-oriented practice are explored within the following three sections, both in terms of the field of mental health in general, and in relation to the

Scottish context. The Chapter concludes by offering an operational definition of recovery used throughout the thesis, and evaluating the extent to which, based on this definition, I.ROC can be considered a valid measure of recovery

1:3.2. Chapter three: Systematic review of recovery measures

A systematic review of individual-level measures of personal recovery is presented in Chapter 3. Ten measures of personal recovery similar in form and function to I.ROC are identified and evaluated based on criteria covering psychometrics, usability and relevance of the tools. Findings for each measure are discussed in turn, in relation to their comparability with I.ROC, with the aim of developing a set of benchmark criteria against which I.ROC can be evaluated within the rest of the thesis.

1:3.3. Chapter four: Methodology

Chapter four presents the methodology and rationale behind the approach taken to data collection and assessment for each of the ten quantitative and qualitative studies included within this thesis. The first section explores the theoretical underpinnings of the mixed methods and action research approach adopted. This is followed by an overview of the data collection, and detailed discussion of the analytical techniques employed; the final section then evaluates this approach.

1:3.4. Chapter five: Development and Face validity

Research detailed within Chapter 5 seeks to retrospectively document the I.ROC development process using a process of narrative synthesis. Designed by practitioners, I.ROC was created as a pragmatic solution to the outcome measurement needs of the organisation. Consequently, much of the story of I.ROC's early development and implementation went undocumented, making it difficult to fully evaluate aspects of the measure's validity. In this Chapter, each stage of I.ROC development is explored in turn, drawing on the narrative accounts of those involved in its creation, supplemented with documentary analysis of materials from Penumbra's archive. The face validity and feasibility of the resulting instrument are then assessed.

1:3.5. Chapter six: Quantitative Results

Chapter 6 explores the statistical psychometric properties of I.ROC which were examined in a series of six quantitative studies. Psychometric testing is presented for

each of the studies in turn, grouped into three sections. The first covers the initial validation testing. Subsequent investigative studies designed to address questions arising from the original study are then presented. Following this, in section 3, routinely collected I.ROC data is used to test the findings of the previous studies. Findings relate to the demographics, descriptive statistics, reliability, structural and convergent validity of I.ROC, and discussed in relation to the benchmarks set in Chapter 3.

1:3.6. Chapter seven: Consequential validity

Measures designed for routine use in support settings need to be usable as well as robust (Slade, 1999); to assess usability, the consequential validity and feasibility of I.ROC are therefore explored in this penultimate Chapter. Feasibility is evaluated by examining the extent to which stakeholder descriptions of how I.ROC is used in practice match guidelines on its use; and by exploring the perceived challenges and barriers to using the tool. Accounts of I.ROC use by practitioners and people using Penumbra services are then reviewed to identify the positive and negative personal and societal consequences of using I.ROC. Exploration of the findings seeks to answer the question of whether the benefits of using I.ROC outweigh the challenges identified.

1:3.7. Chapter eight: Discussion and conclusions

The final chapter presents a discussion of the research findings, seeking to answer the question: to what extent can I.ROC be considered a valid, reliable and feasible tool for routine use in practice? Implications of this research are considered, along with recommendations for future research.

Chapter 2. Literature Review

Ch2, Section 1. Introduction

This Chapter presents a scoping review of the literature on recovery in mental health, with the aim of summarising and mapping the body of recovery literature, in order to identify the key concepts within this rapidly growing field. As Scotland provides the cultural context for this thesis, the review also examines the conceptualisation and application of recovery within Scotland. The Chapter is presented in four sections; firstly, the rationale and context for conducting this review are discussed; following this, the aims of the review are outlined. Methods used to conduct the review are summarised in section two (full methodology can be found in Appendix 6), after which the findings of the review are presented under the following titles:

- Findings Part 1: Summary and mapping of recovery literature
- Findings Part 2: What is recovery?
- Findings Part 3: Conceptualisations of recovery
- Findings Part 4: Recovery oriented practice

Finally, the Chapter will conclude with a discussion and synthesis of these findings.

2:1.1. Rationale and impetus for the review

Rationale for this review was influenced by three factors: firstly, the size of the literature on recovery has expanded to such a point as to necessitate a scoping review to map the recovery literature and summarise the key aspects of this field of research. Secondly, instrument development occurred within the Scottish mental health system; developing a clear understanding of the meaning of recovery in Scotland and how this compares to international conceptualisations will help evaluate the extent to which recovery-oriented practices developed in Scotland (such as I.ROC) may be successfully applied elsewhere. Finally, I.ROC was developed within a framework for recovery developed by Penumbra; evaluation of the validity of this framework as an approach to recovery-oriented practice will help assess the content validity of the measure.

2:1.2. The size of the literature base

The systematic review conducted in April 2017 for this thesis (see Ch2, Section 2 for review methods) revealed approximately one thousand published articles dedicated exclusively to the subject of recovery (see Figure 2.1), and this figure is growing rapidly (Figure 2.2). Given the breadth and weight of the recovery literature, this scoping review was conducted with the aim of summarising and mapping the body of literature, in order to identify the key concepts within this rapidly growing field.

2:1.3. Understanding the local context

Local differences in mental health systems and culture can influence how a key technology or piece of policy such as recovery is implemented, and its impact in practice (Smith-Merry et al, 2011). For this reason, understanding the local context within which the technology is intended to be used is crucial to its success.

“The holistic reorientation of service provision around the aims of recovery will likely depend upon the promotion and dissemination of multiple recovery technologies tailored to the local peculiarities of mental health care, and acting in different ways and at different sites in the system. Without such technologies, the meaning of recovery as a set of values will remain unrealised in practice.” Smith-Merry et al, 2011, p11)

The Scottish approach to recovery is therefore outlined in section 2:3.1.1; the Scottish understanding of recovery is described within section 2:3.2.2, and the approach taken to recovery-oriented practice in Scotland is outlined in section 2:3.4.4.

2:1.4. Evaluating content validity

I.ROC developer Penumbra is a mental health charity based in Scotland, a country recognised for its largely successful implementation of recovery (Slade, 2009b) as outlined in Chapter 1. I.ROC is described by its developers as a measure of personal recovery outcomes (see Chapter 5 for the development of I.ROC), but what does this actually mean, and what is the evidence base behind it? Embedded within the core values and objectives of the organisation, Penumbra describe recovery as follows:

“Penumbra believes, and statistics show, that people can and do recover from mental illness. Recovery means different things to different people because everybody is different. Experiencing mental ill health brings many losses, which may include relationships,

Chapter 2

employment, self-esteem and hope. However, recovery doesn't only mean regaining what has been lost; it may mean a new start...Recovery doesn't necessarily mean being 'cured' or living without medication or support. It does mean being in charge of your own life, with real choices under your control. Recovery offers hope."
(Penumbra, 2018c)

To understand recovery as it relates to I.ROC, this review explores what is meant by personal recovery, and how this concept is applied in practice in Scotland.

2:1.5. Aims

The aim of this review was therefore to give an overview of the current understanding of recovery, and seeks to answer the following questions:

- What is recovery, and how is it defined in Scotland?
- What are the key principles of recovery-oriented practice, and what practices are evident within a Scottish context?
- To what extent can the conceptualisation of recovery underpinning I.ROC be considered a valid reflection of current theory?

Ch2, Section 2. Literature review methods

Literature was reviewed systematically at the start and end of the research programme, between which this knowledge was updated in an ad hoc but regular fashion. This was assisted through membership of the Recovery Research Network, which links researchers to new publications every month, and through regular attendance at national and international conferences.

Two major searches and reviews were undertaken over a period of six years. The first, conducted at the beginning of the PhD in July 2011, sought to identify all recovery literature to date in order to meet the KTP objectives of understanding and operationalising recovery, and identifying key recovery measures for comparison to I.ROC. The initial literature search formed the basis for all subsequent research, providing a bedrock of knowledge around key recovery themes, models and measures. A second formal review (Figure 2.1) conducted in March 2017 updated the earlier results, highlighting key progressions in the understanding of recovery and systematically examining new measures and techniques. This final review also sought to map the influence of recovery through research, policy and practice. For full details of the methodology, see Appendix 6.

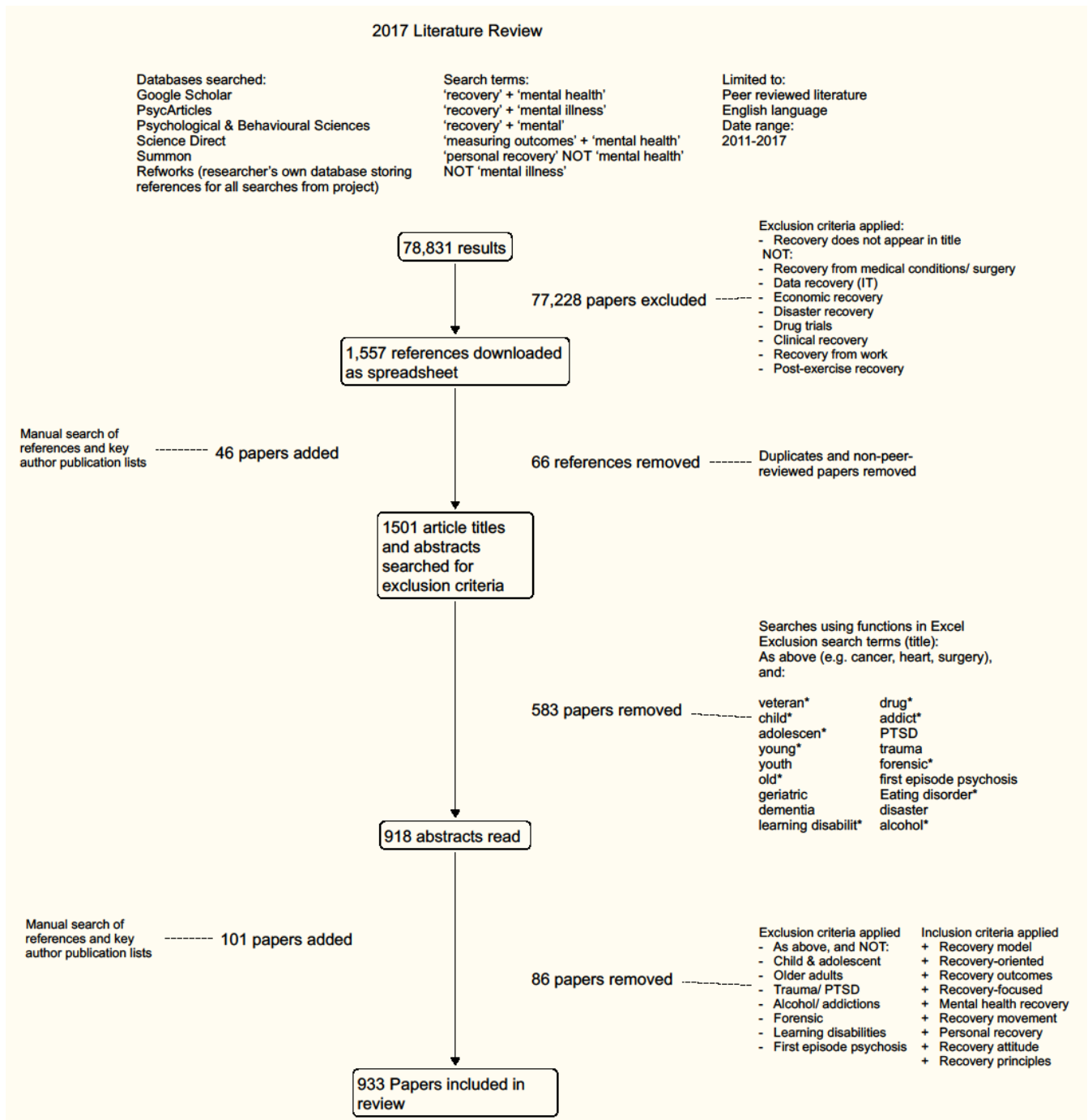


Figure 2.1: 2017 Literature review process

Ch2, Section 3. Findings

The term recovery has taken on new meaning within the field of mental health over the past forty years. One definition that has received intense scrutiny and provides the focus for this review, is the concept of personal recovery. As shown in Figure 2.1, a total of 933 papers referring to personal recovery were identified as part of this review. Papers examine the meaning of recovery (Section 2:3.2), to whom and in what circumstances it applies. Empirical research into recovery: explores

understandings of recovery amongst different populations and stakeholder groups (see Section 2:3.2.1); develops and tests instruments to measure the concept (Chapter 3); and investigates what impacts on people’s recovery (e.g. wellbeing; stigma) (Section 2:3.3). Increasingly, researchers are also exploring what constitutes recovery-oriented practice, as discussed within Section 2:3.4.

2:3.1. Findings Part 1: Summary and mapping of recovery literature

As demonstrated in Figure 2.2, the field of recovery research has grown monumentally since its roots in the late eighties and early nineties, particularly over the past decade; 88% of publications included within this review were published between 2006 and 2016¹. The impact of this work can also be seen in the growing number of countries worldwide that are publishing work in the area (Figure 2.2). From just two published articles in 1996, both originating in the USA, 2016 saw 125 papers published from 23 countries across six continents (Figure 2.4).

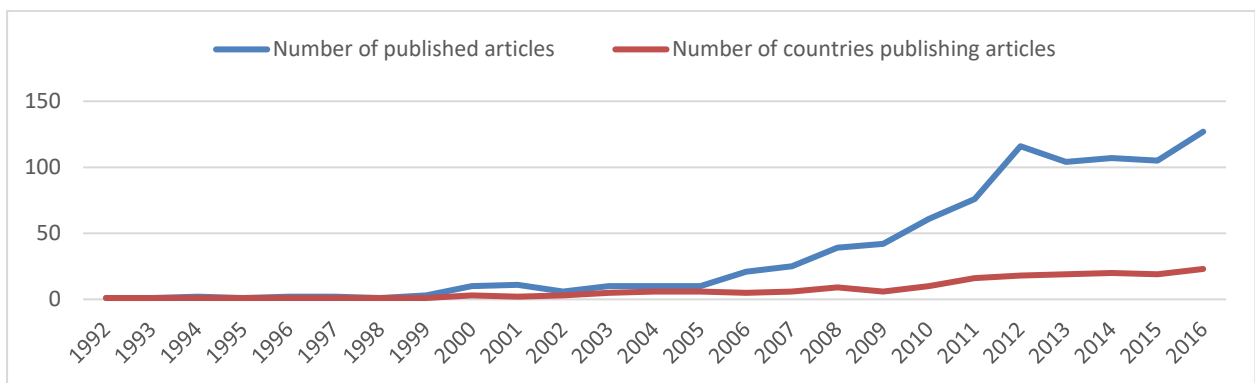


Figure 2.2: Articles with 'recovery' in the title published in peer-reviewed journals between 1992 and 2016

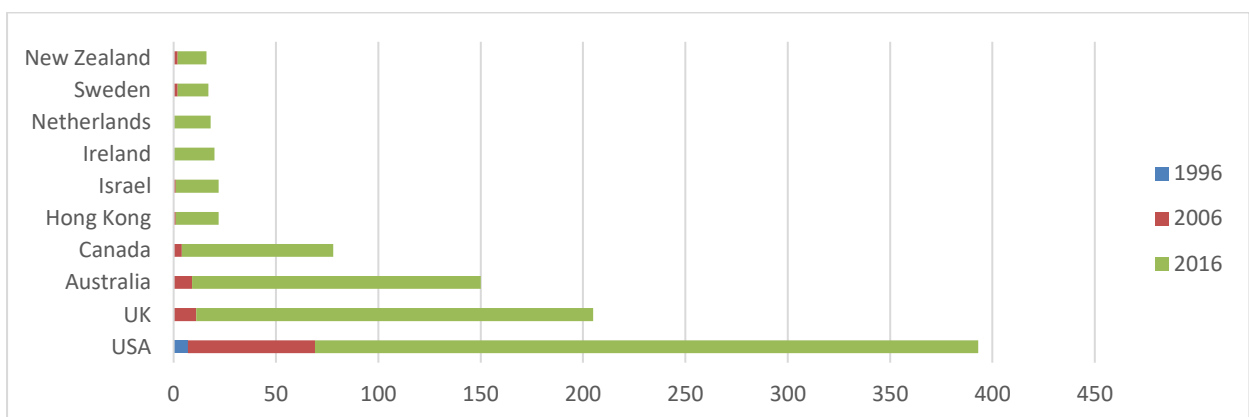


Figure 2.3: Cumulative frequency of personal recovery publications in the 10 most prolific countries

¹ Figures based on papers with 'recovery' in the title of the paper

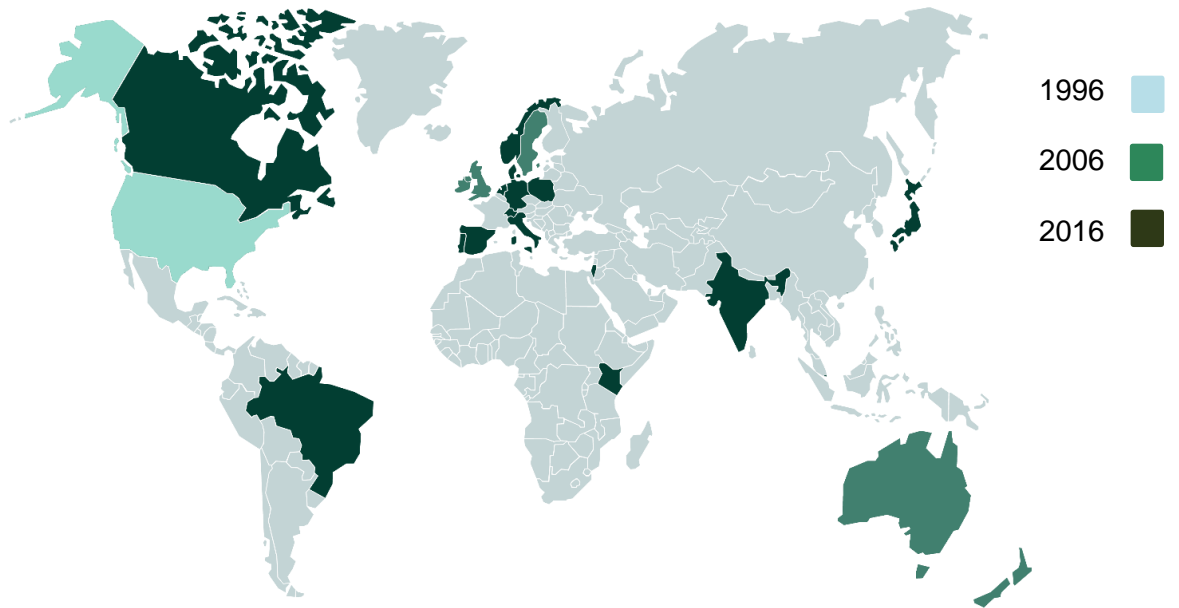


Figure 2.4: World map showing location of articles published in 1996, 2006 and 2016 with recovery in the title

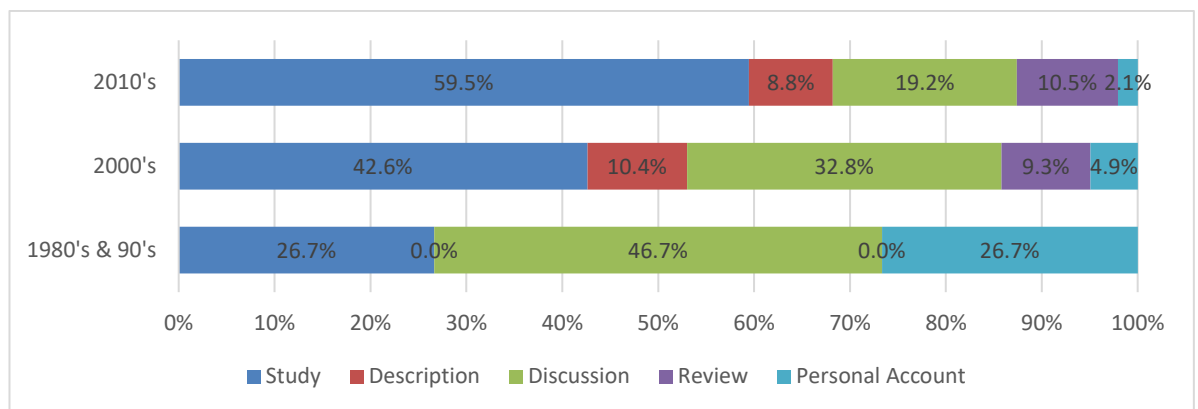


Figure 2.5 Proportion of published recovery articles by type and decade of publication

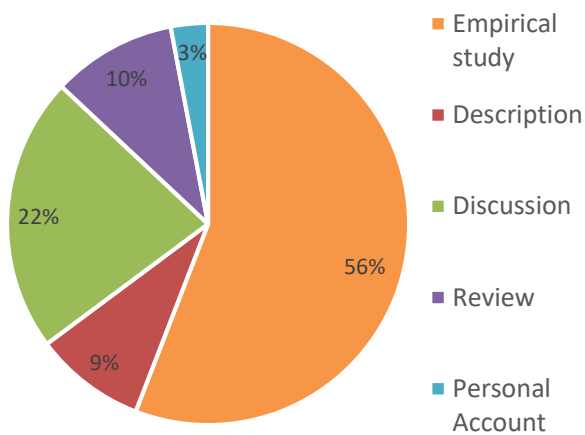


Figure 2.6: Pie chart showing types of articles referencing recovery in their titles within peer reviewed journals 1982-2017 (n=937)

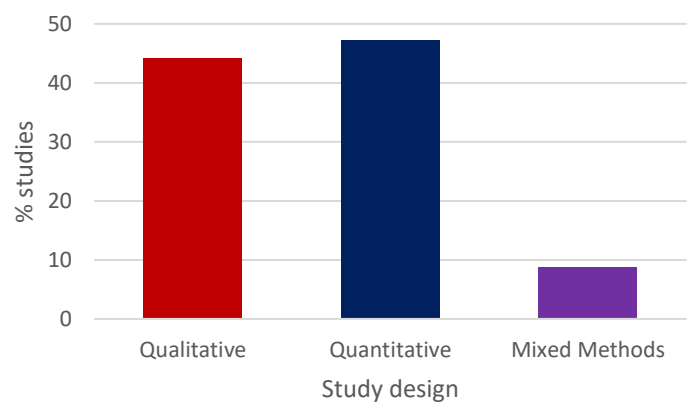


Figure 2.7: Percentage of studies using qualitative, quantitative or mixed methodologies within recovery research (n=456)

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Content analysis of publication abstracts included in the 2017 literature review revealed that the most common aims of authors writing about recovery between 1982 and 2017 were:

- to discuss the meaning of recovery;
- to describe a method, model or measure;
- to evaluate a recovery-oriented practice (see Appendix 7 for full results)

Most commonly when referencing recovery, authors are publishing empirical research (**Error! Reference source not found.**Figure 2.6). Empirical research articles are approximately equally split between those using a qualitative and those using a quantitative design (Figure 2.7). Qualitative methods were employed particularly to explore and understand aspects of recovery, commonly including a review or discussion of the meaning of recovery. Quantitative studies include the development and testing of measures of recovery (see Chapter 3 for an in-depth examination), and the evaluation of recovery-oriented practice (Section 2:3.4).

Within empirical research identified in this review, recovery measurement is a growing trend. References to recovery or recovery-related measures occur within approximately 40% of empirical studies (n=206), and are particularly prevalent within quantitative research studies, over two thirds of which use recovery measures (n=174; 70%). A substantial part of this literature is dedicated to the psychometric assessment of such measures (n=67); once validated, recovery measures are used within studies to evaluate the success of recovery-oriented practice initiatives such as the Illness Management and Recovery (IMR) programme (e.g. Roosenschoon et al., 2016b) and to identify what impacts upon recovery, and how. Such studies explore the relationship between recovery and a range of psychosocial variables including insight and stigma (Fowler et al., 2015), housing (e.g. Martins et al., 2016), and community participation (Burns-Lynch et al., 2016).

The expansion of the literature base includes a growing proportion of empirical research articles and papers written by academics as shown in Figure 2.5. Changes in the types of papers being written on the subject are reflective of a wider concern of some mental health advocates that the politicising of recovery has changed the rhetoric and shifted the power back in favour of practitioners

(Smith-Merry & Sturdy, 2013); from a service-user led field of research (see Section 2:3.2), papers discussing recovery now commonly do not directly include the voices of people experiencing recovery. As shown in Figure 2.5, personal narratives accounted for just 2% of published recovery articles this decade, compared to 27% of articles published between 1982 and 1999.

2:3.1.1 Recovery research: The Scottish evidence

Per capita², Scotland has published more about recovery than any other part of the UK (see Figure 2.8) and is recognised as a world leader in recovery policy and practice (Bradstreet & McBrierty, 2012; Smith-Merry et al., 2011), now referenced within several studies exploring international approaches to recovery (e.g. Le Boutillier et al, 2011b; Pincus et al, 2016).

The current review identified twenty-four papers emanating from or positioned within Scotland. Of these papers, fifteen examine recovery exclusively within a Scottish context. Eleven papers report the results of empirical research, from high-level investigations into the implementation and meaning of recovery in Scotland (Smith-Merry et al, 2011), to evaluations of specific recovery-oriented practices (e.g. Lamont et al, 2017), detailed within Section 2:3.4.4. Papers by Brown and Kandirikirira (Brown, 2008; Brown & Kandirikirira, 2007) explore the meaning of recovery in Scotland, and these will be discussed within Section 2:3.2.2. A series of studies by Smith-Merry and colleagues examine the implementation of recovery in Scotland. A further seven studies emanating from Scotland do not directly address recovery in the

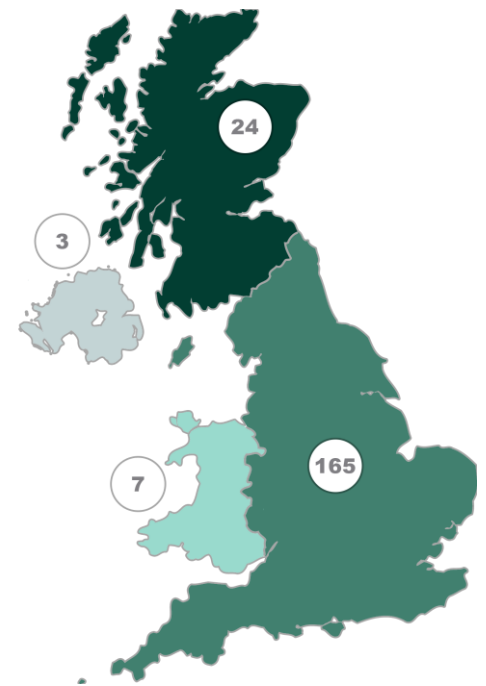


Figure 2.8: Map of recovery publications in peer-reviewed journals across the UK.

Countries are shaded to show the number of publications per capita, from the fewest per capita (N. Ireland – light green) to the highest per capita (Scotland – dark green).

² Per capita figures based on the Office for National Statistics (ONS) mid-2017 figures (ONS, 2017)

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country; written by Barker and colleagues, these papers discuss the authors' Tidal Model of recovery for mental health nursing. Empirical studies also include three articles by the thesis author (Monger et al, 2013; Ion et al, 2013; Dickens et al, 2017).

Scotland's influence in the field of recovery has been driven by discussion and action as well as research. The work of early recovery advocates such as Ron Coleman (Coleman, 1999), has been influential on the world stage (Gray, 2014); the Scottish Recovery Network has provided a model for embedding recovery-oriented practice (Bradstreet & McBrierty, 2012), and Scotland is noted as an early adopter of recovery policy (Smith-Merry et al., 2010).

2:3.1.2 Findings Part 1: Conclusions

Since the since the early 1990's, research into recovery has burgeoned, and interest in the topic shows no signs of abating. The field of recovery is expanding; publications demonstrate interest from a growing number of countries. Involvement of more countries means a greater variety of cultural contexts in which the concept of recovery is being applied; cross-cultural conceptualisations of recovery are explored within Section 2:3.2.1. Providing the cultural context for this thesis, Scotland has established itself within an influential position in the field of recovery, and findings from Scottish research are presented in sections 2:3.2.2 and 2:3.4.4.

The level of understanding of what recovery is, and what impacts on it (Sections 2:3.2-3.3) has never been better, but there is a danger of the field becoming distanced from its experiential routes. Empirical research now accounts for almost 60% of all published recovery articles, dwarfing other forms of discussion on this topic, particularly personal recovery narratives which now comprise only 2% of recovery articles, and are criticised in turn for taking a narrow perspective (Recovery in the Bin, 2018).

2:3.2. Findings Part 2: What is recovery?

Traditionally, psychiatry defines recovery as the complete removal of symptoms of mental illness and return to pre-illness levels of functioning (Davidson et al., 2005). Such definitions are referred to as 'clinical recovery' or 'recovery from'

mental illness (Davidson & Roe, 2007). Four key features of clinical recovery are identified:

“1. It is an outcome or a state, generally dichotomous; 2. It is observable – in clinical parlance, it is objective, not subjective; 3. It is rated by the expert clinician, not the patient; 4. The definition of recovery is invariant across individuals” (Slade et al, 1999, p.35).

Using this definition, evidence suggests that approximately 25% of people ‘fully recover’ and 60-80% experience ‘partial recovery’ (Davidson & McGlashan, 1997; Harrison et al., 2001; Slade, 2009d). Contrary to the traditional Kraepelinian prognosis of schizophrenia as chronic and degenerative, statistics offer recovery as a realistic outcome of mental illness (Davidson et al, 2008; Slade, 2009b). Attainment of functional and clinical outcomes are common hopes of people who have experienced mental illness, as seen in some published narrative accounts. Tagore, (2014) for example, presents his personal experience of challenges faced along the path to “*recovery back to ‘full functioning’*” (Tagore, 2014, p. 89), whilst Pare writes:

“The pimple (that was me) had been popped, the contents drained. That fulminating abscess excised, opened, drained and cleaned. My damaged psyche, had been somewhat renewed, and definitely rejuvenated, and although certainly not yet entirely restored, at least was on the way in a positive healing direction” (Pare, 2010), p.8

Since the psychiatric liberation movement of the 1970’s (Frese & Walker Davis, 1997), this definition has been refuted by many with lived experience of mental illness. People challenge the perception of ‘normality’, the social constraints and negative prognoses still inherent within the clinical model;

“The goal of the recovery process is not to become normal. The goal is to embrace our human vocation of becoming more deeply, more fully human. The goal is not normalization. The goal is to become the unique, awesome, never to be repeated human being that we are called to be.” (Deegan, 1996 p. 92)

In medical terms people argue, recovery following mental illness is most like recovery following paralysis (Anthony, 1993; Davidson & Roe, 2007). One advocate draws parallels between her own experience of recovery following a

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diagnosis of schizophrenia, and those of a man she met with quadriplegia (Deegan, 1988).

“Recovery does not refer to an end product or result. It does not mean that my friend and I were “cured”. In fact, our recovery is marked by an ever-deepening acceptance of our limitations. But now, rather than being an occasion for despair, we find that our personal limitations are the ground from which spring our own unique possibilities. This is the paradox of recovery, i.e., that in accepting what we cannot do or be, we begin to discover who we can be and what we can do.” (Deegan, 1988, p.56)

Personal recovery, or ‘recovery in mental illness’ (Davidson & Roe, 2007) is described as “a process – a life journey that has ups and downs” (Brown, 2008, p.42). Not reliant on obtaining objective outcomes such as the remission of symptoms or a return to ‘full functioning’, personal recovery occurs *despite* such outcomes not being met. Instead, personal recovery is a process of healing and learning to “cope with the challenges of an on-going and serious illness,” (Frese & Walker Davis, 1997, p.244) many of which are socially constructed. The role of the individual in overcoming such challenges is acknowledged by Davidson and Roe (2007) who argue that recovery recognises “a person’s rights to self-determination and inclusion in community life despite continuing to suffer from mental illness” (Davidson & Roe, 2007, p.459). Craig agrees,

“The realization that many of these disabilities are not inevitable or inherent in the illness and can be avoided or ameliorated by adaptations to the environment or a change in the way the sufferer views and copes with their condition...is a universal truth.” (Craig, 2008, p.125)

Published recovery narratives reflect a unique and individual experience in which personal growth, identity and moving beyond the pre-illness self are commonly described (Ridgway, 2001). They address recurring themes, including the emergence of hope; understanding and acceptance of illness; engagement and active participation in life; meaning and purpose; a positive sense of self; support and partnership (Ridgway, 2001; Wisdom et al., 2008).

The field of recovery research began to take off in the early nineties, greatly influenced by William Anthony’s seminal publication which identified recovery as the “guiding vision of the mental health service system in the 1990’s” (Anthony,

1993, p. 521). The cornerstone of all current recovery research, Anthony's description of personal recovery is the most widely quoted within academia, policy and practice. Recovery is described within this paper as:

"A deeply personal, unique process of changing one's attitudes, values, feelings, goals, skills and/or roles. It is a way of living a satisfying, hopeful, and contributing life even with limitations caused by illness. Recovery involves the development of new meaning and purpose in one's life as one grows beyond the catastrophic effects of mental illness." (Anthony, 1993, p.17)

Despite the growing popularity of Anthony's definition, research into the specific nuances of personal recovery continues, demonstrating a lack of consensus regarding its operational definition. In its breadth recovery has, some argue, become a truism; Huiting (2013) argues that difficulties embedding recovery in practice (Section 2:3.4) *"are 'fuelled' by 'polyvalent' capaciousness of the term"* (Hopper, 2008, p. 307). Advocacy group Recovery in the Bin agree that because recovery is 'too malleable', it will "always fit a self-serving agenda" (Recovery in the Bin, 2018). Ambiguity may however be an inherent property of a concept which describes a unique and subjective experience.

"Recovery is considered as an essentially contested concept which must be self-defined and self-directed by the ideographic narratives of those who own and are living with the experience," (Cameron & McGowan, 2013; p.21).

Loose conceptual boundaries can be beneficial; its broad definition has facilitated adoption of recovery within Scotland, enabling it to be appropriated into pre-existing advocacy movements (Smith-Merry et al., 2011). Yet differences in understanding become an issue when relating to how recovery is supported within mental health practice; (Le Boutillier et al., 2015), or indeed how it is measured. Much of the debate stems from the term's multiple linguistic meanings rather than from the concept implied in the theory of personal recovery. In a review of the literature, Collier concluded that confusion is caused by the one term being used to refer indiscriminately to two very separate constructs which she refers to as 'medical' (clinical) and 'life' (personal) recovery (Collier, 2010).

Empirical studies have so far failed to clarify the relationship between clinical and personal recovery constructs. Some studies using personal and clinical

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recovery measures shows the existence of two separate, uncorrelated constructs (Slade, 2009b; Andresen et al., 2010; Macpherson et al., 2015). Others find a significant correlation between measures of clinical and personal recovery (Resnick et al., 2004). Instruments including the QPR, RAS, MHRM, MARS³ and I.ROC have all been found to correlate significantly with measures of clinical symptoms, although the effect sizes tend to be moderate (Andresen et al., 2010; Beck et al., 2012; Cavelti et al., 2012; Drapalski et al., 2016; Law et al., 2014; Monger et al., 2013).

There is therefore evidence pointing both to the distinctiveness and relatedness of these concepts. Lack of consensus suggests that far from being dichotomous constructs, personal and clinical recovery are 'intertwined' (Slade et al., 2014, p. 15). Davidson and Roe (2007) likewise describe 'recovery from' and 'recovery in' as fluid concepts that are not mutually exclusive: an individual may be experiencing aspects of both, and one may impact the other both positively and negatively. As a variety of recovery concepts remain relevant within practice settings, an integrated or holistic model of recovery appears the most advantageous (Turton et al., 2011; Bressington & White, 2015). This conceptualisation of recovery is consistent with qualitative accounts (e.g. Brijnath, 2015) which demonstrate that to people with mental illness, there is no clear distinction between personal and clinical recovery.

Gordon (2013) argues that continued focus on such semantic debates is actively impeding recovery research and practice. 'Recovery in' vs 'recovery from' labels, Gordon contends, perpetuates a focus on symptoms, and thus threatens to ignore those people who have experienced symptom remission, but not personal recovery. Perceiving recovery as a process and not an outcome condemns people with mental illness to a lifetime of recovery, and consequently can be no better than the chronic diagnoses given in medical models of recovery. In debating the nature of recovery therefore, it is important to acknowledge that recovery as a process and an outcome co-occur (Davidson & Roe, 2007), and that symptoms of mental illness are an inherent and

³ For list of measure abbreviations, see Appendix 8.

important aspect of recovery. It is also important that such debate does not continue to dominate research, and that researchers do not lose sight of the common ground; indeed, there are many aspects of recovery that are agreed upon.

“It is the uniqueness of each individual’s recovery journey that makes finding a generally agreed-upon definition of recovery so difficult. Influenced by unique life experiences and cultures, individuals bring their own systems of personal values to their definitions of recovery.” (Allott et al, 2002, p.4)

2:3.2.1 Recovery in different populations

The concept of recovery has been explored within different cultural settings (Jones et al., 2007) stakeholder groups, (e.g. carers) and within groups specified by mental illness diagnoses. Whilst models of recovery have existed conceptually for many years within specialist areas of mental health (e.g. eating disorders), in practice there remains a clinical focus to these models (Turton et al., 2011). For example, within first episode psychosis, recovery is usually used to refer to remission of symptoms and return to ‘normal’ pre-illness functioning (Ventura et al., 2011).

A growing body of research is now exploring the differences and similarities between such population-specific models and personal recovery. Some report considerable overlap between personal recovery and other models prevalent within these settings, arguing for an overarching model based on the principles of personal recovery (Clark & Nayar, 2012; Davidson & White, 2007; Gagne et al., 2007), which can be successfully applied to these populations (McKenna et al., 2014). Others have identified key themes (see Section 2:3.3) that whilst central to one population’s vision of recovery, are peripheral in others, arguing that a universal recovery model will require a level of generalisation which will result in the marginalisation of those for whom a different understanding of recovery holds true (Turton et al., 2011).

Cultural differences are often overlooked within mental health research and practice (Jones et al., 2007). Personal narratives emphasise how cultural differences can impact the diagnosis and treatment of mental illness, highlighting the importance of addressing cultural variation within a more

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person-centred approach (Kwok, 2014), yet recovery remains largely a Western concept; the majority of research coming from (in order of magnitude) the USA, UK and Australia (see Figure 2.3) (Slade et al., 2012). Some authors do argue that the concept of personal recovery is applicable to non-Western cultures (Jones et al., 2007), however others argue that there are significant variations in the relative importance of different domains.

For example, whilst the five domains of Connectedness, Hope, Identity, Meaning and Empowerment identified within the most popular conceptualisation of recovery (CHIME framework; Leamy et al., 2011; see Section 2:3.3) - are found to be consistent across different cultures (Brijnath, 2015; Leamy et al., 2011; Slade et al., 2012), cultural variation is seen in the dominance of the different themes. Black and minority ethnic (BME) populations for example put greater emphasis on the role of spirituality, stigma and the community in recovery (Leamy et al., 2011); community integration and social inclusion appeared most commonly within papers from the USA and the UK reviewed by Slade and colleagues, whereas a focus on strengths was particularly apparent within Australian literature (Slade et al., 2012). Qualitative analysis of interviews with Anglo-Australians and Anglo-Indians has revealed similar results (Brijnath, 2015). Brijnath concluded that the CHIME framework is applicable to both groups, but that factors which are culturally variable such as stigma, spirituality, family relationships and perceptions of recovery mediate the way in which the domains are operationalised. Supporting these findings, Eltaiba and Harries (2015) found that in Jordan, although people's experiences of recovery are largely still consistent with personal recovery, religion plays a far greater role. Schon and Rosenberg (2013) argue that whilst research into recovery in different cultures (in this case Scandinavian) tends to support Western-identified recovery domains and the effectiveness of recovery-oriented practice, it has been guided in the first instance by Western theories and research models, meaning that cultural elements of recovery have not been fully addressed.

Taken together, this evidence suggests that whilst recovery is relevant for everyone (Perkins & Repper, 2015), and the domains of recovery remain fairly constant across cultures, their relative importance and mediating factors

fluctuate between groups. This highlights the need to explore the cultural context recovery models are applied within. Findings emphasise the growing need for more research into personal recovery within diverse cultural settings, and a better understanding of the cultural context within which particular models of recovery are applied. Such explorations will help to better develop culturally sensitive approaches to recovery-oriented practice.

2:3.2.2 How is recovery defined in Scotland?

Narrative research conducted by the Scottish Recovery Network has played a crucial role in the construction of a distinctly Scottish version of recovery (Smith-Merry et al, 2011).

“...through the practices of telling and recording Scottish stories of recovery, the actors involved have come to regard recovery as a national achievement, which expresses the distinct character of the Scottish people and their ability to cope with mental illness.” (Smith-Merry et al, 2011, P.8)

Themes identified from the recovery narratives of almost seventy Scottish adults mirror themes recurrent within international literature on the subject. Participants described recovery as a journey, and identified themselves as ‘in recovery’ whilst still experiencing symptoms of mental illness. Within the full report of the narrative research findings, recovery is described as follows (Brown & Kandirikirira, 2007):

“Recovery emphasises social inclusion and belonging. It highlights the importance of developing a renewed and valued identity that has moved beyond the constraints of the mental health system, that it provides and is often driven by hope and the recognition of strengths, it provides the opportunity to re-engage with meaningful social and occupational roles and can be helped by having positive, trusting, caring, reciprocal relationships with friends, family, professionals and others in your community. It is the pursuit of a life that has meaning and is full of flavour and purpose” (Brown & Kandirikirira, 2007, p157.)

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Reflective of Anthony's earlier definition, the narrative project provides a philosophical vision of recovery in Scotland which emphasises several key elements of such as hope and optimism; identity; meaning and purpose; positive relationships and community; self-management and recognition of personal strengths (Brown, 2008). These mirror the CHIME processes identified within the synthesis of international literature by Leamy and colleagues, as fundamental to recovery (CHIME framework; Leamy et al., 2011). For more discussion of recovery elements, see Section 2:3.3.

2:3.2.3 Findings Part 2: Conclusions

Separate from and yet linked to a person's recovery from illness is the experience of overcoming or growing beyond the impacts of that illness on the person's life (Anthony, 1993). This experience is described as personal recovery; an experience commonly involving a growing sense of hope, empowerment and strength. Aligning with international literature, Scottish recovery narratives describe recovery as a journey involving an exploration of what makes life meaningful and gives each day purpose. People describe the importance of mutually supportive relationships, community connections and the realisation of a positive sense of self-identity (Brown & Kandirikirira, 2007). Recovery is commonly experienced simultaneously as both a process and an outcome (Davidson & Roe, 2007).

As a personal experience, recovery clearly has different meanings to different people, and each one of these needs to be regarded as equally valid.

"It is the uniqueness of each individual's recovery journey that makes finding a generally agreed-upon definition of recovery so difficult. Influenced by unique life experiences and cultures, individuals bring their own systems of personal values to their definitions of recovery." (Allott et al., 2002, p.4)

The concept of personal recovery is not without its critics. Many criticisms focus on different semantic understandings and the impact that this can have both in how the concept can be manipulated, and in what it means to people experiencing mental illness. Application of the term within policy and practice will be further examined within Section 2:3.4. At the individual level, recovery

can be interpreted in a multitude of ways. Recovery stories of overcoming illness, taking responsibility and control, can be inspirational, but are also perceived as Westernised, self-deterministic and isolating (Bayetti et al, 2016), as discussed in Section 2:3.3.1d) below. Publication of too many such stories narrows the discussion regarding mental illness, and risks trivialising the impact of symptoms of mental illness (Recovery in the Bin, 2018). Whilst for some, the concept of recovery as a journey or a process may offer hope, to others it implies no end point, perpetuating an image of mental illness as chronic disability (Hopper, 2008). Personal recovery maintains mental illness as a core construct to be overcome, and emphasis on self-management and engagement with services further ensures a focus on 'mental illness' is retained (Lillehet, 2002; Pilgrim, 2008).

Conceptual clarity appears key to moving past such criticisms to a useful model of mental health. Despite the continued debate, progress has been made on this front. Common themes have been identified, and used to develop an operational definition, as discussed within the next section.

2:3.3. Findings Part 3: Conceptualisations of Personal Recovery

Whilst recovery definitions vary between groups, cultures, and even individuals, key themes have emerged from the literature. Reviewing qualitative studies into the meaning of recovery, Davidson et al (2005) offer a conceptual summary of recovery of the most frequently described key themes:

- Recovery is a Journey
- Being Supported by Others
- Renewing Hope & Commitment
- Engaging in Meaningful Activities
- Redefining Self
- Incorporating Illness
- Overcoming Stigma
- Assuming Control
- Managing Symptoms
- Becoming Empowered & Exercising Citizenship

More recently, Leamy and colleagues (2011) synthesised conceptualisations of recovery within the literature, developing a recovery framework with three overarching categories: Characteristics of the Recovery Journey; Recovery Processes; and Recovery Stages. ‘Characteristics of the recovery journey’ describe the experience of recovery as a complex, multidimensional and non-linear personal journey, highlighting many of the key properties of recovery already discussed in this Chapter. Dominant themes and their role within models of recovery are explored further within this section; recovery processes identified by Leamy and colleagues are examined in detail within Section 2:3.3.1; whilst the stage models identified within the same conceptual framework are discussed in Section 2:3.3.5i).

2:3.3.1 Commonly Identified Elements of Recovery

Despite continued debate regarding the meaning of recovery, consensus has been reached on the centrality of five components identified through a highly influential systematic review on the meaning of recovery (Leamy et al., 2011). Leamy and colleagues identified almost one hundred articles offering different conceptualisations of recovery, and used an adapted process of narrative synthesis to develop a conceptual framework of recovery (referred to as the CHIME framework). Following review by an expert panel (both professional and lived experience), the resulting framework identifies five core recovery processes to which they assign the acronym CHIME: Connectedness, Hope,

Recovery processes

1. Connectedness

- Peer support & support groups
- Relationships
- Support from others
- Being part of the community

2. Hope & optimism about the future

- Belief in the possibility of recovery
- Motivation to change
- Hope-inspiring relationships
- Positive thinking & valuing success
- Having dreams & aspirations

3. Identity

- Dimensions of identity
- Rebuilding/ redefining/ positive sense of identity
- Overcoming stigma

4. Meaning in life

- Meaning of mental illness experiences
- Spirituality
- Quality of life
- Meaningful life and social roles
- Meaningful life and social goals
- Rebuilding life

5. Empowerment

- Personal responsibility
- Control over life
- Focusing upon strengths

Table 2.1: CHIME framework (Leamy et al, 2011)

Identity, Meaning and Empowerment (see Table 2.1). The evidence supporting each of these five elements as central components of personal recovery is explored below.

a) Connectedness

Relationships is one of the most frequently cited themes within recovery research (Soundy et al., 2015); “*people, not pills, are crucial to recovery*” asserts one peer provider (Fisher, 2003, p. 65). Personal, social, peer and professional relationships that are supportive, hope inspiring and reciprocal play a crucial role in facilitating recovery, whilst negative relationships pose a substantial barrier. Personal and social relationships are discussed here, whilst professional and peer relationships are discussed in Section 2:3.4, which examines recovery-oriented practice.

Personal relationships: Family, friends and romantic partners

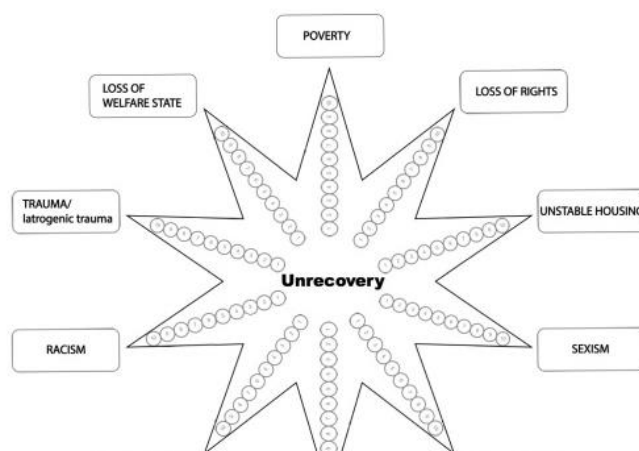
Family, friends and partners can have both a positive and negative influence on recovery (Aldersey & Whitley, 2015; Boucher et al., 2016; Reupert et al., 2015). Personal relationships facilitate recovery through the provision of reciprocal practical and moral support (Pernice-Duca, 2010), and by giving the person motivation to recover (Aldersey & Whitley, 2015). Negative personal relationships, for example where loved ones express stigmatising attitudes or a lack of understanding, or where the relationship itself is a cause of stress, are described by people with lived experience as barriers to recovery (Aldersey & Whitley, 2015).

CHIME, like many models of personal recovery, focuses on the impact of close relationships on the person experiencing the mental health issue, but does not fully address the issue of reciprocity (Petros et al., 2015). People in recovery talk of the importance of mutuality - not only being supported, but giving support to others (Brown, 2008a). Mental health difficulties affect those closest to the person living through the experience, and this results in a need for family and friends to ‘recover’ too (Chandler & Repper, 2011). A growing body of literature explores ‘family recovery’ (Price-Robertson et al., 2017) or ‘co-recovery’ (Korsbek, 2016), investigating the interdependence of a person’s recovery and that of their family or partner. Family roles held by the person in recovery (e.g.

parent/child/partner) affect the recovery process and vary the impact on family relationships (Bonfils et al., 2014; Mesidor & Maru, 2015; Reupert et al., 2015; 2017). A recent review by Reupert and colleagues (2017) supports the use of family-focused and role-sensitive interventions such as parenting interventions, although more evidence is needed.

Social relationships: inclusion, exclusion and connectedness

Measures of recovery correlate with perceived level of social inclusion (Burns-Lynch et al., 2016) and measures of objective and subjective social support (Corrigan & Phelan, 2004), suggesting that an individual's social support and perceived satisfaction with their social network is an important factor of their personal recovery. 'Mental health recovery is social' (Holttum, 2014, p.110). The past thirty years have seen long-term psychiatric institutions closed in many countries including the UK (Frese & Walker Davis, 1997), yet people with mental illness diagnoses now living in the community commonly do not feel a part of it, and people with mental health problems continue to be socially excluded; stigmatised, marginalised and isolated (Burns-Lynch et al., 2016). Social equality is acknowledged as crucial for recovery (Piat & Sabetti, 2012), and removing barriers to social inclusion is a key attribute of recovery-oriented practice (RCPsych, 2009). Despite this, the recovery paradigm does not yet sufficiently recognise the role of social factors (e.g. poverty, trauma, discrimination **Error! Reference source not found.**) on a person's ability to recover (e.g. Callero 2008). Advocates argue that until society is fundamentally changed to fully support people with mental illness, recovery will remain an



intangible platitude, and 'unrecovery' (Figure 2.9) a reality for many. "Some of us will never feel "Recovered" living under these intolerable and inhumane social pressures" (Recovery in the Bin, 2017).

Figure 2.9: The Unrecovery Star, developed by user group Recovery in the Bin to reflect the social causes of mental illness and barriers to 'recovery'

Hope

Experiences of the onset of mental illness and subsequent diagnosis are commonly described by people with lived experience as hopeless or devoid of hope (e.g. Lovejoy, 1982), whilst the subsequent return of hope sparks the beginning of recovery (Hobbs & Baker, 2012). Hope has been linked to positive outcomes in education, mental and physical health (Snyder, 2002). Within mental health, hope acts to counteract symptoms of depression, improves subjective quality of life and wellbeing (Corrigan, 2014). A key theme within narrative accounts (Section 2:3.2), and within all models of personal recovery (see Section 2:3.3.5), hope is central to personal recovery. Schrank and colleagues (2008) conclude that hope mediates recovery through the restoration or development of meaning in life, and a gained insight into the meaning of past experiences. Hope varies significantly across recovery stage (as measured using the SISR; Andresen, 2007), with a trend towards higher levels of hope in the latter stages of recovery (Copic et al., 2011).

The role of hope in recovery is conceptualised as comprising three main categories: “influence of others on hope”, “personal hope” and “doing recovery” (Hobbs & Baker, 2012, p.145). Relationships inspire hope through the positive modelling of recovery, the sharing of the belief that recovery is possible, and by providing a sense of connection and belonging. Turning points or catalysts represent a time at which personal sense of hope increases, often linked to a sense of agency or control over one’s mental health problem. Hope is maintained through gaining understanding, making positive changes and the achievement of recovery-oriented goals.

Hope as described above focuses on the individual’s inner faith in themselves, their own ability to overcome difficulties and to live a ‘better’ life. But does hope for recovery set people up to fail? Some believe that the rhetoric of ‘recovery is possible for everyone’ trivialises the impact of symptoms of mental illness (Recovery in the Bin, 2018) and neglects the genuine challenges posed by society (see above). Conflation between the concepts of personal and clinical recovery may be aiding this belief. There is a difference however, between hopeful (and possibly unhelpful) rhetoric (i.e. recovery is possible for all), and the concept of hope as a central component of recovery. As a central

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component, hope represents a personal belief that things can change, and the motivation to make that happen.

b) Identity

“With the onset of mental illness, one is often stripped of one’s identity and left with a sense of failure and distress. One feels like a shell; a being of no substance; one who walks in the shadows of others and casts none of one’s own; a victim of the spooks and phantoms that pervade one’s mind.” (Jeffer & Pepper, 2005, p.92)

Mental illness can have a devastating effect on one’s sense of self; people with lived experience describe how the onset of mental illness can result in the loss of one’s pre-illness identity as they struggle to come to terms with their new reality (Baker et al., 2009; Kerr et al., 2013; Wisdom et al., 2008). People may struggle to reconcile a fractured, dichotomous or manifold sense of self in which the elements of the person’s perceived ‘real identity’ exist alongside an ‘illness identity’ (Wisdom et al, 2008). Self-stigma, the endorsement and internalisation of cultural stereotypes about mental illness, can have a detrimental effect on one’s self-identity (Oxle et al., 2017), impacting the person’s perception of their illness (Chan & Mak, 2014, 2015), meaning in life and possible outcomes (Hasson-Ohayon et al., 2014), highlighting the role of social factors on recovery. Reconstruction of self-identity is a central component of recovery (e.g. Baker et al., 2009; Kerr et al., 2013); as outlined within several stage models of recovery (e.g. Andresen et al, 2003). Regaining a positive sense of self is enabled partly through a process of making sense of, or finding meaning in, the mental illness experience (Grant et al., 2015; Kerr et al., 2013), and is also facilitated by engaging in meaningful social roles (Wisdom et al., 2008).

c) Meaningful Activity

“Not having a job is the single biggest inequality that people with mental health problems can face” (Scottish Government, 2017b, p.8). Although the majority (85-90%) of people with mental health problems view employment as central to their recovery (Barbic et al., 2016a, b), unemployment is far higher amongst people with mental health problems than the general population, with unemployment and underemployment estimates commonly in the range of 75-

90% (Boardman et al., 2003; Saavedra et al., 2015). Unemployment is shown to be both a cause and a consequence of a range of negative social and health outcomes including poverty and mental illness (Thomas et al., 2005). On the other hand, employment has been linked to a range of positive social and mental health outcomes (Boardman et al., 2003); having a job can provide structure and routine, give people a sense of control over their lives, of purpose and meaning, and help them feel like a contributing member of society (Doroud et al., 2015; Panczak & Pietkiewicz, 2016). Employment can also improve people's sense of self-esteem and facilitate the development of a positive self-identity (Bevan et al., 2013). Paid work can also reduce money-related stress (Bond et al., 2001), an important factor for many people with mental health problems who commonly identify improved financial management as one of their most important goals (Elbogen et al., 2011).

It is important to recognise that not everyone wants to work however (Coutts, 2007). For people in Scotland, stigma, stress and other negative past experiences are amongst the reasons why people with mental health problems do not want to work (Brown & Kandirikirira, 2007). Stigma in the workplace is common; only 37% of employers report being willing to recruit people with a mental health problem (Department of Work and Pensions, 2002). Three quarters (74%) of the UK workforce report having felt too stressed to cope in the past year (Mental Health Foundation, 2018).

Thankfully, employment represents just one aspect of meaningful activity (Hancock et al., 2013). Positive outcomes are reported whether the employment in question is paid or unpaid work, education (Bullock et al., 2000; Rinaudo & Ennals, 2012) or other activities perceived to be meaningful to the person, particularly if the activity facilitates social participation (Compton et al., 2011; Kaplan et al., 2012; Myers et al., 2016). Enjoyable and meaningful leisure activities are also recognised as important for recovery (Iwasaki et al., 2010; Shank et al., 2015). Engaging in leisure activities has been shown to have a significant positive impact on recovery (Lloyd et al., 2007), to enrich and provide meaning to the life of the individual (Iwasaki et al., 2010). People with lived experience describe leisure activities as an opportunity for deepening social and

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personal relationships, a source of enjoyment, relaxation and fulfilment (Shank et al., 2015). A growing body of research reports the positive effect of creative pursuits including art (e.g. Colbert et al., 2013), music (Perkins et al., 2016), and theatre (Montez, 2013).

Spirituality

Qualitative studies have commonly identified spirituality as a factor in recovery. Spirituality or religion can be a source of social support, help a person cope with stress and make life decisions (Sullivan, 1992; 1998). Spirituality can also help the development of a positive self-identity, improve subjective wellbeing, empowerment and a 'sense of meaningful connectedness' (Starnino & Canda, 2014). Results of quantitative research support the role of spirituality in recovery (Ho et al., 2016); spirituality but not religiousness was found to be a predictor of recovery from depression in a year-long study by (Mihaljevic et al., 2016). Measures of religiousness and spirituality have been shown to be significantly related to recovery (Barber et al., 2012; Corrigan et al., 2003), but the universality of spirituality as a factor in recovery is contested; Slade and colleagues' review of international conceptualisations of recovery identified spirituality as a factor in only 42% of studies (Slade et al., 2012). It is argued that spirituality is a factor with more weighting for people from some cultures than others (Brijnath, 2015), and it therefore remains a contentious issue. As a consequence, spirituality is often not included as a major category within models of recovery; instead, it is subsumed within other domains such as meaning in life (Leamy et al., 2011) or hope (Bassett et al., 2008) .

d) Empowerment

A mainstay of personal recovery models (e.g. Davidson et al., 2005; Jacobson & Greenley, 2001), empowerment is acknowledged as a fundamental attribute of recovery (Fisher, 1994; Leamy et al., 2011). Authors describe empowerment in terms of autonomy (Basso et al., 2016), citizenship (Lawn et al., 2014), responsibility (Andresen et al., 2003), participation and control (Crane-Ross et al., 2006) and self-management (Coulombe et al., 2016). Measures of empowerment are frequently used within convergent validity testing of personal recovery instruments (e.g. RAS: Chiba et al., 2010; MARS: Drapalski et al.,

2016), and are widely employed in recovery-oriented practice evaluations as an indicator of recovery (Boevink et al., 2016; Bullock et al., 2000; Dunn et al., 2008). Wciorka and colleagues (2015) found empowerment to be predicted by high self-esteem and self-efficacy and by low levels of stigma and depression, whilst Zhang et al (2017) show self-empowerment to mediate the influence of perceived primal threat (the extent to which mental illness is perceived as a threat to basic needs) on recovery. Piltch (2016) draws on her own lived experience and those of her peers to discuss the role of self-determination – the ability to make one’s own decisions - in recovery. She identifies five factors that foster self-determination: access to (good quality) information about services and resources; support from trusted others; mentors/coaches with lived experience; willingness to try different approaches; and engaging in meaningful activity. These are common themes within recovery-oriented practice guidance documents, which reference peer support, focusing on strengths, promoting informed choice, service user rights and meaningful occupation (Le Boutillier et al., 2011b). It is a logical conclusion therefore that, as found in a study by Barrett and colleagues, empowerment mediates the relationship between recovery-orientation of the service and service user satisfaction (Barrett et al., 2010).

Over-emphasis on empowerment is one of the key criticisms of the recovery model however. Personal recovery is perceived to be grounded in a neoliberal, overly individualistic world view which puts too much of the responsibility for recovery on the person (O’Brien, 2012). As discussed in Section 2:3.3.1 the recovery paradigm currently fails to reflect cultural differences or fully acknowledge the social contributors to illness and recovery (Harper & Speed, 2012).

“The recovery model, by focusing on the individual rather than the family and community, supports and propagates a neoliberal model of development” (Bayetti et al., 2016, p.895)

2:3.3.2 Is CHIME a good framework for personal recovery?

CHIME has become a widely adopted framework for personal recovery, used to evaluate the construct validity of recovery measures (Shanks et al., 2013; Williams et al., 2012), and to develop targeted recovery oriented interventions

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(SMART-Therapy, Thomas et al., 2016) and programmes (Refocus; Slade et al., 2015b). Recent evaluations of the framework tend to support the validity of the conceptualisation; results of further literature reviews (Bird et al., 2014; Deering & Williams, 2017; Slade et al., 2012) and deductive analyses of qualitative interviews (Brijnath, 2015; Petros et al., 2015) report that the CHIME framework adequately summarises the key recovery themes across different cultural groups (Brijnath, 2015; Slade et al., 2012).

Whilst research behind the CHIME framework is robust there are several aspects that can be criticised. Firstly, the article in which the CHIME framework is presented lacks detail (Leamy et al, 2011). The themes are outlined as seen in **Error! Reference source not found.**, but there is very little description of the themes themselves, and none relating to the subthemes. For example, 'meaningful life and social roles' and 'meaningful life and social goals' are both listed as subthemes of Meaning in Life, but they are not defined, and the difference between them is therefore not entirely clear. Secondly, the labelling of the central CHIME components as processes is confusing, as in reality each one is both a process and an outcome of recovery. Finally, the framework does not fully account for all domains identified within conceptualisations of personal recovery. The authors themselves note that they were alerted by consulted experts to several areas of omission such as physical health and trauma. Several authors have since identified further elements such as practical support (Bird et al., 2014) and socio-economic security (Brijnath, 2015) that are missing or not emphasised within the framework. Whilst the conceptual framework has provided a good starting point for further recovery research therefore, it cannot yet be considered exhaustive. Areas of omission from the framework are considered in more detail below.

2:3.3.3 Other elements of recovery

e) Daily living

Activities of daily living and improving skills in this area is commonly considered an aspect of functional rather than personal recovery (e.g. Lloyd et al, 2008). Several studies have demonstrated that people with lived experience do not draw such a distinction however, and that daily living is thus underrepresented within recovery models (e.g. Hancock et al, 2013; Gibson et al., 2011; Lee et al., 2014). For example, the positive impact of financial skills development on recovery was reported by (Elbogen et al., 2011). Inclusion of a 'daily living' component may help address the current disproportionate focus on individual responsibility within recovery models (Hopper, 2008), by recognising the role of society in meeting basic needs. Croft and Parish for example found that *"meeting basic needs for food, clothing, and shelter are important first steps in the recovery process for self-directing participants"* (Croft & Parish, 2016, p.14). Good quality housing for example is commonly identified as a fundamental requirement for recovery (Browne et al., 2008; Choy-Brown et al., 2016), leading to improved hope for the future (Kirst et al., 2014), and a more positive self-identity (Polvere et al., 2013).

f) Safety & Security

Related to the concept of being able to manage day to day life is the issue of safety and security. Although not frequently discussed (Yates et al., 2011), a growing body of authors (see Table 2.2) describe a sense of safety from self and others as a prerequisite for recovery (Shepherd et al., 2016). Safety is often only referred to in relation

Key word	# Occurrences	
	Title	Abstract
Connectedness		
Relationship*	12	146
Connect*	3	53
Social*	66	317
Family	17	83
Hope		
Hop*	148	162
Identity		
Identit*	147	65
Meaningful Activity		
Purpose*	146	138
Meaning*	13	130
Leisure	3	4
Employment	7	46
Spiritual*	13	30
Empowerment		
Empower*	14	113
Citizenship	3	8
Autonom*	0	21
Management	54	126
Health & Wellbeing		
Physical*	4	47
Wellbeing*	3	19
Positive psychology	2	6
Happy	1	1
Strength*	6	58
Daily living		
Trauma	0	10
Housing	19	51
Daily living	0	3
Function*	4	76
Safe*	2	24

Table 2.2: Frequency of occurrences of key words relating to each recovery component within recovery literature

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to professionals' attitudes to risk management (e.g. Osborn & Stein, 2017; Sykes et al., 2015; Perkins & Repper, 2016), however some acknowledge it as a more fundamental building block for recovery. For example, lack of safety and security within inpatient mental health treatment (e.g. concerns over dosing, seclusion, violence) was identified as a barrier to recovery by Happell (2008b). This theme is particularly important for the reported 40 to 90% of people with mental illness who are survivors of abuse (Costanzo, 2016; Herman, 2015; Mueser et al., 1998; 2004). Whitley and colleagues (2008) found safety and security to be the biggest concern for residents of recovery communities, particularly for women and adolescents. Many of the residents felt the communities to be a place of safety, comparing it to life 'before', which often included living on the streets or experiences of abuse. Whitley et al recognised that:

“Feelings of safety and security appeared to be the bedrock upon which positive inter-personal relationships were forged and individual growth occurred.” (Whitley et al, 2008, p.177)

g) Health & Wellbeing

Health & Wellbeing is comprised of two sub-components, one focusing on physical, and one on mental health, neither of which on their own receives enough attention within the literature to be conceived as a dominant theme, but which together amount for a significant proportion of the discussion on personal recovery.

Physical Health

Consulted experts identified physical health as an aspect of recovery missing from the CHIME framework (Leamy et al, 2011). Several authors now propose that physical health should be considered a factor within personal recovery (Bressington & White, 2015; Choy-Brown et al., 2016; Lamont et al., 2017; Rosenbaum et al., 2015). Service users recognise the importance of physical health to their recovery and wellbeing rating it in their top three concerns alongside mental health and housing (Choy-Brown et al., 2016). Life expectancy for people with serious mental illness is fifteen to twenty years less than for the general population (Thorncroft, 2011), and mental illness is frequently associated with increased rates of physical health conditions

including obesity, diabetes and heart disease (Brown et al., 2015; Thornicroft, 2011). A meta-analysis of the impact of physical activity on mental health showed exercise and activity to significantly reduce symptoms of mental illness, and increase quality of life (Rosenbaum et al, 2014; 2015). Studies have also demonstrated the positive impact of participating in physical activities such as football on personal recovery (Oldknow & Grant, 2008).

Mental Health

“Personal recovery involves working towards better mental health, regardless of the presence of mental illness” (Slade, 2009b, p.129). Authors have long debated the difference between clinical and personal recovery, arguing that living a full and satisfying life is not dependent upon remission of clinical symptoms (Anthony, 1993). Yet within conceptualisations of personal recovery, mental health is largely addressed in terms of mental illness. For example, the construction of positive self-identity is often described as dependent on integration of, or overcoming, an illness identity (Wisdom et al, 2008). Recovery is also defined by the ability to self-manage symptoms of illness (Coulombe et al, 2016), and to engage constructively with mental health services (Hicks et al, 2012). Good mental health is more than the absence of illness however (Herrman et al., 2005) and empirically, mental illness and mental health have been shown to be distinct concepts (e.g. Ryff & Keyes, 1995). A growing body of literature considers the relationship between recovery and mental health through the lens of positive psychology and wellbeing (Slade, 2010c). This approach focuses on strengths and personally-defined goals, highlighting key elements of mental health such as happiness which are otherwise missing from recovery conceptualisations (Slade, 2010c).

2:3.3.4 Discussion of recovery elements

Connectedness, Hope, Identity, Meaning and Empowerment are identified as key recovery themes within the majority of recovery literature, and increasingly evidence supports the validity of this conceptualisation. Although the relative importance of each of the elements is acknowledged to vary from person to person and across cultures, their dominance within the literature establishes the CHIME components as the fundamental building blocks of personal recovery.

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CHIME omits several important recovery themes however. The current review finds that whilst a smaller proportion of the literature on recovery addresses these aspects, as demonstrated in Table 2.3 and Table 2.4, there is sufficient evidence to consider physical health, mental health, safety and daily living as additional recovery elements.

Yet a question remains as to the positioning of these themes within a model of recovery; given their exclusion from the CHIME framework and the lesser frequency with which these aspects are referenced in the literature (as shown in Table 2.4), do 'health and wellbeing' and 'daily living' and their subthemes fit within the concept of personal recovery, or are they better placed outside this domain, within a wider multi-dimensional model of recovery?

Recovery Elements

1. **Connectedness:** Personal, social, peer and professional relationships that are supportive, hope inspiring and reciprocal
 - a. **Personal Relationships:** positive, supportive and reciprocal relationships with family, friends and partners.
 - b. **Social Relationships:** isolation, involvement, stigma, equality, support
 - c. **Professional Relationships:** Supporting relationships built on a sense of shared humanity
 - d. **Peer Relationships:** A source of hope, empowerment, empathy and mutual support.
2. **Hope:** having hope for a positive future, hopeful relationships, meaningful life; spirituality as a source of hope
3. **Meaningful Activity:** Employment, enjoyable and meaningful leisure activities, creative pursuits
 - a. **Spirituality:** Faith, religion or spirituality as a source of inter and intrapersonal support and meaning
4. **Identity:** positive sense of self, growing beyond illness identity, self-stigma, meaningful roles
5. **Empowerment:** autonomy, citizenship, responsibility, participation & control, self-management
6. **Daily Living:** ability to manage one's day to day life, including housing, budgeting and self-care.
 - a. **Safety & security:** feeling safe and secure, particularly after traumatic experiences is acknowledged as crucial early building block for recovery
7. **Health & wellbeing:**
 - a. **Mental health:** overcoming or managing illness, strengths-based, personally-defined goals, happiness, good quality of life, positive wellbeing
 - b. **Physical Health:** Acknowledges the detrimental effects of mental illness on physical health, and the positive impact that physical activity can have on mental health and quality of life.

Table 2.3: The seven core components of personal recovery

2:3.3.5 Recovery Models

Elements of recovery arising from qualitative studies and personal accounts have been used to develop several theoretical models; some outline a series of stages, whilst others focus on the factors influencing recovery, and the

components that change as a result. A smaller number of models incorporate personal recovery into a wider multi-dimensional or 'complete recovery' model.

Table 2.5 uses a sub-sample of 17 papers to demonstrate the frequency with which recovery components established in the previous section are represented as central aspects of personal recovery within theoretical models (components envisioned within models but outwith central domains of personal recovery are not counted). The majority of models incorporate all CHIME components, however there appears to be less agreement regarding the domain of connectedness than the other four components. Several models exclude connectedness (e.g. Andresen et al., 2003), whilst others situate it outside of the core domains as part of the background or environment within which recovery occurs (e.g. Slade, 2009b), or within a separate recovery dimension (e.g. Lloyd et al, 2008). The additional themes of health and wellbeing and daily living are included within some models; indeed, aspects of health and wellbeing are identified within almost as many of the personal recovery models (n=6) as connectedness (n=8), although daily living themes are less apparent (n=3).

h) Process Models

Process models of personal recovery are consistent with Mancini and colleagues' description of recovery as a "*subjective and dynamic process involving reflexive interaction of numerous personal and environmental factors*" (Mancini et al., 2005, p.49). Following the themes outlined in the previous section, process models commonly identify a central set of internal attributes such as hope and identity believed to be fundamental to recovery.

Although relatively consistent in their identification of such themes, models describe their role within recovery in different – and sometimes rather vague - ways. For example, Slade (2009) simply identifies four core domains involved in recovery: hope, identity, meaning and personal responsibility, whereas Green (2004) more specifically includes hope as a source of motivation, and Lapsley et al describe hope as a fundamental process of change (Lapsley et al., 2002). Several models outline key tasks or strategies a person engages in to facilitate recovery, such as learning about mental health (Lapsley et al, 2002; Green, 2004), developing valued social roles (Slade, 2009) and taking personal

responsibility. For example, Noordsy and colleagues (2002) identify ‘living a healthy lifestyle’ as one such task, situating this theme within the wider domain of ‘taking personal responsibility’.

Core components of recovery	Baxter & Diehl, 1998	Young & Ensing, 1999	Pettie & Triolo, 1999	Roe & Ben-Yishai, 1999	Jacobson, 2001	Ridgway, 2001	Jacobson & Greenley, 2001	Spaniol et al, 2002	Lapsley et al, 2002	Noordsy et al, 2002	Andresen et al, 2003	Green, 2004	Slade, 2009	Ralph, 2004	Carla et al, 2004	Song & Shih, 2009	Lloyd et al, 2008	Total Frequency
Connectedness	x	x			x	x			x	x			x			x		8
Hope	x	x				x	x		x	x	x	x	x	x	x	x	x	13
Identity	x	x	x	x	x	x		x	x	x	x		x			x	x	13
Meaning	x	x	x	x	x	x		x	x	x	x	x	x		x	x	x	15
Empowerment	x	x			x	x	x	x	x	x	x	x	x	x	x	x	x	15
Health & Wellbeing		x			x				x	x				x		x		6
Daily Living		x							x			x						3
Process model							x		x	x		x	x					
Stage model	x	x	x	x	x	x		x			x			x				
Holistic model															x	x	x	

Table 2.4: Frequency of inclusion of core components of personal recovery within personal recovery models

External or environmental factors that can facilitate or impede recovery are also listed within several models. Aspects of Leamy et al’s (2011) ‘Connectedness’ component including both personal and societal connections are frequently situated within this wider background for recovery (e.g. relationships; human rights; Jacobson & Greenley, 2001; Slade, 2009). Daily functioning, comfortable living space and the development of skills are identified within models by Green (2004) and Lapsley et al (2002) as important foundations for recovery instrumental particularly within the early stages of recovery.

Labelling of the recovery components as processes within these models is confusing, as in reality each one can be considered both a process and an outcome of recovery. For example, developing positive relationships may facilitate recovery (process), but also demonstrate that recovery has occurred (outcome). Likewise, negative relationships may impede recovery and be viewed as a barrier, but negative relationships may also be construed as a sign that recovery outcomes have not yet been reached. More work is needed

therefore to develop a theoretical model which clearly defines the processes and outcomes of recovery.

i) Stage Models

Many models describe progress towards recovery as occurring in a series of discrete phases or stages (Appendix 7). Although the number of stages varies between models from three (e.g. Jacobson, 2001) to seven (e.g. Noiseux et al., 2009), the proposed trajectory remains relatively consistent. Models start either with a time before recovery has begun (e.g. 'Overwhelmed by the disability'; Spaniol et al., 2002), or with the initiation of recovery, in which a trigger (sudden spark of insight/hope, e.g. Peden, 1993) is commonly reported. The final stage of each model describes a time of both intrapersonal (e.g. positive self-esteem and sense of self; Roe & Ben-Yishai, 1999), and interpersonal growth (e.g. relationships/ occupation; Merryman & Riegel, 2007), during which the person is consistently living a life not defined by mental ill-health. Although most models are presented as following a linear progression, for example from anguish to living beyond disability (Ralph, 2004), most acknowledge that recovery does not usually take a linear course; instead, the process has been described as a spiral, in which people will move back and forth between the different stages (Andresen et al., 2006).

Two reviews synthesising stage models (Davidson et al., 2010; Leamy et al., 2011) conclude that stages of recovery are consistent with the five-stage transtheoretical model of change (Prochaska & DiClemente, 1982). Empirical evidence for this is mixed. Although some authors report findings resulting from psychometric testing of stage measures of recovery consistent with five stages (e.g. Chiba et al., 2010), others present structural analyses which only identify three or four stages (Andresen et al., 2013; Lemos-Giraldez et al., 2015; Weeks et al., 2011) (see Chapter 3 for discussion of recovery measures). Research findings do agree that there are distinct stages of recovery however; theoretical models propose a minimum of three stages to recovery (see Appendix 7), and this is supported by empirical testing. It is therefore likely that recovery comprises no fewer than three stages, in which the person moves from a period of crisis to a time in which they feel hopeful and begin to entertain the possibility

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of recovery. Following this initial step, people begin to take action towards their own recovery, the outcome of which includes personal and social growth and increased wellbeing.

There is also agreement upon the concept that stages are moved between in a non-linear upwards spiral, but as models are still visually presented as a series of linear steps, and no processes are described for how the stages are repeatedly moved between, they do not yet adequately reflect the non-linearity of the recovery process (Davidson et al, 2010; Slade, 2009). Lack of flexibility in the structure of the models does not reflect the uniqueness of the recovery journey; Davidson and colleagues draw on the example that whilst one person may find engaging in employment to be an important aspect of their recovery, for another this step may only come after remission of symptoms or improvements in social relationships. Stage models also tend to place responsibility for recovery on the individual, which ignores the impact of wider interpersonal and societal issues (Davidson et al, 2010). Perhaps because of these criticisms, few recovery measures follow a stage model (see Chapter 3).

j) Multi-dimensional (Holistic) Recovery Models

A growing body of literature supports a more holistic view (Lloyd et al., 2008; Provencher & Keyes, 2011; Whitley & Drake, 2010), in which recovery is viewed as a unified but multidimensional construct. Such models tend not to agree with the CHIME conceptualisation of personal recovery (Leamy et al, 2011). As demonstrated in Figure 2.10, personal and social recovery are commonly depicted as separate dimensions (Lloyd et al, 2008). Whilst Lloyd and colleagues recognise that there is considerable overlap between a hypothesised four recovery domains, their model does not fully address the level or processes through which the domains are connected. Personal recovery is not included at all within Whitley & Drake's (2010) five-dimensional model; instead the concept is separated into several subcomponents which exist alongside components of clinical and functional recovery. Categories are again seen as overlapping, and changes in one area are acknowledged to affect other dimensions. This model fails to clarify the relationship between the five dimensions and 'personal recovery' however. It is not included as a

dimension, and all dimensions include aspects that as outlined above have previously been linked to personal recovery. Whilst a multi-dimensional model of recovery appears to offer a possible solution to the all-encompassing nature of personal recovery and provides a logical link between the constructs of clinical and personal recovery, as yet the dimensions are not well defined enough or supported by enough empirical evidence to be fully embraced. For the purposes of this review therefore, only two recovery dimensions are considered; personal recovery and clinical recovery.

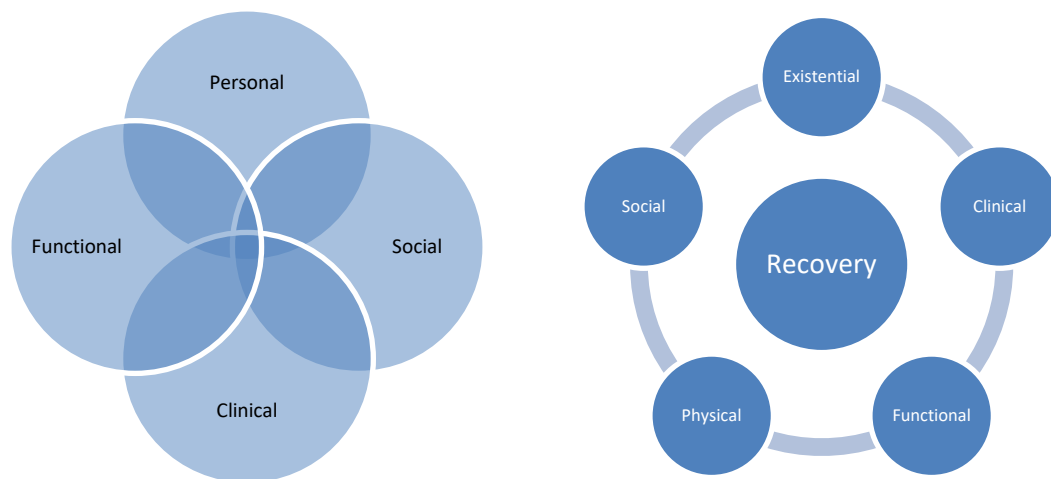


Figure 2.10: Multi-dimensional models of recovery proposed by Lloyd et al (2008) (left) and Whitley & Drake (2010) (right). The models comprise four (Lloyd) and five (Whitley & Drake) interconnected dimensions of recovery.

k) Discussion of recovery models

There is a dearth of empirical scrutiny of the varying operational definitions of recovery; the precise structure of recovery and the process through which change occurs cannot yet be concluded. The interconnectedness and relative importance of each aspect of recovery varies from person to person, and this makes separating the concept of recovery into component parts a challenge. Given the subjective and highly personal nature of the subject (Allott et al., 2002), this may remain the case. No matter the specifics of the model however, authors tend to draw upon the same recovery components. These include the five core CHIME categories (Leamy et al, 2011), but also include the components of 'Health & wellbeing' and 'Daily Living'. These seven components are assumed within the current thesis to comprise the concept of personal recovery. The relative centrality of each component to recovery has yet to be determined; debate continues regarding the position of the new themes in particular, and these are therefore positioned for now as secondary

components, as shown in Figure 2.11. Reflecting current agreement that clinical and personal recovery are relatively distinct but related, this model sees these different aspects as overlapping. Recovery is commonly criticised for being too individualistic and self-determined, ignoring differences between cultures and the impact of social factors on one's ability to recover. As shown in Figure 2.11, recovery is situated within the social and cultural environment, to reflect the overarching impact this on clinical and personal recovery.

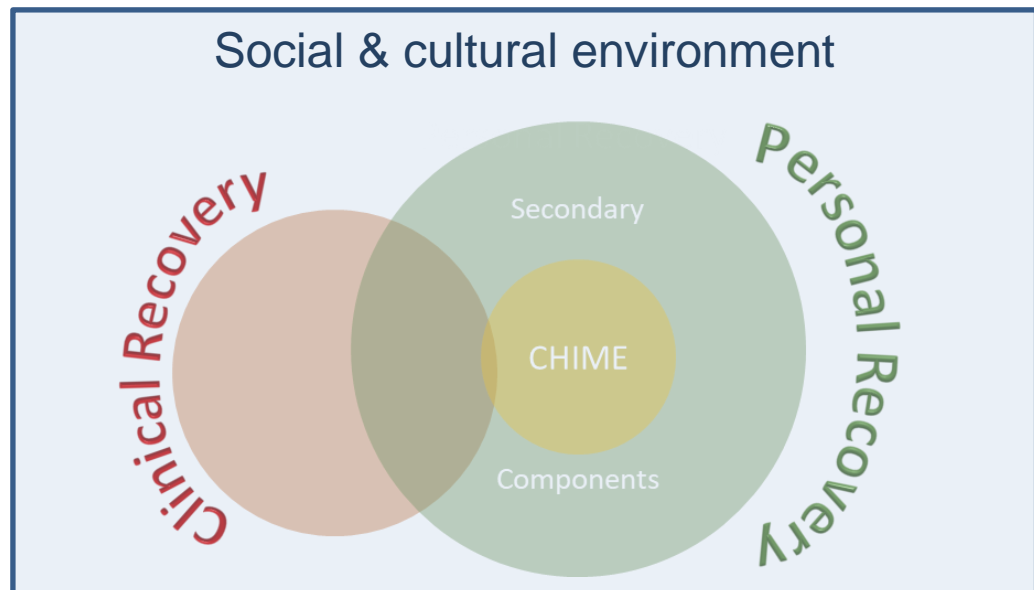


Figure 2.11: Recovery model adopted within current thesis

2:3.3.6 I.ROC and the recovery concept

No comprehensive model yet exists which adequately explains recovery processes, outcomes and stages. Recovery measures, the focus of Chapter 3, have therefore been developed based on a variety of different models, although only a small minority (STORI; SISR) measure stages of recovery. Most, like I.ROC, align with a conceptualisation of recovery processes or outcomes, focusing on measurement of the presence of or satisfaction with the recovery elements outlined within Sections 2:3.3.1-3. This may in part be because stage models have been criticised as unreflective of the non-linearity and uniqueness of the recovery journey (Davidson et al, 2010), key concerns in the measurement of recovery. This criticism mirrors concerns during the development of I.ROC (see Chapter 5) which resulted in developers removing descriptors of each scale point to increase the subjectivity of the measure. Now measured on a one to six frequency scale, increases in I.ROC scores reflect

movement towards recovery, but the relevance of any change is left to the respondent and their worker to determine.

As shown in Table 2.5, questions within I.ROC map to each of the recovery elements identified within this section, but in places only cover aspects of each recovery theme. For example, spirituality is not included as an item within I.ROC, but is referred to within mental health. This varies from its placement within hope or meaning in the literature. Valuing Myself is a broader question than self-identity, and Safety & Comfort is included as a question in its own right, rather than as a component of daily living. I.ROC does not cover professional or peer relationships, and the question relating to social relationships (Social Network) focuses on social activity but does not refer to sense of social inclusion, stigma, or equality. I.ROC therefore appears to measure personal recovery as conceptualised within this thesis, but at only twelve items, it does not exhaustively explore all aspects. Unlike most other measures of recovery, I.ROC is also situated within a wider framework of recovery-oriented practice (HOPE; see Chapter 1). Recovery-oriented practice is therefore explored within the final section of this Chapter.

I.ROC indicator	Description of I.ROC indicator	Recovery Element
Mental Health	Relates to the balance of our physical, emotional, social and spiritual needs: emotions, feelings, optimism, attention, thoughts, beliefs and sense of well-being.	Mental health & wellbeing
Life Skills	The range of skills that we use to cope with the demands of everyday life.	Daily Living
Safety & Comfort	Our home should be a place that provides us with safety and comfort, somewhere that we can rest and relax. We should also be able to live in a home that is suitable for us, that we can afford and that is manageable for us to look after. We should also feel safe in the area in which we live.	Daily Living (Safety & Comfort)
Physical Health	Related to mental health and well-being and specifically relates to such areas as diet, exercise, rest, sleep, illness, pain, if/what we smoke, drink, how well we recover, medication we take, and generally how we look after ourselves.	Physical Health
Exercise & Activity	Regularity of exercise or physical activity undertaken.	Physical Health & Meaningful Activity
Purpose & Direction	Relates to a sense of purpose, of having things to do during the day, a structure.	Meaningful Activity
Personal Network	Relates to the family/ friends/loved ones that are in our lives. People that we can talk to, who are there for us and people who we support. (It doesn't refer to professionals that are paid to support us, including support workers.)	Relationships (Personal Relationships)

I.ROC indicator	Description of I.ROC indicator	Recovery Element
Social Network	Relates to the connections we have with other people e.g. groups/clubs we belong to, interests we share with other people, community events/activities we take part in.	Relationships (Social Relationships)
Valuing Myself	Refers to the degree to which we respect ourselves and how we feel about ourselves as a person.	Identity
Participation & Control	Relates to the degree that we feel we have a say in the decisions that affect our lives.	Empowerment
Self-Management	Relates specifically to the degree to which we feel able to manage our own health and well-being.	Empowerment
Hope for the future	Refers to how optimistic we feel for our future and how much we are able to look forward. Hope for the future also relates to how positive we are about ourselves and the plans we make.	Hope

Table 2.5: Mapping I.ROC indicators against identified elements of recovery

2:3.4. Findings Part 4: Recovery Oriented Practice

Much of the research into personal recovery appears to draw from a motivation to change mental health-related culture, both at a societal and a practice level. Whilst the key elements of the discussion regarding recovery-oriented practice are summarised below, for a more detailed report, see Slade et al (2017).

2:3.4.1 What is recovery-oriented practice?

“Recovery-oriented practices are those that recognize the strengths of service users and empower them within the mental health system.” (Atterbury, 2014, p.182)

Recovery-oriented services are viewed as holistic, hopeful, person-centred and empowering places (Le Boutillier et al., 2015), in which people with lived experience and their carers participate meaningfully in continuous service development (Kidd et al, 2015). Such services promote individuality and a focus on strengths, and encourage active participation in community, service-based and other meaningful activities (O’Connell et al., 2005). They adopt a shared-language of hope, support risk-taking, and *“promote accurate and positive portrayals of psychiatric disability while fighting discrimination”* (O’Connell et al., 2005, p. 379). Systematic reviews of *recovery-oriented practice identify several key components, emphasising the importance of informed choice* (Le Boutillier et al., 2011; see Table 2.6 for full results), alleviating stigma; and managing challenges associated with ROP (Chester et al., 2016). These themes highlight the importance of establishing an equal partnership based on a shared

humanity, rather than a hierarchical relationship structured around the expert role and strict disciplinary frameworks.

Promoting Citizenship

Seeing beyond 'service user' to person

A recovery-oriented service recognises that a person using their service is a person first and a service user second.

Service user rights

Service user rights are understood, respected and advocated

Social inclusion

People using the service are supported to become active participants in their community

Meaningful occupation

The service supports people to identify and pursue personally meaningful occupations and life roles

Organisational Commitment

Recovery vision

Recovery should underpin the overarching vision of the organisation, and be clearly stated within the mission statement

Workplace support structures

Service design facilitates and encourages staff to work in a recovery-oriented way

Quality improvement

Service users/carers etc. are meaningfully involved in the development and design of services

Care pathway

Flexible working to facilitate access to services

Workforce planning

Recruitment, training and professional development of staff is centred around recovery values and competencies.

Supporting personally defined recovery

Individuality

Recovery-oriented services are personalised; they promote individuality and autonomy, personal responsibility, "the dignity of risk, and the right to failure".

Informed choice

People are supported to make informed choices, and care planning centres on personally-defined outcomes.

Peer support

Bastions of hope and models of empowerment, people with their own lived experience of recovery can play a key role in promoting self-management strategies, responsibility, and learning.

Strengths focus

Individual's inherent strengths and supports are recognised and reinforced

Holistic approach

The service offers a variety of support options/interventions, giving people a broad range to choose from, and enabling the development of personalised recovery plans

Working relationship

Partnerships

Service users are recognised and treated as equal partners in all aspects of their support; practitioners play a coaching role

Inspiring hope

Practitioners retain hope and belief in the abilities of each person they work with, and in recovery as the expected outcome of support.

Table 2.6: Key elements of recovery oriented practice as identified by Le Boutillier et al, 2011

2:3.4.2 Barriers to recovery-oriented practice

Despite the 'rhetorical consensus' (Slade, 2009c, p.367) seen within policy and practice documents regarding ROP, many people using mental health services have reported little or no actual change in the perceived recovery-orientation of the organisations they attend (e.g. Boso et al., 2009; Kidd et al., 2015), and a recent review by Morera and colleagues (2017) showed that mental health workers still tend to endorse biomedical over psychosocial models of recovery, suggesting that attitudes and beliefs have yet to change. Authors suggest that

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the current state of recovery-oriented practice is one of ‘old wine in new bottles’ (Davidson et al., 2005); although the language of recovery has been widely adopted, the change is superficial and underlying practice remains largely the same (Drake & Whitley, 2014; Slade, 2009c). Studies exploring the barriers to implementing ROP highlight a range of issues at the level of policy (Edgley et al., 2012; Pilgrim, 2008; Shera & Ramon, 2013), organisational culture (Clossey & Rheinheimer, 2014; Le Boutillier et al., 2015; 2011a), and individual staff attitudes, knowledge and behaviour.

One fundamental challenge identified within many of these accounts, and one that is clear from the current review, is the need to agree a definition of recovery. For service settings, the problem, as argued by Tickle and colleagues is that *“recovery can be defined so stringently that it becomes impossible to achieve, or so broadly that its achievement becomes unimportant”* (Tickle et al., 2014, p.97). Aston and Coffey (2012) report that although the majority of nurses and service users are familiar with the notion of recovery, understandings of the term are *“vague and contradictory”* (Aston & Coffey, 2012, p. 257). Research also shows that practitioners’ belief in personal recovery is moderated by perceptions of conflicting recovery models. Le Boutillier et al (2015) identified three such models within mental health workers’ understanding of recovery: clinical recovery, personal recovery, and service recovery. Whilst personal recovery aligns with the definitions of ROP outlined above, in practice, this model conflicts with perceptions of the importance of clinical treatment and expert roles, and is challenged for some by a perception that their organisation’s adoption of a ‘recovery-orientation’ is financially and administratively-driven (service recovery). Such perceptions are unfortunately not entirely wrong. Lack of clarity means that recovery orientation is difficult to operationalise; there are no set benchmarks or auditable criteria, and thus recovery language can be used without actual change occurring, or indeed appropriated for any agenda. Recovery rhetoric can for example be used to implement regimes focused on efficiencies and throughput, driving the criticism that the paradigm has been ‘co-opted by government and health officials’ (Bird et al., 2014).

Constructive organisational culture has been shown to be an important factor in the implementation of recovery-oriented practice, significantly affecting service users' perceived support for recovery (Clossey & Rheinheimer, 2014).

'Organisational Commitment' is key to achieving a recovery orientation; recovery needs to underpin all values and actions of an organisation (Le Boutillier et al., 2011a). For true change to occur, staff must play a key role within this process (Williams et al., 2016). Internal motivation effects change better than imposed directives, and consequently an approach which promotes staff autonomy and encourages practitioners to re-engage with their own recovery values is recommended. Williams et al observed that mental health staff often reference their own beliefs in the reasons why they chose their profession, and that these tend to align with personal recovery, but that it is common for workers to 'lose sight' of these values over time. Evidence suggests that whilst mental health professionals are in favour of a personal recovery approach, they struggle to marry the ideals of recovery with what they perceive as the realities of the job, including risk management (Tickle et al., 2014), medication and compliance (Cleary & Dowling, 2009; Cleary et al., 2013). Tickle and colleagues (2014) argue that existing tensions between mental health policies which promote recovery on the one hand but emphasise risk reduction on the other are reflected in the conflicting attitudes of professionals towards recovery.

User-involvement in service development poses another challenge to the development of recovery-oriented services. Development of recovery focused, personalised services requires the involvement of people using them. Not all service users want to be involved in service design however, and others complain of *"tokenism, slow progress and consultation fatigue"* (Pilgrim, 2008, p. 299). Involvement must therefore be genuine, intentional and optional. Some point out that development of recovery-oriented services is futile without wholesale culture change (Pilgrim, 2008) as the recovery paradigm is inconsistent with current structuring of health and social care services. *"The 'holistic' approach underlying the concept of recovery requires a great degree of coordination and integrated planning between the nodal ministries responsible for the various mental health professional bodies involved in the delivery of such*

an approach” (Bayetti et al., 2016, p. 896). Recovery therefore presents a challenge not just for mental health services, but for government and society generally.

2:3.4.3 Facilitators of recovery-oriented practice

Despite the many apparent barriers to implementing a recovery focus, there are many more references in the literature to how recovery can be supported by mental health services. Amongst the diverse facilitators described within these studies, support relationships are given central importance. A multitude of recovery-supporting interventions are also reported. Key facilitators are summarised below.

l) Professional support relationships

“Recovery-oriented professionals were those who had the courage to deal with the complexities and the individuality of the change process, and were able to use their professional skills and expertise in a collaborative partnership with the service user. A recovery-orientation in professionals also involves the willingness and ability to shape services to the needs and preferences of each individual service user.” (Borg & Kristiansen, 2004, p.493)

Relationships with mental health professionals (referred to as therapeutic relationships/ the working alliance) play a key role in recovery for many. The relationship between the working alliance and recovery is complex; the quality of each affects the other (Hicks et al., 2012). Evidence suggests that a positive working alliance can affect recovery by increasing the person’s hope (Hyun et al., 2014). There is considerable agreement on the elements that create a positive working alliance, to which person-centred and recovery-oriented practices appear crucial.

The quality of the working alliance and its impact on recovery is mediated by the number of recovery-promoting competencies displayed by the professional (Moran et al., 2014). Recovery-promoting competencies perceived to be important by people using services include: having genuine respect for clients; helping clients to accept and value themselves and to develop coping skills; a belief in the person’s ability to recover; seeing the person behind the illness;

listening to and trusting the person (Ruscinova et al., 2011; 2013). People with lived experience of recovery describe positive relationships with professionals (irrespective of type of professional) who are open, available and hopeful. Positive relationships do not display a power imbalance, and instead are built on mutuality, respect and flexibility (Borg & Kristiansen, 2004; Klockmo et al., 2014). Such relationships break down traditional therapeutic boundaries to create an alliance that is more human (Borg & Kristiansen, 2004).

Relationship construction requires both parties to be given adequate space and time for the relationship to develop, and this can be influenced by several factors. Development of positive relationships is reliant on staff availability and training (Onken et al., 2002). Budget cuts in the UK have ensured a relentless squeeze on resources, meaning that for some services less time can be allocated to one-to-one support and recovery-focused training. Breaking down relationship boundaries can be perceived as a professional risk (Tickle et al., 2012), often requiring the worker to ignore their core training (Onken et al., 2002) and relinquish their professional status (Davidson et al., 2006). Poor mental health and wellbeing risks staff burnout, and this can also hinder the development of recovery-promoting relationships (Onken et al., 2002). The relationship between recovery-oriented practice and burnout is bi-directional; professionals who perceive the service they work for as providing high quality recovery-oriented support have higher levels of job satisfaction and lower levels of burnout (Kraus & Stein, 2013).

m) Recovery-oriented Programmes and Interventions

A vast literature is dedicated to the development and evaluation of recovery-focused interventions; the current review revealed 143 papers discussing therapies, treatments or programmes. Studies have shown interventions such as the Recovery Workbook (e.g. Barbic et al., 2009), and Wellness Recovery Action Planning (WRAP; Doughty et al., 2008; Fukui et al., 2011; Keogh et al., 2014) to successfully support recovery. Whilst these interventions are too numerous to cover in detail here, several reviews have evaluated the impact of interventions on recovery, including: music therapy (McCaffrey et al., 2011), occupational therapeutic interventions (Gibson et al., 2011), illness-specific

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interventions (e.g. Bipolar-disorder: Murray et al., 2017; Schizophrenia: Nowak et al., 2016), internet-based interventions (Strand et al., 2017), family therapy (Reupert et al., 2017) and Illness Management and Recovery (IMR; McGuire et al., 2014; Mueser et al., 2002).

Slade and colleagues (Slade et al., 2014) describe ten recovery-oriented practices with a strong evidence base, including: peer support workers; advance directives, WRAP; IMR; REFOCUS, the Strengths model of case management, Recovery colleges, the Individual Placement and Support (IPS) employment intervention, Supported housing, and mental health dialogues. Of these, WRAP and peer support are considered key technologies in the development of recovery in Scotland (Smith-Merry et al., 2011; see Section 2:3.4.4).

Peer support

Many survivors today identify support from others who share a personal experience of recovery (peer support; Salzer et al, 2010) as the best treatment and support available.

“I gained love and trust from people who have been hurt like me. I gained confidence from people who were lost and re-gained their lives. I regained another life.” (Armstrong, 2010, p. 261)

The employment of people with lived experience as peer support workers has gained traction internationally (Kilpatrick et al, 2017; Repper, 2013), and increasingly mental health services hire peer workers into paid positions (Walsh et al, 2018). People with lived experience working in research, health and social care professional roles are also more frequently publicising their experiences (e.g. Pare, 2010; Walsh, 1996) so that such experience is seen to exist at all levels of the mental health system.

Studies identify a range of benefits for people receiving support from someone with a lived experience of recovery (Repper & Carter, 2011). Empirical support for the efficacy of peer worker roles is mixed (Stubbs et al., 2016) but overall, reviews conclude that peer work is beneficial. In the UK, studies have shown that outcomes of peer support include reduced admission, an improved sense of acceptance; increased hope, empowerment, social support and functioning; and reduced stigma (Repper & Carter, 2011). Others have shown positive

outcomes such as improved recovery and hopefulness (Cook et al., 2012) and self-management (Druss et al., 2010). A recent review showed that peer support relationships promote a sense of trust, humanity, respect, empowerment, empathy and hope (Miyamoto & Sono, 2012). Benefits to peer providers such as improved recovery and self-efficacy have also been identified (Weikel et al., 2017). Moran and colleagues found peer workers describe positive outcomes within five 'wellness domains': health & mental-health wellness, emotional wellness, social wellness, occupational wellness, and spiritual wellness (Moran et al., 2012).

Several significant challenges to the successful employment of peer workers remain, at both a personal and organisational level (see Moran et al., 2013 for a full review). Personally, peer work poses a challenge to one's own mental health (Moran et al., 2013), and adopting the peer-worker label can be a negative experience (Gillard et al., 2014). At an organisational level, inclusion of people with lived experience is considered central to the transformation of mental health services (Hurley et al., 2016), but hiring peer workers is not enough in itself to change the culture of a service. Peer workers have in some cases been treated as a commodity; a cheap and easy way to 'do recovery', and employment of peer workers remains tokenistic without wider consideration of the values, policies and practices needed to make the shift to recovery-oriented practice (Kilpatrick & McCauley, 2017; Williams et al., 2016). This is demonstrated within the wide variety of ways in which peer support worker roles are operationalised (Hurley et al., 2016), and continued difficulties in implementation, including insufficient training, lack of opportunities for career progression, managing relationships with other workers, and maintaining a good work-life balance (Moran et al., 2013). The emphasis on incorporating the expertise and experience of service users at all levels of support necessitates a shift of power within services, but remains a challenge many are yet to embrace (Kilpatrick et al., 2017). Peer worker roles challenge traditional professional hierarchies, raising questions about the legitimacy of mental health qualifications and the need for accreditation of personal experience (Alberta, 2012). Further definition of peer worker roles, competencies and structures is needed (Mahlke et al., 2014).

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WRAP

The Wellness Recovery Action Plan (WRAP; Copeland, 2002) is a popular self-management tool comprising a Wellness toolbox, daily maintenance and crisis plans. Trained facilitators support the person completing WRAP to explore what wellness means to them, what keeps them well, and what their personal triggers and early warning signs are for a mental health-related crisis. Since its creation two decades ago, WRAP has become one of the most widely adopted recovery interventions, with studies into its use in several countries including Scotland (Pratt et al., 2013). Evaluations have shown WRAP to be relevant and useful to people completing it in a group setting (Pratt et al., 2013), and significantly improves people's attitudes and knowledge about recovery (Doughty et al., 2008). Completion is linked to improved self-management attitudes, skills and behaviours (Cook et al., 2010), increased hope and recovery orientation (Starnino et al., 2010). Improvements appear to be sustained over time, with an RCT by Jonikas et al (2011) showing that people completing WRAP have higher levels of self-advocacy, hopefulness, quality of life, and fewer psychiatric symptoms than people in control groups after a six-month period. WRAP and other procedural recovery tools are criticised for giving the impression that wellbeing can be manualised and achieved by following systematic and standardised steps (Recovery in the Bin, 2018). Successful use remains dependent however upon the skills of the facilitator, the relationship between facilitator and completer, and level of engagement in the process (Keogh et al., 2014). High-quality training for practitioners is essential to meaningful use of WRAP (Keogh et al., 2014), and is integral to maintaining the values that underpin it (Federici et al., 2013).

Recovery-oriented outcome measures

One final 'technology' supporting recovery-oriented practice is the use of recovery measurement instruments. Instruments have been designed to audit the recovery-orientation of services, assess the recovery attitudes, knowledge and behaviour of staff, and to measure the distance travelled of individuals. Slade argues that service-level recovery measures could provide a way of evaluating and even accrediting the recovery-orientation of services (Slade, 2010b), thus halting the superficial uptake of recovery seen within some services as discussed above. Several such measures have been developed,

including the Scottish Recovery Indicator (Maxwell et al, 2013; see section 2:3.4.4), however none have yet been found to meet the necessary psychometric criteria (Williams et al., 2012). At the individual level, recovery measures can assess and help development of recovery-focused support relationships, aid the identification of recovery goals, and measure progress towards recovery (Slade, 2010b). Such measures are criticised for taking a standardised objective approach that doesn't fit with the conceptualisation of recovery as a unique, subjective experience, and narrows the scope of recovery to measurable predetermined components. Different approaches to overcoming this tension have been explored; instruments have been developed by people with lived experience (e.g. My Voice, My Life, Gordon et al., 2012), to be used as semi-structured interview schedules (e.g. SIST-R; Wolstencroft et al., 2010), and to enable people to choose what is important to them (e.g. Hi-Way, Boniface et al., 2015). Yet, tools still struggle to achieve a successful balance between meaningful and measurable outcomes (Burgess et al., 2010; Miller & Barrie, 2016b). Recovery measures will be discussed in more detail within the next Chapter.

2:3.4.4 Recovery-oriented practice in Scotland

In Scotland, recovery-oriented practice has been supported by an extensive list of policy and strategy documentation since devolution (for a full review, see Smith-Merry et al, 2010). Legislation started with the Scottish Executive's (later Scottish Government) first mental health strategy in 2001. Labelled as the National Programme for Improving Mental Health and Wellbeing (referred to as the National Programme), objectives for the National Programme published in 2003 identified 'promoting and supporting recovery from mental health problems' (Scottish Executive, 2007; Smith et al, 2007) as a primary objective. This document also stated a plan to support and fund a national recovery network, resulting in the launch of the Scottish Recovery Network (SRN) in 2004. The Scottish government then established its new mental health policy with the Mental Health (Care and Treatment) (Scotland) Act 2003 (Scottish Executive, 2003a). The act set out a new focus on quality of life, which included a directive that services should be designed to give everyone using services the opportunity to live 'normal' lives, although recovery was not mentioned explicitly.

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By 2006, recovery was established within mental health agendas across Scotland. Key texts included a review of mental health nursing in Scotland entitled 'Rights, Relationships and Recovery' (Scottish Executive, 2006b), and 'Delivering for Mental Health' (Scottish Executive, 2006a), which laid out the government's plan for implementing their mental health strategy. Both documents called for the creation of a tool to evaluate and support recovery-oriented practice, which was later heeded by the SRN in the development of the Scottish Recovery Indicator (SRI-2; Bradstreet & McBrierty, 2012; see below). A joint position paper from the Royal College of Psychiatrists followed a year later, outlining the way ahead for recovery focused practice in Scotland, and addressing key challenges to recovery-oriented practice such as risk:

"In order to support personal recovery, services need to move beyond the current preoccupations with risk avoidance and a narrow interpretation of evidence-based approaches towards working with constructive and creative risk-taking and what is personally meaningful to the individual and their family."
(RCPsych et al., 2007, p.6)

Although the policy environment has been supportive, authors are quick to point out the crucial influence of people with lived experience on the development of a recovery movement in Scotland (Gordon & Bradstreet, 2015). Drawing on social movement theory (Benford & Snow, 2000), Smith-Merry et al (2010) describe how the early adoption of recovery within the service user movement created a positive frame for recovery that has proved fundamental to successful implementation of the paradigm in Scotland. For example, service user activist Ron Coleman's book *Recovery: An Alien Concept* published in 1999 sparked international as well as local interest, and is identified by Scottish stakeholders as influential in the establishment of the Scottish Recovery Forum in 2001. Developed by representatives from across the third sector and research institutions to promote and share recovery knowledge in Scotland, the Forum's role in establishing recovery as a key policy driver is widely acknowledged (Smith-Merry & Sturdy, 2013).

Coleman was subsequently invited to speak at the first conference on the subject held in Dundee in 2002 entitled 'Would Recovery Work in Scotland?' (SDC, 2002), from which emanated the National Programme and subsequently

the SRN. Ron Coleman addressed individuals from across health and social, challenging their understanding of and attitudes towards recovery;

“People need to recover from the system, not their mental health problem. What has gone wrong with the system, when we know that staff choose mental health work because they want to help and to make a difference? Professionals can choose to be turning points for the people they work with, by putting the person at the centre of the process” (Coleman, 2002, p.5)

Smith-Merry and colleagues argue that a sense of ownership of recovery by stakeholder groups has further been developed through the adaptation and development of four crucial technologies: a large-scale narrative research project, the Scottish Recovery Indicator, WRAP, and the employment of peer workers (Bradstreet & Pratt, 2010; Smith-Merry et al., 2011). Fundamental to the implementation of all four technologies, the Scottish Recovery Network plays a critical role in the development of Scotland’s recovery culture (Bradstreet & McBrierty, 2012). The SRN enacts a research and information-dissemination agenda, which provides the link between policy, research and practice (Smith-Merry & Study, 2013). Collection of recovery stories from almost seventy people in Scotland by the SRN resulted in the development of a recovery definition rooted in the experiences of the population (see Section 2:3.2.2). Since 2005 the SRN has been working to introduce peer-working to mental health services; supported by a policy commitment to the employment of peer workers in 2006 (Scottish Executive, 2006a), the SRN now runs an accredited professional development programme (Gordon & Bradstreet, 2015). Further projects by the network include the provision of WRAP guidance and training, and the development of the Scottish Recovery Indicator (SRI-2; Maxwell et al., 2013), a self-evaluation tool for the assessment of recovery-orientated practice against ten recovery indicators (see Box 2.1). Although criticised for a lack of psychometric testing (Williams et al, 2011), the SRI-2 has been recognised as playing a central role in the promotion of recovery within services in Scotland (Pincus et al, 2016; Smith-Merry et al, 2011). It has been a recommended tool for ROP within Scottish mental health strategies since 2012, as demonstrated in the (Scottish Government, 2017b) quote on the following page.

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More recently, recovery has been supported in Scotland through the implementation and evaluation of a variety of different recovery-promoting practices. Studies have reported the effectiveness of a range of interventions including recovery outcome measurement (Ion et al, 2013; Maxwell et al, 2013), and physical activities such as walking football (Lamont et al., 2017) and ecotherapy (Wilson et al., 2010). Recovery colleges, an educational approach to mental health recovery defined by several features including coproduction, participation, citizenship, tutoring, and a physical base, (Perkins et al, 2012), have also recently been established in Scotland, and early feedback is good (McCaig et al, 2014).

As discussed by Davidson et al (2005; see section 2:3.4.2), use of such recovery tools and terminology has not necessarily resulted in genuine culture change; language and technologies of recovery have been adopted by traditional forms of service. For example, Marland and colleagues (2011) use a case study to demonstrate the use of timelines, a method that the authors describe as having been used for many years, now 'reframed' as a recovery-supporting practice.

Further evidence for the slow pace of change is seen in the employment of peer workers within mental health services across Scotland; although supported by a range of SRN initiatives, implementation has been described as "*slow and patchy*" (Gordon & Bradstreet, 2015, p.160). Feedback from stakeholders from different Scottish health board areas identified several barriers to successful implementation including a lack of evidence supporting peer work, and financial limitations. Where peer support has been adopted and is acknowledged to be working well, implementation has preceded evidence and occurred despite funding challenges (Gordon & Bradstreet, 2015). As also

SRI-2 Indicators

- Basic needs are identified and addressed
- Goals are identified and addressed
- Personalised services are provided
- Service is strengths based
- Service promotes social inclusion
- Service promotes and acts on service user involvement
- Informal carers are involved
- Service encourages advance planning and self management
- Staff are supported and valued
- Practice is recovery focused

Box 2.1: Description of SRI-2 Indicators

suggested by the implementation challenges outlined within section 2:3.4.2, peer support is not a tool for culture change; instead successful employment of peer workers relies on an existing positive recovery orientation.

Although challenges remain in the genuine translation of recovery rhetoric into practice in Scotland, a growing number of services are adopting recovery-focused working. The shift towards ROP continues to be supported by policy; the latest strategy identifies I.ROC as a tool for the promotion of ROP:

“There needs to be a strategic shift towards recovery models focused on assets, strengths and self-management...Integration Authorities and Local Authorities will therefore wish to mainstream a recovery-oriented and rights-based approach throughout clinical services, through workforce development and use of tools like I.ROC (Individual Recovery Outcomes Counter) and SRI-2 (Scottish Recovery Indicator).”(Scottish Government, 2017b, p.30)

As recovery has “moved from the margins of Scotland’s mental health system to the mainstream” (Gordon & Bradstreet, 2015), I.ROC has therefore been adopted as a key technology for the continued implementation of recovery in Scotland.

Ch2, Section 4. Discussion of literature review

‘Recovery’ has become thoroughly embedded within policy and practice across the world over the past twenty years (Slade, 2010a), and the research base on the topic has been growing rapidly. Scottish mental health charity Penumbra identify recovery as a key aim, and has developed I.ROC in order to measure this concept (Monger et al., 2012), but what is actually meant by recovery? This Chapter reviewed the literature relating to recovery in mental health to gain a better perspective on how the model of recovery underpinning I.ROC fits with current academic understanding of recovery and recovery-oriented practice, in order to evaluate the content validity of the measure.

Despite a multitude of papers debating the meaning of recovery, consensus on a concise definition has yet to be reached, and this is seen as a significant barrier to successful implementation to the paradigm in practice. The concept of personal is criticised for being too broad, applicable to everything and nothing

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(Hopper, 2008), making it difficult to adopt in practice (Le Boutillier et al., 2015) and to measure. Conceptualisations of recovery from Scotland and across the world do concur on several fundamental properties of personal recovery however. Personal recovery is a non-linear journey, which follows a set of stages loosely defined by the transtheoretical model of change, and can be considered a fluid combination of process and outcome. Recovery involves engagement, action and taking responsibility; it is a process of personal learning and growth. It is clear from the literature that recovery is a multi-dimensional concept, relating to clinical, functional, social and personal gains made following a life-altering event such as the onset of mental illness. Distinctions between these dimensions continue to be debated; there is as yet little agreement on the relationship between clinical and personal recovery beyond the general acknowledgement that they are closely related. Models vary in the weighting and specification of each recovery dimension, and in the relationships between dimensions. Given that recovery is a unique experience, it seems likely that dimensions vary from person to person. Models of recovery therefore need to reflect the fluidity and subjective nature of the concept.

Recovery is indeed a subjective and personal experience, but common elements have been identified, and there is consistency in the dominant themes present within the majority of recovery conceptualisations. These have been summarised most succinctly as connectedness, hope, identity, meaning and empowerment (CHIME; Leamy et al., 2011). The most evidence-based conceptualisation of recovery to date, CHIME components are considered within the current review as the five core attributes of personal recovery. The relative importance of these different aspects of recovery varies cross-culturally (Leamy et al., 2011), but this is not fully reflected within the CHIME framework. In recent years, CHIME has been criticised for a series of omissions; this review identified a wider set of inter and intrapersonal recovery components with growing evidence supporting their inclusion within recovery. These relate to physical and mental health and wellbeing, and to one's daily living skills and situation, including a sense of safety and security. Arguments for the inclusion or exclusion of such themes draw back to the debate over how best to classify different recovery dimensions. Whilst it is important that the boundaries of

recovery are clearly established to overcome its nebulous form and avoid it becoming a 'truth for all seasons' (Hopper, 2008), it is also crucial that all key elements are reflected. For the sake of this thesis, these themes are recognised as aspects of personal recovery, but because they have yet to be fully evaluated, they are considered secondary recovery themes (see Figure 2.11). Each of these elements can be considered to facilitate or impede recovery, depending on their presence, absence or quality. They are also the areas in which positive changes will be seen as recovery progresses.

As demonstrated in Section 2:3.3.4, the model of recovery underpinning I.ROC fits with this recovery conceptualisation. The twelve indicators cover all five core CHIME components as well as the two additional themes of health and wellbeing and daily living, and there are no items that do not map to one of these seven themes and their subcomponents. This provides good initial support for the content validity of the measure, as discussed further within the next Chapter. It is acknowledged however that this model, like most recovery conceptualisations, is based on research largely gathered within Westernised culture (Jones et al., 2007), which is criticised for its individualistic, self-deterministic perspective and under-representation of social factors which contribute to illness and recovery such as poverty and discrimination. Further research is needed to explore non-Western and collectivist understandings of recovery, to examine the role of society on recovery, and how this can be reflected within models and resulting measures of recovery.

The importance of establishing a clear definition of recovery is twofold; firstly, an operational definition is needed in order to identify how best to support people towards recovery. Secondly, recovery needs to be fully understood before it can be accurately measured – a necessity for the evaluation of mental health treatments and practices. Defining recovery therefore relates directly to the efficacy of mental health services. As gains have been made in conceptualising recovery, so the literature on recovery-oriented practice has burgeoned. Stimulated also by the rapidly increasing coverage of personal recovery within mental health policy, and by the demand for evidence-based practices in the field, a growing number of articles have been dedicated to the exploration of

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recovery-oriented practice. As a result, progress has been made in determining what support for personal recovery looks like at an organisational level.

Services that fully embrace a recovery philosophy are those that adopt a culture that is person-centred, strengths-based, educational and empowering.

Recovery oriented practice is hopeful, inclusive and respectful; it promotes equality and human rights, citizenship and meaningful participation in community and social activities, and encourages positive risk-taking. The working relationship is a dominant central theme within ROP; recovery-promoting relationships are based on equality, mutual respect and humanity, trust and empathy. Recovery-oriented practice can be supported through the use of tools such as WRAP, programmes such as IMR and educational resources e.g. recovery colleges (for full review, see Slade et al, 2017).

In Scotland, the embedding of recovery in practice has been facilitated by the adaptation of recovery-oriented practices such as WRAP and peer support, and the creation of recovery measurement tools such as SRI-2 (Maxwell et al, 2013). Although a plethora of such resources have been developed to facilitate the development of a recovery orientation in mental health services, there remain several key challenges to their implementation at a societal as well as organisational level. Many of these issues relate back again to the issues regarding comprehension of the concept of personal recovery discussed earlier in this Chapter. Authors also highlight the role wider society has in supporting recovery. Without a supportive health and social care environment, recovery cannot fully be embraced by services, whilst without continued effort to reduce social injustices such as stigma, poverty and inequality, people in recovery will continue to struggle. Personal autonomy and choice in the adoption of recovery values also play a key role in fully embracing the ideals of the paradigm. The embedding of recovery in Scotland has been facilitated by continued focus on social reform, and the development of its own recovery definition (Brown & Kandirikirira, 2007), which has helped people locally to identify with the concept.

Research shows that there is no half-way house in ROP; it takes significant culture change, with recovery ingrained throughout all levels of an organisation. In Scotland, as elsewhere, many organisations have only superficially adopted

recovery, with changes in language not reflected by practice or attitudes. Yet Penumbra's organisational commitment to recovery is seen throughout its policies, and within the continuing development of its HOPE framework for ROP as described in Chapter 1. Implementation of the framework is supported by training and resources including I.ROC, which is now acknowledged as a key recovery technology in Scotland (Pincus et al, 2016; Scottish Government, 2017). Penumbra's approach is discussed in more detail within Chapter 5; the extent to which recovery ideals are embraced by practitioners is explored within Chapter 7.

2:4.1. Challenges and Limitations

This literature review was conducted across a six-year period, during which time the literature base quadrupled. Deciding which parts of the literature to review and how therefore posed a serious challenge. Because I.ROC is described by its developers as a measure of personal recovery, it was important that the question of what is recovery was addressed. Debate around the precise meaning and conceptualisation has continued for more than twenty years however, and even this part of the review consequently became a difficult task. A scoping review methodology was decided upon to try to cover the breadth of the literature on recovery, but given the limited resources (for example, only one reviewer), it was not possible to closely adhere to the recommendations of (Drisko, 2015). It is acknowledged therefore that the decisions on what to include within the review, and the conclusions that are reached are the opinions of one person, and as such are open to bias.

Chapter 3. Systematic Review of Recovery Measures

Ch3, Section 1. Introduction

This Chapter presents a systematic review of individual-level measures of personal recovery, which are comparable in form and function to I.ROC. Ten measures of personal recovery are identified and evaluated based on criteria covering psychometrics, usability and relevance of the tools. Findings for each measure are discussed in relation to their comparability with I.ROC, with the aim of developing a set of benchmark criteria against which I.ROC can be evaluated in latter chapters.

3:1.1. Measuring recovery outcomes

The current focus on recovery within mental health policy (Slade, 2010a) encourages services to adopt a recovery-orientation, and services are under increasing pressure to evidence the extent to which their work is recovery-oriented (Williams et al., 2012) (see Chapter 2 for discussion of recovery-oriented practice). Routine measurement of recovery outcomes provides one solution for mental health services.

Routine Outcome Measurement (ROM), the *“planned, systematic measurement and recording of clearly defined variables using specified and robust measures”* (Monger et al., 2012, p.25), most commonly in mental health settings refers to the measurement of clinical outcomes such as symptom reduction or reduced drug use (Lakeman, 2004). Now mandatory across several countries (Trauer, 2010b), ROM can provide useful data on the needs of people using services, the impact of the service and change over time (Slade, 2002). The battery of standardised ROMs currently in use is not fit for purpose however (Happell, 2008a; 2008b), and evidence for the effectiveness of using outcome measures is mixed (Slade et al., 2006).

In a research setting, standardised measures assessing personal outcomes are crucial to the accurate and meaningful evaluation of evidence-based practices (Drake et al., 2001). Recovery measures reflect an approach to measurement that focuses on the person, their experiences and hopes for the future. Such measures can therefore provide an effective means of evaluating recovery orientation, assessing outcomes that are both personally meaningful and useful at a service level, fundamental properties of any routine outcomes measure (Happell, 2008c; Trauer, 2010b). Clinically, measures can be used within support to reflect on the

recovery journey and identify recovery outcomes to work towards, as well as to measure progress (Burgess et al., 2010).

Systematic measurement of recovery is also important for exploring the underlying structure of the concept and providing an empirical evidence base to facilitate acceptance of the recovery model. As outlined in Chapter 2, recovery has been conceptualised in several different ways. Variations in its meaning are reflected in the diversity of ‘recovery-promoting’ tools, techniques and treatments applied within mental health services, and in the plethora of instruments that have been developed to measure recovery-related outcomes. This is considered a positive outcome of vagueness in the recovery definition; a broader range of interpretations results in a wider range of tools, applicable across a broader range of cultures and populations (Smith-Merry et al, 2011). Diversity in the range of tools on offer also helps uphold the values of autonomy and personalisation inherent within the recovery paradigm. Consequently some authors suggest that no tool may be universally accepted (Hancock et al., 2015). Instead empowerment can be promoted by providing people with sufficient information about the range of tools, and the freedom to choose what would work best for them (Turton et al., 2011). It is therefore important to ensure that recovery promoting tools such as recovery measures are compared, and that this information is made readily available. As a first step, this chapter provides a systematic review of personal recovery measures.

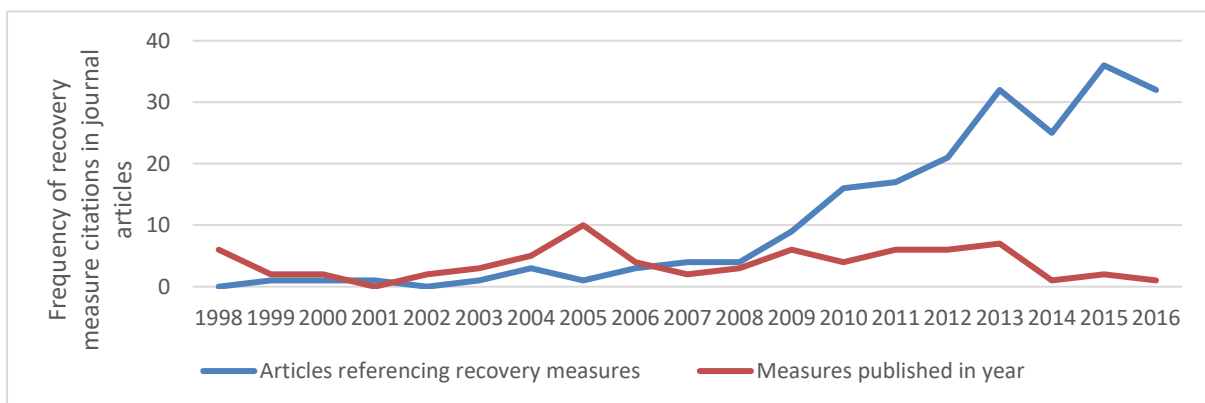


Figure 3.1: Frequency of papers published each year that include reference to at least one recovery measure, and the number of recovery/ recovery-related measures published (including grey publications) during year

3:1.2. Recovery measures

Recovery measures play a part within the majority of published empirical recovery research; the literature review described in Chapter 2 identified 87 recovery or recovery-related measures appearing within more than two hundred publications

(n=222). Papers report the development of new measures, the evaluation or adaptation of existing measures (including translations, e.g. Chien & Chan, 2013). Measures are also used to evaluate recovery-oriented practice (see Chapter 2), to further explore the concept of recovery, or to assess the impact of variables such as stigma on recovery (Chronister et al., 2013).

Due in part to the subjective nature of recovery, many different styles of recovery measure have been developed. Amongst them are semi-structured narrative interviews (e.g. Short Interview to assess Stages of Recovery (SIST-R); Wolstencroft et al., 2010), as well as a variety of questionnaires. These aim differentially to measure recovery knowledge or attitudes (e.g. Recovery Self-Assessment; O'Connell et al., 2005), current stage of recovery (e.g. Stages of Recovery Indicator (STORI); Andresen et al., 2006) or to measure recovery-related processes or outcomes (e.g. Questionnaire about the Process of Recovery (QPR); Neil et al., 2009). To add to this, there are measures of elements of recovery, such as hope, empowerment, well-being and quality of life (Ralph et al., 2000). For organisations, there are also a number of tools to measure the recovery focus within their service (for a review, see Williams et al., 2012). Despite the variety, there are also many similarities between these different tools: whilst there are a small number of interview style tools, most are designed as self-report questionnaires with a numbered (Likert) scale for answering questions, and most have been developed based on a theory or model of recovery (Chapter 2). Tools also show overlap in terms of the areas of recovery they aim to measure, with the majority of instruments measuring areas of recovery consistent with the CHIME framework (Leamy et al., 2011). For example, hope is a very commonly measured construct in recovery tools.

I.ROC is one example of an instrument designed to measure personal recovery, and the evaluation of its development and use are central to this thesis. I.ROC's psychometric properties are assessed in Chapter 6, whilst Chapters 5 and 7 explore the development and current usage of the tool to determine the extent to which I.ROC can be considered a valid, reliable and useful measure of personal recovery. In order to fully evaluate I.ROC as such, this Chapter reviews other measures of personal recovery that have been developed, to provide the contextual background and benchmarks against which I.ROC can be considered.

3:1.3. Reviews of recovery measures

More than eighty instruments have now been developed to measure recovery or recovery-related concepts, the majority of which have been evaluated in a series of reviews describing and evaluating several different subsets of measures. To date, ten reviews of recovery instruments have been published, including two recovery compendiums (Campbell-Orde et al., 2005; Ralph et al., 2000), one review looking at measures of recovery orientation of services (Williams et al., 2012), and one systematic review focusing specifically on the Recovery Assessment Scale (RAS) (Salzer & Brusilovskiy, 2014). Results of previous reviews relating specifically to measures of personal recovery are summarised in Table 3.1. Findings across the studies show the RAS to be both the most frequently reviewed and the most commonly recommended measure, but reviews are consistent in their conclusion that no instrument can yet be considered a gold standard for recovery measurement.

	<i>Burgess et al, 2010</i>	<i>Cavelti et al, 2012</i>	<i>Law et al, 2012</i>	<i>Sklar et al, 2013</i>	<i>Scheyett et al, 2013</i>	<i>Shanks et al, 2013</i>	# SHORTLISTINGS
Recovery Assessment Scale (RAS)	x	x	x	x	x	x	6
Stages of Recovery Instrument (STORI)	x				x	x	3
Questionnaire About the Process Of Recovery (QPR)			x			x	2
Mental Health Recovery Measure (MHRM)		x			x		2
Maryland Assessment of Recovery in Serious Mental Illness (MARS)				x		x	2
Recovery Process Inventory (RPI)	x				x		2
Self-Identified Stage of Recovery (SISR)		x			x		2
Short Interview to Assess Stages of Recovery (SIST-R)					x		1
Consumer Recovery Outcomes System (CROS)					x		1
Illness Management and Recovery Scales (IMRS)	x						1

Table 3.1: Shortlisted personal recovery measures in previous reviews. Crosses in bold show those expressly recommended by reviewers

The most recently published reviews of all measures date from 2013 (Shanks et al., 2013; Sklar et al., 2013), and since this time, recovery measurement has remained a popular subject within the literature, as shown in Figure 3.1. Between 2013 and the beginning of 2017, approximately 150 papers relating to the development, evaluation or use of recovery measures within a mental health setting have been published (based on the results of the literature review conducted in Chapter 2). This includes

papers relating to ten personal recovery measures that have not yet been reviewed, of which I.ROC is one. This chapter therefore also aims to update the previous findings by reviewing measures of personal recovery.

3:1.4. Review Objectives

Given the large amount of new data relating to measures of personal recovery that has emerged since the last systematic review, and in order to contextualise the results of psychometric testing of I.ROC presented within the following Chapters, this chapter presents a systematic review of personal recovery measures. The review was conducted to meet the following objectives:

- a) To update the previous findings by reviewing measures of personal recovery.
- b) To evaluate the evidence supporting the validity, reliability and usability of measures of personal recovery.
- c) To understand how different conceptualisations of personal recovery as outlined in chapter 2, are operationalised within recovery measures.
- d) To determine a set of benchmarks against which I.ROC can be evaluated.

Ch3, Section 2. Method

In order to provide a direct comparison to the measure at the heart of this thesis, I.ROC, the review focuses on instruments that are comprehensively and exclusively individual-level measures of personal recovery. Previous reviews were used initially as the primary source to identify recovery measures. Each measure appearing within the reviews was searched for individually using Google Scholar and the Abertay Library search function, to identify any new findings in relation to these measures. The Chapter 2 literature review acted as a secondary source of potential measures. Abstracts and titles of all papers included within these reviews were searched for the key words 'measur*', 'evaluat*', 'scale' and 'instrument'. These papers were then read in full to identify any recovery measures appearing within them. In the first instance, all measures described, developed, used or reviewed as measures of personal recovery were included. Drawing on the categorisation of instruments in previous reviews (Burgess et al., 2011; Campbell-Orde et al., 2005; Ralph et al., 2000), identified measures (n=87), were then split into the following categories based on the intended use and characteristics of the instruments as follows:

Personal recovery

Recovery Orientation

Recovery Knowledge

Recovery-related

N=45	N=15	N=9	N=18
Instruments measuring the stages or processes of personal recovery at an individual level.	Instruments designed to evaluate the extent to which a service, project, programme or intervention is consistent with recovery values	Instruments designed to measure the level of recovery knowledge, or the recovery-related attitudes, beliefs or priorities of any population.	Instruments that measure constructs that are related to recovery (e.g. hope, empowerment), but are not holistic recovery measures.

Table 3.2: Frequency of different types of recovery measure

		Cavelti et al, 2012	Law et al, 2012	Sklar et al, 2013	Scheyett 2013	Shanks et al, 2013	Burgess et al, 2010
	<i>Criteria</i>						
<i>Constructs measured</i>	Measures individual-level personal recovery	x	x	x	x	x	x
	uses the term recovery				x		
	Definition of recovery				x	x	
<i>Perspective taken</i>	Self report (consumer perspective)	x	x				x
	Self report or clinician rated			x			
<i>Yields quantitative data</i>	Quantitative	x	x	x	x		x
<i>Population specific</i>	Narrow specific diagnostic criteria	x			x		
	Population of working-age adults	x		x		x	
<i>Scientific rigour & availability of findings</i>	Must be written in article form				x		
	peer review publication/scientifically scrutinised	x	x				x
	Published (peer-reviewed or not) and accessible					x	
	empirically tested psychometric properties	x	x	x	x	x	x
<i>Usability</i>	Brief & easy to use (Ease of administration/ user friendliness)	x	x	x			x
	Acceptable to consumers		x				x
<i>Empowerment of consumers</i>	Consumer involvement in development		x	x	x		
	Promotes dialogue						x
<i>Cultural context</i>	Applicable to a specific context (e.g. Australian)						x
	Availability of translations	x					

Table 3.3: Review criteria of previous reviews of recovery measures

3:2.1. Inclusion criteria

This review focuses on personal recovery measures, therefore the other 42 measures were excluded from further analysis. Drawing on the criteria used within previous reviews shown in Table 3.3, a series of four criteria were then applied hierarchically to the remaining 45 measures as follows: instruments must measure recovery from the perspective of the person experiencing it (Law et al., 2012); they must quantitatively measure recovery (Cavelti et al., 2011); measures must be brief

(Burgess et al., 2010); measures must have been scientifically scrutinised (Law et al., 2012). Finally, instruments were scrutinised based on their applicability across mental health conditions. The rationale behind each of these criteria is outlined in sections 3:2.1-5 below. Measures are referred to using their abbreviated names; for a full list of measures and abbreviations, see Appendix 8.

3:2.1.1 User Perspective

Measures must be completed from the perspective of the person experiencing recovery (i.e. self-assessment / completed collaboratively).

As discussed in Chapter 2, key elements of recovery-oriented practice include personalisation and empowerment, which puts the service user at the heart of their support and their recovery journey (Le Boutillier et al., 2011a; Leadbeater, 2004). Recovery is a subjective and personal experience, which looks different to everyone (Leamy et al., 2011), and it is widely accepted that service users are the experts of their own experience (Boevink et al., 2016; Brown, 2008). It is therefore argued that measuring recovery from the person's perspective is not only consistent with the values of recovery-oriented practice, but actually the only valid way to measure a unique and subjective phenomenon at an individual level. I.ROC is described as a facilitated self-assessment (see Chapter 5), used in practice as a collaborative tool to stimulate conversation (Chapter 7). Six measures (LORS; MORS; MTR; RMI; STARS; PERS⁴) were found to be designed solely for completion by a practitioner rather than the service user, and were thus excluded at this stage.

3:2.1.2 Quantitative

Measure must include a quantitative element within their design

To enable an objective measurement of recovery, that can provide aggregated results and be used within a range of settings, responses must be quantifiable. Five measures were excluded at this stage. The Hi-Way and the Rochester Recovery Inquiry (RRI) are questionnaires comprised entirely of open-ended responses, whilst the Recovery Interview and the Short Interview to Assess Stages of Recovery (SIST-R) are designed as semi-structured interviews. Finally, the Personal Growth and Recovery scale (PGRS) was excluded at this stage, as no information regarding its

⁴ For full list of recovery measure acronyms, see appendix

scoring was available. The American and UK versions of the Developing Recovery-Enhancing Environments Measure (DREEM; REE) and the Procovery Evaluation Instrument (PEI) were retained because although they include qualitative elements, quantitative data is also collected. I.ROC also falls into this category of instruments used to collect both quantitative and qualitative data; the impact of this mixed-methods approach is explored in Chapter 7.

3:2.1.3 Brief

Measure must be brief, including no more than 50 items

Slade and colleagues recognise brevity as a key criterion for routine outcome measures (Slade et al., 1999). First included as a criterion by Burgess and colleagues (Burgess et al., 2010), this relates to the usability of the instrument. Questionnaires that include a large number of questions are likely to put more burden on respondents, and the importance of including such high numbers of items must be weighed against the additional time and effort required to complete them. Longer questionnaires are also less likely to be completed or used collaboratively or to facilitate discussion within support. As argued by Happell,

“consumer participants...held the view that open communication between consumers and clinicians would be far more influential in effecting change and responsive services than completing forms...outcomes assessment systems should place minimal burden on the respondent” (Happell, 2008c, p.325).

Fifty was chosen as the cut-off for acceptable length, in keeping with Burgess et al (Burgess et al., 2010), however it is acknowledged that fifty items is still relatively long, and that the selection of this cut-off is somewhat arbitrary. Whilst nine measures were found to exceed 50 items, and were thus excluded at this stage (ACF; DREEM; MVML; OMHCOS; PEI; REE; RMT; SeRvE; SRS), several long measures remain, and the length of each, in particular the STORI (n=50) and the RAS (n=41) will be taken into further consideration within the evaluation criteria.

3:2.1.4 Scientifically scrutinised

Measure must have been scientifically scrutinised (with at least one peer-reviewed publication reporting empirical psychometric testing)

All reviews published to date have evaluated measures based on the weight of their psychometric evidence. This enables an assessment of the extent to which a

measure can be said to be a valid and reliable measure of recovery. Ensuring that the considered psychometric properties come from peer-reviewed publications allows the reviewer to assume a level of rigour in the testing and analytical procedures. Eight measures had not yet published any testing of the psychometric properties: ARAS; CCHS; CROS; MPRM; PVRQ; PIS; RMQ; SRAS. Whilst the CROS and RMQ have basic psychometric properties reported within reviews and/or papers, the researchers have not published their research.

3:2.1.5 Widely Applicable

Measure must be applicable across different diagnosed mental health conditions

In contrast to some of the earlier reviews which focused on measures designed for use with people with a specific diagnosis such as schizophrenia (Cavelti et al., 2011) or psychosis (Scheyett et al., 2013), this review seeks measures that like I.ROC, are applicable across diagnoses. Personal recovery is of relevance to all people who have experienced a mental health difficulty (Perkins & Repper, 2015); indeed, it *“transcends illness and the disability field itself. Recovery is a truly unifying human experience”* (Anthony, 1993, p. 527). Developing measures for use with a restricted diagnostic group lacks flexibility and goes against principles of personal recovery as described in the quote above by Anthony, and as outlined in the previous Chapter (see Chapter 2, section 4 for discussion). Personal recovery is conceptually distinct from clinical recovery (Chapter 2, section 2.3.2a), exists outside of the paradigm of mental illness, and is relevant to anyone with an experience of mental ill-health. It does not therefore seem appropriate to develop measures of personal recovery which first depend upon a clinical diagnosis. Measures included within this review are consequently those developed using a conceptual model of recovery which is not diagnosis-specific; or that have been widely tested and found to be valid outwith the remit of its original development. Four measures were excluded at this stage. The Bipolar Recovery Questionnaire (BRQ), Psychosis Recovery Inventory (PRI), Schizophrenia Patient Outcomes Research Team Scale (PORT) and the Recovery Styles Questionnaire (RSQ), which measures adaptation to psychosis and recovery (Drayton et al, 1998), were excluded at this stage. Although many of the remaining questionnaires were developed for use with particular diagnostic groups (e.g. QPR,

developed for use with people with psychosis), they have been widely tested and found to be applicable within broader populations.

3:2.2. Evaluation criteria

The remaining ten measures (CRM; IMRS; MARS; MHRM; QPR; RAS; RPI; MHRS; SISR; STORI) are evaluated within this review based on the following four criteria:

1. The extent to which people with lived experience (PLE) were actively involved in measure development and evaluation, and how acceptable the measure is found to be to PLE
2. Published psychometric properties
3. How much and for what purpose the tool has been used following development, and the extent to which it can be used to promote dialogue between SU and practitioner (use in practice).
4. The applicability of each measure to the Scottish context, including mapping to the CHIME framework of recovery.

As described below, each measure received a score for each criterion evaluated. These scores were used to determine a set of benchmarks against which the results of psychometric and usability testing of I.ROC can be evaluated. Benchmarks were determined based on the median score achieved on each criterion, as shown in Table 3.16). All aspects of this procedure were assessed and verified by the research supervisor, SH.

3:2.2.1 Involvement of people with lived experience of recovery

Instruments are evaluated based firstly on the extent to which people with lived experience were involved within their development. The involvement of people with lived experience (PLE) within recovery measure development is important for several reasons. Firstly, to ensure face and content validity of the measure (see methodology, Chapter 4 for discussion of validity). Secondly, to reflect the nature of recovery as a social movement that has emerged from and been shaped by the experiences of people with a personal history of mental illness, in which key aspects of recovery-oriented practice include collaboration, mutuality and empowerment, or *“nothing about us without us”* (Trivedi, 2014, p.544). Finally, as argued by (Neil et al., 2013) collaboration between lived and professional experience is crucial to providing high quality mental health services (Faulkner & Thomas, 2002), and collaborative

research is more likely to improve clinical practice (Department of Health, 2000). Within this review, service user involvement is rated on a six–point scale, where 0 represents no service users involved at any stage of development, and 5 reflects a scale developed solely by people with lived experience of recovery. A full breakdown of the approach to scoring can be found in Appendix 10.

3:2.2.2 Psychometrics

Results of all papers reporting psychometric testing were synthesised by the researcher BR using an online data extraction tool (Appendix 10) developed to both collect and evaluate the methodology and results of each paper. The tool was developed using the guidelines for outcome measurement evaluation from the Scientific Advisory Committee of the Medical Outcomes Trust (Lohr, 2002; Valderas et al., 2008), and the COSMIN checklist (Mokkink et al., 2010). Drawing from these two sources, a combination of dichotomous and open-answer questions were developed to collect data regarding methodology (e.g. sampling strategy; population; power analyses), analytical techniques (e.g. was test-retest reliability assessed using Intraclass Correlation Coefficients (ICC), or Weighted Kappa's (Mokkink et al., 2010)), and reporting quality (e.g. was the hypothesis clearly stated?). Accuracy of data extraction was checked by inviting a second independent researcher (GM⁵) to use the tool for a small subset (2) of the papers reporting psychometrics. Concordance was high (98%) supporting the robustness of this approach.

Data was collated into a spreadsheet, and used to evaluate the strength of the evidence supporting the psychometric properties of each measure. Properties evaluated were: internal consistency; test-retest reliability; inter-rater reliability; structural validity (factor analysis or Rasch analysis); convergent validity; divergent validity; predictive validity; cross-cultural validity; criterion validity and responsiveness. Extracted data for each paper was scored using a systematic coding framework (Appendix 10), which assigned points based on the quality and size of the results reported. For example, internal consistency was evaluated using (Ponterotto & Ruckdeschel, 2007)'s assessment matrix, which uses sample size and number of instrument items to help determine the acceptability of the coefficient,

⁵ GM is a relief worker and peer researcher for Penumbra

providing a rating on a scale from 'fair' to 'excellent', as discussed within Chapter 4. Coefficient values rated as 'fair' using this matrix were scored as 1, whilst 'excellent' coefficient values received 4 points. Total scores for each element of validity, reliability and reproducibility of the study were summed, and were then used to produce an overall average for each measure by dividing the summed total by the number of papers reviewed. Mean psychometrics scores for each measure ranged from 4.5 for CRM, to 29.6 for QPR. For full details of the scoring process used to evaluate the measures, see Appendix 10.

3:2.2.3 Use in practice

This criterion merges two criteria from earlier reviews (Burgess et al., 2011; Law et al., 2012):

- a) the intended use of the measure in practice,
- b) and the extent to which the measure has been found to be acceptable to people with lived experience of recovery

Although recovery measures are most commonly utilised as outcome assessments in ROP evaluations and other research, individual-level measures also have the potential to play a meaningful role in support, as a key working tool (Onifade, 2011). Trauer (2010a) suggests that outcome measures could play a significant role in promoting dialogue between service users and practitioners, as well as in tracking progress and identifying previously unexamined issues. Burgess and colleagues concur, arguing that measures that can be completed collaboratively are more likely to promote recovery-focused dialogue between service users and providers (Burgess et al., 2010), by alleviating confusion, and through heightened engagement and communication within the therapeutic relationship. As a collaborative relationship is central to recovery-oriented practice (Slade, 2009a), this is as a key consideration in the evaluation of recovery measures.

Measures explicitly designed or adapted to be used collaboratively, are assumed to better promote recovery discourse between service users and practitioners.

Logically, instruments are more likely to be used, and applied effectively if they are acceptable to respondents. Measures are therefore also evaluated on the extent to which they are felt to be meaningful, comprehensive and user friendly by the people they are designed for (both service users and practitioners). This review seeks

published evidence for the evaluation of acceptability in the form of face validity testing (separate to development), or the publication of any end-user experiences (e.g. focus groups, surveys). Scores for use in practice take into account the frequency of references to each measure within papers reporting on evaluations of recovery-oriented practice and wider recovery research. Stakeholder feedback and the intended method for use (e.g. self-report/collaborative interview) were also rated. Each element was rated separately and then summed to give an overall score for this criterion. Feedback is then reviewed for the weighting of positive and negative points highlighted by the participants. For details, see Appendix 10.

3:2.2.4 Scottish Context & CHIME

As discussed in the previous Chapter the ability to develop or adapt recovery measures to local contexts and cultures is a key issue, (Smith-Merry et al., 2011). For a recovery measure to be applicable within the Scottish context, it has to have a version available in English, and not have any non-transferrable references to the culture in which it was developed. For example, although created in English, the Making Decisions Empowerment Scale includes questions not clearly understood within the UK such as “*you can’t fight city hall*” (MDES; Rogers et al., 1997). Such questions are likely to be confusing to respondents, and may not be relevant to local models of recovery. There are also specific aspects of Scottish culture that may not fit well with instruments developed elsewhere, for example, almost half of the Scottish population is not religious (Scottish Government, 2014). Instruments were therefore evaluated based on the availability of an English-language version and the extent to which the language used makes sense in Scotland.

The extent to which the questions fit with a Scottish understanding of recovery was also evaluated. The Scottish model is reflective of a positive psychology approach (Slade, 2009b), which highlights the importance of strengths-based support (Perkins & Repper, 2015), and the ability to live beyond the mental health system (Brown & Kandirikirira, 2007). Consideration is therefore given to the language used within each measure (e.g. positive or negative wording), whether the tool supports a strengths-based approach, and the representation of the mental health system within the questions. As discussed within Chapter 2, the Scottish definition of recovery fits well with the CHIME framework (Leamy et al., 2011), which identifies relationships

(connectedness), purpose or meaning, identity, hope and empowerment as fundamental aspects of personal recovery. The conceptualisation of personal recovery adopted within this thesis includes these five areas as primary components. Empirically tested, CHIME has been found to be a “*valid and relevant representation of recovery processes*” (Bird et al., 2014, p. 650). It has been widely applied within recovery research, including in the evaluation of personal recovery measures (Shanks et al., 2013). In order to evaluate the extent to which each instrument is a good conceptual fit with personal recovery therefore, its coverage of the CHIME categories is evaluated.

Although nine of the ten measures included within this review were mapped to the CHIME framework in an earlier review by Shanks et al, the categorisation of each item was not published, and when the findings were compared to a preliminary mapping of results in the current review, substantial differences were found. It was therefore decided to map each questionnaire from scratch rather than adopt the mappings from the previous study.

The CHIME mapping procedure followed that used within the review by Shanks and colleagues (2013). Items from each questionnaire were independently mapped against the framework by three reviewers (BR; SB; SJ⁶). In line with the original review, each measure item could only map to one CHIME area, so in cases where multiple mappings were possible, items were assigned to the element it most closely mapped to. Results were collated, and where at least two of the three reviewers agreed, this was taken as the result. Concurrence between reviewers occurred in 92.4% of cases. Where all three reviewers’ opinions diverged, this item was not mapped to CHIME. Both percentage of items mapping to CHIME and the number of CHIME categories covered by the measure are reported in Table 3.5 (mapping tool: Appendix 9).

The conceptualisation of personal recovery put forward at the end of Chapter 2 also included two further recovery themes as secondary components; ‘Health and wellbeing’ and ‘Daily Living’, are not included within the CHIME framework, but are

⁶ BR = Bridey Rudd, lead researcher; SB is a leading expert of recovery in Scotland; SJ is a recovery worker and peer researcher.

recognised by a growing body of authors as important aspects of recovery (see Chapter 2, Section 2:3.3 for details). Coverage of the two secondary components within each measure is evaluated in addition to the five core CHIME categories, but as their placement within personal or wider models of recovery has not yet been conclusively tested, instruments are only scored on the five primary recovery elements.

Ch3, Section 3. Results

Ten measures of personal recovery were included in the review. Table 3.4 shows the number of papers assessing each psychometric property for each of the included measures. Table 3.5 provides a summary of the main review criteria scores for each measure. For full scores tables, see Appendix 11.

	CRM	IMRS	MARS	MHRM	QPR	RAS	MHRS	RPI	SISR	STORI
Internal consistency	1	1	3	6	5	14	2	2	3	5
Test-Retest Reliability	0	2	2	1	4	1	1	1	1	2
Inter rater Reliability	0	0	0	0	0	0	1	0	0	0
Predictive Validity	0	4	2	6	5	12	1	2	3	5
Structural Validity	1	1	3	6	4	12	1	1	0	2
Cross-cultural Validity	0	2	0	4	1	7	0	0	0	2
Responsiveness	0	0	1	0	1	3	1	0	0	0

Table 3.4: Number of papers assessing each psychometric property of included measures.

	Top Score	CRM	IMRS	MARS	MHRM	QPR	RAS	RPI	MHRS	SISR	STORI
# Previous Reviews	6	0	6	2	6	2	6	6	3	6	6
Reviews Weighted score (%)	100	0	61.2	68	42.9	78	76.5	42.9	40	46.9	69.4
Total reviews score	16	0	12	8	10	9	13	10	9	10	11
Consumers involved in development	5	4	2	1	2	4	3	2	2	0	1
Use in research	N/A	1	3	1	7	5	9	0	1	5	4
Use in practice ⁷	7	1	1	1	1	5	6	2	5	1	2
Use Total	N/A	2	4	2	8	10	15	2	6	6	6
% Mapping to CHIME	100%	66.7%	46.7%	96%	100%	100%	92.7%	90.9%	90%	100%	96%
# CHIME elements covered	5	4	3	5	5	5	5	5	5	4	5
CHIME Total score	15	10	7	14	15	15	14	14	14	14	14
# Peer-reviewed psychometrics papers	N/A	1	4	4	6	5	14	2	2	2	5
Test retest Reliability	13	0	3.5	5	0.7	4.6	0.5	2.3	4	1.7	2.2
Inter-rater Reliability	6	0	0	0	0	0	0	0	2	0	0
Internal consistency	9	1	1	3.7	4.1	6.4	4.1	2.1	5.5	-0.3	3.3
Reliability Total ⁸	30	1	5	9.3	5	11.8	4.6	4.8	12.5	1.7	5.9
Predictive Validity	19	0	5.7	5	5.9	6.8	4.2	4.8	1.4	6.9	1.5
Structural Validity	13	4.5	0.6	4.9	3.6	5.8	6.8	1.3	1	0	2.4
Cross-cultural Validity	13	0	-0.8	0	0.7	2	0.9	0	0	0	0.8
Responsiveness	8	0	0	0.3	0	0.2	0.1	0	0.5	0	0
Validity Total ⁹	55	4.5	6.5	11.3	11.1	16.8	14	6.1	3.9	6.9	5.7
Total psychometrics score	85	5.5	11.5	20.6	16.1	28.6	18.6	10.9	16.4	8.6	11.6
# Papers bonus (ranked)	4	1	2	2	2	2	4	1	1	1	2
Paper quality	3	-2	-1.3	-0.7	-0.9	-1	-0.7	-1.5	-0.5	-0.7	-1.6
Overall psychometrics score with paper quality adjustment	92	4.5	12.2	21.9	17.2	29.6	21.9	10.4	16.9	8.9	12
Overall Review Score	135	24.5	42.2	51.9	57.2	77.6	84.9	38.4	50.9	38.9	50

Table 3.5: Overview of review scoring for the included measure

⁷ Use in practice score combines scores for completion format & stakeholder feedback

⁸ Bonus (max 2 pts) added Test Retest and Inter Rater assessments, as these were the least assessed reliability elements

⁹ Bonus (max 2 pts) added for cross-cultural and responsiveness assessments, as these were rarely assessed

In the following sections (3.1 – 3.10), each of the ten included instruments is examined in turn, in relation to the evaluation criteria outlined above.

3:3.1. Consumer Recovery Measure (CRM 3.0)

Items: 15	Scale: 1-4 Likert	Reviews (% score): 0(0%)	Psychometric Publications: 1		
Recovery domains/ subscales:	active/ growth orientation, hope, symptom interference, safety, and social network				
Example question:	<i>In most situations I feel totally safe</i>				
SU Involvement:	Use in Practice:	Psychometrics:	Paper Quality:	CHIME¹⁰:	
4	1	5.5	-2	4(67%)	

Table 3.6: Properties of the Consumer Recovery Measure

The Consumer Recovery Measure (CRM; DeRoche et al, 2011 (unpublished¹¹) is the individual-level instrument in a toolkit developed by the Mental Health Centre of Denver (MHCD) for measurement of individual and service level recovery outcomes (Olmos-Gallo & DeRoche, 2010). Recovery is described the MHCD as “a non-linear process of growth by which people move from lower to higher levels of fulfilment in the areas of sense of safety, hope, level of symptom interference, social networks and activity” (Olmos-Gallo & DeRoche, 2010, p.11). Designed to be used as a quarterly self-report, the CRM measures an individual’s perception of their own recovery within these five domains. The original instrument consisted of 17 items, measured using a 1-4 Likert scale. This was later revised (details of revision unavailable); CRM 3.0 consists of 15 items (Luszczakoski et al, 2016).

3:3.1.1 PLE Involvement

The CRM was developed in 2003 by an established Recovery Committee at the MHCD, consisting of mental health practitioners, managers and consumers (Olmos-Gallo et al, 2012). Development is described as a multi-stage iterative process involving literature reviews, logic modelling and focus groups (Luszczakoski et al, 2016). Reference is also made to the use of Rasch modelling during development, which found the scale to have high person (0.83) and item (0.96) reliability (DeRoche, unpublished), however the details of this analysis and the development process more broadly are unpublished and not readily available.

¹⁰ CHIME ratings are given as the number of categories (maximum 5) that the questionnaire maps to and the percentage of measure items mapping against the CHIME categories

¹¹ DeRoche et al referenced in (Olmos-Gallo & DeRoche, 2010)

3:3.1.2 Psychometrics

Published psychometrics are so far limited to examination of the structural validity of the measure through Rasch analysis and Confirmatory Factor Analysis (Luszczakoski et al, 2016). Results supported a single factor structure, and the Rasch reliability estimates are similar to those reported during development (person=0.83; item=0.99). No attempt is made however to address the significance of the undimensionality finding in relation to the five underlying recovery domains described above. Psychometric analysis of the CRM is currently very limited, and although the items in this measure do appear to be related to recovery, considerably more testing is needed.

3:3.1.3 Use in practice

“The goal of recovery measurement efforts at MHCD is to help drive system transformation by the use of outcomes to define practice” (Olmos-Gallo et al, 2010, p.10.) The CRM is designed for use as a self-report instrument, and whilst the developers describe how their suite of tools are used to inform service design (Olmos-Gallo et al, 2010), and discuss the importance of feeding outcomes data back into practice in usable guises such as training and clinical supervision (Olmos-Gallo et al, 2012), use of the tool at an individual level appears to remain a data-collection exercise, separate from support. Despite the high level of service user involvement in development, and the good rhetoric on its use in practice, stakeholder voices are absent in the CRM published literature to date. Use in practice has therefore not yet been robustly examined from stakeholder perspectives.

3:3.1.4 Scottish Context & CHIME

The CRM was developed in English, and its items are largely consistent with the Scottish definition of recovery (Brown & Kandirikirira, 2007; see Chapter 2). The CRM items cover four of the five categories within CHIME; consisting of items relating to hope, relationships and social network, a sense of purpose and meaning. Identity is not covered by the scale’s questions however, and five questions, relating to safety and to clinical symptoms, did not map to any CHIME category. Items relating to safety do fit within the wider conceptualisation of recovery identified within the previous Chapter. As previously discussed, a sense of personal safety and security is recognised by a growing body of researchers as playing an important role

in personal recovery (e.g. Shepherd et al., 2016); consequently, safety is included as a subtheme of the 'Daily Living' component of the conceptualisation of personal recovery used within this thesis. Whilst the CRM does not fit precisely with the widely recognised CHIME framework therefore, it is nevertheless largely consistent with personal recovery.

This measure is the least tested of any measure included within this review. Although the inclusive nature of its design and the objectives of the developers for this tool to be used in practice make it a potentially useful measure of recovery in the future, more testing is certainly needed. This applies both to its psychometric properties which are not yet well examined, and to its use in practice.

3:3.2. Illness Management and Recovery Scale

Items: 15	Scale: 1-5 Likert	Reviews (% score): 6 (61%)	Psychometric Publications: 7	
Recovery domains/subscales:	personal goals, knowledge of mental illness, involvement with significant others, impaired functioning, symptoms, stress, coping, relapse prevention, hospitalization, medication, use of drugs and alcohol			
Example question:	<i>How well do you feel like you are coping with your mental or emotional illness from day to day?</i>			
SU Involvement:	Use in Practice:	Psychometrics:	Paper Quality:	CHIME:
2	1	11.5	-1.3	3(47%)

Table 3.7: Properties of the Illness Management and Recovery Scale (client version)

The client version of the Illness Management and Recovery Scale (IMRS; Mueser et al, 2005) is a 15-item personal recovery measure, which uses a 1-5 'behaviourally anchored' scale to measure recovery across 11 domains (see Table 3.7). Developed in 2004, the IMRS-client was designed alongside a clinician-rated version of the instrument, to measure outcomes of the Illness Management and Recovery (IMR) Program, a nine-month psychosocial intervention for people with Schizophrenia, which incorporates five illness self-management strategies within nine curriculum topics, closely aligned to the domains described above (Mueser et al, 2006). The IMR Program has been widely adopted; 24 papers from nine different countries evaluating this recovery-oriented practice were identified within the literature review at the start of this thesis (Chapter 2). Following the success of the IMR program, the IMRS has become one of the most widely used personal recovery measures appearing within all but one of the recovery measure reviews, with seven peer-reviewed evaluations into its psychometric properties.

3:3.2.1 PLE Involvement

According to Mueser and colleagues, service users were involved in multiple aspects of IMRS creation, including generation of items and helping to review each version of the scale (Mueser et al, 2005). It has been reported that the development of the IMR scales included consultation with two separate groups of service users; one helped construct the questions, whilst another provided feedback on draft versions (Burgess et al., 2011). No details of how this inclusion was facilitated, or of the demographics of the reviewers, are available, limiting the score for this domain.

3:3.2.2 Psychometrics

Four psychometric evaluations of the client version of IMRS assess the reliability, convergent and structural validity of the measure. Estimates of internal consistency range from low ($\alpha=0.55$; Hasson-Ohayon) to 'fair' ($\alpha=0.73$; Fardig, 2011), far below that of the other measures included here (next lowest: SISR $\alpha=0.8$, see Table 3.16), and suggestive of multi-dimensionality. Hasson-Ohayon and colleagues reported a three-factor structure identified through EFA with domains labelled as 'coping', knowledge and goals' and 'medication' showing a similar pattern over both the client and practitioner versions of the scale. Factors show some overlap with the original CHIME domains (Table 3.7), although with fewer components. Given the relatively low internal consistency reported above, and the inclusion of a 'medication' factor within the questionnaire, the IMRS would merit further examination of its factor structure and its level of agreement with the personal recovery construct. The IMRS does demonstrate good convergent validity with other recovery measures however, including the Recovery Markers Questionnaire (Sklar et al, 2012) and the Recovery Assessment Scale (RAS; e.g. Fardig et al, 2011). The IMRS has also been shown to correlate significantly with several measures of recovery-related constructs such as coping efficacy (Hasson-Ohayon et al, 2008) quality of life (Fardig et al, 2011) and progress in substance abuse treatment (Sklar et al, 2012; Salyers et al, 2007). Client and clinician versions of IMRS are positively correlated, although the strength of this relationship varies significantly between studies (Fardig et al, 2011, Hasson-Ohayon et al, 2008; Salyers et al, 2014). Interestingly, although the client and clinician versions of IMRS are parallel forms of the same survey, no papers have yet evaluated the relationship between the two versions using parallel forms or inter-

rater reliability analyses, opting instead for convergent/concurrent validity testing using Pearson's correlations. Whilst this is not noted as a problem with the assessments to date, it highlights the potential for further examination.

3:3.2.3 Use in Practice

Although employed routinely within the IMR programme, wider evidence supporting the use of the IMRS within a range of practice settings is currently lacking. IMRS client and clinician versions are commonly used in their intended role as outcome measures for the IMR program; a quick search of the literature identified fifteen papers in which the IMRS instruments were employed within evaluations of ROPs, usually as pre-post measures of change in personal recovery following completion of the IMR program or program pilot. The IMRS-client tends to show a positive change in scores from baseline to the end of the nine-month program (Fardig et al 2011b; Hasson-Ohayon et al, 2007; Tan et al, 2017). Despite the plethora of evidence supporting the efficacy of the IMRS as an outcomes measure for use with the IMR program, there is little evidence supporting its use outside this program. Although the clinician-rated scale has begun to be used outside IMR evaluations (e.g. Sklar et al, 2015), this is yet to be the case for the self-report version of the measure.

No publications exclusively evaluating the IMRS have included any service user feedback, and details of feedback during development is unavailable. Whilst the scale is brief at 15 items, the format of the questions is not consistent; some are phrased in the first-person, others in the second-person; some questions are brief statements, whilst others include a fairly lengthy description. Finally, although the scale remains constant, the descriptors vary significantly. Format inconsistencies may be confusing for some respondents, and may add to the time it takes to complete the IMRS, particularly as it is designed as a self-report measure. These observations are supported by the conclusions of the service user panel in Law and colleague's review. The panel stated that the IMRS is "*difficult to complete, not service user-friendly*" (Law et al., 2012, p.200).

3:3.2.4 Scottish context & CHIME

Created in English, the IMRS is linguistically a good fit for the Scottish context, but only seven items from the IMRS map onto the CHIME categories, and those that do

only cover three categories (Connectedness; Meaning; Empowerment). IMRS questions relating to symptoms, hospitalisation and impairment of functioning, although widely recognised as domains of a wider model of recovery (e.g. Lloyd et al, 2008) are not represented in CHIME or within the Scottish definition of recovery as described in Section 2:3.2.2, which emphasises personal strengths and moving beyond the constraints of the mental health system (Brown & Kandirikirira, 2007). Functioning falls within the secondary component of recovery identified within this thesis however, and measurement of clinical aspects highlights conflicting views on how personal and clinical recovery are related. Conceptualisations of recovery are discussed in greater depth within Chapter 2. Of greatest concern are the recovery components not covered by this measure; Hope, Identity and Meaning are fundamental aspects of personal recovery. It is therefore because of these omissions and not because of the measure’s wider conceptualisation of recovery that the IMRS does not fit well with accepted models of personal recovery in Scotland.

3:3.3. Maryland Assessment of Recovery in Serious Mental Illness

Items: 25	Scale: 1-5 Likert	Reviews (% score): 2 (68%)	Psychometric Publications: 4	
Recovery domains/ subscales:		Empowerment; holistic; nonlinear; strengths based; responsibility; and hope		
Example question:	<i>I believe I make good choices in my life.</i>			
SU Involvement:	Use in Practice:	Psychometrics:	Paper Quality:	CHIME:
1	1	20.6	-0.7	5(96%)

Table 3.8: Properties of the Maryland Assessment of Recovery in Serious Illness

The Maryland Assessment of Recovery in Serious Mental Illness (MARS; Drapalski et al, 2012) was designed based on the definition of recovery given by the Substance Abuse Mental Health Services Administration (SAMHSA), which identifies “ten characteristics of recovery and recovery-oriented services” (Sklar et al, 2013, p.1807). Whilst the developers argue that this measure is also underpinned by a conceptualisation of recovery which draws on Bandura’s Social Cognitive Theory of Human Agency (Bandura, 1989; Bellack & Drapalski, 2012), only SAMHSA domains relevant to the individual (and not community or service) were retained following review of the drafted items (see Table 3.8 for MARS domains).

3:3.3.1 PLE Involvement

Although the development process is described as led by doctoral level scientists, it was guided by the experiences of a service user panel, and involved an iterative

process of review and refinement which reduced the measure from an initial 67 items to a more manageable 25 questions measured on a 5-point Likert scale.

3:3.3.2 Psychometric properties

As the MARS was first detailed in 2012, it is unsurprising that it has only been included within two reviews of personal recovery measures (Shanks et al, 2013; Sklar et al, 2013). Although gaps in the psychometric testing were noted (i.e. no convergent validity), both reviews appraised the MARS favourably (see Table 3.1). Since these reviews, two further papers have been published. One (Drapalski et al, 2016) extends the psychometric evaluation of the MARS, whilst the other (Thomas & Rickwood, 2016) used the tool to assess the role of self-efficacy in mediating the relationship between social support and recovery.

Few papers have yet to evaluate the psychometric properties of MARS, however preliminary findings support the tool's validity and reliability. The MARS has demonstrated very high internal consistency ($\alpha \geq .95$) in all three psychometric studies, which supports the finding reported within two of the papers following EFA and CFA analyses, of a unidimensional factor structure (Drapalski et al, 2012; 2016). Ahmed and colleagues dispute the single factor structure however, themselves identifying four factors in their exploratory factor analysis, which they label using five of the six original domains ('hope' and 'holistic' are merged, as are 'self-direction' and 'responsibility'). Ahmed and colleagues' sample ($n=84$) was significantly smaller than those used in the studies led by Amy Drapalski however ($n=166$; 250), and falls below recommended sample size for factor analysis (Preacher & MacCallum, 2003) (Gaskin & Happell, 2014). This study alone cannot therefore be taken as strong evidence against the unidimensionality of MARS, but does suggest that the structure of the instrument merits further exploration. The convergent validity of MARS with other individual-level measures of personal recovery has yet to be assessed, however the measure does show large positive correlations with scales measuring related constructs such as agency ($r=.65^{***}$), empowerment ($r=.5^{***}$) (Drapalski et al, 2016) and social functioning ($r=.36^{**}$) (Ahmed et al, 2013). The positive correlation between MARS and system-level recovery measure ROSI was also highly significant ($r=.5^{***}$; Drapalski et al, 2016). Negative correlations are reported between MARS and measures related to clinical symptoms ($r = -.4^{***}$) and substance use ($-.07$, n/s).

3:3.3.3 Use in Practice

No publications have yet examined the application of MARS within ROP settings, or provided any end-user feedback. At 25 items long, the MARS is relatively brief; all items are worded in the first person and use the same rating scale. These features make it likely that it would be perceived as acceptable, but without user testing, this cannot be assumed.

3:3.3.4 Scottish context & CHIME

MARS items map against all five CHIME categories, with between one ('Connectedness'; 'Meaning') and nine ('Hope') items mapping onto each CHIME element. One item (4%) relating to physical health was found not to map to CHIME. Physical health is recognised a subdomain of the recovery component 'Health & Wellbeing' included the broader recovery model outlined in Chapter 2; under this conceptualisation, all items on MARS are found to be relevant to recovery.

Although developed in English, the MARS is an American measure designed around the SAMHSA definition of recovery, which differs from the Scottish framework for recovery (Chapter 2) in several ways. MARS is strongly individualistic and self-deterministic; items include "*I can influence important issues in my life*"; and "*It is up to me to set my own goals*" (Drapalski et al., 2016, p.263) and there are no items relating to personal or social networks. Social and personal relationships are key aspects of recovery conceptualisations in Scotland (Brown & Kandirikirira, 2007); indeed, personal support networks were identified by participants in a 2013 Scottish survey as the most important factor supporting recovery (Reid et al., 2014).

Furthermore, two MARS items may be perceived as retaining an undercurrent of stigma against mental illness (I feel good about myself *even when* others look down on my illness; I know that I can make changes in my life *even though* I have a mental illness¹²). Internalisation of stigma (self-stigma) is recognised to be a mediator of the relationship between social stigma and personal recovery (Chronister et al., 2013). Conflation of stigma and recovery concepts within the MARS may therefore impact upon people's responses. Like many countries, Scotland continues to face the

¹² Italics have been added within this review for emphasis, and are not part of the original questions

challenge of mental health stigma; the last Scottish survey investigating public attitudes towards mental health found that almost half of those surveyed (47%) would not want anyone to know if they had a mental health problem demonstrated stigmatising attitudes, whilst just under 30% agreed that “the public should be better protected from people with mental health problems” (Reid et al., 2014, p.4).

MARS is not currently a good fit with conceptualisations of recovery in Scotland. The relationship between MARS and self-stigma should be investigated before this measure can be recommended for use in Scotland.

3:3.4. Mental Health Recovery Measure

Items: 30	Scale: 0-4 Likert	Reviews (% score): 6 (43%)	Psychometric Publications: 6		
Recovery domains/ subscales:	Overcoming Stuckness; Self-Empowerment; Learning and Self-Re-definition; Basic Functioning; Overall Well-Being; and Reaching New Potentials				
Example question:	<i>I take risks to move forward with my recovery</i>				
SU Involvement:	Use in Practice:	Psychometrics:	Paper Quality:	CHIME:	
2	1	16.1	-0.9	5(100%)	

Table 3.9: Properties of the Mental Health Recovery Measure

Originally adapted from a 36 item Recovery Scale (Ralph et al, 2000), the Mental Health Recovery Measure (MHRM; Young et al., 1999) initially comprised 41 self-report questions answered on a 5 point Likert scale (scoring 0-4) ranging from “strongly agree” to “strongly disagree”, later further adapted through Rasch analysis in a sample of more than 200 completed questionnaires (Bullock & Young, 2003) to a slightly shortened 30 items. This later development also saw the addition of a new subscale: Advocacy/Enrichment (Bullock & Young, 2003)

3:3.4.1 PLE Involvement

Development of the MHRM was informed by Young and Ensing’s recovery model (Young & Ensing, 1999), following the conceptual domains identified through the narrative synthesis of interviews with 18 people with lived experience, (Campbell-Orde et al., 2005).

3:3.4.2 Psychometric properties

Details of the initial development remain somewhat hazy, as although the MHRM and its development are described in the compendiums of recovery measures by both Ralph et al (2000) and Campbell-Orde and colleagues (2005), none of the development process or initial psychometric testing was captured in peer-reviewed

publications. Despite this, the tool has been selected for use within a number of more recent studies, which have scrutinised its properties.

Chang and colleagues (Chang et al, 2013) used Rasch analysis to explore the factor structure and internal consistency of the questionnaire. They identified a number of redundant items, and suggested instead a reduced 26-item, unidimensional version of the measure, with a 4-point rating scale. Redundant items removed from the measure included a number of items pertaining to spirituality, medication use and risk, reflecting common points of debate in the recovery literature, as discussed in Chapter 2. The observations made by Chang et al have been supported by the findings of several later studies which also identify a unidimensional structure (Armstrong et al., 2014; Bola et al., 2016; Ye et al., 2013), but other studies have challenged Chang and colleagues' findings. Drapalski and colleagues tested the validity of a unidimensional structure using CFA techniques, but found that the single factor did not produce a consistently good fit (Drapalski et al., 2016). Testing of the Dutch translation revealed a three-factor solution (van Nieuwenhuizen et al., 2014), and analysis of the Portuguese version revealed six factors (Oliveira-Maia et al., 2016). As in Chang and colleagues' study, item and scale redundancies have been reported in several papers, but although superior psychometric properties (higher internal consistency of total and subscales; higher correlations with convergent measures) have been reported for a range of modified MHRM scales, there is not yet any agreement as to what number of items is best; the modified measures range in size from 29 items (van Nieuwenhuizen et al., 2014) to ten (Armstrong et al., 2014). The modifications have yet to be independently assessed or used in any subsequent research. Although structural validity testing of the original 30-item measure has been inconclusive therefore, there is insufficient support for any modified instrument to yet be recommended.

3:3.4.3 Use in Practice

The MHRM has been used as an outcomes measure within evaluations of ROP's such as the Illness Management and Recovery programme (Roosenschoon et al., 2016a) and as a measure of convergent validity in the development or testing of new measures (e.g. Recovery Star; Killaspy et al., 2012a). Studies have also used the

MHRM to measure personal recovery in explorations of the relationships between recovery and other psychosocial variables such as stigma (Chronister et al., 2013).

The instrument is designed for use as a self-report questionnaire, which the developers state takes approximately five minutes to complete (Young & Bullock, 2005). Although the format of the questionnaire appears user-friendly; the thirty items that comprise the MHRM are positively worded in the first person and all use the same 1-5 scale; as no service user feedback has been published since the tool's initial development, the acceptability of the MHRM to people with lived experience of recovery cannot yet be evaluated. No studies yet have reported on how – or whether - the MHRM can be used within a support relationship.

3:3.4.4 Scottish context & CHIME

The MHRM was developed in English, and the majority of questions fit with the Scottish view of recovery, although there are small points of divergence. Two items of this instrument relate to the respondent's spirituality; although spirituality is included as a subtheme within the CHIME framework, and within Scottish recovery narratives (Brown & Kandirikirira, 2007) it is not a prominent feature of Scottish recovery. With a diminishing proportion of the Scottish population declaring a religion (Scottish Government, 2014; 2018b), it could be argued that inclusion of spirituality is increasingly at odds with the Scottish culture. Some of the shorter versions of the MHRM outlined above do remove items relating to spirituality and it may be that one such revision would prove to be a better fit for the Scottish population. Chang and colleagues (Chang et al., 2013) for example removed items relating to spirituality, arguing that whilst spirituality is relevant to recovery, it relates to a specific mechanism for achieving recovery, rather than reflecting a fundamental attribute of the concept, and should therefore not comprise an aspect of instruments measuring recovery as a process/outcome. Spirituality is discussed within more detail in Chapter 2.

The MHRM also includes several items which fall within the domain of 'basic functioning', which were found not to map to CHIME by (Shanks et al., 2013), although within the current review, these items were found to fit within the meaning of sub-theme of 'quality of life'. Issues relating to basic functioning appear within several areas of the recovery narratives evaluated by (Brown & Kandirikirira, 2007),

who discuss issues relating to financial security, low income, benefits and housing as themes within treatments and supports for recovery. As discussed within Chapter 2, daily living/functioning is conceptualised as a secondary component of personal recovery within this thesis. MHRM therefore does in general terms fit with a Scottish recovery model, but would merit from further testing of different iterations of the tool with a Scottish sample before recommendations can be made.

3:3.5. Questionnaire about the Process of Recovery

Items: 22	Scale: 0-4 Likert	Reviews (% score): 2(78%)	Psychometric Publications: 5	
Recovery domains/ subscales:	<i>understanding of self; empowerment (rebuilding of self); Active participation in life; rebuilding social support (Rebuilding life); A process of change; Desire for change (Hope for a better future)</i>			
Example question:	<i>I am basically strongly motivated to get better</i>			
SU Involvement:	Use in Practice:	Psychometrics:	Paper Quality:	CHIME:
4	5	28.6	-1	5(100%)

Table 3.10: Properties of the Questionnaire about the Process of Recovery

Developed in England by a collaborative research group based at Manchester University, The Process of Recovery Questionnaire (QPR) is a self-report measure of recovery, with questions measured on a 5-point Likert scale ranging from Strongly Disagree to Strongly Agree (Neil et al., 2009). Item selection for QPR was guided by earlier qualitative research by the team (Pitt et al., 2007), in which three overarching recovery themes (rebuilding life; rebuilding self; hope for a better future) were identified. Originally consisting of twenty-two items, QPR-22 was later reduced to fifteen questions (QPR-15) in a larger follow-up study by Law et al (2014).

3:3.5.1 PLE Involvement

Service users were heavily involved throughout the development of QPR. Item development was based on the findings of qualitative interviews with seven people with lived experience of psychosis. Two service user researchers were included within the collaborative research team, and a steering committee of up to 15 service users was consulted regularly throughout the process. The steering group contributed to item generation, provided feedback on QPR drafts, and facilitated with the design and running of all elements of the research project, including the original qualitative study and the later validation testing. Procedures for the inclusion of people with lived experience were rigorously detailed in a paper by the team in 2013 (Neil et al., 2013).

3:3.5.2 Psychometric properties

The QPR received the highest psychometrics score of any included instrument in this review, with excellent reliability and validity across five published studies. In the first published account of the QPR's psychometric properties, Neil and colleagues conducted an exploratory factor analysis of data collected from 111 adults with history of psychosis, identifying two factors explaining approximately 40% of the variance. The authors labelled the factors as Inter and Intrapersonal recovery, the internal consistency of which were excellent (interpersonal $\alpha=.94$) and moderate (intrapersonal $\alpha=.77$). The two subscales show good convergent validity with a range of measures including measures of hopelessness and self-esteem (Neil et al, 2012; Beck et al, 2012). Subsequent factor analyses with larger samples ($n=300 - 399$) have provided varying levels of support for the two-factor model. Whilst Chien & Chan's (2014) exploratory factor analyses suggested a three-factor structure, Williams et al (2015) found the two-factor structure to have good fit statistics, particularly for the Intrapersonal subscale. Williams and colleagues also found however that the Interpersonal subscale showed low internal consistency (.49), had several factor loadings of less than 0.5, and showed poor sensitivity to change. Further research by the Manchester team (Law et al, 2014) also found the two-factor structure to have inadequate fit statistics, and the developers responded by removing items with low factor loadings, to produce a new 15-item QPR consisting entirely of questions from the intrapersonal subscale (QPR-15). Law's study showed QPR-15 to have a unidimensional structure and high internal consistency ($\alpha= .93$). This was supported by the findings of Williams and colleagues (2015), who found the QPR-15 single-factor model to have good fit statistics and high internal consistency ($\alpha=.89$), and good convergent validity with the RAS ($r=.73^{***}$). Psychometric properties of both the original and reduced measure are therefore reported.

QPR-22 has good convergent validity with measures of recovery related constructs including self-efficacy ($r=.5^{**}$; Chien & Chan, 2013) and general health ($-.52^{**} \geq r \leq -.83^{**}$; Neil et al., 2009). Internal consistency estimates are high ($\alpha \geq .9$), and test-retest reliability findings are good. Correlations between scores at time 1 and time 2 of $r=.77$ and $r=.87$ were reported for the two subscales by the team at Manchester University (Neil et al, 2009), although as the paper reports Pearson's correlations with no other statistical assessments, this on its own does not provide good evidence

of reliability, as discussed in Chapter 4. Sensitivity to change measured against WEMWBS was moderate for both subscales of QPR-22 (Williams et al, 2015).

Internal consistency for QPR-15 is also high ($.89 \geq \alpha \leq .93$), and convergent validity has been established with a range of measures including RAS ($r=.73^{**}$; Williams et al, 2015), and quality of life measures ($r=.54^{**}$; Law et al, 2014). QPR-15 also shows strong inverse relationships with measures of clinical symptoms (e.g. Calgary Depression Scale for Schizophrenia (CDSS); $r = -0.56^{**}$; Williams et al, 2015). A 'fair to good' relationship between QPR scores at time 1 and those at time 2 (two-week interval; $ICC=.74^{**}$) was reported by Williams et al (2015), and a similar size effect was found in the earlier study by (Law et al., 2014), although this was slightly lower than for the subscales of the 22-item version. Sensitivity for the 15-item version was low however (Williams et al., 2015).

There are approximately equal amounts of information available for the two versions of this measure; both appear to have generally good validity and reliability. As the 15-item version is developed based on the structural validity testing of the longer measure, and given that shorter measures are quicker and easier to complete, the QPR-15 is recommended.

3:3.5.3 Use in Practice

One of the most rigorously tested recovery measures, the QPR has been accepted as the measure of choice within many recovery studies both within the UK and further afield over recent years, although only in its original 22-item format. It has been used within several research projects since 2011, including two evaluations of therapeutic interventions for people with psychosis (Morrison et al, 2012; Hutton et al, 2014). It was also used as the primary outcome measure in Slade and colleagues' RCT of recovery-oriented programme REFOCUS, with the researchers arguing that it is "*the only service user-rated measure of personal recovery which has been developed in England and with adequate psychometric properties*" (Slade et al, 2011, p.4), although advances in the psychometric testing of I.ROC and the MHRS can now contest this claim.

Alongside the heavy involvement of service users in the tool's development, the impact of completing QPR-22 on participants has also been assessed; Neil and

colleagues reported that for the majority of participants, distress following completion of the QPR was rated low (61.9% scored <1; 93.7% <5 on a distress rating analogue scale developed by the team) (Neil et al., 2009). QPR is a relatively brief measure, particularly the reduced 15-item version (Law et al., 2014); questions are positively worded and are all rated on the same five-point scale. The lived experience panel in Law and colleague's review of measures described the QPR-22 as "easy to complete, very user-friendly; overall, an effective measure of personal recovery" (Law et al., 2012, p.200).

The QPR remains a self-report measure however, and whilst it has been used in an interview format within research (Lofthus et al., 2016), no studies have yet reported on its use as a key working tool. With increasing pressures on staff time and outcomes now required by commissioners in many countries, the brevity and lack of staff input could be seen as positive features of this measure, however,

"collaborative, completion could support the development of important therapeutic relationships (Priebe and McCabe, 2008) and enable service users to take an active role in their recovery (Priebe et al., 2005)" (Tickle et al., 2013, p.196).

3:3.5.4 Scottish context & CHIME

One of only three instruments included within this review developed in the UK, the QPR is a good fit for the Scottish context both linguistically and in the underlying model of recovery. All items map onto the CHIME framework, and removal of items for the reduced questionnaire QPR-15 has not changed this. Taking into account the strong psychometrics, heavy involvement of people with lived experience and positive reviews of the measure by the lived experience panel (Shanks et al., 2013), the QPR appears therefore to be a valid, reliable and usable tool that would work well in the Scottish context. Its relatively recent development and accrual of evidence supporting its validity has meant that the QPR was not used as a measure for convergent validity testing of I.ROC within this thesis, but findings within this thesis will be compared to QPR where possible.

3:3.6. Recovery Assessment Scale

Items: 41	Scale: 1-5 Likert	Reviews (% score): 6(76.5%)	Psychometric Publications: 14
Recovery domains/ subscales:	Personal Confidence and Hope, Willingness to Ask for Help, Goal and Success Orientation, Reliance on Others, No Domination by Symptoms.		
Example question:	I have my own plan for how to stay or become well		

<i>SU Involvement:</i>	<i>Use in Practice:</i>	<i>Psychometrics:</i>	<i>Paper Quality:</i>	<i>CHIME:</i>
3	5	18.6	-0.7	5(93%)

Table 3.11: Properties of the Recovery Assessment Scale

Created in 1995, the Recovery Scale, later called the Recovery Assessment Scale (RAS) is the earliest developed recovery measure in this review (Giffort et al., 1995). The RAS consists of five subscales (see Table 3.11), and is based on the assumption that recovery is a process (for discussion of recovery as a process v. outcome, see Chapter 2. Questions are rated on a five-point Likert scale of strongly disagree to strongly agree. The RAS has been translated into Japanese, Portuguese, Hebrew and Chinese, and published studies have supported its validation in a growing number of countries. Inclusion of this tool within all identified individual-level recovery measure reviews exemplifies the longevity and robustness of the RAS, and has led at least one review to conclude that the RAS is the “*best currently available measure of personal recovery*” (Cavelti et al., 2012, p.19). The RAS is certainly the most widely used and most commonly evaluated recovery measure included within this review. Whilst fourteen papers assessing the psychometric properties of this tool were found to meet inclusion criteria for the current review, the literature review conducted in Chapter 2 identified over 70 papers referring to the RAS, the majority of which have been reviewed in a recent systematic review of the measure (Salzer & Brusilovskiy, 2014).

3:3.6.1 PLE Involvement

RAS was constructed from the narrative analysis of four personal recovery stories. The initial 39 items generated from these narratives were assessed by an independent panel of people with lived experience, and as a result of their feedback, a further two items were added (Giffort et al, 1995).

3:3.6.2 Psychometric properties

As may be expected from the large number of studies investigating the validity and reliability of the RAS, this measure scores highly for its psychometrics, rated second overall behind the QPR. Test-retest reliability is good over a period of 14 days (Corrigan et al, 2004). Convergent validity has been extensively assessed; large correlations have been reported across several studies with a range of instruments,

including measures of recovery¹³ hope¹⁴, resilience¹⁵ and clinical symptoms¹⁶. Internal consistency for the measure is very high ($\alpha \geq .9$), and there is considerable support for the existence of the five recovery domains (e.g. Corrigan et al, 2004; Jorge-Monteiro & Ornelas, 2016; Cavelti et al, 2017). Rasch analysis of the original RAS (Hancock et al, 2011) provides the only challenge to the five-factor model. Hancock's analysis identifies several redundant items, and reports a ceiling effect, with approximately 40% of participants selecting 'agree' or 'strongly agree' on all questions. Participants scoring high on RAS were therefore invited to take part in a series of focus groups, from which seven themes emerged as areas indicative of later recovery¹⁷, only two of which – representing clinical and personal recovery – were felt to be covered in satisfactory detail by RAS (Hancock et al, 2012). From these conclusions, Hancock and colleagues identified items to add to RAS, creating an adaptation entitled Recovery Assessment Scale-Domains and Stages (RAS-DS), a 38-item questionnaire with a 4-point rating scale from "untrue" to "completely true". Rasch analysis showed RAS-DS to be unidimensional, with generally good fit statistics, closely matched item and person difficulty and very high internal consistency ($\alpha = .96$).

Although the overall psychometric properties of the original measure are good, redundant items have been identified within several studies. This has resulted in a range of adaptations to the original measure being proposed, consisting of between 20 (Roe et al, 2012) and 38 (Hancock et al, 2015) of the original 41 items. Of these modified instruments, only the 24-item version (Corrigan et al., 2004) has been independently assessed. Interestingly, whilst the study by Corrigan and colleagues reported that only 24 items corresponded to the five factors identified through EFA, the researchers did not recommend the removal of the other 17 items. Nevertheless, these 24 items have been adopted as the full measure in several subsequent

¹³ Recovery Markers Questionnaire (Ridgway & Press, 2004); $r = 0.72^{**}$ (Mak et al, 2016b); Stages of Recovery Scale (Song & Hsu 2011), $r = 0.71^{***}$ (Young et al, 2017)

¹⁴ Herth Hope Index (Herth, 1992); $r = 0.89^{**}$ (Chiba et al, 2010b)

¹⁵ Resilience Scale (Oshio et al, 2002); $r = 0.76^{**}$ (Chiba et al, 2010b)

¹⁶ BASIS-32 (Eisen et al, 1999) $r = -0.58^{**}$ (Chiba et al, 2010b)

¹⁷ Later recovery themes: (a) accepting your illness and gaining control over the symptoms (b) self love and an optimistic future orientation (c) doing things for pleasure (intrinsic motivation) and experiencing pleasure and satisfaction from the things you do, (d) contributing through meaningful activity, (e) having a diversity of friendships, (f) being needed and valued by others and (g) coming to terms with family relationships (Hancock et al, 2012)

papers, and psychometric evaluations of the RAS-24 now account for half of all RAS studies in this review (Cale et al., 2015; Chiba et al., 2010; Fukui et al., 2012; Girard et al., 2015; Jorge-Monteiro & Ornelas, 2016; Mak et al., 2016b; McNaught et al., 2007; Young et al., 2017). Due to the high proportion of literature dedicated to the revised measure (RAS-24), it is considered separately in this section.

3:3.6.3 RAS-24

RAS-24 comprises 24 of the original items, and maintains the five-factor structure, with factors ranging in size from 3 (willingness to ask for help) to 9 (personal confidence & hope) items. Like its predecessor, RAS-24 has been shown to have good validity and reliability; internal consistency of the RAS-24 is almost as high as the original measure ($.89^{18} \geq \alpha \leq .93^{19}$). The five-factor structure is again found to be a good fit, with factors accounting for between 50 and 57% of the variance (e.g. Cale et al, 2015; Young et al, 2017), and internal consistency of the subscales in excess of .7. Test-retest reliability was assessed in a sample of 24 participants; Chiba et al (2010b) found a strong relationship between RAS total scores at time 1 and those completed 1-2 weeks later ($ICC=.81^{***}$). Weighted Kappa's were also good ($>.61$) or moderate (.41-.6) for the majority of items. Like its predecessor, RAS-24 shows good convergent validity with a range of instruments including measures of clinical symptoms²⁰ (DASS; $r=-.42^{**}$; Cale et al, 2015), resilience²¹ ($r=.76^{**}$; Chiba et al, 2010b) and personal recovery (e.g. STORI; $r=.71^{***}$; Young et al, 2017).

The strength and proliferation of examinations of the psychometric properties of RAS have led this measure to be widely used within recovery research. RAS (both the original and RAS-24) has been frequently utilised as a measure of convergent validity in the development of other recovery measures, including four of the measures within this review (STORI (e.g. Andresen et al, 2006; 2013); IMRS (e.g. Fardig et al, 2011); QPR (Williams et al, 2015); SISR (e.g. Chiba et al, 2010a), where it is generally found to have significant positive correlations with the other recovery measures. RAS-41 was also included as a measure of convergent validity

¹⁸ Chiba et al, 2010

¹⁹ Mak et al, 2016b

²⁰ Depression Anxiety Stress Scale (DASS); Lovibond & Lovibond, 1995

²¹ Resilience Scale; Oshio et al, 2002

in the initial validation of I.ROC (Monger et al, 2013), the results of which are presented in Chapter 6. The longer scale was used during this evaluation because it is a more exhaustive measure, and because the majority of evidence supporting the validity and reliability of RAS-24 has been published since the I.ROC study, however it is acknowledged here that as RAS-24 demonstrates comparably good psychometric properties but in a shorter format, this is likely to prove a better tool for use in practice.

3:3.6.4 Use in Practice

Alongside its frequent use as a benchmark in the development of other recovery measures, the RAS has widely been used as an outcomes measure in other recovery research. More than forty other recovery studies have included the RAS, including several randomised controlled trials of interventions as varied as WRAP (Cook et al, 2012a; RAS-41), peer-led recovery education (Cook et al, 2012; RAS-41) and self-referral to inpatient treatment (Moljord et al, 2017; RAS-24). Authors have also used the Recovery Assessment Scale in research investigating the construct and processes of recovery (RAS-41: Jorgensen et al., 2015; RAS-24: Lloyd et al., 2010), and exploring the relationship between recovery and other cognitive and psychosocial variables such as self-stigma (RAS-24: Oexle et al., 2017), sensory processing (Pfieffer et al, 2014), cognitive insight (RAS-24: Giusti et al., 2015) and helping behaviours (RAS-41: Firmin et al., 2015).

Despite the prevalence of the RAS within research, its feasibility for use in practice has rarely been evaluated. Developers do say that the tool can be completed as an interview as well as a self-report (Burgess et al., 2010), and acceptability is generally reported to be good; service users have reported that the RAS-41 is “*easy to complete and understand; overall an effective measure*” (Law et al., 2012, p.198). Briefer modifications of the instrument including RAS-24 and RAS-DS are likely to score even better in this regard; Hancock and colleagues (Hancock et al, 2015), found that the majority (~70%) of participants describe the RAS-DS to be quick and simple to complete; and to be “*an acceptable and relevant instrument*” (p.628), although there were some who found the tool too demanding. Unlike the original instrument, feasibility of RAS-DS in a practice setting has been evaluated. Service users completed the instrument, and discussed the results with a practitioner in

Hancock et al's study; the authors report that service users and staff "*commented on its value for facilitating recovery-focused goal setting*" Hancock et al, 2015; p. 628).

3:3.6.5 Scottish context & CHIME

Developed in English, RAS fits reasonably well with the Scottish understanding of recovery, although there is perhaps more of a focus on symptoms, and less on relationships than would be indicated by Brown and Kandirikara's (2007) definition. Whilst RAS is not used in practice within Scotland, it was used in the original evaluation of the I.ROC (RAS-41; see Chapter 4), and found to correlate strongly with the Scottish measure, as outlined in Chapter 6 (Monger et al, 2013). Although participants preferred using I.ROC, the RAS was neither their favourite nor least preferred measure from the battery, suggesting that it could be acceptable to Scottish service users (Ion et al., 2013).

The majority (93%) of items on the 41-question RAS were found to map to CHIME in the current review, with between 2 (Identity) and 12 (Meaning) items corresponding to each of the five categories. Only three items in the original, and two in the 24-item version were found not to fit within the CHIME components; these related to clinical recovery (e.g. 'my symptoms interfere less and less with my life').

Unlike the longer version, RAS-24 does not cover aspects of recovery that fit within the wider conceptualisation of recovery employed within this review; RAS-41 includes questions on physical health and 'having fun' which fit with the secondary domain of 'health and wellbeing' (see Chapter 2 for discussion of recovery conceptualisations). People looking to employ a recovery measure within research or practice settings should therefore consider the conceptualisation of recovery that they are looking to evaluate/ engender and scrutinise the questions included within each measure before choosing between different RAS iterations. In the case of this thesis, RAS-41 provides the better fit.

3:3.7. Recovery Process Inventory

Items: 22	Scale: 1-5 Likert	Reviews (% score): 6(43%)	Psychometric Publications: 2		
Recovery domains/ subscales:	<i>Hope, Empowerment/Self-control, Self-esteem, Self-management, Social Relations, Family Relations, Housing, Employment, Stigma, and Spirituality.</i>				
Example question:	<i>Even when I don't care about myself, other people do.</i>				
SU Involvement:	Use in Practice:	Psychometrics:	Paper Quality:	CHIME:	
2	2	10.9	-1.5	5(91%)	

Table 3.12: Properties of the Recovery Process Inventory

The Recovery Process Inventory (RPI; Jerrel et al, 2006) was developed by Jerrell and colleagues in 2006 as a personal recovery self-report instrument. Jerrell et al defined the recovery process as including ten domains (Table 3.12).

3:3.7.1 PLE Involvement

The RPI was largely developed by a working group of staff. Service user participation was through a series of four focus groups use to help “*broaden the definition of recovery*” on which the measure is based (Jerrell et al., 2006, p.465). From the focus groups, the definition was subsequently expanded to include domains such as self-management, self-efficacy, and elements of wider wellbeing for example having a good place to live and general health. A ‘consumer’ evaluation team was then used to pilot the measure, and to run the psychometric testing.

3:3.7.2 Psychometric properties

Although appearing frequently within recovery measure reviews, psychometric evaluation of RPI is limited, with only two papers reporting reliability and validity of the tool, however the results reported are nevertheless encouraging. Jerrell and colleagues evaluated the validity of their newly developed measure in a sample of 459 people with severe mental illness (Jerrel et al, 2006). Principle Components Analysis revealed six factors explaining 47% of the variance. These factors were labelled: anguish, connected to others, confidence and purpose, others’ care and help, good living situation, and hopeful/cares for self. Internal consistency of five of these factors was high (.71-.81), however the ‘others’ care’ factor had a lower alpha of .56. Structural validity was not assessed in the later study by Jaeger and colleagues, however this second study does again report internal consistency statistics for the six factors, finding just two to be acceptable (>.7), although when reassessed using Ponterotto and Ruckdeschel’s (2007) acceptability matrix, only

one factor (Others' care/help) failed to reach the minimum standard. Internal consistency for the measure as a whole was good ($\alpha=.84$).

Jerrel and colleagues also reported two-week test-retest reliability for the RPI in a sub-sample of 185 participants, with the correlation coefficients between scores at the two time points ranging from .36 to .63 for the six factors (no statistics were reported to for the measure as a whole). As the effect sizes were reported in isolation, and without describing the analysis used however, no strong conclusions can be drawn regarding the test-retest reliability as reported in this study. For discussion of psychometric analyses including test-retest, see Chapter 4.

Convergent validity findings from the study by Jaeger and colleagues are equally mixed. Whilst the RPI correlates significantly with measures of recovery related constructs including hope ($r=.64^{***}$), and with measures assessing the quality of support (e.g. Scale to assess therapeutic relationship, $r=-.43^{***}$), no significant relationship was found between RPI and the Recovery Attitudes Questionnaire (RAQ-7; $r=.03$, n/s).

3:3.7.3 Use in Practice

The service user panel within Law et al's (2012) study found that the RPI is not user-friendly; many of the RPI items are negatively framed, and some were felt to be confusing. They also concluded that this instrument does not holistically measure recovery, with no questions pertaining to important domains such as social relationships, but several focusing on medication adherence (Law et al., 2012). No further reports regarding the use of the RPI in practice have yet been published

3:3.7.4 Scottish context & CHIME

Ninety percent of the RPI's 22 items map to CHIME, and these cover all five CHIME domains. Items not mapping to CHIME pertain to issues such as safety and housing, both of which have been identified as aspects of personal recovery missing from the CHIME framework (Bird et al., 2014) and are therefore relevant to wider conceptualisations of recovery. Safety and housing fall under the domain of 'Daily Living', a component of the recovery model used within this thesis (see Chapter 2). Thus, whilst the RPI does not fit well with the CHIME framework of recovery, it is largely consistent with recovery as conceptualised within this thesis.

Given the negative language and low acceptability to service users however, in its current form, the RPI may still not be a good fit for measuring recovery in Scotland.

3:3.8. Recovery Star

Items: 10	Scale: 10pt Ladder	Reviews (% score): 3(40%)	Psychometric Publications: 2	
Recovery domains/ subscales:	<i>Managing Mental Health; Physical Health & Self-Care; Living Skills; Social Networks; Work; Relationships; Addictive Behaviour; Responsibilities; Identity & Self-esteem; Trust & Hope.</i>			
Example question:				
SU Involvement:	Use in Practice:	Psychometrics:	Paper Quality:	CHIME:
2	5	16.4	-0.5	9(100%)

Table 3.13: Properties of the Recovery Star

The Mental Health Recovery Star (MHRS; MacKeith et al, 2008), developed in England by Triangle consulting and the Mental Health Providers Forum, is described as “an holistic and personalised outcomes measurement and recovery-focused key working tool” (Onifade, 2011, p.78). Adapted from its predecessor the Outcomes Star (Triangle Consulting, 2006), the Recovery Star follows the same format, consisting of ten indicators, each measured on a ten-step ‘ladder of change’, with a descriptive statement for each step (Onifade, 2011; Imonioro, 2010). Based on Prochaska et al’s (1994) ‘transtheoretical model of change’ (see Chapter 2, section 2:3.3.5i), the ladder comprises five stages (Stuck; Accepting Help; Believing that things can change; Learning new skills/approaches to maintain recovery and Self-reliance), (Onifade, 2011; Mackeith and Burns, 2004; 2008).

The Recovery Star is designed to be used as a collaborative tool, with both the end user and the professional supporting them present during the process, during which the respondent is asked to identify their current stage of recovery against the ten indicators. Answers are reached through discussion, and if the person and the worker can’t agree, two sets of scores are recorded. Narrative is also captured alongside the scores. Scores are mapped onto a star graphic, to give a visual representation of their current level of recovery.

3:3.8.1 PLE Involvement

Developed from the earlier Outcomes Star, work to adapt the measure involved collaboration with practitioners, managers and service users from across several NHS services. Service user recommendations led to the inclusion of ‘hope’ and ‘identity’ as two of the Recovery Star indicators. The draft measure was piloted with 114 service users, who provided positive feedback on the measure. Service user

feedback has also been used to develop the staff guidance, for example feedback from BME service users highlighted a need for a greater focus on spirituality and community within the guidance (Onifade, 2011). Service users in a study by Killaspy and colleagues (2012b) provided positive feedback on the measure; 66% found it easy to decide how to score themselves (66%), and 85% felt that the tool was useful for reflecting on how they had been doing, and in collaborative support planning.

3:3.8.2 Psychometric properties

Psychometric properties of the Recovery Star have been reported in two published articles, with mixed results. The Recovery Star shows 'excellent' internal consistency ($\alpha=.85$; Dickens et al., 2012) and good test-retest reliability (item ICC's: .7-.89 (staff); .71-.82 (collaborative rating); Killaspy et al, 2012a), and most items show significant change over time (average of 157 days; Dickens et al, 2012). Inter-rater reliability of staff-only ratings are reported as showing relatively low reliability however (ICCs=.46 (Addictive behaviour) - .77 (Work)), leading the authors to question whether the MHRS is usable as an outcomes measure. Yet this suggestion has led to several rebuttals, including critiques of Killaspy and colleagues' methodology which largely focus on the fact that inter-rater reliability was assessed using staff-only ratings; as the tool is designed to measure service user's personal perceptions of their recovery (Onifade, 2011), this limits the validity of the assessment methodology, and the application of the findings in practice (Dickens, 2012; McDonald, 2012; MacKeith, 2012.) Further testing of the tool's inter-rater reliability using self-assessments or collaborative assessments is therefore recommended.

Exploratory factor analysis of routinely collected MHRS data (n=203) identified two factors, accounting for 48% of the variance, with 'very good' (Factor 1: $\alpha=.85$) and 'acceptable' (Factor 2: $\alpha=.73$) internal consistency (Dickens et al, 2012). Two items – 'Relationships' and 'Addictive Behaviour' did not load onto either factor; inter-item correlations showed a weak relationship between 'addictive behaviour' and four other items, further suggesting that this item may not fit well within the questionnaire.

Killaspy et al (2012a) evaluated convergent validity with measures of social functioning (Life Skills Profile: LSP; Parker et al, 1991) and personal recovery (MHRM). Although some staff-only rated Recovery Star subdomains demonstrated good convergent validity with LSP (.36 (Work) $\geq r \leq$.71 (Living Skills)), the majority

($n=7$) of domains on the service-user-rated MHRS did not correlate strongly ($r \geq .7$) with the chosen comparison measure of personal recovery (MHRM). The authors conclude that it may therefore not be accurate to describe the Recovery Star as a measure of personal recovery. Reporting of this finding is flawed however; the authors set the level of 'acceptability' for convergence very high ($r \geq .7$), and did not report significance levels for any correlation making it difficult to interpret these findings. For the sake of this review, significance levels were calculated using an online calculator²² which revealed that the majority of correlations between subscales/items on the two measures do in fact reach significance. Furthermore, the size of the correlation between total scores on the two measures was not assessed, so assumptions about the tool's validity as a measure of recovery are based purely on correlations between MHRM subdomains and MHRS individual questions. The findings from Killaspy et al (2012a) cannot therefore be taken as evidence of the lack of convergent validity of the measure. More testing is needed to examine the relationship between the MHRS and measures of personal recovery, but on the basis of this review, it is hypothesised that contrary to the conclusions of Killaspy and colleagues, the MHRS will show significant positive correlations with other measures of the construct. Testing in Chapter 6 of this thesis provides the first independent test of this hypothesis; assessment of the convergent validity of the MHRS and I.ROC returns a significant positive correlation between the two measures, thus supporting this hypothesis (see Chapter 6 for details).

3:3.8.3 Use in Practice

As a key working tool, the Recovery Star is designed to facilitate conversation about recovery, and to help structure discussion which can lead to outcome focused planning (Onifade, 2011). Staff and service users have reported that the tool is useful for care planning and as a clinical outcome measure (Killaspy et al, 2012b). This instrument is more widely used in practice than many of the other recovery measures described here, employed by a growing number of mental health agencies across the UK and beyond (Lloyd et al, 2015). Although no validation data was

²² Two calculators were used for corroboration of p values (Soper, 2006; Vassarstats, 2001), and were checked against the table of significance for Pearson correlation coefficients in (Howitt & Cramer, 2005)

published until 2012, it has been used by external agencies since 2008 (Mental Health Providers Forum, 2009; Beazley, 2011), and its implementation within mental health services has been supported by the government in England (Tickle et al, 2014). Publications relating to the feasibility and use in practice of the Recovery Star also outweigh those of most other measures.

In a qualitative study with NHS mental health practitioners, Tickle and colleagues (Tickle et al, 2013) found that the Recovery Star is generally considered to be useful both as a tool to gather new information and as an outcomes measure, although some practitioners described the tool as complicated or difficult. Respondents highlighted the importance of the relationship between the professional and the service user, and felt that the Recovery Star could help to establish this particularly when used collaboratively, although it was acknowledged that this is often not the case in practice.

Used to evaluate a new Mental Health Recovery Service in Queensland, Australia (Lloyd et al, 2015), Recovery Star scores showed a positive improvement over the course of the three-month pilot. Lloyd and colleagues used the Recovery Star scores as the basis for a series of suggestions for service improvement, for example the inclusion of an employment intervention and specialist addiction training for staff. Lloyd and colleagues conclude that the MHRS is a useful ROM, which is well liked by service users and staff. Low baseline scores and little change over time could also suggest issues with the wording, scoring or inclusion of measure items however. For example, people who do not identify paid work as a relevant outcome, are according to the guidelines unable to score higher than seven on the scale (Dickens et al, 2012). As no other measures were used as a benchmark during this trial, it is difficult to draw any conclusions.

3:3.8.4 Applicability to the Scottish context

One of only two measures within this list developed within the UK, the Recovery Star is comprehensively applicable in Scotland, and although the measure is a relatively good fit with CHIME, there are items within the Recovery Star, in particular regarding addictions, that are not a good fit with CHIME, or with recovery as realised in Scotland (Brown & Kandirikirira, 2007). Several other items (e.g. physical health) are

covered by CHIME subthemes, but their placement is fairly subjective, leading to substantial differences between the current review and that of (Shanks et al., 2013).

Furthermore, as the convergent validity testing of the Recovery Star with other recovery scales has returned results that are reported as not supportive of its validity (although this is contested), it cannot yet be confidently adopted as a measure of personal recovery. New findings are reported within this thesis however that do support the convergent validity of the Recovery Star (see Chapter 6 for details). Despite the issues highlighted in published evaluations, the Recovery Star is being used within Scotland; a 2016 report from the Scottish Recovery Network details how one residential service in Scotland has embedded the CHIME framework in practice and how use of the Recovery Star has facilitated the process. The report says,

“The CHIME theme is also explored [with the resident], in depth, in relation to the ten indicators from the Mental Health Recovery Star. This results in the identification of the resident’s needs and goals which are reviewed on an ongoing basis” (CHIME as a mechanism for support planning; Scottish Recovery Network, 2016).

This suggests that the Recovery Star may indeed be useful within a Scottish context, but given the problems stated above, the Recovery Star is likely to need adjusting before it can be used with certainty as a measure of personal recovery in Scotland. The unusual positioning of this instrument as a measure and a key working tool certainly merits further consideration however, and as the stated dual-purpose of MHRS is more comparable to the intended use of I.ROC (see Chapter 5) than any other measure included within this review, the MHRS was therefore chosen as a measure of convergent validity during the psychometric testing of I.ROC (Chapter 6).

3:3.9. Self-Identified Stage of Recovery

Items: 5	Scale: 1-6 Likert	Reviews (% score): 6(47%)	Psychometric Publications: 3		
Recovery domains/subscales: Moratorium, Awareness, Preparation, Rebuilding, Growth					
Example question: I know who I am as a person, and what things in life are important to me					
SU Involvement:	Use in Practice:	Psychometrics:	Paper Quality:	CHIME:	
0	1	16.4	-0.7	4(100%)	

Table 3.14: Properties of the Self-Identified Stage of Recovery

The Self-Identified Stage of Recovery (SISR; Andresen, 2007) is a brief measure designed by Andresen and colleagues, developed for inclusion in the Australian Integrated Mental Health Initiative (AIMHI; Oades et al., 2005). The measure was

developed using the Stage Model of Recovery (Andresen et al., 2003); developed from a qualitative synthesis of published service user accounts, the Stage Model comprises five sequential stages of recovery and four component processes (see Appendix 7). SISR consists of two parts: SISR-A is a single-item, forced choice measure comprising five statements representing the five recovery stages. Participants are asked to select the statement that is most applicable to them. They are also asked to answer, for each statement, whether it reflects how they feel 'now', 'in the past' or 'never', in order to measure progression through the stages. The second part, SISR-B, comprises four items assessing the recovery components of the stage model, rated on a six-point Likert scale ranging from 'disagree strongly' to 'agree strongly'.

3:3.9.1 PLE Involvement

There is no mention of any service user involvement in item development; items were instead written by one researcher, and approved by two reviewers familiar with the stage model (Andresen, 2007).

3:3.9.2 Psychometric properties

Internal consistency ($\alpha=0.8$) is 'excellent' and test-retest reliability of the SISR is good; test-retest scores over a 1-2-week period show that ICC's and Weighted Kappa's range from moderate to high for the scores on the two parts of the scale (Kappa: A= .4; B=.12-.57; SISR-B ICC=.68) (Chiba et al., 2010a). Because of the brevity of this tool, structural validity has not been assessed. Convergent validity evaluations with measures of recovery show the SISR to correlate significantly with the RAS (Andresen et al., 2010; Chiba et al., 2010a; McNaught et al., 2007), the MHRM (Andresen et al., 2010), and the STORI (Andresen et al., 2006). Effect sizes do vary; whilst Chiba found large effect sizes with RAS-24 (SISR-A: 0.61**; SISR-B: .76**; (Chiba et al., 2010a), Copic and colleagues found the SISR to correlate significantly with only the 'Personal confidence & hope' subscale of RAS-24 (Copic et al., 2011). Small to medium effect sizes have also been reported for recovery-related constructs including hope (Snyder Hope Scale; $r=.35^{**}$) and active involvement in personal health management ($r=.28^{**}$; Copic et al., 2011); a large correlation was found between SISR-B and the Resilience Scale ($r=.75^{**}$; Chiba et al., 2010a). Andresen also reported much lower correlations, largely non-significant,

with measures of clinical recovery and functioning including the Life Skills Profile (LSP-16; Rosen et al, 1989) and the Global Assessment of Functioning (GAF; Hall, 1995), supporting the divergent validity of SISR (Andresen et al., 2010).

The validity of the underlying Stage Model of recovery has been further assessed through ANOVA analyses evaluating differences between scores on personal recovery and clinical measures for participants at each stage of recovery (as identified by SISR-A; Andresen et al., 2010). Z scores showed that recovery measure totals (MHRM; RAS; SISR-B) all increased in a linear fashion with stage of recovery. Clinical measures showed a far more complex, and non-significant picture, supporting the divergence of the clinical and personal recovery constructs as discussed in Chapter 2.

3:3.9.3 Use in Practice

The SISR has been used in ROP evaluations (Chiba et al., 2014), recovery measure development and psychometric testing (Andresen et al., 2006; Buckley-Walker et al., 2010), and wider recovery research. People reporting higher stages of recovery as identified by SISR have been shown to set significantly more and wider-ranging positive goals than those in earlier stages (Clarke et al., 2012), and to identify more positive change in their life (Chiba et al., 2011)

Whilst its brevity makes the SISR an obvious choice for research and evaluation, its lack of content may prove less effective in support settings, and perhaps as a consequence, no publications yet refer to SISR being used within support. Acceptability has equally not yet been assessed.

3:3.9.4 Scottish context & CHIME

The language and content of SISR appears to be applicable in Scotland, and all questions map to CHIME, although 'Connectedness' is not clearly covered by the questionnaire. There are no elements of the recovery model embodied by the measure that are in contradiction to those described by Brown and Kandirikirira, (2007). As the Stage Model and the CHIME framework are comprised of different numbers of component processes, and the SISR is comprised of so few items, it would not be expected that SISR would cover all CHIME categories, however this does highlight differences in the conceptualisation of recovery underpinning the two

theories of recovery, as discussed with Chapter 2. It is therefore considered likely that the SISR could be successfully used in Scotland, but perhaps not as a holistic measure of recovery.

3:3.10. Stages of Recovery Instrument

Items: 50	Scale: 0-5 Likert	Reviews (% score): 6 (69%)	Psychometric Publications: 5	
Recovery domains/subscales: <i>Moratorium, Awareness, Preparation, Rebuilding, Growth</i>				
Example question: <i>I am starting to learn how I can help myself get better</i>				
SU Involvement:	Use in Practice:	Psychometrics:	Paper Quality:	CHIME:
1	2	11.6	-1.6	5(96%)

Table 3.15: Properties of the Stages of Recovery Instrument

Results of validation testing of the SISR (Andresen et al, 2007, discussed in Section 3:3.9) identified a need for a longer, multi-item measure of the Stage Model of Recovery (Andresen et al, 2003). The Stages of Recovery Indicator (STORI; Andresen et al, 2006) was consequently developed by Andresen and colleagues to address this. The five studies used to develop the Stage Model were scrutinised to identify questions for STORI, with the aim of identifying at least one question for each process at every stage of recovery. Questions were then clustered into themes used to inform the selection of ten items per stage, resulting in a 50-item questionnaire (Andresen et al, 2006).

3:3.10.1 PLE Involvement

Item generation did not involve service users; qualitative feedback was first collected during pilot testing of the STORI with ten consumer-researchers (Andresen, 2007).

3:3.10.2 Psychometric properties

Psychometric properties of STORI are generally reported to be good. Internal consistency of the stages is 'good' (Ponterotto & Ruckdeschel, 2007), and correlational analyses of the relationship between stages support a sequential stage model (Andresen et al., 2013; Lemos-Giraldez et al., 2015). Convergent validity testing also shows measures of recovery correlate negatively with early and positively with later stages of the model (e.g. RAS v Stage 1 $r = -.65^{**}$; RAS v Stage 5 $r = 0.77$, (Andresen et al., 2006; Andresen et al., 2013)). Similar results were found for correlations with measures of recovery-related constructs including well-being, hope and resilience (Andresen et al., 2006). Despite these findings, cluster and factor analyses have proved unable to provide support for the five-stage model.

Three studies identified a three-cluster solution (Andresen et al., 2006; Lemos-Giraldez et al., 2015; Weeks et al., 2011), whilst Andresen and colleagues' EFA identified a four-factor model (Andresen et al., 2013). Correlations with other measures again provide further support for a shortened stage model, with non-significant results reported for stages 2, 3 and 4 (Andresen et al., 2006). For a more detailed discussion of stage models of recovery, see Chapter 2, Section 2:3.3.5i).

Although a shortened 30-item version of STORI has been developed (Andresen et al., 2013), its structural validity is unclear. Whilst Andresen and colleagues conducted structural analysis again identifying a three-cluster structure, they retained the five stages of the original model (Andresen et al., 2003). More research is therefore needed to fully investigate the structural validity of STORI in both its original and reduced format.

3:3.10.3 Use in Practice

STORI has been used in the evaluation of ROP's, for example Helping Hands, an Australian befriending-style programme of group and one-to-one support (Dean & Andresen), and is used in wider research exploring the links between recovery and other variables such as the impact of stage of recovery on behaviour (e.g. involvement in clinical decision-making; Loos et al, 2017) and cognition (e.g. suicidal thoughts; Gale et al., 2012).

Service users have reported finding the STORI to be a long and complex measure of some but not all areas (social network and quality of life not addressed) of recovery (Law et al., 2012). No articles have yet been published in which the STORI is used within support, however it is believed to be likely given the service user feedback, that there may be significant challenges in using this instrument effectively within support. If the STORI were to be reimaged as a collaborative instrument, particularly in its shorter 30-item format, this may improve its utility in practice. An alternative solution was provided in the development of a brief interview (the Short Interview to assess Stage of Recovery (SIST-R); Wolstencroft et al., 2010) designed to be used alongside the STORI to facilitate the identification of recovery stage in practice. Initial testing shows the validity and feasibility of SIST-R to be good (Wolstencroft et al., 2010).

3:3.10.4 Scottish context & CHIME

Developed in Australia, the STORI is not in need of translating for use in Scotland, and there are no cultural references that would need adapting. All five areas of the CHIME framework are covered by items from the STORI, with between one (connectedness) and fifteen (meaning) questions mapping to each category (Shanks et al., 2013). Only two items (4%) did not map to CHIME, and some items cover elements of positive mental health (e.g. 'my life is really good now'; 'I have a sense of inner peace'), which fits in the domain of Health & Wellbeing included within the wider conceptualisation used throughout this thesis. The one aspect that causes hesitation with recommending this measure for use in Scotland is the less than positive view held by service users; in particular, the STORI is long at 50 questions, and in order to identify between the stages, many of the questions are negatively worded, and if used as intended as a self-report, this could have negative consequences for respondents. The modifications of this instrument as a briefer 30-item measure and as a structured interview are promising, but without further testing both of the psychometric properties and use in practice, STORI cannot yet be recommended for use.

Ch3, Section 4. Discussion of systematic review of measure

As demonstrated in the previous chapter, interest in personal recovery has soared over the past twenty years. In response to the burgeoning field of recovery research, a plethora of measures have now been developed in order to evaluate recovery-oriented practice and to deepen understanding of the concept or recovery. Measures show a wide variation in both their intended use and in the underlying conceptualisation of recovery adopted (see Chapter 2 for discussion of recovery conceptualisations). This review sought to evaluate the particular subset of instruments which best mirror the purpose and design of I.ROC, in order to develop a set of benchmarks against which the psychometric properties and usability of I.ROC can be assessed. In this review therefore, the psychometric properties and general usability of individual-level measures of personal recovery were examined. Instruments were included in the review if they: took a user perspective; allowed quantitative measurement; were brief, scientifically scrutinised and widely applicable irrespective of mental illness diagnosis. Based on these criteria, eleven measures were shortlisted from an original list of forty-five.

Chapter 3

Forty-nine peer-reviewed publications relating to the included eleven measures were reviewed using a detailed data extraction tool. Data were coded to provide a scoring matrix in which the paper's quality was assessed alongside seven psychometric properties. Each measure was also scored for the extent to which people with lived experience were involved in the tool's development and the amount of items on the instrument that directly map to the CHIME framework. Finally, the number of papers in which each instrument is used, and the format of the measure itself was assessed alongside key stakeholder (practitioners and people with lived experience) feedback to give a rating for overall usability. The Recovery Assessment Scale (RAS) and the Questionnaire about the Process of Recovery (QPR) were found to be the highest scoring measures overall. The Consumer Recovery Measure (CRM) received the lowest scores, however it was also the least frequently evaluated, with only one psychometric publication to date.

This review has found that as a result of evaluations of their psychometrics, most recovery measures have been reduced in length since their initial conception. This demonstrates a general tendency towards shorter measures and a unidimensional structure. At twelve questions, I.ROC is of a similar length to several of the revised instruments reviewed here. The psychometric properties, including structural validity, of I.ROC will be further reviewed and compared to these findings within Chapter 6.

Table 3.16 gives an overview of the benchmarks set for I.ROC based on the median scores for each criterion, and lists measures in this review which received the top scores and those falling below the benchmark. A more detailed table of benchmarks, which additionally describes the characteristics of top scoring measures, and lists measures just meeting the benchmarks, can be found in Appendix 12 The findings for each measure and the set of benchmarks for the I.ROC testing are discussed in more detail below.

critierion	Benchmark (median)	Measures below benchmark	Top measures	Top Score	Benchmark minimum requirements
Consumers involved in development	2	SISR; STORI; MARS	CRM; QPR	4	Development included focus groups/interviews with consumers as part of an iterative development process
Use in research	2	CRM; MARS; RPI; MHRS	RAS	3	At least one peer-reviewed publication using the measure in ROP or elsewhere
Method of use	1	-	MHRS	4	The instrument is developed to be used as a self-report
Stakeholder feedback	1	CRM; MARS; MHRM; SISR	QPR; RAS	4	Staff or service user feedback on measure collected and reported
Chime total score	14	CRM; IMRS	QPR, MHRM	15	90% or more items mapping successfully to CHIME; all 5 areas of CHIME covered by the questionnaire.
Test retest reliability	2.25	CRM; MHRM; RAS; SISR; STORI	QPR	4.6	Test-retest reliability evaluated in at least one study; reporting of the results includes the length of time between testings and rationale for this. Correlation coefficient as a minimum requirement for analysis.
Inter-rater reliability	0	-	MHRS	2	This criterion is not routinely assessed in psychometric evaluations of recovery measures; no benchmark is set for I.ROC
Internal consistency	3.5	CRM; IMRS; RPI; SISR; STORI	QPR	6.4	Internal consistency reported for total measure and subscales; coefficient relates to a rating of 'fair' or above using acceptability matrix.
Predictive validity	4.9	CRM; RAS; MHRS; STORI	SISR (QPR)	6.9	Predictive validity against a range of measures assessed in at least one study. Hypotheses clearly stated; coefficients reported and meeting a minimum standard of 0.3 (medium effect size; George & Mallery, 2003); power >0.8
Structural validity	3	IMRS; RPI; MHRS; SISR; STORI	RAS	6.8	Structural validity using factor analysis or Rasch analysis methodology assessed in at least one study; EFA factor retention based on more than one method (e.g. scree plot; Eigen values); adequate sample size (based on 10 ptps per item rule of thumb)
Cross-cultural validity	0	IMRS	RAS	0.9	Not routinely assessed (50% measures did not report cross-cultural validity), cross-cultural validity testing should follow the establishment of basic psychometric properties. No benchmark is set for this criterion.
Responsiveness	0	-	MHRS	0.5	The majority of measures have not been assessed for responsiveness. No benchmark is set for this criterion.

Table 3.16: Benchmarks for evaluating I.ROC

3:4.1. Involvement of People with Lived Experience

Involvement of people with lived experience during measure development varies substantially. The CRM and QPR received the joint highest score; people with lived experience sat on the design team of both measures, and development decisions were reviewed by an independent panel in both cases. SISR received the lowest score (0); there is no documented mention of people with lived experience included in any aspect of the measure's creation. These two extremes set the scale against which I.ROC's is evaluated in Chapter 5.

3:4.2. Psychometric Properties

Overall, psychometric ratings for all the included instruments as evaluated using the data extraction tool fall far below the potential top scores. Inter-rater reliability (n=1) and responsiveness (n=6) have only been examined in a minority of cases, and cross-cultural validity has only been assessed for six of the eleven measures. Most commonly assessed were internal consistency (n=42) and predictive validity (n=40). Papers use a variety of methods to evaluate the psychometric properties of these instruments, and as shown by the negative scores for paper quality, there are considerable issues with the reporting of such evaluations. Papers often lack sufficient detail to enable the study to be replicated, for example in the description of factor analytical methods applied, Oliveira-Maia et al (2016) say only that "*psychometric refinement of the full scale was performed according to an exploratory factor analysis of the 22 original MHRM items with adequate item-total correlation*" (Oliveira-Maia et al., 2016, p.4), with no discussion of how the data was handled. Several papers also selected inappropriate methods of analysis. One common practice (n=8) was the application of Pearson's correlation as the only test-retest statistic, but as discussed within Chapter 4, correlation alone cannot evaluate whether scores have changed over the given period of time. Evaluation of I.ROC's statistical psychometric properties also concentrates on the most extensively examined aspects of validity and reliability as outlined above; the rationale for choosing these methods is described within the next chapter (Chapter 4). This enables I.ROC to be directly compared to the measures included within this review; results presented in Chapter 6 will therefore be discussed in relation to the findings of this review.

The Recovery Assessment Scale (RAS) was the most frequently evaluated measure, with fourteen papers assessing its psychometric properties. Number of evaluations did not necessarily reflect the quality of the measure however; whilst the RAS has been translated into six different languages, and used extensively within recovery research, the current rating for the measure's psychometric properties revealed that overall, papers assessing this measure do not score well for reliability. Intra-rater reliability has not been assessed and test-retest analytical methods were often inappropriate. The structure of RAS is still debated after twelve papers reporting factor analysis, and has resulted in several attempts to modify the instrument. This review therefore concurs with previous findings, that whilst the RAS is one of the best available instruments, it cannot be considered a gold standard measure of personal recovery (Law et al., 2012). However, as the most extensively examined instrument, and one of the only measures to have been assessed at the start of this PhD, the RAS was used as a convergent validity measure within psychometric evaluations of I.ROC. The results of this examination are presented in Chapter 6.

The highest review rating of any measure was awarded to the QPR, which scored particularly high on the CHIME mapping, test-retest reliability, and overall validity. This suggests that the QPR may be the best tool so far developed for measuring personal recovery, and positive reviews of the measure given by people with lived experience support this view. There are however still a number of areas in which the QPR does not fully meet the criteria. Firstly, although the QPR has been used successfully with people with a range of mental health issues, it was originally designed exclusively for people with lived experience of psychosis (Neil et al., 2009), which as discussed earlier is found to be inconsistent with the concept of personal recovery (see Section 3:2.2). Secondly, the examination of its psychometric properties is not yet complete; only one paper has so far evaluated the cross-cultural validity and the responsiveness of this measure, and inter-rater reliability has not been tested. Whilst the QPR may be considered the best recovery measure so far developed therefore, it again cannot yet be considered a gold standard instrument.

3:4.3. Use of Measures in Practice

Whilst the QPR has been used fairly extensively within ROP evaluations and wider recovery research, like the majority of measures, it has not been designed or adapted to be used in a collaborative manner within support. This is a key criterion within the current review, as in the earlier review by Burgess et al., (2010) which acknowledged that using tools collaboratively can improve the face validity of the measure by helping clarify the meaning of questions. Jerrell and colleagues (2006) highlight the importance of being able to demonstrate the 'added value' of new outcome measures in mental health systems where staff already feel overburdened. Much of the added value for recovery measures comes from the uniquely person-centred approach that recovery advocates, but tools designed to be used collaboratively have the added benefit of promoting dialogue between service users and practitioners, thus in turn facilitating the development of a positive support relationship acknowledged to be critical in recovery-oriented practice (Slade, 2009a), as discussed in Chapter 2. It is certainly possible that the QPR could be used as such through the development of staff training and guidance, but this has not yet been the case. In contrast, developers of the RAS and the RPI allude to the fact that these instruments can be used in an interview format, although the self-report questionnaires remain the most popular within the studies reviewed here, and there is no readily available guidance for staff on how to use the questionnaires in practice.

Training and staff guidance on how to use the recovery measure as the basis of a conversation does exist for one measure. The Recovery Star, like I.ROC, is designed to be used collaboratively. Collaborative use of the Recovery Star is preferred over practitioner-only assessment; staff agree that:

“the distinct advantage of the MHRS recognised by participants is that it is a client-centred tool, consistent with the principles of recovery-orientated practice that is strived for within services”
(Tickle et al., 2013, p.201).

Despite this, it is acknowledged that the Recovery Star is not always used collaboratively; less than fifty percent (47%) of staff find the measure is easier to score collaboratively than when used as a clinician-rated scale (Killaspy et al., 2012b). Killaspy et al also reported inadequate convergent validity (although this is contested, see Section 3:3.7) and inter-rater reliability, leading the

authors to question the utility of the Recovery Star as an outcomes measure. They point out that quality and outcomes assessment is often conflated, “*with measures of process often being reported as measures of outcome*” (Killaspy et al, 2012b; p. 69). Given these important points, this thesis seeks to explore whether a personal recovery measure can successfully bridge the gap between useful and valid, and thus balance the conflicting needs of service users, practitioners and managers. As the only measure intended for use as a key working tool, the Recovery Star, despite its shortcomings, will be used as a comparison against which to evaluate use of I.ROC in practice (Chapter 7).

3:4.4. Scottish Context & CHIME

Although all described as measures of personal recovery, instruments included within this review vary considerably in regards to the underpinning conceptualisation of recovery. Whilst all questions on the QPR and MHRM fit within the CHIME framework, all other measures included at least one question pertaining to a wider conceptualisation of recovery, or highlighting aspects of CHIME not emphasised by the framework (i.e. second or third order themes). Measures include questions on physical health (MHRM; MARS; MHRM; RAS-41), and positive mental health and wellbeing (MHRM; SISR; STORI; RAS-41), which align with the secondary component of recovery identified in Chapter 2, ‘Health and Wellbeing’. The recovery instruments also covered aspects of the second additional component referred to in the previous Chapter, ‘Daily Living’. Two of the questionnaires ask respondents about the sense of personal safety (CRM; RPI); financial independence (MHRM), housing quality (RPI) and general functioning (IMRS) are also covered within the instruments. Inclusion of questions on broader recovery components within such a large proportion of measures, supports the seven domains of personal recovery which comprise the model of recovery used within this thesis (see Chapter 2 for details).

One area of continuing debate within the recovery literature that is clearly illustrated by the measures reviewed here is the placement of clinical recovery as a separate dimension of recovery vs. an aspect of personal recovery. Reflecting the split within the field of recovery, questions relating to symptoms of mental illness, hospitalisation and/or medication were identified within just

under half (n=4) of the measures in this review (CRM; RAS; IMRS; MHRM). Some people with lived experience recognise clinical improvement as a core aspect of their wider recovery (Brijnath, 2015), but empirical evidence tends to suggest a separation between the two dimensions of recovery (Andresen et al, 2010); although clinical and personal recovery are acknowledged to be intertwined (Slade et al., 2014), as discussed in Chapter 2.

3:4.5. Limitations

The main limitation of this review was lack of resources. Data extraction/ coding and evaluation of results are conducted by a team in many robust systematic reviews (e.g. Leamy et al, 2011; Bird et al, 2014), to enable triangulation of results but this was not possible across all data in the present study.

Researchers not involved in the main study were instead invited to code the data using the CHIME mapping or data extraction tool, and analytical steps were agreed with the project supervisor. Whilst this has improved the rigour of the approach, more extensive collaboration for example following guidelines set out by Archibald (2016) would reduce the possibility of researcher bias in the results.

3:4.6. Conclusion

The best measure of personal recovery depends on the intended use; for aggregate measures designed to be used in service ROP evaluation or research, the QPR appears to be the best choice, performing well both in terms of its psychometrics and its coverage of the underlying recovery construct. For use in practice, the choice of measure is less clear cut; the RPI, RAS and MHRS can all be used collaboratively, but although the RAS is the highest scoring measure, its collaborative format has not been empirically evaluated, whilst a lack of detail fails to support use of the RPI. The MHRS is the only measure to have published empirical evaluations of its usability, however the findings do not yet support its validity as a measure of recovery. As no gold standard yet exists, and no recovery measure has been comprehensively demonstrated to fulfil all the criteria of this review, the findings of this chapter are instead drawn into a series of benchmarks (Table 3.16) against which the validity and usability of I.ROC will be assessed.

Chapter 4. General Methodology

Ch4, Section 1. Introduction

Despite increasing research focus on recovery measurement few of the plethora of existing instruments have been rigorously psychometrically evaluated, and even fewer have included aspects of consequential validity or feasibility testing. This thesis presents findings from ten studies conducted as part of a wider research programme aiming to holistically evaluate the validity and reliability of one such measure, I.ROC, from both a statistical and usability perspective. This Chapter outlines the methods and procedures employed throughout each study, and discusses the rationale for their inclusion. Section 1 outlines the theoretical underpinnings of the research including action research, mixed methods approaches and psychometric testing. Following this, the data collection (Section 2) and analysis (Sections 3 & 4) methods used within each study are presented in turn. These approaches are then evaluated within the final section of this Chapter.

Ch4, Section 2. Theoretical Underpinnings

4:2.1. Research Approach: Action Research

Guided by the existing partnership between Penumbra and Abertay (see Chapter 1), a Pragmatic Action Research (Greenwood, 2007) approach was adopted for the duration of this research programme. Action research (Lewin, 1946) is a strategy of “*co-generative knowledge creation*” (Greenwood, 2007 p.133), used to solve an applied research problem, and requiring genuine engagement with local stakeholders with experiential expertise. This approach emphasises democratic inquiry and collaborative research processes as the basis for societal action and practical problem solving (Lingard et al, 2008). Stakeholders are involved as partners within all aspects of the research, conducted as a cyclical process of “*‘planning’, ‘action’ and ‘fact finding’ about the result of the action*” (Lewin, 1946, p.205).

Although different models have been proposed (Dickens & Watkins, 1999), these are used flexibly and interchangeably (Peters & Robinson, 1984). Greenwood argues:

“there is no one ideal form of AR. It really is a broad array of practices, epistemological beliefs, ontological commitments, and processes. AR...is highly personal” (Greenwood, 2007, p. 134).

Consequently, the approach applied here did not conform neatly to one particular model of action research, but uses the principle of participation, and a cyclical

process of action, measurement, reflection and change. Each stage of the process was agreed by a research oversight group comprising equal numbers of researchers and Penumbra stakeholders, and project managed by lead researcher BR who was employed directly into this position with no prior attachment to either organisation, as shown in Figure 4.1. The composition and objectives of this group were established in line with the KTP (see Chapter 1); during the first 18 months, the group met every 3-4 months to review progress, and decide on next steps. Following the end of the KTP in 2012, the group continued consultation on a regular basis.

Several additional steps were taken to ensure the involvement of I.ROC stakeholders within the testing of the measure. A wider stakeholder research group was created, through which practitioners shared research ideas and knowledge, designed and evaluated their own projects (Project 4), collected (Study 1; Project 4) and evaluated data and helped disseminate findings (Project 4). Stakeholder views were also sought through focus groups and surveys, and research findings were fed back through meetings, conferences, and internal communication channels. Findings from the research were used to further development of I.ROC and recovery within Penumbra, for example by developing a digital solution (see Chapter 8 for details).

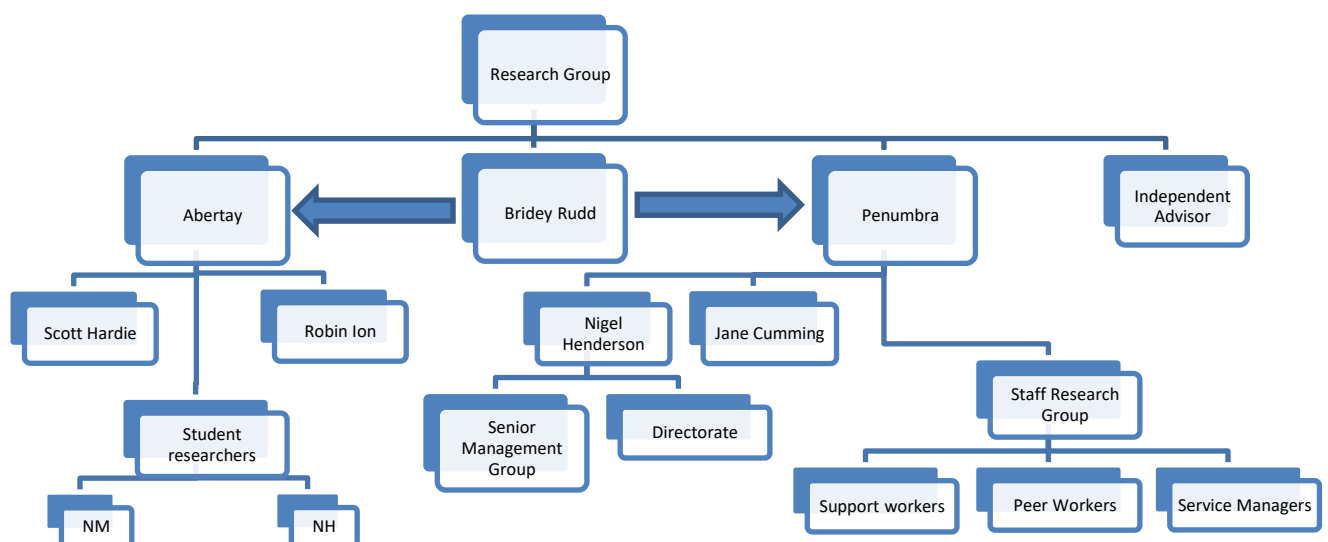


Figure 4.1: Stakeholder Involvement Network

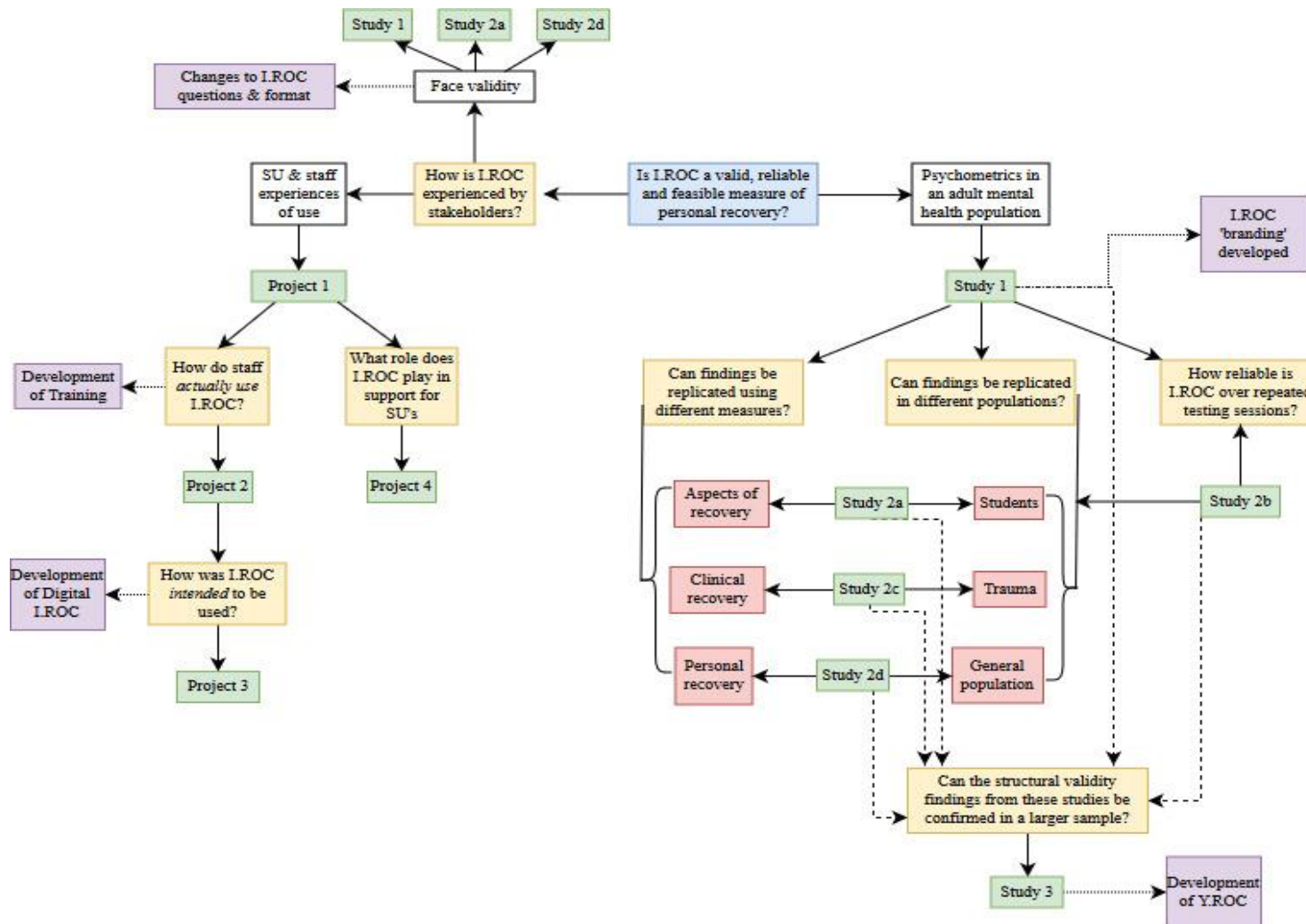


Figure 4.2: Flowchart showing the relationship between research questions, studies and I.ROC development

4:2.2. Use of Mixed Methods in Research into Recovery

Mixed methods research uses both quantitative and qualitative methods within a study or research programme to explore a single complex research question (Lingard et al., 2008). The use of mixed methods designs has increased in recent years within the field of mental health research (Palinkas et al., 2011). Mixed methods approaches are well suited to recovery research; a complex construct described as both a process and

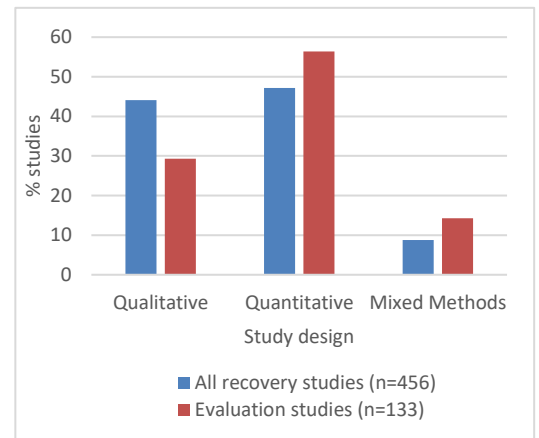


Figure 4.3: Bar graph showing the percentage of recovery studies and ROP evaluation studies using quantitative, qualitative and mixed method designs

an outcome (Bellack, 2006), recovery includes both objective elements (outcomes) such as improved functioning, and subjective elements (processes) (Hasson-Ohayon et al., 2015). Recognition of the importance of considering an instrument's purpose and utility within its evaluation is growing, as discussed in Section 4:2.3.2s), but there remains a dearth of such methods in studies using recovery measures (Figure 4.3). Yet, mixed methods approaches may help overcome one of the most common criticisms of recovery measures; that there is a lack of consideration of feasibility and use in practice (Shanks et al., 2013).

A mixed methods approach was therefore adopted. Dominant paradigms are used to categorise research as either qualitative Projects or quantitative Studies within this thesis; (for overview, see Table 4.2 & Table 7.1). For example, test-retest reliability (Study 2b) concerns the consistency of scores across multiple time points, not requiring qualitative feedback; whilst understanding what people using services find important in their support (Project 4) needs a qualitative approach. Some studies used both methods in parallel (whilst maintaining a dominant paradigm); participants in Study 1 were asked to complete a battery of outcomes measures alongside a feasibility feedback survey containing both closed and open-ended questions. Data was analysed concurrently, and both aspects were used to evaluate the validity of the instrument.

Across the full research programme, completion of each study overlapped, as determined by other work demands. As each study was designed to explore a

different aspect of validity, reliability or feasibility, the findings of one did not always inform the design of all subsequent research. The logic model in

Figure 4.2 demonstrates when and where the findings of one piece of research was influential in the design of further studies.

The process of data interpretation conducted for this thesis has provided the first opportunity for all quantitative, qualitative and mixed-methods findings to be considered in parallel. The approach has conformed most closely to the concept of 'simultaneous triangulation', in which quantitative and qualitative data are collected separately with limited interaction during the planning or collection stages of the research and are used to complement each other during a combined analysis process (Morse, 1991). Here, the combination of qualitative and quantitative methods occurs within the discussion chapter (Chapter 8), within which the relative contributions to the overall evaluation of I.ROC of each piece of data are considered.

4:2.3. Selecting validity, reliability and feasibility methods: rationale

Validity and reliability are two of the eight crucial psychometric attributes of any measurement tool designed for use within a clinical setting (Lohr, 2002), and are related but separate concepts. Both can be considered "*continuous rather than dichotomous psychometric indices*" (Frost et al., 2007, p.595), with evidence built up across a series of experimental trials (Cronbach & Meehl, 1955; Smith 2005). The greater the evidence supporting validity and reliability of the measure, the greater degree of confidence can be merited to this conclusion. I.ROC is thus examined over a series of studies (Table 7.1 & **Error! Reference source not found.**) evaluating several components of validity and reliability, as outlined below.

4:2.3.1 Reliability testing

The reliability of a questionnaire relates to the level of agreement between two or more sets of scores (Lin et al., 2012). An instrument's ability to consistently reflect true scores, free from random error is fundamental to its reliability. Reliability is appraised using assessments of internal consistency and reproducibility.

n) Internal consistency

Internal consistency compares scores on scale items that purport to measure the same construct, assessing the level of homogeneity of the tool or subscale (Henson, 2001). Computations utilise a single set of measure scores, making it one of the easiest properties to assess. One of the most frequently reported psychometric properties (Zumbo & Chan, 2014), within this thesis, internal consistency was evaluated for all quantitative data.

o) Reproducibility

Reproducibility evaluates the extent to which scores on a measure remain the same over repeated testing sessions, when the underlying construct being measured remains constant. The two most common ways of evaluating reproducibility are inter-rater reliability and intra-rater (test-retest) reliability.

Inter-rater reliability

Inter-rater reliability compares scores relating to one person rated by different observers, based on the assumption that a person's 'true score' can be objectively and independently assessed. This is a challenging concept for measures of personal recovery. Recovery is a "*deeply personal, unique process*" (Anthony, 1993, p.527), within which the expert knowledge of the person experiencing recovery is fundamental. Inter-rater reliability can undermine this expert knowledge, particularly when assessed without the person in recovery's self-rating (e.g. Killaspy et al., 2012a). The majority of papers evaluating psychometric properties of recovery measures have not reported this form of reproducibility (Table 3.4, Chapter 3), and those that do report inconclusive results (Killaspy et al., 2012a). For this thesis, inter-rater reliability has therefore not been included.

Intra-rater (Test-retest) reliability

Reliability can also be tested by evaluating the extent to which scores given by the same person or group of people on two or more occasions agree, given stability of the measured concept and no change in testing conditions. Two assumptions underpin test-retest reliability: firstly, that the 'true score' for each participant does not change between presentations, and secondly, that the time between tests is long enough to prevent recall, learning or carry-over effects

(Allen & Yen, 2001). Whilst this will depend on the type and sensitivity of the measure, an interval of approximately two weeks is “*often considered appropriate for the evaluation of patient reported outcome measures*” (Mokkink et al., 2010b, p.26). This time frame was adhered to within Study 2b, in which participants completed I.ROC twice, approximately eight days apart.

4:2.3.2 Validity Testing

p) Content validity

Content validity, the extent to which an instrument appears to be measuring the concepts that it is intended to measure, usually involves analysis of the theoretical underpinnings of a tool, for example through literature review, as explored within Chapter 2. The opinions of stakeholders and/or professionals as to the relevance and feasibility of the measure are also commonly collected, often through surveys or focus groups (Powers et al., 2010). Content validity is thus a fairly subjective but important aspect of a tool’s validity. It helps ground a measure within the context it is developed to be used in, and encourages instrument designers to think beyond the statistical qualities of a tool to the people who will use it. The opinions of staff and service users are explored within several of the studies, as shown in Figure 4.2

q) Criterion validity

Criterion validity evaluates the extent to which an instrument is related to widely accepted, validated ‘criterion measures’ of the underlying concepts the new tool pertains to measure. It differs from convergent validity in that it involves comparing scores on the new instrument to those from an accepted ‘gold standard’ measure. Within health and social sciences, very few – if any - ‘gold standard’ measures exist (Mokkink et al., 2012), and no recovery measures are yet considered to meet this standard (Law et al., 2012). True evaluations of criterion validity are rare (Lohr, 2002), and it is therefore not assessed.

Predictive, Convergent and Divergent validity (Hypothesis testing)

Convergent, divergent and predictive validity are used to test the construct validity of a measure, by assessing the extent to which the scale behaves as predicted in its relationship to other measures, and over time (Mokkink et al.,

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2016). These elements of validity rely on the a-priori development and communication of clearly defined, testable hypotheses (Smith, 2005).

Personal recovery is a subjective concept which is related to concepts of wellbeing (Jose et al., 2015) and quality of life (Murray et al., 2017). Studies have demonstrated that recovery is related to a plethora of intra and inter personal factors (e.g. Vass et al., 2015; Iwasaki et al., 2014; Martins et al., 2016), and there are therefore many measures available for convergent validity testing. Consequently, this element of validity was tested in a series of studies (S1, S2a-d) with measures of personal recovery, commonly identified elements of recovery (e.g. hope), and other types of recovery (e.g. clinical recovery).

Divergent validity has proved harder to ascertain, as recovery is a holistic concept, but its relationship to other concepts, (e.g. clinical recovery), is still widely debated (see Chapter 2). Published results are contradictory. Some have reported successful results (Drapalski et al., 2016; Andresen et al., 2010), but others have reported difficulty establishing divergent validity with a range of variables (Jaeger et al., 2013; van Nieuwenhuizen et al., 2014). Measures used within these studies are therefore used to evaluate convergent and not divergent validity.

r) Factor Analysis (Structural validity)

Factor analysis is used to identify latent or unobserved variables (factors) within a wider set of observed (or manifest) variables through the analysis of the correlations between the observed variables (Hayton et al., 2004). This is based on the key premise that observed variables displaying a similar pattern of responses are all associated with a common latent variable (common factor model; MacCallum et al., 1999). Within measure development, factor analysis is an important tool for the evaluation of construct validity (Nunnally, 1978; Thompson & Daniel, 1996). There are two overarching methods of factor analysis, the selection of which is determined by the aims of the researchers; exploratory factor analysis is used to explore patterns within data and develop hypotheses. Following the development of a hypothesis, confirmatory factor analysis is used to evaluate its efficacy (Gaskin & Happell, 2014b). Studies within this thesis have applied a combination of EFA and CFA, to first explore

the factor structure of I.ROC with no limitations, before evaluating the statistical fit of the potential models (see Section 4:5.4).

s) Consequential validity and Feasibility

“The vast majority of measures have, at their core, a purpose of personal and social change” (Hubley & Zumbo, 2011, p220)

Consequential validity evaluates the sociological outcomes and impact of using a measure (Messick, 1964; 1975; 1980; 1995), and is comprised of two components. The first assesses the extent to which the instrument labels accurately reflect what the tool is intended to measure, the value potential users assign to it based on these labels and implications for use (Hubley & Zumbo, 2011). The second aspect is an evaluation of the positive and negative social and personal consequences of using the instrument (Hubley & Zumbo, 2011). Consequences of I.ROC use should be reflective of its use as a multilevel construct, in which scores are intended for use both at the individual and aggregate level (Zumbo & Forer, 2011). Messick intended for this aspect of validity to be examined experimentally alongside other aspects of validity, before the scrutinised instrument is used in practice. Authors have pointed out the challenges of doing so however (Reckase, 1998), and consequential validity is considered in here in a post-hoc qualitative exploration of I.ROC stakeholders’ experiences of using the tool.

Feasibility

Slade and colleagues (1999) highlight the importance of *meaningful* use of a tool in practice. Routine use of standardised outcome measures within mental health settings is currently hampered by the failure to address feasibility (Slade et al., 1999). Feasibility, Slade et al argues is determined by six attributes: brevity, simplicity, relevance, acceptability, availability, and value, as described in Table 4.1. Feasibility and consequential validity are investigated here in a series of qualitative studies (Projects 1-4), which explore the intentions of the I.ROC developers, the purpose, usability and challenges of using the tool in practice.

Attribute	Description
Brevity	Brevity relates to the look of the tool, time to complete, and training time.
Simplicity	The instrument “should make immediate sense at first reading”; jargon and acronym-free. Ideally, instruments should not require specialist training or guidance. Slade et al note that professionally designed instruments can facilitate this aspect of feasibility.
Relevance	High face validity; salient and meaningful language and concepts; flexibility in language wording
Acceptability	Accessible content, language, method and purpose of assessment. Tool should not duplicate other information collected, and administration should be flexible
Availability	Free and readily available; easy to photocopy
Value	“Seen by clinicians as having a higher value than an unstandardized assessment” – cost/benefit analysis based on five domains: learning how to do the assessment; carrying out an assessment; analysing the data; and presenting and interpreting the resulting information.

Table 4.1: Six attributes of instrument feasibility, adapted from Slade et al, 1999

Ch4, Section 3. Data Collection: Rationale & General Methods

Studies reported here were conducted as part of a larger multi-faceted research project evaluating and developing I.ROC. Given the size of the larger project, it was not possible to include findings from all studies within the confines of this thesis. For the sake of brevity, and to produce a consistently clear narrative, a subset comprising four qualitative and six quantitative studies was selected. These were chosen to represent the full breadth of psychometric properties evaluated and the full range of participant demographics in the fewest possible studies. The relationships between each included study can be seen in Figure 4.2. General methods are covered in two sections, outlining qualitative (Section 4:3.2.1) and quantitative procedures (Section 4:3.2.2). A summary of each study can be found in Table 7.1 and Table 4.2.

4:3.1. Ethics

All studies were approved by the University Research Ethics Committee (Appendix 1), and the research protocols conform to the Declaration of Helsinki. All participants provided informed consent prior to participation, and were fully debriefed. Data were stored in a locked filing cabinet, and on a password protected computer.

4:3.2. Sampling techniques

Participants were recruited from two main sources: Penumbra, and the University of Abertay, and comprised students, staff and service users.

Quantitative Studies 2c and d and 3 used data collected from other sources including a mental health charity (Study 2d; Jami, see Ch6, Section 3) and an NHS centre providing specialist trauma services (Study 2c, see Ch6, Section 3). These sampling frames were selected because of their prior engagement with the project, which facilitated recruitment, and ensured that all participants had adequate access to mental health support if required (e.g. support, supervision or student counselling services.)

Empirical studies used non-probability sampling strategies (Hibberts et al., 2012); in most cases, people meeting inclusion criteria were selected based on their ease of recruitment (convenience). Although considered inferior to methods in which equal probability of selection is given to all items in a population (Howitt & Cramer, 2005), in practice, non-probability presents a challenge within social research (Hibberts et al., 2012; Polit & Beck, 2010). Instead focus was given to collecting large samples with sufficient demographic information to describe the sample. Demographic information was collected from all participants to allow variables such as gender, mental health diagnosis and time in service to be considered. The mining of routinely collected data (Study 3) is the only exception to the sampling outlined above. This study involved no empirical data collection, instead sampling from Penumbra's database of routinely collected I.ROC data, as described in Ch7, Section 2.

4:3.2.1 Sample size: Quantitative studies

Sample size is a contended issue within psychometric evaluation studies for patient reported outcome measures (PROMs; Anthoine et al., 2014). Although largely discredited (e.g. Mundfrom et al., 2005), recommendations are often based on participant to item ratios, with the only agreement being that more accurate solutions tend to have larger samples (e.g. MacCallum et al., 1999). For the following studies, a minimum of between 100 and 130 participants was aimed for based on the suggestions of (Cattell, 1978) and (Comrey & Lee, 1992), beyond which recruitment followed the philosophy of 'the more, the better' within the limits of the resources available (Gaskin & Happell, 2014a). Sample size is evaluated based on its impact on statistical power as discussed within data analysis (Section 4).

4:3.2.2 Sample Size: Qualitative studies

In qualitative research, sample size should be determined based on considerations of “*study aim, sample specificity, theoretical background, quality of dialogue, and strategy for analysis*” (Malterud et al., 2016, p.1754). The broader and more exploratory the scope of the study, the more participants are needed. Likewise, solid theoretical background, and robust interview techniques resulting in strong interview dialogue will reduce the necessary sample size. Research suggests that saturation tends to occur after approximately twelve interviews, or between three and six focus groups (Guest et al., 2006; 2017); all qualitative studies include herein exceed these minimum sample sizes. Sample size is evaluated based on Malterud’s criteria (Malterud et al., 2016) within the discussion sections of each project.

4:3.3. Data Collection

Data for this thesis comes from four predominantly qualitative Projects, and six quantitative Studies. An overview of data collection methods is provided in the following two sections.

4:3.3.1 Qualitative Data Collection

Four Projects provide the main source of data for the qualitative elements of this thesis, the results of which feed into the evaluation of the face and consequential validity and feasibility of I.ROC use, as covered within the results Chapters 5 and 7. All projects used a semi-structured interview design to conduct interviews and/or focus groups. Methods are summarised in Table 7.1, and detailed within Chapter 7.

Additional sources of qualitative data include service user feedback collected during Studies 1, 2a and 2d (see below). Archival Penumbra documents (e.g. annual reports) were used as additional sources of data within Project 3 (see Section 4).

4:3.3.2 Quantitative Data Collection

Six Studies provide data from a total of over 5,000 people for the quantitative evaluation of I.ROC. Using a combination of investigative study and secondary data analysis, all Studies primarily employ psychometric statistical analytical

techniques to assess the validity and reliability of I.ROC. Participants completed I.ROC alongside between one and four further outcome measures as described below. Testing procedures summarised in Table 4.2, are detailed in Chapter 6.

Study #	Description	Completion	Format	# Additional measures	Population	N=
1	Validation	Supported	Paper	2	MH SU	171
2a	Benchmarking	Self-report	Paper	4	Students	237
2b	Test retest	Self-report	Online	1	Students, Staff	174
2c	Trauma	Self-report	Paper	3	MH SU	113
2d	Recovery Star	Supported	Online	1	MH SU; Students	77
3	Routinely collected	Supported	Paper	0	MH SU	9367

Table 4.2: Quantitative Studies Testing Procedure Summary

4:3.4. Instruments/measures

Measures were identified through literature review (Chapter 2), and selected through a process of concept mapping and evaluation by the research group. A detailed summary of this process and of each measure can be found in Chapter 6. Two personal recovery measures and seven measures of related concepts (including clinical recovery) were used.

Demographic data was collected within studies 1-2b and 2d using a brief questionnaire (see Appendix 17 for testing materials) consisting of 11 questions relating to socio-economic variables such as age, gender, history of mental health issues, education, and current living and employment situation.

A short feedback survey (Appendix 17a) was designed to evaluate the face validity and feasibility of I.ROC from the perspective of participants completing I.ROC. Survey questions were designed to address concerns or issues identified during I.ROC development in 2011 (see Chapter 5), and was informed by the checklist for investigating feasibility outlined by Slade and colleagues (1999). Feedback survey items comprised dichotomous, open-ended, and 5-point Likert scale responses, about the measures used in each study.

Ch4, Section 4. Qualitative Data Analysis

Data from each project was initially analysed separately using thematic analysis methods as described below. Comparison of themes across the four Projects revealed many similarities, particularly regarding current use of I.ROC in practice, but also themes unique to each Project not specifically related to I.ROC use. In order to focus on I.ROC usability, data from across the four

projects was synthesised and analysed together using a thematic analysis approach.

4:4.1. Thematic analysis

Thematic analysis was employed as the primary method of analysis, underpinned by a phenomenological critical realist viewpoint. Thematic analysis was chosen because of its flexibility and structured methodology which can be employed on a wide range of qualitative data types to ensure systematic and robust analysis (Braun & Clarke, 2006). Coding was approached as a “fluid, flexible and organic process that evolves as the analysis progresses” (Clarke & Braun, 2016, p.86). The aim throughout analysis was not to expose an exhaustive account of all inherent themes, but to identify and adequately explain a plausible and coherent set of resulting themes.

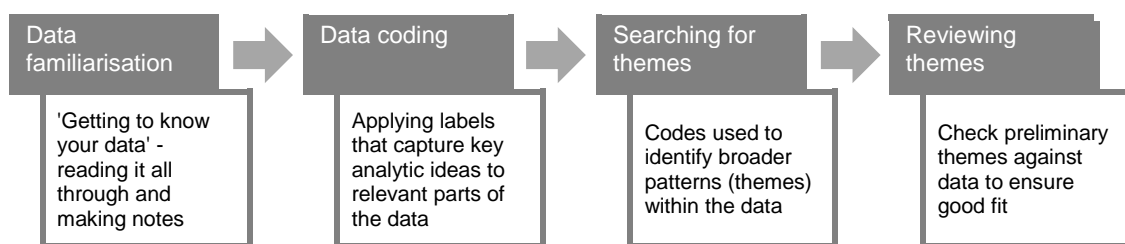


Figure 4.4: Thematic analysis process

Thematic analysis followed the fifteen-point checklist set out by Braun & Clarke (2006), the fundamental steps of which are summarised in Figure 4.4. Analysis was completed using the data management software Quirkos (Quirkos, 2014). See Appendix 18 for example coded interview transcripts and themes.



Figure 4.5: Example Quirkos - bubbles used to code data. Picture shows four child quirks clustered around one parent quirk (process). Numbers = number of pieces of coded text

4:4.2. Narrative Analysis

Methodology for the qualitative evaluation of I.ROC development draws inspiration from a form of historical sociological narrative analysis in which narrative mode is used “to analyse historical events and social action in processual, sequential, action-oriented ways” (Gotham & Staples, 1996, p.481). Data has been synthesised from several sources, to construct a temporal narrative of I.ROC development. Supplementary materials from Penumbra’s archives were used to provide more concrete dates for the timeline of development identified through

initial coding of interview data (Project 3), and as supporting evidence for the I.ROC developments that were made. This data included questionnaire drafts, meeting presentations, and development plans. Interview participants subsequently also answered brief survey questions (see Appendix 17) to elicit some of the missing data. Finally, to capture the story of the second half of I.ROC development carried out as part of the initial research with the University of Abertay (pre-PhD), reports of focus groups and questionnaires conducted with stakeholders prior to the start of this thesis were included.

Ch4, Section 5. Quantitative Data Analysis

For all Studies, participant data was entered into Excel for Windows 2013, where demographic and feedback responses were converted to numerical (categorical) data, and reverse-scored items were transformed so that all items in each measure were scored in the same direction. Data were then entered into SPSS version 23 for Windows and the associated AMOS plugin.

4:5.1. Missing data

Response rates were assessed using the MCAR test in SPSS (Little, 1988). Where data was not missing at random, and for any item with less than 95% response rate (Schafer, 1999), pattern analysis was used to identify item or case as problematic (Enders, 2010), and item non-response was used to inform questionnaire modification (De Leeuw, 2001). Listwise deletions were then used for all data with the exception of Study 2c; as listwise removal of missing items reduced the size of dataset considerably in this case, missing values were replaced using Expectation Maximisation (Little & Rubin, 2002) in SPSS.

4:5.2. Parametric and non-parametric approaches

Consensus is split on the use of parametric statistics for ordinal data. Whilst some argue that such data violates assumptions required for parametric analyses (Kuzon et al., 1996), others assert that the non-parametric tests and data transformations recommended as alternatives (e.g. Bishara & Hittner, 2012) are difficult to use (Osborne, 2005), lack statistical power (Rana et al., 2016), and can result in greater analytical error (Norman, 2010). Some now posit that parametric statistics are more robust than previously thought, withstanding most assumption violations, so long as sample size is big enough

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(Norman, 2010). Based on the growing evidence supporting this assertion (e.g. Carifio & Perla, 2008; Norman, 2010; Sullivan & Artino, 2013), analyses primarily employed parametric tests.

Normality is evaluated using the Shapiro-Wilk test in SPSS, skew and kurtosis statistics and visual evaluation of the histograms. Sample sizes are assessed using G*Power (see Section 4:5.5); and homogeneity of variance evaluated using Levene's test. Only where assumptions of normality and homogeneity of variance are severely violated (skew or kurtosis $> \pm 2$) (George, 2011; Gravetter & Wallnau, 2016), and sample sizes fail to meet the limit for acceptable power of .80 (Cohen, 1988), were nonparametric statistics employed.

4:5.3. Reliability testing

4:5.3.1 Internal consistency

Internal consistency is evaluated using Cronbach's alpha. Coefficients are reported as a single value between 0 and 1, with higher scores indicating a stronger relationship between the questions, and thus greater homogeneity of the tool. Alpha coefficients are evaluated using the acceptability matrix developed by (Ponterotto & Ruckdeschel, 2007) shown in Table 4.3, which assesses acceptability based on the sample size and the number of items within the subscale. Inter-item correlations will also be examined, using Cohen's conventions, as discussed in Section 4:5.5.

Items/ Subscale	Rating	Sample Size		
		N<100	100 \geq N \leq 300	N>300
≤ 6	Excellent	0.75	0.8	0.85
	Good	0.7	0.75	0.8
	Moderate	0.65	0.7	0.75
	Fair	0.6	0.65	0.7
7 to 11	Excellent	0.8	0.85	0.9
	Good	0.75	0.8	0.85
	Moderate	0.7	0.75	0.8
	Fair	0.65	0.7	0.75
≥ 12	Excellent	0.85	0.9	0.9
	Good	0.8	0.85	0.9
	Moderate	0.75	0.8	0.85
	Fair	0.7	0.75	0.8

Table 4.3: Acceptability matrix adapted from Ponterotto & Ruckdeschel, 2007

4:5.3.2 Reproducibility

Although commonly evaluated using Pearson's r , psychometric guidelines (COSMIN checklist, Mokkink et al., 2010) recommend the use of Intraclass Correlation Coefficients (ICC) or weighted Kappas for the evaluation of test-retest

reliability, both of which are applied to I.ROC in this thesis. ICC scores are given as a ratio of true score variance: error variance, and range from 0 to 1, with higher scores reflecting better reliability (Weir, 2005). A one-way random, single measure ICC model (equates to model 3,1 described by (Shrout & Fleiss, 1979) was used in SPSS. Reported results include significance, effect size, and standard error of the measurement (SEM), as recommended by (Weir, 2005).

Weighted Kappa's were used alongside ICC analysis as a measure of absolute reliability designed to appraise the level of agreement between scores that occurs by chance (Cohen, 1960). Kappa scores range from 0 (agreement is no better than chance) to 1 (perfect agreement). Guidelines given by (Fayers & Machin, 2013) assign weighted Kappa's above 0.6 as 'good', as shown in Table 4.4.

K	Agreement
<0.20	Poor
0.21-0.40	Slight
0.41-0.60	Moderate
0.61-0.80	Good
0.81-1.00	Very high

Table 4.4: Guidelines for assessing weighted Kappa scores; adapted from Fayers & Makin, 2007

4:5.4. Validity Testing

4:5.4.1 Construct Validity

t) Convergent and divergent validity (Hypothesis testing)

Analysis of the relationship between I.ROC and other measures used within these studies was calculated using conventional correlation coefficient methodology (Howitt & Cramer, 2005). The relationship between scores on two questionnaires (completed by the same participant at the same point in time), is routinely tested using either Pearson's r (parametric), or Spearman's rho (nonparametric). As discussed within Section 4:5.2, unless assumptions of homogeneity and variance are strongly violated and sample size is small, parametric statistics are employed (Norman, 2010).

u) Factor Analysis (Structural validity)

Structural validity of I.ROC was examined in each dataset using either Principal Components Analysis, Exploratory, or Confirmatory Factor Analysis, as detailed in Chapter 6. Factor analysis is a complex, multi-step process requiring several decisions such as type of analysis, rotation and extraction to be made by researchers. Guidance pertaining to these decisions can be contradictory. Within social science research, the most commonly applied technique is

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Principal Components Analysis (PCA; Gaskin & Happell, 2014) with varimax rotation. Although not technically factor analysis (Abdi & Williams, 2010), PCA produces simple solutions, identified as the key objective of factor analysis (Thurstone, 1947), and is particularly useful for item reduction during measure development. PCA is thus applied in the initial validation study (Study 1). Methodology is critiqued within the discussion of this Study, and subsequent studies (Studies 2a-d) use traditional Exploratory Factor Analysis. In the final study (Study 3), the models identified within each previous analysis are compared using Confirmatory Factor Analysis in AMOS. CFA imposes a series of constraints upon model characteristics (e.g. to what extent factors are allowed to covary) to force agreement, and calculates estimates of model fit. Although there are a range of techniques to examine the goodness of fit, only a small number are routinely used. Non-significant Chi-square (χ^2) values suggest the hypothesized model fits the data, but are sensitive to large sample sizes. χ^2/df ratios less than 3 indicate good fit (Byrne, 2001). Values of the Root Mean Square Error of Approximation (RMSEA) between .05 and .08 indicate acceptable fit, and below .05 show excellent fit. The Comparative Fit Index (CFI) and Tucker-Lewis index (TLI) are also used to assess the model fit, with values between .80 and .95 indicating acceptable fit; values greater than .95 suggesting excellent fit (Hu and Bentler 1999).

4:5.5. Evaluating the statistical significance of the research

Results of each quantitative study are evaluated according to several criteria: statistical power; confidence intervals, effect sizes and p value, as recommended by researchers and author guidelines (Gaskin & Happell, 2014a; Rodgers, 2010). Each of these criteria are summarised below. Further details can be found in Appendix 16.

P-value Statistical significance is reported using a minimum p-value of 0.05, which represents the probability that the calculated results are due to chance rather than an actual effect (i.e. the chance of a type-1 (α) error).

Effect Size Standardised effect sizes are assessed using Cohen's conventions (Cohen, 1988) of 0.1 (small); 0.3 (medium) and 0.5 (large) as reported in (Gaskin & Happell, 2014a). These are used with the caveat that descriptors are

relative and should be considered within the remit of the area of science and the specific factors of the study (Cohen, 1988).

Statistical Power Statistical power is the probability of an analysis resulting in a type-2 (β) error (Cohen, 1992), and is influenced by three factors: sample size, significance criterion, and population effect size (Gaskin & Happell, 2014a). Post-hoc power calculations were conducted for each Study, and are evaluated against the current convention within social research of .80 (Cohen, 1992). Power calculations were calculated using G*Power 3.1.9.2, a free statistical software package designed specifically for the estimation of power statistics (Faul et al., 2007; 2009)

Confidence Intervals Confidence intervals acknowledge that the point estimate (effect size) is only an approximation of the true population value, and instead calculate the range of values within which the true population value is most likely to lie, based on the sample data (Gaskin & Happell, 2014a). Calculation uses the standard error of the sample; for a 95% confidence interval with a large sample, this is calculated as the point estimate $\pm (1.96 \times SE)$ (Howitt & Cramer, 2005).

Ch4, Section 6. Evaluation of Approach to Data Collection

Several independent studies were conducted to explore different elements of the validity and usability of I.ROC, and the precise aims and the design of each consequently varied. Using a range of methods has facilitated a holistic approach to validity, whilst employing similar techniques across different studies has improved the rigour and the depth of the conclusions that can be drawn. Similar data collection techniques were used throughout the qualitative projects for example, but the research questions and the researchers conducting the data collection differed. This ensured that topics were covered from several perspectives, and findings were triangulated. Variations in approach can also be considered a limitation however, for example within qualitative analyses, asking similar questions in different ways within each study elicited different responses, and hindered the consolidation of cross-project themes. This was a particular challenge presented by the use of secondary data within qualitative analysis.

Another challenge presented by the use of secondary data was the variation in demographic information collected, which limits the extent to which conclusions can be generalised. For studies in which demographic data was not available, wider demographics for the population that the sample has been drawn from (e.g. Penumbra staff) is reported instead.

4:6.1. Bias

Bias causes systematic errors within the results of a study. Often the result of flaws in experimental design, the risk of bias and its impact on the results of each study must be considered. Several potential sources of bias are discussed within the limitations of the current studies, particularly regarding the relationships between testers, participants and I.ROC.

4:6.1.1 Sampling & recruitment bias

Sampling and recruitment biases occur when respondents and non-respondents systematically differ. Three possible sources of sampling and recruitment bias were present during the current studies: participant selection, non-response or refusal and the impact of incentives.

a) Non-response and refusal

“Non-response bias will occur when the likelihood of responding is correlated with survey topics of interest” (Stoop, 2012, p122). This is a realistic concern within these studies, as the earliest stages of recovery are not likely to be represented within community samples, and a positive linear relationship between stage of recovery and participation has been identified within previous research (Andresen et al., 2006; Song & Hsu, 2011; Weeks et al., 2011). Refusal rates may be impacted by cognitive burden of sensitive questions (Tourangeau & Smith, 1996) and perceived invasion of privacy (Singer et al., 1993; 2003). Refusal rates may also be affected by the concept of recovery itself; people may choose not to participate for example due to a belief that the concept of recovery does not apply to them, or that they have not made enough progress in their recovery to take part. This would cause a skew in the demographics towards the later stages of recovery.

Another likely source of non-response bias in the majority of current studies is a prior knowledge of Penumbra and I.ROC, which may affect people's desire to participate. For instance, it is possible that staff and service users holding less positive views on I.ROC may have chosen not to take part for fear of any negative repercussions. This should be considered particularly when reviewing feedback given about the measure. Future research should seek to gather the experiences of people with more negative and/or neutral viewpoints, to give a more balanced overview of the benefits and challenges of I.ROC use.

b) Participant selection bias

Participant selection bias relates to systematic ways in which participants differ from the general population. This source of bias is more likely within non-probability sampling methods as used within these studies.

For example, psychology, sports science and nursing and counselling students participated in Study 2 because they were easily accessible, however it is possible that they may vary in systematic and important ways (e.g. prevalence of mental health issues) from the wider population. There is very little research evidence that can either support or refute this potential source of bias. Whilst a small number of studies have explored mental health within discipline-specific student groups (e.g. Roberto & Almeida, 2012) none yet appear to compare prevalence of mental health issues across disciplines. What can be said for certain is that mental health issues are higher in student samples than in the general population (Brown, 2016; Stallman, 2010). A recent multi-national study found that between 33.8% and 51.1% of students were experiencing psychiatric distress at the time of the study, and just under one third of the sample had contemplated suicide (Eskin et al., 2016). More research is needed to explore variations in prevalence of mental health conditions in different fields of study, but given the size of the samples used here, and the high prevalence of mental health issues across the student population, it is considered likely that samples are reflective of the mental health of the student population.

In some cases, recruitment relied on information about the study being passed to the service users by members of support staff. Staff may choose not to participate in the recruitment process, may participate reluctantly or with their

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own ideas about the study which impact the likelihood of a service user agreeing to participate. Staff may also select the people they refer the study to, based on pre-judgements of eligibility. Likewise, service users may feel forced or coerced into participating, and this may be affected by the approach of the staff member, and the characteristics of any pre-existing relationship between staff and service user. Recruitment strategies varied, and no methods were employed systematically across studies to evaluate the potential for this bias. It must therefore be considered an undefined source of bias within the data. Data was collected from approximately 40% of the Penumbra workforce (Penumbra, 2018a) and 46% of people who have used services since 2011 (Penumbra, 2018b). These studies have therefore captured data representing a significant proportion of the immediate populations, but the possibility of bias remains. It is suggested that future research using similar designs for research collection ask practitioners to keep a record of the recruitment process, for example noting all service users considered and reasons for their inclusion or exclusion. Another method of evaluating the impact of staff attitudes to the study would be to complete focus groups or interviews with the staff at the end of the study

c) Incentives to participate

A small incentive to participate was offered during study 1 in the form of a £10 Tesco voucher. Such an incentive may appeal more to some people than to others, for example to those who are struggling financially, and may therefore affect the demographics of the sample, however small incentives have generally been found not to have a detrimental effect on survey quality, are no less effective than large incentives, and are considered good practice by many (Toepoel, 2012). Due to resource restrictions, reasons for participation and refusal were not collected within these studies, and therefore must be acknowledged as an undefined source of error.

4:6.1.2 Prior relationship with I.ROC and/ or Penumbra

Many of the participants within these studies were recruited through Penumbra. Whilst the ease with which participants can be recruited is a benefit of action research (Turnbull et al, 1998), this can also be a limiting factor. In this case, participants in the majority of studies had a prior relationship with Penumbra and I.ROC, for example as a member of staff or as a service user. Although the

questionnaire format remained unbranded throughout, the participants would have been familiar with the questions. This presents the potential for familiarity bias, particularly when selecting a favourite questionnaire (Studies 1, 2a, 2d). Familiarity and novelty can both inflate item preference (Liao et al., 2011). Previous I.ROC use and time in service are reported in relation to questionnaire preference, but for a true evaluation of preference, future studies should seek to engage participants with no prior knowledge of any of the measures or their context.

Familiarity and the relationship with Penumbra must also be acknowledged when considering the item responses. For example, participants who have completed I.ROC previously may spend less time considering each question, or may remember how they have answered questions in the past. The current studies were not blinded in order to maintain simple study designs, and as a consequence of the limited resources available.

Detection biases have already been acknowledged in the discussion of researcher position, however performance biases – the inflation or deflation of scores by participants to intentionally or unintentionally affect the outcomes of the study - must also be considered. A participant may inflate their scores if they feel uncomfortable with the researcher present or the testing environment (e.g. in public, Study 2a). Such biases will be considered throughout the results section, by comparing results across studies, demographic and participant groups.

The high proportion of participants with a prior knowledge of I.ROC is a consequence of the action research framework within which this research programme occurred, and whilst familiarity can be considered a limitation of this research for the reasons outlined above, the benefits of such an approach are substantial.

Chapter 5. Development and Face Validity

Ch5, Section 1. Introduction

This chapter adopts a narrative synthesis methodology (see Chapter 4 for details) bringing together findings from a series of qualitative studies and material from Penumbra's archives to develop a temporal narrative documentation and examination of the process through which I.ROC was created and implemented.

As seen in Chapter 3, recovery measurement is a rapidly developing field of study, with a broad variety of instruments now in existence. Approaches to the development process itself are equally divergent; some used service user-led, qualitative methods (Gordon et al., 2013) whilst others have adopted researcher-informed quantitative methods (Song & Hsu, 2011). Although methods do vary, there are several commonalities in the approaches taken to recovery measure development. For example, the majority of projects through which questionnaires have been created have been led by experienced teams of researchers, and the processes they followed are clearly defined. I.ROC development has not followed this pattern. Designed by practitioners, the tool was created in response to practice-based needs within Penumbra. As a result, much of the story of its early development went undocumented. This Chapter seeks to retrospectively document the development process using a narrative synthesis approach (methodology: Chapter 4). Development documentation can provide evidence to support a measure's construct validity; transparency in documentation encourages evaluation of the methods and comparison to those used in the development of similar measures, and facilitates future learning.

5:1.1. Aim

The aim of this chapter is to use existing evidence to reconstruct a narrative account of the development of the Individual Recovery Outcomes Counter which can be used to evaluate the face validity and feasibility of I.ROC. Through analysis of synthesised data from interviews, focus groups, surveys and literature searches (see Chapter 4 for methodology), a timeline of the processes leading to its creation and implementation will be devised, and the journey from initial idea conception through to implementation explored. Analysis seeks to answer the following questions:

- Who was involved in the creation of I.ROC?

- What was the intended purpose of I.ROC?
- How was I.ROC first created, and how has it been revised?
- How does the development process compare to other similar measures?
- Based on this process of development, to what extent can I.ROC be considered a valid and feasible measure of recovery?

Ch5, Section 2. I.ROC creation

5:2.1. Setting the scene: Contextual factors in I.ROC development

I.ROC development has been an iterative and ongoing process within which most practitioners involved in its development cannot identify a clear starting point. Key developments in Scottish policy and trends within health and social care practice were described by participants within I.ROC story interviews however, which help to place creation of the tool temporally, theoretically and culturally.

Within the UK, conceptualisations of recovery first reached prominence towards the end of the 1990's through the work of people with lived experience (Smith-Merry et al., 2010). At the same time, pressure was mounting within Penumbra for a change of approach; interviewees described a mounting recognition of the need for a more purposeful or intentional approach.

“We needed to have intentionality in what we were doing, so we couldn't just pitch up at someone's house and say, 'I'm here to support you, what do you want to do today?' And then sit and have coffee and read the paper or whatever.” Senior manager (P3_15)

Many made the link between Penumbra's need for purposeful working practices and the organisation's shift towards recovery-oriented practice. The link between intentionality and ROP is widely recognised in the literature; recovery-oriented practice is described as an *“active, ongoing and intentional process”* (Nugent et al, 2017, p.1). Leamy and colleagues (2014) identify 'intention to implement' as a crucial factor in the successful adoption of recovery-oriented practice.

Penumbra were early adopters of the recovery movement in Scotland, becoming the host organisation for the Scottish Recovery Network in 2004 (Bradstreet & McBrierty, 2012). The same year, Penumbra invited advocate Ron Coleman (see Chapter 2) to run a series of workshops on recovery, from which inspiration was taken to coin what would become a key acronym for recovery in Penumbra: HOPE.

“Ron talked a lot about hope, and what that meant to people in recovery, and he had an acronym called CARE that he used, which I

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honestly can't remember what it stood for, but I was doodling and I came up with this acronym HOPE: Home, Opportunity, People, Empowerment, and that was really the beginnings of ...me trying [to] think about how we might frame our work in relation to recovery.”
(P3_15)

Despite its fairly arbitrary beginning, HOPE has since come to represent the framework for recovery focused practice within Penumbra, as described in detail within Chapter 1. Hope, itself a central component of personal recovery (see Chapter 2), represents the “pillars from which people set forth their lives” P3_15, and the holistic changes Penumbra aims to support people to make. It is the recovery ‘programme’ I.ROC was designed to evaluate. Although the concept of HOPE predates I.ROC, evolution of the two are inseparable; I.ROC indicators were developed to fit within the four areas of HOPE (Section 5:2.2); and the framework evolved into an approach as a result of feedback during the piloting of I.ROC.

Early movements towards the adoption of recovery at a policy level influenced thinking in Penumbra, but change did not begin in earnest until 2006. An important year for mental health in Scottish policy, 2006 saw the release of several key documents which influenced Penumbra’s approach. The Changing Lives social work review (Scottish Executive, 2006) recognised the placement of people receiving support and their carers at the “heart of services” (Leadbeater, 2004, p.19) as crucial, and acknowledged the important role in delivering personalisation played by the measurement of outcomes of importance to people using services (personal outcomes; Cook & Miller, 2012). The Scottish Government commissioned research investigating practical applications and implementation of a personal outcomes approach, resulting in Talking Points, an organisational approach to engaging practitioners and service users in outcomes-focused conversations, and recording meaningful user data (Cook & Miller, 2012). Knowledge gained through involvement of Penumbra senior managers in the development of these documents was instrumental in reshaping services and in formulating an organisational response to the other key piece of 2006 legislation, competitive tendering.

Strategic and legislative changes to the procurement of community health and social care services in 2006 (Scottish Executive, 2006c) resulted in a rapid increase in competitive tendering in Scotland. Changes resulted in a series of negative

consequences for private and third sector organisations and the people they support (CCPS, 2008). In response, Penumbra engaged in a period of restructuring.

Frustrated with their inability to successfully compete as the lowest cost option, and uncomfortable with the ethics of doing so, discussion turned to how Penumbra could make *“the quality case to overcome the price issue”* P3_7. One solution was offered by a local software developer, who presented a template for an outcomes measure, with indicators that could be populated to an organisation’s specification (Community Care Providers Scotland, CCPS, 2010) and used to produce an image of change. This template provided the structure for I.ROC.

The influence of competitive tendering and data management techniques on the development of I.ROC suggest developers’ earliest intentions centred on measuring the ‘distance travelled’ of people using Penumbra services in order to demonstrate the impact of their services, *“We wanted to see the impact...it was simply about a tool to measure effectiveness.”* P3_8. However, participants also referenced organisational culture change, and the desire to use I.ROC to *“make a difference”* P3_7 to people using services, rather than simply measure change.

“I think we were quite clear that if you don’t measure it, it doesn’t get done ...it was important to have a measure but ... the measure wasn’t the end in itself, it had to be about a culture, the ethos and so on as well.” P3_15

Recovery instruments are identified as a ‘technology’ that can aid the development of ROP (Slade 2010b), and many agree that routine use of such outcome measures can prove an effective way of evaluating and improving practice (e.g. Coombs & Meehan, 2003; 2005). Currently the most widely used outcome measures fail to reflect issues considered important by people using services however (Happell, 2008c). Outcome measurement has instead become largely eponymous with performance monitoring and quality assurance (Happell, 2008c). Such measures, according to Lakeman, *“strip the person’s experience of all meaning and reduce it to predetermined categories”* (Lakeman, 2004, p.212) and this Browne (2006) argues, is inconsistent with a recovery approach. Well-designed, personally meaningful outcome measures may yet prove a useful tool within mental health care however, particularly when used collaboratively as part of support (Hoy, 2014)

I.ROC development is reflective of common critiques of recovery discussed in Chapter 2. Whilst the emerging recovery movement provided some inspiration for the development of the instrument, its creation was equally spurred by policy and an organisational drive to retain a competitive edge. I.ROC development was not instigated directly by people with lived experience, and as explored within the following sections, nor was it coproduced. Advocacy group Recovery in the Bin (RITB, 2018) argue that recovery has been driven far from its roots in as a user movement; now co-opted by government and health officials it is, they argue, employed within organisations as a commodity. Yet the question remains, does the end justify the means? I.ROC development may not have been driven by people with lived experience, but as demonstrated in Chapter 3, only a minority of recovery measures (including those that have been coproduced) are designed to be used in a collaborative and meaningful way within support, and I.ROC is one. This next section seeks to better understand the process through which I.ROC was developed and tested, to evaluate this question.

5:2.2. Creating I.ROC

In 2007-8, a working group was established to develop I.ROC. Consisting of senior practitioners representing a cross-section of Penumbra's services, group members brought a combination of both personal (as both carers and as people who themselves had experienced mental illness and recovery) and professional experience²³. One criticism of the makeup of this group is that there were no experienced researchers involved; early iterations of the tool were developed without well-researched scale models or an evidence-based framework for recovery. As argued by Nunnally and Bernstein (1994), specificity in this aspect of research design is crucial to its further development and latter examination of its validity.

Time spent determining the indicators as a group was minimal; developers described a brief two to three-hour session in which approximately eighty suggested indicators were condensed into twelve core categories using a process of 'brainstorming' by the working group.

²³ Demographics gathered from responses to a *post-interview questionnaire sent to Study 3 participants (Appendix 18)*.

“I remember a meeting where we had a big piece of paper on the wall and we started looking at all the things that could be indicators and I think we started off with like 70 or 80 different things, parts of people’s lives and we just did a process of condensing them.” P3_15

This process is unusual; measure development (including recovery measures; Slade et al., 1999); generally follows a procedure of deductive and inductive item generation (Morgado et al, 2018) in which thematic analysis of either recovery literature (REAQ-PV; Siu et al., 2012) or first-hand accounts of recovery (e.g. QPR; Neil et al., 2009) are used as the basis of their questions. Such a procedure is widely considered best practice (DeVellis, 2003) as the process through which questions are developed influences the underlying conceptualisation of recovery, and can affect the overall validity of the measure (MacKenzie et al, 2011).

The approach taken by I.ROC developers is not entirely unprecedented (e.g. Gordon et al., 2013, p.201). Yet unlike other measures following a less structured approach, I.ROC item generation also occurred without significant involvement of service users. Giving a voice to the experiences and perspectives of people in recovery is a central theme of the recovery movement. As argued by Scheyett et al (2013), developing measures without genuine inclusion of people with lived is incongruent with recovery philosophy and may affect the credibility of the instrument. One consequence of lack of involvement in the case of I.ROC is that indicators were chosen to reflect the intentions of the organisation, rather than specifically what matters to people using services.

“We wanted the indicators to be aspects of life that we could actually do something about as an organisation in terms of our day to day work” P3_15

Developers described the centrality of the HOPE framework to the generation of the indicators. It was conceded that the number of questions, and their attribution to the four HOPE elements was fairly arbitrary;

“well actually over the course of two or three hours I think we did get it down to twelve [indicators] and I think we’d set ourselves a limit of having twelve, we thought three for each [HOPE] section, so it’s all a bit arbitrary in some ways, but there was a process.” P3_15

I.ROC, unlike other recovery measures is thus underpinned by a ‘model’ of recovery which is neither theory nor research-based and did not guide development of items

for the questionnaire in any meaningful way. This is an important point when considering the face and construct validity of the measure. Creation of legitimate and robust evaluation frameworks requires structured processes (Thomas, 2012) such as logic modelling (Julian, 1997) to be used. No evidence of such a process was forthcoming within the current research. Furthermore, developed with no scientific input, measures based on practice-based models may lack construct validity. In terms of real-world application however, a practice-based framework developed in situ by those who intend to use it may be more acceptable than a scientifically derived model, particularly if, like I.ROC (see Chapter 2), this framework is conceptually aligned with research and theory. The statistical support for and against the HOPE framework as a structure for I.ROC is evaluated within Chapter 6.

5:2.3. Piloting and redesign

Following initial creation, I.ROC development received input from a broader range of stakeholders. PROWD (later I.ROC) was piloted with a group of approximately 40 adults with mental health issues using one Supported Living service in 2008. Feedback (collected informally) showed the questionnaire was too complicated, resulting in boredom and disengagement by service users. Workers reported that they had been able to complete PROWD within a two-hour support session, and felt this was not a justifiable use of support time. Pilot participants also reported the scoring method to be prescriptive, and not reflective of recovery as a unique and subjective experience (Perkins & Repper, 2015).

“Comments came back that it was a bit laborious because it was a series of 6 statements for each question, so effectively 72 questions; people were getting bored, people said they needed a break, it was taking too long, and also it seemed to sort of fix people with what we were stating as the outcome and they had to agree where they were on that scale...I think that very quickly we realised that we shouldn't be dictating what the outcome was, that people self-select or decide for themselves what was good for them or what wasn't good, and that would mean different things to different people.” P3_15

In response to feedback from the pilot, developers redrafted the measure, switching from a series of described stages unique to each indicator, to a static six-point frequency scale ranging from 'never' to 'all the time'. Standardising the format made it easier to compare results across questions, reduced the time and effort required to complete it, and enabled more flexibility and subjectivity – points in favour of its

feasibility (Slade et al, 1999). Yet, developers were upfront about the lack of any scientific rigour in the process of choosing this new scale, admitting that the idea came from seeing a similar Likert scale used in a magazine.

“I was just reading a magazine, and they had a similar scale in the magazine and I thought that actually, it doesn't really need to be any more complicated than that...So I went home and redrafted it that weekend.” Senior manager (P3_7)

Scale length was not discussed during the interviews, but follow-up discussions with I.ROC developers suggested that the scale was informed by the assessment scale used by external auditors (Care Inspectorate) who used a six-point evaluation. Developers also fed back that they were keen to use a scale with no mid-point, to encourage decision-making and discussion. Most articles reporting the development of recovery measures spend very little if any room discussing consideration of scale length; lack of focus on this during the I.ROC interviews is therefore not unusual. Despite the lack of scientific reasoning behind the choice scale, I.ROC developers decided on a scale length that is not without its advocates (e.g. Chang, 1994). Preston and Coleman (2000) for example, found that scales with six or more points are more valid than those with fewer scale points, and that those with eleven points or less are preferred by respondents.

Redraft of the scale and question wording was not developed by the working group but by a single person – albeit a group member with lived experience of recovery²⁴. Nevertheless, testing of the second draft within a small number of services produced enough positive feedback for the tool to be rolled out across Penumbra. One final alteration at this stage saw the name changed from PROWD to i-ROC (Appendix 4.c) to reflect the sense of empowerment that the developers hoped to encourage by use of the tool. *“PROWD felt a bit grandiose. i-ROC was intended to be more empowering and about the person (‘I rock’)” P3:1*

Ch5, Section 3. Implementation

Site testing of i-ROC and Carista began in early 2008, with four supported accommodation and supported living services across the organisation selected for a

²⁴ Information gathered through follow-up questionnaire and personal communications

trial during the year. Feedback suggested that i-ROC was generally positively received at this point, although it was not universally liked,

“I remember doing it at very early stages and thinking 'I don't like it' (laughs)...And I think that's because there was quite - I thought - quite a lot of questions...At that point, people weren't used to answering a lot of questions, they didn't like it. They weren't very keen on doing questionnaires and paperwork.” P3_17

As demonstrated by this quote, apprehension regarding i-ROC related not only to the questionnaire format, but to the changes to the culture of the organisation that it represented – notably here an increase in paperwork. A similar challenge was identified by Piat & Lal (2012) who found that one source of practitioners' scepticism towards recovery-oriented practice was the perception that use of recovery tools results in increased and unnecessary levels of bureaucratization. The authors linked concern over increased paper-work to worries about workload, lack of adequate leadership, and insufficient recovery knowledge on the part of practitioners. This is consistent with the 'service recovery' conceptualisation of recovery identified by Le Boutillier and colleagues (2011b), who found that some mental health workers believe recovery to be a financially-driven bureaucratic exercise. In the case of I.ROC, the financial context highlighted by developers who described the need to compete for tenders, and the fact that implementation of the tool coincided with the financial crash in 2008 may have contributed to the development of a similar belief amongst Penumbra staff.

This is supported by sustained negative perceptions towards the tool and the wider approach held by some staff. For example, three years after initial site-testing, staff continued to voice a variety of concerns including anxiety that i-ROC results may be used as a performance measure. When asked 'how will measuring recovery and reporting on outcomes affect you and your job?' one respondent replied:

“I feel that the project has been under enormous pressure to meet "the target" by means of quantifiable, measurable outcomes which quite often don't reflect reality.” AR1: Manager 7

This quote mirrors criticisms of outcome measures raised by Happell (2008) and Lakeman (2008) (see Section 5:2.1), and reflects concerns raised by practitioners across Scotland (Miller & Barrie, 2016). Miller and Barrie conclude that in order to use outcome measures successfully, “*other aspects of the system, such as*

approaches to prioritisation, performance management and commissioning, need to align to support outcomes and to avoid a return to service led approaches.” (Miller & Barrie, 2016; p.9). What is needed, they argue, is a collaborative approach that isn't heavily reliant on 'top-down, reductionist, statistical approaches', instead drawing on qualitative data wherever possible. In early iterations of I.ROC, no qualitative data was captured, perhaps contributing to the negative views outlined above.

Despite some initial apprehension, staff and service users within the trial sites gave enough positive feedback for both the measure and the database (Carista) to be rolled out across the organisation in 2009. Use of i-ROC was not mandatory at this stage; instead area managers were given responsibility for deciding how they could most effectively introduce the tools into their services, and the tools were offered to service managers who expressed an interest. Developers acknowledged that uptake at this stage was 'patchy', and whilst some staff saw the utility of the tool, others were apprehensive.

“i-ROC could be seen as another tool imposed on people with mental health problems as it has never been developed in consultation with service users. Therefore, it is professionals that have developed i-ROC and not service users. Service users are inundated with paper work...It could also be said does one tool fit all and can you measure human behaviour?” AR: Manager 1

This feedback reflects a sense of disempowerment or frustration with the process through which i-ROC had been developed and introduced. It highlights the impact of the extemporaneous manner in which i-ROC was introduced, without sufficient communication, guidance or training. Lack of clarity and consistency when implementing organisational change can lead to resistance or slow uptake (Greenhalgh et al., 2004) as demonstrated with i-ROC. This approach may have had some positive consequences however; one developer highlighted the perceived benefits of the 'staged process' of development and implementation, which they see as having allowed confidence in the tool to grow over time.

“The obvious one [thing we should have done differently] is that ... we would have invested a lot more in the...embedding of that but...I'm not sure about that, because I think in retrospect, it's been a much more staged development, and I think that it's actually done us no harm that we kind of stopped and started again if you like. If we had embedded what we'd had in the first place and really pushed that at

the time, I'm not sure we would have ended up where we ended up.”
P3_7

Despite acknowledgement of the negative impact that ad-hoc implementation had on staff attitudes towards i-ROC, the idea of implementing a mandatory training programme during the initial roll-out was therefore felt to be premature. Penumbra persevered with implementation, and by the end of the year, the measure was in use across nineteen services. Staff were growing accustomed to the idea of completing it by this time, but informal feedback given during this stage of implementation highlighted continuing issues regarding a lack of clarity in the purpose of i-ROC

“The one thing that sticks in my mind was one of the managers saying – this is all very well, but what do we do with the results? We’re ...asking people to fill in this questionnaire, we’re going to get a set of results, what do we do with the results? ...and I thought, absolutely, that’s absolutely right. You know, if we’re going to ask people to complete this, we also have a responsibility to equip our staff to be able to respond to what they get.” P3_17

This feedback helped stimulate development of the HOPE toolkit, a collection of plans, tools, tips and resources designed to help staff to work in a focused, recovery-oriented way.

“We suddenly thought, well what is in our tool-bag? What do we do with people? How do we engage [with] them? Or was it being left to the individual worker to show their creativity - or not? ...So how did we give something that was a bit more universal? So I guess at that point it became the way of beginning to talk of HOPE.” P3_15

i-ROC was included within the first iteration of the HOPE Toolkit (Appendix 4.d), reflecting a shift in its intended role, from an isolated measure to one of many tools positioned within a toolkit designed to promote a recovery approach. Links between the framework and i-ROC were not yet clearly defined; accompanying guidance described the instrument as *“a measurement tool, not a planning or therapeutic tool”* (PROWD, draft 2, Appendix 4.b) until 2012. The perceived purpose of i-ROC, and its place within the HOPE framework was in a state of flux; not yet established at the heart of the approach, i-ROC was becoming integrated within a developing toolkit, the centrality of which was itself not yet established.

5:3.1. KTP developments: Face Validity and Feasibility Testing

Increased uptake by services and the development of the toolkit improved confidence in i-ROC, and in 2010 a chance conversation with researchers at Abertay University stimulated the next stage of questionnaire development (see Chapter 1 for details). During 2011, the research team sought to investigate face validity of i-ROC. Utilising a mixed-methods approach including focus groups, interviews and questionnaires, people using services and staff at Penumbra were asked about their understanding of and attitude towards recovery and i-ROC. Data from the focus groups was thematically analysed, and the main findings of this analysis were then added to the results of the staff questionnaire to compare themes and construct a list of necessary revisions. Findings were discussed by the research group, and revisions were made to the questionnaire. Examples of themes arising from the focus groups are shown in Table 5.2 (for full results, see Appendix 1818.a); questionnaire results are shown in Figure 5.1.

Participants demonstrated an understanding of the content of i-ROC and why the questions were included; responses showed that questionnaire items were generally felt to capture all relevant aspects of recovery. For example, one participant described i-ROC in terms that emphasised its holistic approach to recovery “*Well I call it the circle of life, I don't know what they call it...because it is like a big circle and it is my life*” P5~1*, whilst another stated; “*I think you have managed to ask everything relevant to us. There is nothing that stands out that you have missed.*” P5~2* Participants described their responses to the i-ROC questions, highlighting the interconnectedness of the different questions, and their importance to recovery. In relation to the mental health question for example, one person described difficulties they have with their memory, how this impacts ability to cope with daily living tasks, and how stress caused by these issues impacted their physical health;

“I have been finding it difficult because I'm bothered with short term memory and it has just been difficult because my support got changed and people used to come to my house and make sure I take my tablets and I had something to eat... I don't feel good now. I am worrying about that all the time and that brings on my epilepsy. Stress brings on my epilepsy.” P5~3*

This quote also highlights the impact of the support relationship on recovery. As outlined in Chapter 2, a support relationship built on trust, mutual respect and hope is a critical dimension of recovery-oriented practice. Absence of such a relationship

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as described by this participant can pose a significant barrier to recovery; this quote provides an example of how conversations guided by I.ROC indicators can aid the identification of problems with support and support relationships. Benefits of I.ROC in mental health practice are discussed further within Chapter 7.

Participant responses showed that questionnaire items were generally felt to capture all relevant aspects of recovery. For example, one participant stated; *“I think you have managed to ask everything relevant to us. There is nothing that stands out that you have missed.”* P5~2*. One service user’s feedback encapsulated the importance of a wide range of aspects in their recovery journey:

“I have gone from being a 0 on everything, now I’m at 21 - or 100 or whatever is at the top of the scale! I have improved socially and financially. My self-identity and confidence have been really important changes on the road to recovery. Housing was a really important aspect in my recovery. My physical health has also improved. Since coming off medication, I have lost a lot of weight, which has helped me improve my self-image. I have goals for the future now.” P5:1

This supports the finding in Chapter 2 that although CHIME components are most frequently identified aspects of personal recovery (Leamy et al., 2011), others such as mental and physical health and daily living skills significantly affect recovery for some. Consequently, no questions were added or removed at this stage.

As shown in Figure 5.1, questionnaire respondents were particularly concerned about language comprehension. Language was reported to be unclear; respondents (staff and service users) reflected that many of the questions were confusing: *“It would take me a minute or two until it came to me what you were asking me.”* P5~5*. Question wording was changed to clarify item meanings; lengthy descriptions presented at the beginning of each item were removed and used instead to inform development of a guidance booklet for staff. Prompt words lifted from the descriptions replaced the text, to encourage wider thinking around each indicator, and pictures were introduced to improve engagement and accessibility.

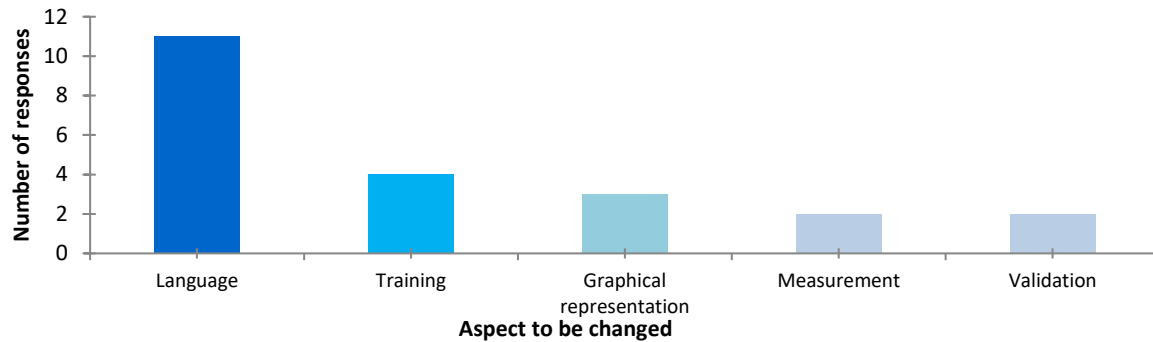


Figure 5.1: Questionnaire responses to the question: how could i-ROC be changed to make it better?

‘Employment and skills’ was understood to mean paid work; for example one service user stated; *“I don’t really feel I’m in a position to answer that because I’ve been on the sick for quite a while so haven’t worked for quite a while” P5~4**. Developers were clear however that the intention was not to ask specifically about work; *“people said are you trying to get me back into employment and we said no, it’s more about purpose.” P3_10*. To fully represent the variety of possible meaningful activities, the wording was therefore changed to ‘purpose and direction’.

Other changes included removal of the word ‘recovery’ from all questions in response to the varied perceptions (some negative) participants related. Markers (‘Never’ and ‘All the time’) were added to the first and final points of the scale, and a directional arrow included to facilitate comprehension. Length and format of the scale itself was not changed, but free-text boxes were added after every question, to capture respondent’s feelings and reasons for their answers. This addresses Miller & Barrie’s (2016b) recommendation that quantitative outcomes data should be used ‘with caveats and not in isolation’.

Once redesigned, the questionnaire was assessed at a second round of focus groups, to establish likeability and tool comprehension. Positive user feedback at this stage, with no further suggestions for changes, suggested that face validity of i-ROC was acceptable.

Interviewer Quote (Context)	Full Quote (Context: participant)	T1	T2
How did you feel about the length of it, about the number of questions?	Just ample. More or less true, everything that you wanted to discuss, went through everything that was needed.	Right length	Length
Do you think there are any questions that we have missed out	No I don't think so, I think we have covered everything. I think you have managed to ask everything relevant to us. There is nothing that stands out that you have missed.	Questions haven't missed anything	Content
Do you think that the questions cover the areas that are relevant, if you think about health and wellbeing and things like that? Do you think that the questions that are in here cover the areas that are important? Or are there areas that are missing?	I think it covers important areas but there isn't from the perspective of someone who may have dealt with people with mental health difficulties, but doesn't really understand what it is like to be mentally ill.	Covers important areas, but perspective not right	Content; perspective

Table 5.1: Example of themes arising from service user interviews during the KTP

	Version 1	Version 2	Version 3	Version 4	Version 5
Name	PROWD	PROWD	i-ROC	i-ROC	I.ROC
Year of development	2006-7	2007	2008	2011	2012
Changes informed by	Working group	Pilot feedback	Carista rollout	Focus groups	Focus groups/ graphic designer
Introduction to questionnaire included?	None	Yes	Yes	Yes	Yes
'Best Hope' included?	Yes	No	No	No	No
Description of indicator	Text-based description of indicator	Text-based description of indicator	Text-based description of indicator	Prompt words and pictures	Prompt words and pictures
Time frame of question	None given	"At this time"	"At this time"	"In the past 3 months"	"In the past 3 months"
Question wording	No questions	Most questions worded to ask, 'how often do you feel'...	Most questions worded to ask, 'how often do you feel'...	Most questions worded to ask, 'how often '...	Most questions worded to ask, 'how often '...
Scale	6 described stages	1-6 frequency scale	1-6 frequency scale	1-6 frequency scale (with arrow)	1-6 frequency scale (with arrow)
Free text box for notes/ comments?	No	No	No	Yes	Yes
Number of Indicators	12	12	12	12	12
Indicator wording changes	Employment & Skills	Employment & Skills	Employment & Skills	Purpose & Direction	Purpose & Direction

Table 5.2: Comparing the properties of I.ROC at each stage of development

Focus groups both informed positive changes to the questionnaire, and provided a medium for the formal inclusion of stakeholders in the tool's development. For example, one service user recalled how the consultation process had helped people using the services to feel involved in the development of i-ROC,

*“Being part of that process that revamped it.. it was like the service users were actually saying how they wanted the tool to be... you know this is how we want our I.ROC and that's how it was done... and it was improved as well which was really... and it gives you that...whoa....someone's actually listening to what we want ... you know rather than you's are just service users...they're actually listening to what we wanted... this is our ... after all were the ones that have to use it...so why shouldn't it be the way we want it.” P1_3**

The importance of such involvement is widely recognised within the literature. Given the roots of recovery in service user activism (Frese & Walker Davis, 1997), and its definition as a subjective and empowering experience (Fisher, 1994), involvement of people with lived experience in the development of recovery measures is considered crucial to the instrument's validity (Law et al., 2012), as discussed within Chapter 3. Involvement of staff within the development process may further encourage use of the tool and facilitate the creation of a recovery culture (Williams et al., 2016); the impact of staff involvement within I.ROC development is considered within Chapter 7, which examines staff and service user perspectives on current use of the tool.

Having established initial support for the face validity of i-ROC, the research team began further validation testing of the revised instrument (Study 1). Results of this testing, presented within Chapter 6, were positive both in relation to the psychometric properties and stakeholder's opinions of the tool. This initial testing provided enough confidence in i-ROC within Penumbra for the questionnaire to be more widely implemented.

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1999	<ul style="list-style-type: none">• <i>Recovery: an alien concept (Coleman) published</i>• Recovery introduced to Penumbra
2002	<ul style="list-style-type: none">• <i>Visions & Voices Scottish national conference on recovery</i>• <i>Scottish Recovery Forum established</i>
2004	<ul style="list-style-type: none">• <i>Health Scotland commissioned to establish national mental health indicators</i>• <i>Scottish Recovery Network established</i>• Ron Coleman runs recovery workshops for Penumbra• HOPE acronym coined
2006	<ul style="list-style-type: none">• <i>Changing Lives report</i>• <i>Government commissioned work on outcomes begins</i>• <i>Changes to policy increases competitive tendering</i>• <i>National mental health indicators consultation</i>• HOPE toolkit first discussed• Meeting with Intrelate sparks interest in outcome indicators for Penumbra
2007	<ul style="list-style-type: none">• Outcomes measurement working group established in Penumbra• Background research into outcome measures, practice in Penumbra etc.• Carista for Penumbra developed
2008	<ul style="list-style-type: none">• First draft of PROWD created• PROWD piloted with approximately 40 service users. Feedback used to revise the measure• Second draft of PROWD• Penumbra restructuring begins• Site testing of i-ROC and Carista at four test sites across Penumbra
2009	<ul style="list-style-type: none">• Carista and i-ROC rolled out across Penumbra, but only to teams expressing an interest• Penumbra restructuring continues
2010	<ul style="list-style-type: none">• KTP application with Abertay University for validation and further development of i-ROC• Penumbra restructuring concludes
2011	<ul style="list-style-type: none">• KTP begins in March 2011• Focus groups with service users and staff• Redevelopment - inclusion of pictures & prompts• Initial Validation begins
2012	<ul style="list-style-type: none">• Graphic designer employed and produces an aesthetically re-formatted I.ROC• Full roll-out of I.ROC across all Penumbra services• I.ROC training introduced and made mandatory for all frontline staff• Conclusion of initial validation

Table 5.3: I.ROC Development Timeline

5:3.2. 2012 Roll-out

“Our confidence in it has grown over the years in terms of what it is, what it can do and what difference it can make, because the evidence that’s come back has supported that...Now we’ve got evidence to say actually, this helps, so we can make a case for it” P3_7

Buoyed by the positive results of initial validation testing (see Chapter 6), in 2012 the final implementation steps were taken. A graphic designer finalised changes including the inclusion of the prompt words and pictures described above, and changing the name from i-ROC to I.ROC. Graphic redesign was extended to include the HOPE toolkit, a guidance book and a tear-off spidergram pad (see Appendix 4.f). Although the designer’s changes to I.ROC were aesthetic, they were felt to have had a marked impact upon uptake and attitudes towards the tools.

“I think that I had completely underestimated – I mean the significance of having the tools graphically designed and presented in the way that they are is quite amazing” P3_7

Standardisation of format across each of Penumbra’s recovery ‘tools’, including the use of ‘HOPE’ colours, lettering styles and motifs (see Figure 5.2) created a recovery ‘brand’; branding is recognised as a useful technique for establishing organisational culture (Hatch, 2008). The newly designed HOPE toolkit emphasised links between I.ROC and the HOPE framework throughout²⁵, for example the personal plan in the toolkit includes a page asking ‘what does my I.ROC tell me?’ Continuity of design motifs across the documents, also helped link I.ROC to the HOPE toolkit and the wider framework. I.ROC guidance introduces the tool as *“based on the HOPE framework for recovery,”* (I.ROC Guidance, 2012) and links the document to planning tools and other resources as part of the wider approach (Figure 5.3).

Links between the measure and the HOPE framework were further emphasised during newly designed mandatory I.ROC training. Training was felt to be

²⁵ Appendices 4 & 5

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beneficial, both in introducing staff to the materials, and in establishing I.ROC's place within the organisation's approach

"It pulls everything together...it's like to fit into some kind of jigsaw rather than just be disparate workshops that happen because, well we've always done it, but now it makes sense ...it feels like it's at the core of what we're trying to promote within Penumbra as an organisation." P3_6

1



2

I-ROC
What does my I-ROC tell me? Does it identify specific areas I may wish to focus on?

HOME

OPPORTUNITY

PEOPLE

EMPOWERMENT

Add in any comments, thoughts, and ideas from your I-ROC and what you think is important to you.

penumbra hope
Name _____ Date _____

Figure 5.2: Demonstrating continuity of design motifs: pictures of the I.ROC materials (1) and a page from My Plan (2), a personal planning tool included within the HOPE toolkit. Image 3 also shows the links made within I.ROC guidance to the HOPE toolkit.



Refer to the HOPE Toolkit for tools and resources that can help in the area of **Life Skills** such as My Plan, My Money Plan, About Me... 3

Although the process of embedding I.ROC has continued since this time, 2012 marked a transition in use of the tool: from voluntary addition to practice, to required central element of Penumbra's approach. With the new materials cementing I.ROC's position within the HOPE framework, and use of the tool included within mandatory core training requirements, this point marks the shift from implementation to current practice.

Ch5, Section 4. I.ROC Feedback

Feedback on the post-2012 (current) version of I.ROC was provided by senior managers (n=5); service managers (n=5); frontline practitioners (n=23) and people using Penumbra services (n=19) during the interviews and focus groups conducted within the four qualitative Projects analysed in this Chapter. Analysis also draws on feedback provided by service users (n=13) and staff (n=9) during the initial KTP focus groups described in Section 5:3.1. This Section seeks to summarise and categorise feedback concerning the content, format and

structure of the current version of I.ROC to evaluate its face validity and perceived usability.

5:4.1. Formatting

Design elements of I.ROC were referenced frequently within interviews with service users and staff in all projects. Participants commented positively on the colours and graphics of the new design.

*“Colours make a difference more than numbers do to people. Different parts of your brain are, creative sides, pictures and all that sort of stuff. In mental health, I think using colours rather than numbers is better.” P1~5**

A similar finding was reported by developers of Hi-Way, a recovery outcomes measure developed in Wales (Boniface et al., 2015). Boniface and colleagues reported that service users specifically requested graphics to be included in the tool to reduce its formality and improve its user-friendliness.

Stakeholders liked the consistency of using the same scale throughout I.ROC, but whilst some liked the scale, others felt that they couldn't always fit their answers onto the six points; as one person put it, *“the scale doesn't always cover what I feel” (P5~10*)*. The scoring of questions was identified frequently by practitioners as an area of difficulty when completing I.ROC, for example, one staff member said

“Some people struggle with it because of the guidelines. I mean, you've got 1 – never, to 6 – all the time. And some of them do struggle with finding where they are in the scale.” P2_1

Scale length will be examined from a statistical perspective within the next Chapter. What is important to note is that participants did not disapprove of the use of a numerical scale,

*“You're a person not a number. Like other health professionals you're a number...you're a person here it's your journey...it's your recovery... it's your support.” P1~3**

Use of I.ROC as a conversational prompt, and addition of the comments boxes ensured users did not report finding it reductionistic, a common criticism of outcome measures (Happell, 2008). As argued by Miller and Barrie, quantitative outcome measures should be used *“with caveats, and not in isolation”* (Miller & Barrie, 2016b, p.5), as is the case with I.ROC.

5:4.2. I.ROC Questions

Stakeholders appear happy with the breadth of topics covered and the general tone of the questionnaire, describing it as a holistic assessment. A holistic approach was recognised by people using services as important for their recovery.

*“[I.ROC] kind of encompasses everything... I think it's definitely very important that support...encompasses everything, considering that mental illness kind of just encompasses everything” P4~11**

Participants agreed that most I.ROC questions were simple and straightforward. The simplicity and overarching structure of I.ROC was felt to enable flexibility in how the questions are related to by respondents.

“The questions can be kept quite general...or they can be really specific. I think it's because it is broken down into 4 sections, kind of identifying certain areas that they want to work on anyway.” P2~8

Concerns over the wording of particular questions and the prompt words that accompany the questions were also expressed however, as discussed in turn below.

5:4.2.1 Purpose & Direction

Some staff voiced their dislike of the Purpose & Direction item, feeling that the focus of the question and accompanying prompts was too centred on employment.

“If you have got somebody who has retired, they are not interested in or maybe not interested but they could be interested in volunteering I think I would reword it saying how perhaps would you fill your day in instead of doing the employment side. It has changed a little bit but the questions is still based on employment.” P2_5

Whilst engagement in meaningful activity such as employment has been shown to significantly improve a range of recovery-related outcomes (Doroud et al., 2015; Panczak & Pietkiewicz, 2016), as discussed previously, this does not have to mean employment (Bullock et al., 2000; Rinaudo & Ennals, 2012). Staff perceptions of this item suggest that the language used within the question does not yet reflect this fully.

In contrast to staff opinions however, people using services identified no changes to specific I.ROC indicators at all (Project 1). Asked about their recovery journeys and what made a difference (Project 4) people using Penumbra services talked openly about their hopes for the future, in which employment and meaningful activity played a significant part:

*“I'm working towards getting a well-paid job and have lots of money coming in... That's what I would like eventually is to get a good, well paid job and do something with my life.” P4_12**

Differences seen in the responses of staff and service users in response to the issue of employment suggest that staff are yet to fully hear the perspectives of people they support. Some practitioners additionally voiced concern about asking questions that may not get a positive response, which appears to reflect a pessimistic and paternalistic attitude towards recovery and people using services. Findings do also suggest however that the wording and fit of this question merit further scrutiny

5:4.2.2 Conceptual Clarity

Respondents regarded some questions as conceptually indistinct and highlighted this as a cause of confusion. Overlapping items included Exercise & Activity and Physical Health; and most commonly Participation & Control and Self Management.

“If they could somehow differentiate from the participation and control and self management because they're too much the same and it confuses people.” P1~16

Whilst most participant responses reflect a clear understanding of each of the questions, both staff and service users across all qualitative projects discussed the difficulty of scoring ‘double barrelled’ questions, in which the question appears to cover more than one topic. Participants referred to several of the questions as “not specific enough” S1:17 as they cover “too many areas in one question.” S1:63. One respondent gave the example that “I feel safe but I'm not comfortable. How should I score?” S1: 42. Another said,

“The double-barrelled questions are just confusing. E.g. how often have you felt mentally emotionally happy healthy and well? It is just too much. These questions should be split up...’emotionally healthy happy and well’ are separate things...If

*they were three separate questions as an example you might go 3 2 1. Because they are all in the one you are probably going to go for an average, it just could be more accurate.” P1~5**

It is commonly acknowledged that question wording is crucial to the success of a questionnaire (Morgado et al, 2018); ambiguity or difficulty answering questions as seen in this analysis are recognised as key weaknesses in instrument design (Gottlieb et al., 2014). Wording of I.ROC questions should therefore be further considered, to ensure clarity and comprehension.

Ch5, Section 5. Discussion

Motivated by a range of internal and external organisational factors, I.ROC was created to measure both service-level outcomes and change in personally meaningful outcomes for people using the service. Balancing such conflicting demands presents a significant challenge (Miller et al, 2017). The majority of routinely used outcome measures currently fail to meet both objectives (Happell, 2008; Lakeman, 2004), and debate continues as to how – or even if - an outcomes tool can be both personally meaningful and produce reliable results at the organisational level (Miller & Barrie, 2016b). Collaborative, conversational approaches and the use of a combination of qualitative and quantitative data collection are crucial, Miller and Barrie (2016b) argue, to successful outcome measurement. The format and intended use of I.ROC appears to meet these criteria, suggesting it has the potential to be a meaningful measure.

For Penumbra at least, I.ROC does appear to have played a meaningful role. Perspectives on I.ROC’s purpose have shifted over time; representing far more than just a measurement tool, it is now perceived as central to Penumbra’s recovery approach. As such, it has played a part in the establishment of recovery culture at the organisation (Clossey & Rheinheimer, 2014)

5:5.1. Critique of development process

Initially, I.ROC creation involved neither researcher input nor explicit involvement of people with lived experience. By embedding statistical evaluation within the questionnaire design process development, researcher involvement can help ensure the development of instruments with sound

psychometric properties. Researcher involvement can also improve the rigour and transparency of the methods used to create a measure, enabling replication of methodology and robust evaluation of the resulting instrument (Rattray & Jones, 2007). The impact of lack of research input is demonstrated in the 'arbitrary' underlying model and lack of conceptual clarity within and between certain questions (Gottlieb et al, 2014; MacKenzie, 2003).

Development of I.ROC was led not by scientific researchers but by people with experiential knowledge of the practice they are seeking to change, consistent with descriptions of Participatory Action Research (PAR) (Baum et al., 2006). The action research approach taken (albeit unconsciously) by Penumbra to develop I.ROC perhaps provides a better fit paradigmatically to recovery than a standardised psychometric methodology however (Tanenbaum, 2006; Park et al, 2014). Action research is embedded within the social, political and practical environment in which it is conducted (Brydon-Miller et al, 2003). The approach is built on the fundamental principle of respecting the value of experiential knowledge, an attribute of central importance to the personal recovery concept (Amering et al, 2012):

“A key value shared by action researchers, then, is this abiding respect for people’s knowledge and for their ability to understand and address the issues confronting them and their communities.”
(Brydon-Miller et al, 2003; P14)

Yet within the recovery paradigm, the loose form of action research undertaken by Penumbra cannot be considered fully participatory. Whilst creation of I.ROC did include involvement of people with lived experience through the working group and through focus groups conducted as part of an iterative development process, it can be criticised for its lack of structured and strategic approach to user involvement. Involvement of people with lived experience is considered an important feature within recovery measure design, and instruments are routinely evaluated on the strength of such involvement (Burgess et al., 2010; Scheyett et al., 2013). Involvement helps ensure accurate reflection of issues of importance to the people who will be using the tool, and at a broader level, facilitates movement beyond the negative constraints of the service user label (Hutchinson & Lovell, 2013).

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Coproduction models (Gillard et al, 2012; Slade et al, 2014) of inclusion, in which people with lived experience are included as equal partners throughout, represent best practice (Scheyett et al., 2013) for measure development. Yet, only a minority of measures have fully involved people with lived experience within all aspects of the process (e.g. Gordon et al., 2013), and only two measures in the review in this thesis (Chapter 3) were found to meet the highest standards of involvement. Despite fairly low levels of user involvement, I.ROC still meets benchmarks set in Chapter 3. More importantly, it is also found to be a good measure of recovery by people with lived experience. The fact that recovery measures are commonly developed without a level of user involvement reflective of the model seeks to highlight the substantial gap that still remains between recovery philosophy and practice, as discussed in Chapter 2. It may also suggest that lived experience of recovery is not fundamental to the successful development of tools and techniques to support recovery, and that skilled practitioners are capable of empathising and understanding the concept. This may demonstrate that recovery applies much more broadly (Perkins & Repper, 2015), relevant to anyone who has experienced devastating and life-altering events, reflective of a shared humanity and common experience.

5:5.2. Questionnaire critique

Modifications were made iteratively through the I.ROC development process, on the basis of feedback from service users and staff. Not all opinions voiced within this feedback resulted in changes however, and several of the less frequently voiced criticisms have previously gone unexamined. These include issues regarding scale length and question wording, particularly with regard to multi-aspect questions, in which items are seen to cover too many disparate areas for just one answer. Issues of question wording can seriously impact an instruments' validity (Gottlieb et al., 2014).

MacKenzie (2003) identifies three main issues of model development relating to weak underlying theory; confusion in defining what the instrument is measuring, development of 'deficient' or 'contaminated' items, and invalid conclusions regarding relationships with other constructs. Concerns raised by participants

regarding question wording are reflective of these issues, in particular the issue of item contamination or deficiency. This suggests as previously acknowledged, that the 'arbitrary' HOPE model on which I.ROC has been based is itself flawed. Whilst structural fit of HOPE is considered in the next Chapter, it is imperative that difficulties understanding I.ROC questions are seriously addressed.

5:5.3. Limitations

The account of I.ROC development presented in this Chapter is the result of data synthesis from a number of sources including interviews and historical sources. Accuracy of the narrative is limited by the recall of interview participants and gaps in archive documents. The researcher presents a possible source of bias as she has been embedded within Penumbra throughout the project and directly involved in latter I.ROC development. As stated previously (see Chapter 1), the position of the researcher within the charity has proved beneficial in many respects. Potential interviewees could be contacted quickly through the organisation, and existing rapport between the researcher and the participants helped establish a relaxed and comfortable atmosphere during the interview process, which may have enabled participants to open up more than would otherwise be the case. Knowledge of the organisation and the tools under scrutiny helped the researcher focus on eliciting detail of earlier parts of the story. During analysis, gaps within the interviewees' accounts of events were identified. An interviewer with less prior knowledge may have made less assumptions and thus been able to more easily spot and respond to these gaps within the interviews.

Long delays between the development of I.ROC and the collection of interview data, and between the interviews and analysis limited the extent to which gaps that were eventually identified could be filled in by participants. This limits the amount to which the story captures the developers' thought processes, for example reasons why questions were worded as they are, or what other indicators were considered for inclusion.

5:5.4. Conclusion

This Chapter has set out to tell the story of how and by whom I.ROC was developed, and to frame the tool's creation within its contemporary temporal,

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practical and political context. The narrative account of I.ROC development presented here has shown that it, albeit unconsciously, followed a Participatory Action Research approach applauded by many as a more grounded approach to social research (Brydon-Miller et al, 2003). This exploration has revealed several issues within both the development method and in I.ROC itself however. Issues of instrument design such as question clarity and a weak underlying model are understood as resulting from insufficient involvement of people with psychometric expertise and of people with lived experience of recovery. Psychometric properties of I.ROC will be examined in light of these findings in the following Chapter. Despite these issues, I.ROC appears to be considered a valid and user-friendly measure of recovery by (primarily) practitioners providing feedback on its use. Chapter 7 will take a deeper look at the perspectives of people with lived experience, as the feasibility and usability of I.ROC are examined.

Chapter 6. Psychometric Testing

Ch6, Section 1. Introduction

Confidence in the validity and reliability of a measure is usually established through a series of studies, with greater numbers of independent results providing a greater level of confidence in the performance of the questionnaire (Zumbo & Chan, 2014). Weight is added to the argument for the measure's validity through repeated psychometric testing within a variety of populations and conditions (Frost et al., 2007). For a more detailed discussion of validity and reliability, see Chapter 4. Thus, whilst findings of qualitative research outlined within Chapter 5 provide initial support for the (ecological) validity of I.ROC, more research is needed to develop a comprehensive picture of the tool's properties. This Chapter therefore presents the findings of studies exploring the psychometric properties of I.ROC.

Systematic review of personal recovery measures within this thesis (Chapter 3) demonstrates that several instruments have been created that are comparable to I.ROC in terms of their intention (to measure personal recovery), level of measurement (individual) and format (quantitative questionnaire completed as a self-report). Such measures provide an important yard-stick against which to evaluate the properties of I.ROC, and the best properties of each have been used to develop a set of benchmarks (Table 3.16) against which I.ROC will here be evaluated.

Findings are presented in three sections, which reflect the development of research questions across the length of the project, as shown in Figure 6.1. Part one presents the initial study into the validity and reliability of I.ROC and a discussion of the findings. The second part reports on four analyses responding to questions arising from this preliminary investigation. Finally, in the third results part, data collected during routine use of I.ROC within support sessions at Penumbra is used to examine the structural validity of the measure, assessing the goodness of fit of each model identified within the previous studies. Within these three parts, the methods and results of each study are presented in turn, and then discussed together, during which they are evaluated against the established benchmarks.

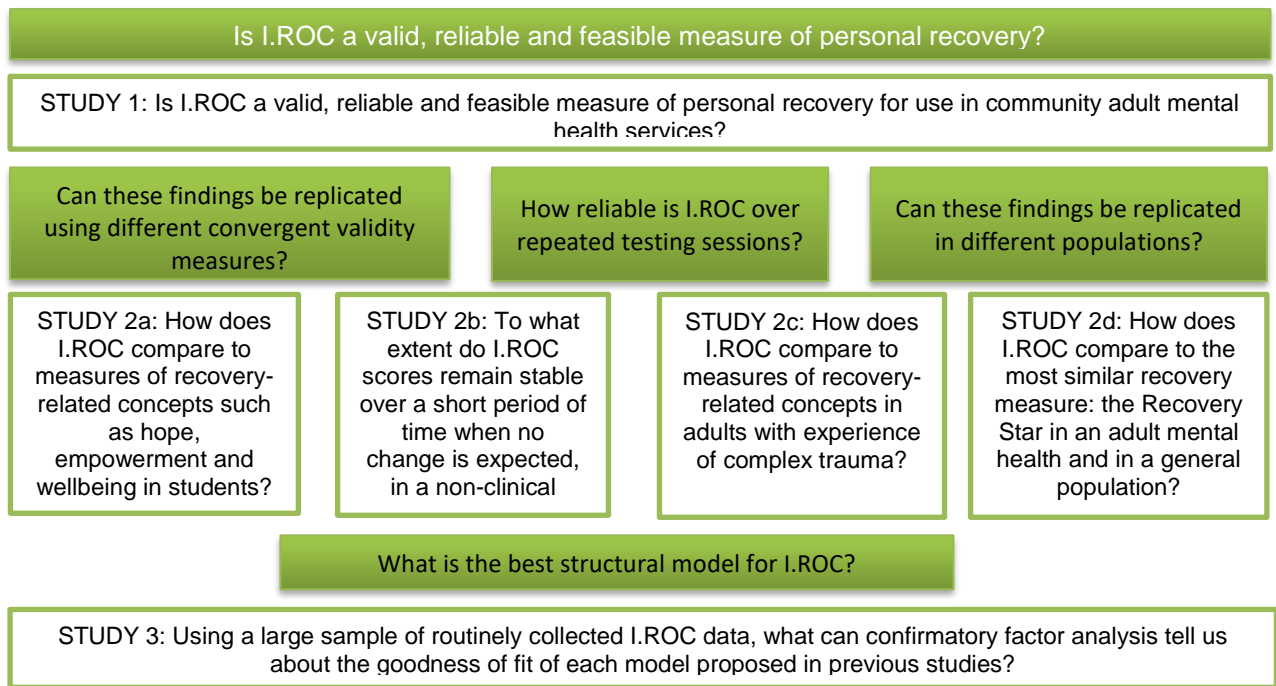


Figure 6.1: Process map showing the development of research questions throughout the project

Ch6, Section 2. Study 1: Initial validity

Study 1 was designed as an initial exploration of the psychometric properties of I.ROC and an assessment of whether further development and application of I.ROC was worth pursuing.

i. Study 1: Methods

Researchers

Seventeen Penumbra support staff members were trained to complete the validation testing, as they already had the necessary disclosures and training to work with individuals with mental health problems. Support staff underwent training and induction with Dr Scott Hardie, who is a BPS accredited Psychologist, and a certified Psychometric tester.

Recruitment

All new and existing service users were asked by their support team whether they wanted to participate, and if they agreed were given information about the study. Participants were not screened by age, and there were no exclusion criteria. Participants were also informed prior to the appointment that they may have someone else present, for example a friend or family member if they needed additional support. If service users agreed to participate, they signed an initial consent form which agreed that they could be contacted by the testers to arrange the testing session. All people who agreed to participate received a £10 Tesco voucher courtesy of Penumbra as a token of gratitude. This was not dependent on their completion of the testing. See section Chapter 4, Section 5 for discussion of the use of incentives.

Materials

Pre-prepared testing packs were constructed including all testing materials alongside standardised instructions. Packs began with a demographic questionnaire, and ended with a feedback survey. RAS, I.ROC and BASIS-32 were then presented in a counter-balanced order. Equal numbers of packs from each counterbalancing order were given to each member of the testing team, and were used on a first come, first served basis.

Procedure

Testing took place one on one (or with additional support) at a location of the participant's choosing, under Penumbra's lone working policy. After completion of a demographic questionnaire, participants completed I.ROC, RAS and BASIS-32 presented in a counterbalanced order. Materials were read out to each participant, and scores were filled in either by the service user or the tester. After finishing the final questionnaire, participants were asked to fill in a feedback form, briefly describing how they found the questionnaires and the testing experience.

Participants

171 adults with mental health problems accessing services through Penumbra at the time of testing.

Table 6.1: Quant. Study 1 Research methods

	Recovery Assessment Scale (RAS); Giffort et al., 1995	Behaviour and Symptoms Identification Scale (BASIS); Eisen et al., 1994
Subscales	<i>Personal confidence & hope; Willingness to ask for help; Goal & success orientation; Reliance on others; No domination by symptoms</i>	<i>Relation to self/others; Daily living/role functionality; Depression/anxiety; Impulsive/addictive behaviour; Psychosis</i>
Construct	Personal recovery	Clinical recovery/ symptoms
Items	41	32
Scale	1-5 Likert	0-4 Likert
Scoring	No reverse scoring	No reverse scoring
Score range	41-205	128-0
Expectation	Positive correlation	Negative correlation

Table 6.2: Measures for convergent validity testing, Study 1

ii. Study 1: Results

Demographics

A summary of demographic variables is shown in Table 6.3. Error! Reference source not found..

Participants were 79 women and 92 men ranging in age from 15 to 79 (mean=46). Support received from Penumbra varied in frequency from occasional respite care to 24-hour supported accommodation, and in length from 49 days to 20 years. Seventy percent of participants had been in service between 6 months and 2 years, and approximately one third of these were still in their

first year of service (32%). Between the 171 participants, there were 320 mostly self-reported diagnoses, most commonly depression, reported in over 50% of participants. Ninety-four validation participants (55%) reported two or more diagnoses, with anxiety & depression the most common dual diagnosis. Participants

	N	171
Participant group		Mental health Service Users
Age Range		15 - 79
Mean Age (SD)		46 (13.6)
Male		79 (46.2%)
Female		92 (53.8%)
Unemployed		112 (65.5%)
Employed/ in education		17 (9.9%)
Living alone		113 (66.1%)
History of/current mental distress		164 (95.5%)
Educated to at least high school level		142 (83.0%)

Table 6.3: Demographics, Study 1

largely lived alone (66%) in rented or supported accommodation, and the majority (66%) were unemployed.

Analysis using one-way ANOVA's determined that counterbalancing and questionnaire preference were not significant confounding variables for any measure (see Table 6.4). Whilst scores on I.ROC did not differ significantly based on gender ($t=1.9$, $p=n/s$), men scored significantly higher on RAS ($t=5.196^*$) and lower on BASIS-32 ($t=7.2^{**}$) than women. This suggests that men are more likely to report higher recovery scores when using these questionnaires, than when using I.ROC. Whilst I.ROC did not correlate significantly with age, the negative correlation between BASIS-32 and age reached significance ($r=-.199^{**}$).

		I.ROC	RAS	BASIS-32
Age	r	0.92	.14	-.199**
Counterbalancing df = 5, 164	F	0.934	0.303	0.815
	p	0.461	0.91	0.54
Sex	T	1.887	5.196*	7.234**
Q. Preference df = 2, 121	F	0.038		
	p	0.962		

Table 6.4: Effect sizes and for the effects of confounding variables in Study 1

Descriptive statistics

I.ROC cases with missing data ($n=9$; 5%) were deleted listwise. Total scores ranged from 18 to 72, with a mean of 44.9. Scores for all twelve items covered the full range (1-6); item means ranged from 2.96 (Social Network) to 4.55 (Safety & Comfort). Skew and kurtosis did not exceed the ± 2 cut off assumed for normality; parametric statistics were therefore employed.

	Items	N (no missing items)	Mean	Std Error	Median	Std. Dev	Min	Max	Skew	Kurtosis	Shapiro-Wilk	α
I.ROC	12	158	44.9	0.85	45	10.8	18	72	-.07	-.3	.99	.86
RAS	41	138	151.5	2.4	150	27.7	53	205	-0.3	0.5	.975*	.96
BASIS	29	149	33.9	2.0	28	24.4	0	107	0.8	0.1	.935**	.95

Table 6.5: Descriptive statistics and alpha coefficients for measures in Study 1

As shown in Table 6.6, floor effects were seen for the indicators Social Network and Purpose & Direction, with more than 18% of participants answering 'Never' (1) to these items. In contrast, Safety & Comfort saw a substantial ceiling effect, with one third of participants answering 'All the time' (6).

	MH	LS	S&C	PH	E&A	P&D	PN	SN	VM	P&C	SM	H
Mean score	3.61	4.23	4.53	3.63	3.43	3.13	4.11	2.95	3.54	4.03	3.99	3.69
% scoring 1	4.7	1.8	2.4	5.3	12.4	18.9	2.9	26.6	9.7	3.6	0.6	9
% scoring 6	11.8	14.8	32.9	10	11.8	5.3	24.1	5.3	17.6	14.8	16	16.2
Inter-item correlations <.3	4	4	5	2	8	6	3	7	1	4	3	1

Table 6.6: I.ROC item means; proportion of participants scoring 1 & 6; number of inter-item correlations <.3 in Study 1

Internal Consistency

Using Ponterotto & Ruckdeschel (2007) categorisations of alpha scores, I.ROC's score of .86 is good, whilst RAS ($\alpha=.96$) and BASIS-32 ($\alpha=.95$) both have excellent levels of internal consistency. Although several I.ROC questions showed low (<.3; Cohen, 1988) inter-item correlations (Table 6.6), all items were found to contribute to the overall statistic, suggesting that no questions should be removed.

Convergent Validity

Pearson's correlations (2-tailed) were calculated for the total scores on all three measures. As predicted, I.ROC scores were significantly positively correlated to scores on the Recovery Assessment Scale ($r=.75^{**}$). I.ROC and BASIS-32 were significantly negatively correlated ($r=-.47^{**}$). The

	N	I.ROC	95% CI		Power
			LL	UL	
RAS	134	.748**	.66	.81	1
Personal confidence & hope	134	.768**	.69	.83	1
Willingness to ask for help	134	.427**	.28	.56	1
Goal & success orientation	134	.652**	.54	.74	1
Reliance on others	134	.567**	.44	.67	1
No domination by symptoms	134	.651**	.54	.74	1
BASIS-29	143	-.562**	-.664	-.439	1
Relation to self/ others	143	-.583**	-.681	-.464	1
Daily living/ role functioning	143	-.518**	-.628	-.387	1
Depression/ anxiety	143	-.554**	-.658	-.429	1
Impulsive/ addictive behaviour	143	-.328**	-.467	-.174	1
Psychosis ²⁶	143	-.283**	-.427	-.125	.92

Table 6.7: Effect sizes, 95% confidence intervals and post-hoc power analysis for Pearson's correlations between I.ROC and measures in Study 1

removal of items with low response rates for BASIS-32 increased the size of this effect ($r=-.56^{**}$). The strongest subscale correlation with BASIS-29 was in the domain of 'Relation to self/others', ($r=-.52^{**}$). Although I.ROC returned strong correlations with the BASIS-32 subscale 'Depression & Anxiety' ($r=.48^{**}$), no significant correlation was found with the 'Psychosis' subscale ($r=-.14$, $p=.15$). A

²⁶ Calculated using Spearman's rho, as the post-hoc power analysis failed to meet the .8 cut-off

significant negative correlation was also found between RAS and BASIS-29 ($r = -.55^{**}$) (for subscale correlations, see Appendix 19i). These results support the convergent validity of the measures, and demonstrate the ability of I.ROC to measure recovery focused outcomes as defined using current leading measures.

Structural Validity Analysis
 The KMO measure of sampling adequacy (Kaiser, 1974) was “meritorious” (Mooi & Sarstedt, 2011) (Table 6.8), and Bartlett’s test of sphericity was highly significant ($p < .001$), therefore the null hypothesis, that the correlation matrix is an identity matrix²⁷, was rejected. The determinant of the correlation matrix (.012) was between 0 and 1, suggesting that neither multicollinearity or singularity are a concern (Field, 2013).
 Principal Components Analysis with orthogonal (Varimax) rotation yielded two factors with Eigenvalues greater than one, accounting for 51.9% of the variance in scores.

Extraction		PCA	
Rotation		Varimax	
KMO		.859	
Bartlett's Determinant		<.001	
Communalities		.28-.66	
# Factors		2	
Variance explained		51.75	
Factor 1: Intrapersonal <i>(Self-reflection/ change)</i>		Factor 2: Interpersonal <i>(Outward/ forward looking)</i>	
# Items	6	# Items	4
% of Variance	40.7	% of Variance	11.2
Cronbach's α	.84	Cronbach's α	.695
Factor 1 Loading		Factor 2 Loading	
Mental Health	.53	Exercise & Activity	.71
Life Skills	.67	Purpose & Direction	.71
Safety & Comfort	.66	Social Network	.69
Physical Health	.48	Hope for the future	.62
Personal Network	.58		
Valuing Myself	.71		
Participation & Control	.65		
Self Management	.82		

Table 6.8: Factor Analysis results, Study 1

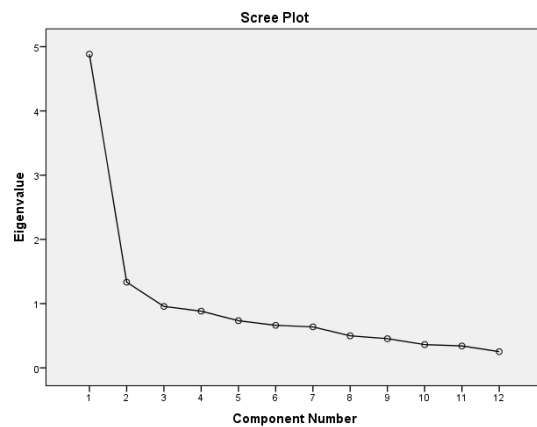


Figure 6.2: Scree plot showing the two significant subscales identified through PCA in Study 1

Examination of the Scree plot (Figure 6.2) showed two factors before the graph flattened off, supporting the extraction of two factors. Whilst item loadings in the two

²⁷ An identity matrix is a table of correlations between each of the questionnaire items in which all the correlations on either side of the diagonal = 0 (and all on the diagonal = 1).

extracted components all exceeded .45, two items ('Physical Health'; 'Hope for the Future') loaded significantly on both. These were assigned to the component in which they presented the highest loading. Subsequently as shown in Table 6.8, the first component comprised 8 items, explaining 40.7% of the variance in the data. Component 2 (4 items) accounted for a further 11.1%. Internal consistency was excellent for factor 1 ($\alpha = .84$) and moderate to good for factor 2 ($\alpha = .695$) (Ponterotto & Ruckdeschel, 2007). Results of the Cronbach's alpha analysis reported here vary slightly to those presented in the published results (Monger et al., 2013). The variation was investigated during the writing of this thesis, and the results as stated by Monger and colleagues were found to be miscalculated; Cronbach's analysis had been carried out with the Physical Health item assigned to Factor 2 rather than Factor 1. For detailed Factor Analysis results, see Appendix 19.b.

Researchers examining the psychometric properties of the QPR also reported a two-factor structure, with factors labelled as 'interpersonal' and 'intrapersonal' to reflect perceived differences in the locus of control of each factor (Neil et al., 2009) (see Chapter 3, Section 3.3.4 for a review). 'Intrapersonal' elements were described by Neil and colleagues as "*tasks that the individual is responsible for conducting, and which help them to rebuild their lives*" (Neil et al, 2009; p4). 'Intrapersonal' items are concerned with the interconnection between the person and the world around them, particularly the value given by that person to the relationships, activities and processes that make up their external environment. Content of the two QPR factors was contextually similar to the factors identified within I.ROC. It was therefore agreed by the research group that the two factors should be labelled in the same way. Like the QPR, of the two factors identified in I.ROC, the majority of items loaded on the intrapersonal subscale (Monger et al., 2013).

Questionnaire Feedback

Participants who indicated a preference for one of the measures included in the testing battery selected I.ROC significantly more often than both BASIS-32 ($t=7.245$, $p<.001$) and RAS ($t=5.996$, $p<.001$). This finding remained consistent irrespective of time in service, number of previous I.ROC's completed or diagnosis (Ion et al, 2013), although content analysis of comments left by participants showed familiarity with

this measure to be one of the things that they liked most about it. Participants described I.ROC as “easy to understand”, “clear” and “simple”, an important factor in instrument feasibility (Slade et al, 1999). Users liked the layout and formatting of I.ROC, with comments on this theme accounting for 24% of the data. In particular comments focused on the length of the questionnaire, the pictures and the prompts.

Participants were asked to rate the extent to which they agreed or disagreed with a series of statements about the I.ROC content; results are summarised in Table 6.9. On the whole, participants liked I.ROC; over 90% agreed that they would be happy to complete the measure again, and comments regarding the measure were largely positive.

	Disagree	Agree	Neither
I understood all the questions completely	5.4%	91.6%	3.0%
I.ROC helped me think about my recovery	7.8%	80.1%	12.0%
The questions in I.ROC are important for thinking about recovery	6.6%	83.1%	10.2%
There were questions on I.ROC that I didn't wish to answer	78.9%	9.6%	11.4%
I would be happy to fill out I.ROC again	3.6%	91.0%	5.4%
I feel that the results of my I.ROC will be helpful for staff	3.2%	83.4%	13.4%
	Too short	Too long	Right length
How did you find the length of I.ROC?	7.9%	12.8%	79.3%

Table 6.9: Study 1 I.ROC Feedback: Frequency of Responses

Participants were also asked to identify specific I.ROC items that they felt they ‘did not fully understand’; ‘were not relevant to recovery’; and, ‘felt uncomfortable answering’ (Table 6.10). Most participants (91.6%) did not have difficulty answering questions based on their comprehension of the questions. Fifty-two respondents identified at least one indicator as not important for thinking about recovery; 63.5% of those identified Purpose & Direction (12.8% of total sample) as irrelevant, significantly more than the next highest item ($t=5.76$, $p<.001$).

	MH	LS	S&C	PH	E&A	P&D	PN	SN	VM	P&C	SM	H
Not important to recovery	3	9	6	5	9	33	7	2	2	2	2	4
Felt uncomfortable answering	5	0	2	2	0	8	3	1	5	1	3	9
Not fully understood	7	6	3	5	4	6	5	3	4	6	5	2

Table 6.10: Frequency with which each I.ROC indicator was identified as unimportant, uncomfortable or not understood by Study 1 participants

i. Study 1: Discussion

The results of this analysis, published in 2013, provide good support for the validity of I.ROC as a measure of personal recovery, and a solid basis from which to further examine its psychometric properties. I.ROC demonstrated good convergent validity with measures of both personal recovery and clinical outcomes, with results exceeding the accepted minimum level (.55) for correlation between tools with similar psychometric properties (Smith & Smith, 2005). Although both results reached significance, the stronger correlation with RAS than with BASIS adds weight to the argument for clinical and personal recovery as two distinct constructs within mental health outcomes (Macpherson et al., 2016), and supports the validity of I.ROC as a measure of personal recovery. Principle Components Analysis identified two underlying factors, accounting for over 50% of the variance. These were labelled as interpersonal and intrapersonal, in line with the factors identified in the development of the QPR (Neil et al., 2009). Internal consistency for the measure as whole was good, although consistency of the two factors was lower.

This initial analysis of I.ROC was conducted using similar methodology to that commonly used across the majority of Exploratory Factor Analysis studies in the area of nursing and health (see Gaskin & Happell, 2014 for review). This provided a well-tested method for examining the structure of I.ROC, and enabled easy comparison of findings to other recovery measures. As all twelve items fit well within a structural model similar to that identified elsewhere within the recovery literature (Neil et al, 2009), results of this analysis provide support for the structural validity of I.ROC.

I.ROC was clearly identified as the preferred measure by the majority of participants in Study 1. Described as easy to understand, well formatted, and relevant to the participants' subjective experience of recovery, this feedback provides support for the face validity and usability of the tool (Ion et al, 2013). Participant responses did however highlight a potential issue with the Purpose and Direction question, with a significant proportion of respondents identifying this item as irrelevant. One of the lowest scoring indicators, dislike of this question may relate to participants' discomfort in answering it; 15% of respondents identified this item as uncomfortable.

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A minority of participants talked about I.ROC feeling too personal; discomfort could relate to a sense of not having goals or outcomes to work towards, or not feeling optimistic about one's ability to achieve these. Discomfort may also reflect an understanding of the question as referring purely to paid employment. Reflecting this possibility, the majority of participants in this Study were unemployed (n=112; 65.5%), and 18% of participants responded that in the past three months, they had 'Never' felt purposefully occupied. Discomfort may therefore reflect genuine challenges in regards to this indicator that are felt to be beyond the control of the individual.

Limitations and further research requirements

There are several areas where this initial methodology may be challenged. Firstly, this initial study was not exhaustive in its evaluation of psychometrics, leaving key components such as test-retest reliability unexamined. As I.ROC is designed to measure change over time, evaluating its reliability over a short period of time is particularly important for future studies. The sample size was relatively small, particularly as is usually recommended for factor analysis (Preacher & MacCallum, 2003) (Gaskin & Happell, 2014), and did not allow for the validity of the factor structure to be checked using a separate dataset – a method widely considered good practice for structural validity testing (Henson & Roberts, 2006).

Participants were recruited from Penumbra's service users, as an easily accessible population, to ensure that participants remained comfortably supported by trained professionals throughout the study. By limiting the study to one organisation, the possibility for bias is large (see Chapter 4). Further testing within different populations will help overcome this and improve the generalisability of the findings.

Measures selected for convergent validity testing, although well-tested have received critiques of their structure, design and underlying theory (e.g. RAS: Hancock et al, 2011; BASIS-32: Russo et al., 1997; Graham et al, 2001). To overcome the assumption that the tools being compared to I.ROC are themselves valid and reliable, testing against a more extensive battery of measures is needed.

Use of Principal Components Analysis for factor analysis remains highly contested (Costello & Osborne, 2005). PCA is not strictly speaking a method of exploratory

factor analysis (Abdi & Williams, 2010), and can cause over-inflation of the variance attributed to the extracted components, which can consequently produce less accurate results than genuine exploratory factor analysis. Over-attribution is particularly likely in cases when factor loadings and the factor/component ratios are low, as is the case for I.ROC (Gaskin & Happell, 2014b; Gorsuch, 1997). Despite these criticisms, as PCA is a data reduction methodology generally applied to reduce data into the minimum number of components, it is commonly used to refine newly developed measures including several personal recovery instruments (e.g. MARS, Drapalski et al, 2012; RAS, Corrigan et al, 2004). It is concluded that whilst the use of PCA was appropriate at this early stage of psychometric testing, alternative methods should be applied for future testing. Further, although orthogonal rotation methods (e.g. varimax) as used within Study 1 are used routinely for EFA (Costello & Osborne, 2005), they may be arguably inferior to oblique methods (Beavers et al., 2013; Loo, 1979). Given the inherent 'messiness' of human behaviour, thoughts and emotions, a degree of correlation between factors is to be expected (Fabrigar, 2011), suggesting that oblique rotation strategies which allow for correlation of factors, may provide a more accurate solution (Costello & Osborne, 2005).

ii. Study 1: Conclusions

As discussed in Chapter 4, validity and reliability are continuous traits, for which evidence should be established across a series of studies. Whilst the results presented in Study 1 provide initial support for the validity and reliability of I.ROC (Monger et al., 2013), they are thus not enough on their own to determine the strength of the tools' psychometric properties. The study was also limited in regards to its sample size, choice of measures, and factor analysis methodology. Nevertheless, results of this initial study were encouraging enough to support further development and testing of I.ROC; the critique of this study was used to design future studies, the results of each of which is reported in turn below.

Ch6, Section 3. Study 2 (2a-2d)

6:3.1. Study 2: Introduction

This second section presents the results of four studies designed to respond to the questions arising from Study 1 (see Figure 6.1). Each one examined the

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psychometric properties of I.ROC in a different population (see Table 6.11), including clinical and general population samples. Convergent validity was assessed against at least one measure in each study (see Table 6.12); studies also evaluated aspects of structural validity and reliability. The four studies are presented below in the order in which they were completed. Aims and methods employed within each study (for full methods, see Chapter 4) precedes each set of results. Study findings are then discussed together at the end of this section.

	<i>Study 2a</i>	<i>Study 2b</i>	<i>Study 2c</i>	<i>Study 2d</i>	<i>Total</i>
<i>N</i>	Benchmarking	Test-retest	Trauma	Recovery Star	
	237	249	113	81	680
<i>Participant group</i>	Students	Staff & students	Trauma Service Users	Mixed	
<i>Age Range</i>	16 - 63	18 - 80	19 - 62	18-66	16-80
<i>Mean Age (SD)</i>	27.7 (10.4)	35.5 (13.8)	38.9 (10.8)	35.4 (13.1)	33 (12.8)
<i>Male</i>	33 (13.9%)	53 (21.3%)	8 (7.1%)	21 (25.6%)	115 (16.9%)
<i>Female</i>	198 (83.5%)	195 (78.3%)	105 (92.9%)	56 (68.3%)	554 (81.5%)
<i>Scottish/White British</i>	N/A	N/A	83 (73.5%)	N/A	
<i>Unemployed</i>	0	0	63 (55.8%)	N/A	
<i>Employed/ in education</i>	237 (100%)	249 (100%)	20 (17.7%)	N/A	
<i>Living alone</i>	N/A	N/A	41 (36.3%)	N/A	
<i>Single</i>	N/A	N/A	57 (50.4%)	N/A	
<i>History of/current mental distress</i>	66 (27.8%)	56 (22.5%)	98 (86.7%)	68 (82.9%)	288 (42.4%)
<i>Educated to at least high school level</i>	237 (100%)	N/A	112 (99.1%)	N/A	

Table 6.11: Demographic summary of datasets in Study 2. Note: Mental distress figures for Study 2d calculated from HADS scores; and Study 2b from GHQ scores

Study	Scale	Authors	Subscales	Construct	Items	Scale	Reverse scored?	Score range	Expected correlation	
2a	HHI	Herth Hope Index	Herth, 1992		Hope	12	1-4 Likert	Y	12-48	Positive
	CLSS	Community Living Skills Scale	Smith & Ford, 1990	<i>Personal care; Socialization/relationships, Activities/leisure skills; Vocational skills</i>	Social recovery	46	0-3 Likert	Y	0-138	Positive
	GHQ	General Health Questionnaire	Goldberg & Hillier, 1979	<i>Somatic symptoms; Anxiety & insomnia; Social dysfunction; Severe depression</i>	Psychiatric state/ symptoms	28	0-3 Likert	N	84-0	Negative
	IPAQ	International Physical Activity Questionnaire	M. Booth, 2000		Physical activity	7	Minutes/week	N	N/A	Positive
	MDES	Making Decisions Empowerment Scale	Rogers et al, 1997	<i>Self-efficacy-self-esteem; Power-powerlessness; Community activism; Righteous anger; Optimism-control over the future</i>	Empowerment	28	0-3 Likert	Y	0-84	Positive
	Self-Esteem	Rosenberg Self Esteem	Rosenberg, 1965		Self esteem	10	0-3 Likert	Y	0-30	Positive
	WS	Wellbeing Scale	Campbell & Schraiber, 1989		Wellbeing	151 (33)	Combination (1-5 Likert)	Y	33-160 (33 item)	Positive
2b	GHQ	<i>As above</i>								
2c	HADS	Hospital Anxiety and Depression Scale	Zigmond & Snaith 1983	<i>Anxiety; Depression</i>	Clinical recovery symptoms	14	0-3 Likert	N	42-0	Negative
	WSAS	Work and Social Adjustment Scale	Marks, 1986		Functional recovery	5	0-8 Likert	N	40-0	Negative
2d	MHRS	Mental Health Recovery Star	Onifade, 2011		Personal recovery	10	1-10 'ladder of change'	N	1-100	Positive

Table 6.12: Convergent validity measures and predicted correlations with I.ROC in Studies 2a-d

6:3.2. Study 2a: Benchmarking

The primary objective of this Study was to investigate the convergent validity of I.ROC with measures of recovery-related constructs. Additionally, the study aimed to evaluate how I.ROC performs when completed by people from the general population who haven't used it before.

i. Study 2a: Methods

Researchers

Testers for this study were the research student BR, and the project supervisors RI and SH. No specific training for the measures was needed, and all three testers have experience of psychological testing.

Recruitment

Participants were recruited through classes within the School of Social and Health Sciences at the University of Abertay during 2012-3. Students were asked during their classes if they would like to participate, and were given time during the class to complete the test.

Materials

Seven measures comprised the benchmarking battery (I.ROC, GHQ-28, CLSS, HHI, IPAQ-7, MDES, RSES, WS-33). All testing packs contained I.ROC, the GHQ-28, a demographic and a feedback questionnaire (see Appendix 17). Testing pack A contained no other measures; pack B also contained the CLSS; HHI and IPAQ-7, whilst testing pack C, contained MDES; RSES, and the WS-33. Measures were presented in a counterbalanced order within each pack. The allocation of a subset of measures to each pack aimed to reduce the time and emotional burden on any participants with mental health issues. Testing packs were ordered by their counterbalancing condition (one of each counterbalancing condition, then back to the beginning) so that students were randomly assigned to a condition on a first come, first serve basis.

Procedure

Testing was completed during classes at the University of Abertay. Participants completed a short demographics questionnaire before completing the measures included within their testing pack by themselves. At the end of testing, participants filled in a feedback questionnaire.

Participants

Participants were 237 students attending undergraduate (1st, 2nd and 3rd year) classes in sports science, psychology, nursing and counselling at the University of Abertay during the academic years 2012-13 and 2013-14.

Table 6.13: Quant. Study 2a Research methods

ii. Study 2a: Results

Participant Demographics

Participants were predominantly female (n=198; 83.5%). This is reflective of the social care workforce; only 11% of registered nurses and midwives in the UK are male (Nursing and Midwifery Council, 2015). Scores did not differ significantly between men and women (I.ROC: $t=.238$, $p=n/s$). Age ranged from 16 to 63 (mean

27.7); whilst no significant correlation was found between I.ROC and age ($r=.094$, $p=n/s$), self-esteem (RSES; $r=.27^{**}$), wellbeing (WS-33; $r=.18^*$) and empowerment (MDES; $r=.26^{**}$) all correlated significantly with this variable.

Participants disclosed a history of mental health problems in 28% of cases. This is roughly in line with national figures, which put the prevalence of mental health problems in the general population as one in four (McManus et al., 2009) and show prevalence to be highest in young adults (Thorley, 2017). Of those who reported mental health problems, the majority listed depression (48) and (16)/or (10) anxiety. Disclosure of mental health issues significantly affected I.ROC total scores ($F=11.2$, $p<.01$)²⁸. Results of post-hoc analysis using the Games-Howell test recommended for use with non-homogenous data (Ruxton & Beauchamp, 2008) showed that participants with no history of mental health problems scored significantly higher than those with a history of mental health issues (mean difference = 6.07; $p<.01$).

Descriptive Statistics

Descriptive statistics for each measure are summarised in Table 6.14.

Study 2a	Items	N	Mean	Std Error	Median	Std. Dev	Min	Max	Skew	Kurtosis	Shapiro-Wilk	α
I.ROC	12	229	54.6	0.58	56	8.79	27	72	-0.7	0.31	.97**	.88
MDES_27	27	129	80.6	0.7	80	7.5	61	107	0.6	1.0	.968*	.84
CLSS_37	37	52	90.4	2.0	92.5	14.4	46	110	-1.1	1.2	.917**	.92
HHI	12	90	37.6	0.5	38	5.1	19	47	-1.1	2.1	.929**	.83
IPAQ	3	76	4963.7	567.6	3009.5	4948.4	0	20916	1.6	2.3	.792**	.74
RSES	10	123	20.4	0.5	21	5.7	5	30	-0.3	-0.1	.973*	.90
WB_27	27	96	85.9	1.0	86	9.7	61	108	-0.2	0.2	.987	.68
GHQ	28	224	22.6	0.9	19	13.4	4	71	1.2	1.1	.901**	.94

Table 6.14: Descriptive statistics for measures in Study 2a

I.ROC and the General Health Questionnaire were completed by the full participant sample ($n=237$). Fewer participants completed testing pack A ($n=99$) than B ($n=138$),

²⁸ ANOVA

Chapter 6

and completion rates varied between questionnaires, from a maximum of 237 for the GHQ to only 59 for the CLSS. One participant only completed I.ROC and GHQ.

	HHI	IPAQ	CLSS	MDES	WS	SE	GHQ	I.ROC
Total N	95	77	59	138	138	125	237	232
Total Items	12	7	46	28	33	10	28	12
Complete (no missing items)	91	64	6	119	12	123	224	229
% with no missing data	96%	83%	10%	86%	9%	98%	95%	99%
Average number of missing items	0.05		2.9	0.22	2.3	0.02	0.07	0.06
Participant: Item ratio	7.9	11	1.3	4.9	4.2	12.5	8.5	19

Table 6.15: Response rates for Benchmarking study

For most questionnaires, the majority of participants responded to all items. For the CLSS and Wellbeing Scale, only 10% or fewer completed the questionnaire without any missed items (Table 6.15). This is an artefact of questionnaire format; both questionnaires ask questions that cannot always be answered, for example the CLSS asks for responses to the statement: 'My relationship with my child(ren) interferes with my life'. Such items were removed before analysis. Total I.ROC scores ranged from 27 to 72 (mean 54.6), and item means ranged from 3.63 (Social Network) to 5.2 (Life Skills) as shown in Table 6.16. The majority of items were positively skewed, with far higher proportions of participants scoring 1 than 6. This was most pronounced for the Safety & Comfort item, for which 46.4% of participants rated themselves 6, compared to 0.4% scoring 1.

	MH	LS	S&C	PH	E&A	P&D	PN	SN	VM	P&C	SM	H
<i>Mean Score</i>	4.38	5.20	5.17	4.22	3.76	4.71	5.02	3.63	4.30	4.78	4.74	4.71
<i>% scoring 1</i>	0.9	0.4	0.4	2.5	1.3	0.4	0	5.1	1.7	1.7	0.9	0
<i>% scoring 6</i>	5.6	44.5	46.4	8.5	9.7	28.8	45.1	8	16.9	29.2	26.8	24.4
<i>Inter-item correlations <.3</i>	2	3	2	0	9	1	2	5	2	2	1	1

Table 6.16: I.ROC item means; proportion of participants scoring 1 & 6; number of inter-item correlations <.3 in Study 2a

Internal Consistency

Internal consistency of all measures reached the minimum acceptability cut-offs outlined by (Ponterotto & Ruckdeschel, 2007). The total score for I.ROC fell just below 'excellent' ($\alpha=.88$). Whilst there were no redundant items, Exercise & Activity and Social Network both had several low (<.3; Cohen, 1988) inter-item correlations (see Table 6.16).

Convergent Validity

Total scores for all measures correlated significantly, reaching significance of at least $p < .01$ (see App_Table 30), with the exception of IPAQ, for which only the correlation with GHQ was significant ($r_s = .261^*$). As shown in Table 6.17, I.ROC scores correlated significantly with measures of empowerment (Making Decisions Empowerment Scale), wellbeing (Wellbeing Scale), hope (Herth Hope Index), community living skills (Community Living Skills Scale) and self-esteem (Rosenberg’s Self Esteem Scale). The strongest correlations were found between I.ROC and measures of hope ($r = .68^{***}$) and community living skills ($r = .75^{***}$), and in particular with the socialization/ relationships subscale of the CLSS ($r = .71^{***}$). Although I.ROC did not correlate significantly with the total for the selected measure of physical activity (IPAQ), there was a significant correlation ($r_s = .28^*$) between I.ROC and the IPAQ subscale for ‘vigorous activity’, which measures time spent doing “*vigorous physical activities like heavy lifting, digging, aerobics, or fast bicycling*” (IPAQ; Booth, 2000).

Measure/ subscale	N	Effect size	95% CI	
			LL	UL
Herth Hope Index	86	.684**	.55	.78
IPAQ	73	.102	-.17	.29
CLSS-37	50	.750**	.60	.85
- Personal care	50	.584**	.37	.74
- Socialization/ relationships	50	.706**	.53	.82
- Activities/ leisure skills	50	.500**	.26	.68
- Vocational skills	50	.673**	.49	.80
MDES-27	129	.492**	.35	.61
Wellbeing Scale	96	.541**	.38	.67
RSES	121	.607**	.48	.71
GHQ-28	218	-.566**	-.649	-.469
Somatic symptoms	218	.461**	-.571	-.366
Anxiety & insomnia	218	-.539**	-.643	-.46
Social dysfunction	218	-.345**	-.488	-.261
Severe depression	218	-.485**	-.619	-.428

Table 6.17: Study 2a: Convergent validity of I.ROC with measures of recovery related concepts; results show effect size and 95% confidence intervals

In an extension to this study, I.ROC was compared to a battery of wellbeing measures as part of a student project (Howarth, 2016). Analysing the results of testing with 103 participants (student and public sample), large positive correlations were found between I.ROC and four measures of wellbeing, along with an overall wellbeing score calculated as the average score across the four measures. Although strong for all participants, correlations were highest for those self-reporting mental health issues (Table 6.18).

	Overall Wellbeing	Flourishing Scale	Subjective Happiness Scale	Satisfaction With Life Scale	Personal Growth Initiative Scale
Total (n=103)	.9**	.8**	.66**	.71**	.76**
With MHP (n=46)	.91**	.84**	.78**	.71**	.79**
No MHP (n=55)	.86**	.72**	.51**	.65**	.67**

Table 6.18: I.ROC (Spearman’s) correlations with measures of wellbeing, adapted from Howarth, 2016

Factor Analysis

Bartlett’s test of sphericity was highly significant ($p < .01$), and the KMO was high (.91). Exploratory Factor Analysis using Maximum Likelihood (ML; Costello & Osborne, 2005) with Promax rotation returned two factors with Eigenvalues greater than 1, explaining 54.58% of the variance. As shown in Table 6.19, the extracted structure was similar but not identical to Study 1; ten items loaded on the first factor (intrapersonal). This included Purpose & Direction and Hope for the future, which both loaded on the second factor in the previous Study. Only two (Exercise & Activity and Social Network) loaded on the interpersonal dimension, but both of these items also loaded on this factor in Study 1.

Dataset		S2
Population		Student
N		229
Extraction		ML
Rotation		Promax
KMO		.911
Bartlett's		<.001
Determinant		.009
Communalities		.3 - .66
# Factors		2
Variance explained		54.58
Factor	F1	F2
alpha	.89	.49
Item loadings	MH	.78
	LS	.63
	S&C	.66
	PH	.44
	E&A	.76
	P&D	.42
	PN	.48
	SN	.47
	VM	.75
	P&C	.73
SM	.78	
H	.71	

Table 6.19: Factor Analysis results, Study 2a

Feedback

169 (71%) participants provided feedback on I.ROC, with approximately 20 providing comments as well as scaled answers.

Indicator	Not important to recovery		Uncomfortable answering		Not understood	
	No declared history	History of MHP	No declared history	History of MHP	No declared history	History of MHP
	N	17	16	11	23	6
MH	12	0	11	6	6	3
LS	5	2	2	0	2	2
SC	6	0	4	1	5	2
PH	4	0	1	2	1	1
EA	6	1	1	2	0	3
PD	4	4	3	3	0	3
PN	5	0	0	1	1	2
SN	5	1	0	1	1	2
VM	8	1	6	2	2	1
PC	4	0	1	2	3	3
SM	5	3	2	1	2	1
H	7	4	0	2	1	2

Table 6.20: I.ROC items selected by participants as uncomfortable, not understood or not important to recovery in Study 2a

A total of 45 participants identified that they had felt that at least one I.ROC indicator was either not important to recovery, not fully understood, or had made them feel uncomfortable when answering. Mental Health and Hope for the Future were most frequently identified as not important to recovery; over 50% of people who identified any indicators selected these. Over 65% of participants identifying indicators that

they felt uncomfortable answering selected Mental Health, although none of these participants reported a history of mental health problems. As shown in Table 6.20, participants with no declared mental health issues identified fewer questions overall as uncomfortable to answer or not understood.

The majority of participants were positive in their feedback regarding I.ROC (Table 6.21), with over 80% agreeing or strongly agreeing with the statement, ‘I would be happy to complete I.ROC again’. Responses were even more positive from those participants with a history of mental health issues, with 83% agreeing or strongly agreeing that the questions are important for thinking about recovery, and almost 94% happy to fill it out again. Themes within the written feedback showed that participants liked the prompt words and pictures, felt that I.ROC was comprehensive and user friendly. One respondent wrote, “I liked the pictures & words - they helped me to understand and focus on questions.” Another wrote, “This was the most explicit of the surveys, easy to understand and the suggested words help clarify what is meant by the question. It was by far the best of the questionnaires.”

	Total Sample				Ptp with MHP			
	% of responses			N	% of responses			N
	Disagree	Neither	Agree		Disagree	Neither	Agree	
I understood all the questions on I.ROC completely	8.88	4.73	86.39	169	8.51	2.13	89.36	47
The questions on I.ROC are important for thinking about recovery	2.42	20.61	76.97	165	4.26	12.77	82.98	23
There were questions on I.ROC that I didn't wish to answer	53.89	26.95	19.16	167	59.57	14.89	25.53	47
I would be happy to fill out I.ROC again	6.51	13.02	80.47	169	0	6.38	93.62	47
	Too Short	Right Length	Too Long	N	Too Short	Right Length	Too Long	
How did you find the length of I.ROC?	1.18	51.48	47.34	169	2.13	63.83	34.04	47
How did you find the answer scale on I.ROC?	4.35	69.57	26.09	69	8.7	73.91	17.39	47

Table 6.21: Study 2a Feedback question responses.

i. Study 2a: Discussion

This study provides further support for the convergent and structural validity, internal consistency and feasibility of I.ROC. Like Study 1, factor analysis revealed a two-factor structure, although internal consistency was not acceptable for the Interpersonal factor. In two separate datasets, strong convergent validity was found

between I.ROC and twelve different measures of elements related to recovery selected to provide detailed measurement of all of the I.ROC's indicators.

Feedback generally concurred with the initial validation; participants liked I.ROC, found it to be useful and user-friendly. In contrast to Study 1 however, the student participants in Study 2a did not identify any issues with the Purpose & Direction indicator, irrespective of any personal history of mental health problems. Average scores were one of the highest of all items, with over a quarter of all participants scoring 6. As participants in this study varied substantially from those in Study 1 in terms of current employment, this finding supports the theory that participants in Study 1 found this question uncomfortable because of the difficulties they experienced in this area. Future research could examine this theory by looking at differences in scores and attitudes in Purpose & Direction between participants with different employment status.

Participant responses did suggest an issue with the Mental Health indicator which was identified as unimportant and uncomfortable to answer. A significant difference between the responses of participants with and without a history of mental health (those with a history of mental health difficulties found no issues with this item) highlights the important role that mental health plays within recovery.

Results suggest that I.ROC is a useful tool for assessing health and wellbeing in the general population, and could be a useful tool for use within wider health and social care populations, but more testing is needed to examine the differences in scores and experience of completion between different populations.

6:3.3. Study 2b: Test-retest Reliability

As I.ROC is used on a quarterly basis to measure change over time, its repeated use is crucial to the tool's use in practice. Repeated measurement of recovery indicators allows an individual's progress to be tracked, and aggregated results provide efficacy-related feedback at a service or organisational level. As described in Chapter 5, I.ROC has been used in this manner since 2007 however the underlying assumption, that quarterly assessments will provide meaningful data, was not tested within the first two studies. The research group agreed that stage one of testing this assumption is to establish the reliability of the measure over a short period of time.

i. Study 2b: Methods

Researchers

Testing was carried out by BR and her supervisor SH. SH oversaw recruitment and testing at Abertay, whilst BR oversaw testing in Penumbra.

Recruitment

Participants were recruited through Abertay University and through Penumbra using emails and the university online notice boards. Participants were sent the basic information about the study in the email/noticeboard, along with a link to the study, which was hosted online (Google/Survey Monkey).

Materials

Two measures, I.ROC and the General Health Questionnaire-28 (GHQ-28; Goldberg & Hillier, 1979) were included within an online survey created using Survey Monkey (Penumbra) and Google Docs (Abertay). The first page of the survey online gave more detailed information regarding the study (PIS: Appendix 17). Participants consented to the study by clicking on 'I agree to participate in this study'. Participants were then asked to complete two basic demographic questions (age; gender), and to provide an email address to which the link for the retest could be sent. Following this, participants completed the GHQ and I.ROC (I.ROC included the graphics and prompts from the 2012 version of the questionnaire, see Chapter 5 for development) before viewing a debrief page including contact details. The retest survey used the same format, with the exception of the demographic questions, which were not included in the retest.

Procedure

Participants were invited to complete I.ROC and the GHQ as part of an online questionnaire. Participants providing their email address as part of the initial survey were sent an email providing a link to the retest after five days, and were sent up to two reminders to complete the retest.

Participants

Participants were students and staff at the University of Abertay Dundee (n=70), and staff at Penumbra (n=104).

ii. *Table 6.22: Quant. Study 2b Research methods*

iii. Study 2b: Results

Participant Demographics

As in Study 2a, the sample consisted of a strong female majority (78.3%; n=195). Participants ranged in age from 18 to 80, with a mean of 35.5. All participants were in employment and/or education, and 56 (22.5%) disclosed a history of mental ill health.

Descriptive Statistics

Descriptive statistics for this Study were similar to those in Study 2a with almost identical mean total scores (Table 6.23) and indicator averages (Table 6.24). I.ROC total scores ranged from 22 to 72 with a mean of 54.5. As shown in Figure 6.3, scores were relatively normally distributed, with just a slight negative skew, which did not exceed the +2 cut off (George, 2011).

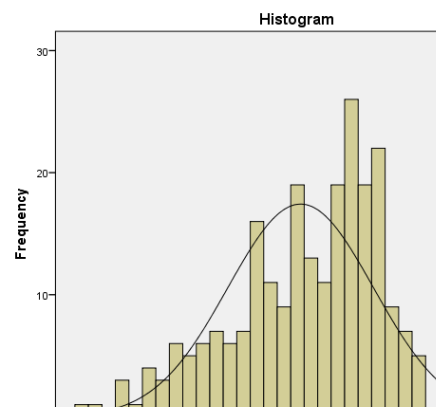


Figure 6.3: Histogram showing the distribution of I.ROC totals in Study 2b

	Items	N	Mean	Std Error	Median	Std. Dev	Min	Max	Skew	Kurtosis	Shapiro-Wilk	α
I.ROC	12	236	54.5	0.7	55.5	10.8	22	72	-.73	-.12	.95**	.92
GHQ	28	241	22.1	.83	19	12.9	2	67	1.0	0.7	.931	-

Table 6.23: Descriptive statistics for measures in Study 2b

As shown in Table 6.24, several of the indicators were significantly negatively skewed, with high proportions scoring at the top of the scale. More than 50% of participants scored 6 for Life Skills, Safety & Comfort and Personal Network.

	MH	LS	S&C	PH	E&A	P&D	PN	SN	VM	P&C	SM	H
Mean Score	4.34	5.15	5.24	4.17	3.81	4.54	5.02	3.56	4.37	4.90	4.81	4.56
% Scoring 1	0	0	0.8	2.1	1.7	2.5	0.8	6.8	2.5	0.4	0.8	1.7
% Scoring 6	7.6	50.8	55.5	12.3	13.6	26.3	50.4	8.1	23.3	39.4	34.3	25.8
Inter-item correlations <.3	1	0	2	0	2	0	2	3	0	0	0	0

Table 6.24: I.ROC item means; proportion of participants scoring 1 & 6; number of inter-item correlations <.3 in Study 2b

Internal Consistency

Internal consistency for I.ROC in this study was ‘excellent’ ($\alpha=.92$). Although two items (Exercise & Activity and Social Network) were redundant, their removal increased the alpha coefficient only marginally ($<.01$), and inter-item correlations were generally in excess of .3, as shown in Table 6.24.

TRT: I.ROC

	Time 1 Mean (SD)	Time 2 Mean (SD)	Range	Intraclass correlation	Lower bound	Upper bound	F test with true value 0	Sig (p<)
Total	55.29 (9.99)	55.33 (10.18)	0.04	.909	0.878	0.932	20.8	.000

Table 6.25: Intraclass Correlation Coefficient for I.ROC test-retest reliability

I.ROC total and subscale scores showed a very high level of agreement, as shown in Figure 6.4; mean values varied by 0.04. The ICC coefficient (Table 6.25) was ‘Excellent’ (ICC=.909*) (Koo & Li, 2016), indicating a very good level of reliability. Agreement between scores on individual I.ROC questions was approximately 90% (range: 89-92%) for all items, and Weighted Kappa’s showed a ‘moderate’ to ‘good’ level of agreement (Table 6.26).

	Agreement	Expected Agreement	Kappa	Std. Error	Z	Prob>Z
Mental Health	90.57%	78.31%	0.5655	0.0514	11.00	0.0000
Life Skills	89.22%	74.95%	0.5698	0.0543	10.49	0.0000
Safety & Comfort	92.91%	82.88%	0.5860	0.0530	11.06	0.0000
Physical Health	89.20%	75.02%	0.5674	0.0506	11.21	0.0000
Exercise & Activity	91.72%	71.67%	0.7079	0.0498	14.23	0.0000
Purpose & Direction	90.92%	74.73%	0.6407	0.0498	12.85	0.0000
Personal Network	90.92%	75.29%	0.6325	0.0540	11.72	0.0000
Social Network	89.43%	71.25%	0.6322	0.0478	13.22	0.0000
Valuing Myself	91.09%	76.74%	0.6170	0.0494	12.49	0.0000
Participation and Control	88.39%	76.02%	0.5158	0.0522	9.88	0.0000
Self-Management	91.28%	79.48%	0.5752	0.0502	11.45	0.0000
Hope for the Future	90.11%	75.41%	0.5980	0.0491	12.19	0.0000

Table 6.26: Weighted Kappa's for I.ROC items

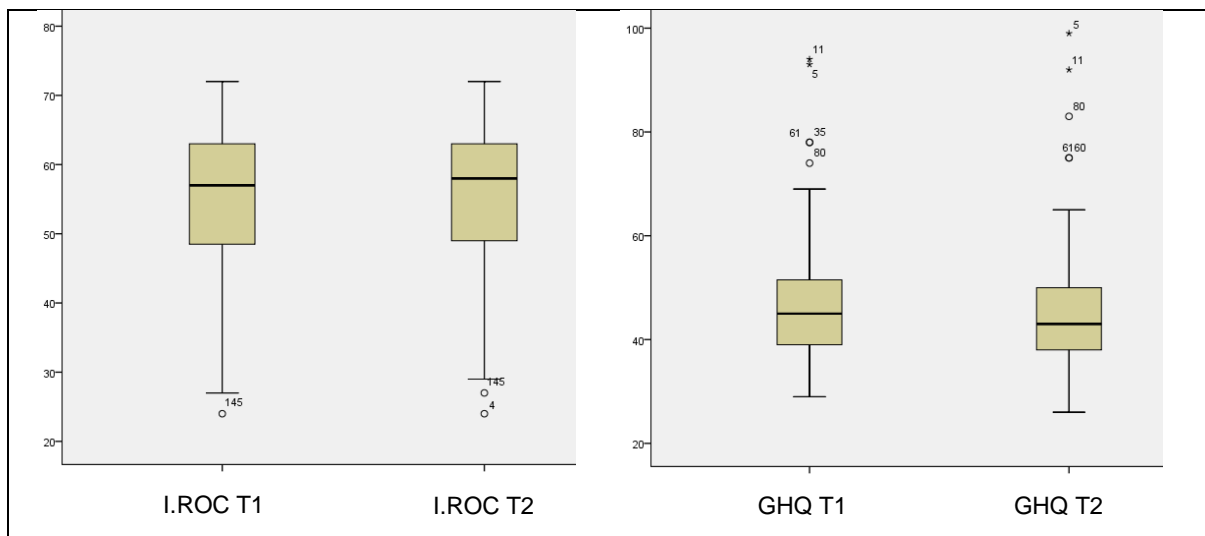


Figure 6.4: Stem and Leaf diagrams showing the distribution of I.ROC and GHQ total scores at time 1 and time 2

TRT: GHQ

One hundred and five participants (Penumbra sample) completed GHQ at both time points; 61 cases included no missing data. GHQ scores were significantly skewed and kurtosis was high, therefore non-parametric statistics were used to evaluate test-retest reliability. Results of a Wilcoxon signed rank test (Table 6.27) showed no significant difference between mean values at t1 and t2 ($W=-1.886$, n/s), and total scores were highly correlated ($r_s=.787^{***}$).

	n	Time 1 Mean (SD)	Time 2 Mean (SD)	Variance	r_s	95% LL	95% UL
Somatic symptoms	61	5.95 (4.07)	5.48 (4.15)	-0.47	0.582**	0.335	0.792
Anxiety & insomnia	61	5.39 (4.21)	4.51 (3.98)	-0.88	0.864**	0.778	0.911
Social dysfunction	61	6.97 (2.75)	7.10 (2.93)	0.13	0.714**	0.516	0.852
Severe depression	61	1.48 (3.14)	1.13 (3.00)	-0.35	0.692**		
GHQ Total	61	19.79 (12.15)	18.21 (12.22)	-1.58	0.787**	0.621	0.886

Wilcoxon Signed rank test: -1.886, p=.059

Table 6.27: Non-parametric test-retest reliability statistics for the GHQ

Convergent Validity

As in Study 2a, scores on I.ROC and the GHQ were highly (negatively) correlated ($r=-.784$, $p<.01$), with strong correlations seen between all subscales ($>.5$; George & Mallery, 2003). The pattern of correlations with the GHQ subscales (Table 6.28) did vary slightly from the earlier study; this time the strongest correlation was with the Severe Depression subscale and the weakest was with the Somatic Symptoms subscale.

Measure	N	R=	95% CI	
			LL	UL
GHQ-28	235	-.784**	-.828	-.73
Somatic symptoms	235	-.569**	-.649	-.476
Anxiety & insomnia	235	-.640**	-.709	-.558
Social dysfunction	235	-.603**	-.678	-.515
Severe depression	235	-.758**	-.807	-.698

Table 6.28: Convergent validity of I.ROC and the GHQ, Study 2b

Factor Analysis

As in the datasets of Studies 1 and 2, the KMO and Bartlett’s statistics were good, and the factor solution extracted using Principal Axis Factoring with Promax rotation elicited two factors, accounting for 64.88% of the variance. Again, the pattern of factor loadings (Table 6.29) remained fairly consistent with the ‘interpersonal’ and ‘intrapersonal’ subscales identified in Study 1. The placement of only Physical Health (Intrapersonal) and Hope for the Future (Interpersonal) varied from the original model.

Dataset		S3	
Population		Student/ Staff	
N		236	
Extraction		PAF	
Rotation		Promax	
KMO		.927	
Bartlett's		<.001	
Determinant		.001	
Communalities		.43 - .80	
# Factors		2	
Variance explained		64.88	
Factor	F1	F2	
alpha	.92	.73	
Item loadings	MH	.63	
	LS	.71	
	S&C	.76	
	PH		.51
	E&A		.83
	P&D		.43
	PN	.73	
	SN		.74
	VM	.60	
	P&C	.86	
	SM	.96	
H	.69		

Table 6.29: Factor analysis results, Study 2b

i. Study 2b: Discussion

Results of Study 2b show I.ROC to be a reliable tool, providing a consistent measurement of individual recovery over a short period of time. This finding was supported by a lack of significant variation in scores using the more sensitive measure of the GHQ. Use of Intraclass correlation coefficients and Weighted Kappa’s to assess test-retest reliability, as opposed to the Pearson’s coefficient, a flawed analysis for TRT assessment, puts the I.ROC results for this section well above the reported results for the majority of personal recovery measures evaluated in Chapter 3 (Table 3.5). ICC values were as high as those reported for the top-rated measure for this criterion in Chapter 3, the QPR. This analysis therefore provides strong evidence supporting the reliability of I.ROC, but as TRT has only been

assessed once, it still lags behind the weight of evidence for more established measures (e.g. IMRS; QPR).

This is an important finding for a measure designed for use over a period of time; in practice, I.ROC is used every three months to track change over time. Establishing reliability of a short time period builds confidence that change seen over a longer period is reflective of actual change rather than random error.

There are a couple of points on which this study can be criticised however. Firstly, it used a convenience sample of students and staff from Abertay and staff from Penumbra, rather than a sample that is reflective of people using mental health services. Self-reported mental health issues were high within the student samples (see Ch6, Section 2). Additionally, 50% of Penumbra staff identify as having lived experience of mental ill-health, and the organisation is the largest single employer of peer workers in Scotland (Penumbra, 2018). Whilst these statistics support the legitimacy of testing I.ROC in such a population, the generalisability of findings from this study to a population of mental health service users remains unknown. Test-retest reliability should be repeated with participants sampled from mental health services for more clearly transferrable findings.

6:3.4. Study 2c: Trauma Population

The previous two studies provided evidence of the validity of I.ROC within a student or general population sample, but did not specifically evaluate psychometrics of the measure within the population it is designed to be used with: people with mental health problems. The objective of this study was to extend the previous research by evaluating preliminary evidence for the validity and reliability of the instrument within a trauma population.

Researchers

Data was collected by trained practitioners and research staff as part of a wider study overseen by Prof. TK at Edinburgh Napier University. Anonymised data was analysed by BR.

Recruitment

Participants in this study were individuals who were referred to a psychotherapy service specialising in the treatment of adult survivors of CSA in a National Health Service (NHS) service in Scotland. All participants during the recruitment period were sent a covering letter and invited to complete a set of standardised measures. Participation was voluntary and anonymous.

Materials

Data included within the outcomes battery included participant demographics and the following measures: Individual Recovery Outcomes Counter (I.ROC; Monger et al., 2013), Rosenberg Self-Esteem Scales; Rosenberg, 1965), the Hospital Anxiety and Depression Scale (HADS; Zigmond & Snaith, 1983) and the Work and Social Adjustment Scale (WSAS; Marks, 1986).

Procedure

Participants completed the battery of outcome assessments measuring symptoms, functioning and recovery as part of the wider study outlined above. Outcome measures were completed pre and post intervention. This analysis included anonymised data from the pre-intervention testing.

Participants

Participants (n= 107, 92.5% female) ranged in age from 18 to 78 years (M=38.8 SD= 10.8) were primarily Scottish (N=79, 73.8%) and single (n=61, 57.0%).

Table 6.30: Quant. Study 2c Research method

i. Study 2c: Results**Participant Demographics**

Participants (n= 107, 92.5% female) ranged in age from 18 to 78 years (M=38.8 SD= 10.8) were primarily Scottish (N=79, 73.8%) and single (n=61, 57.0%).

Approximately one-third of the participants lived alone (35.5%) and two-thirds were lived with others (e.g. a partner or with family; 64.5%). Over half of the cohort attended further or higher education (n=63, 58.9%). Socio-demographic characteristics of each sample are summarised in Table 6.11.

Descriptive Statistics

Results from the Shapiro–Wilk’s test and Kolmogorov–Smirnov’s test along with visual inspection of histograms showed that the data were normally distributed. As shown in Table 6.31, I.ROC scores ranged from 14 to 52 (max possible range: 12–72), with a mean of 33.3 (SD=7.8). Item means (Table 6.32) were fairly low, ranging from 2.08 for ‘Social Network’, to 3.34 for ‘Participation & Control’.

	Items	N	Mean	Std Error	Median	Std. Dev	Min	Max	Skew	Kurtosis	Shapiro-Wilk	α
I.ROC	12	96	33.3	0.8	39	10.8	14	52	-.04	-.14	0.99	0.75
WSAS	5	98	29.0	0.8	29	7.5	4	40	-0.8	0.8	0.948**	0.64
RSES	10	105	9.0	0.4	9	4.4	0	20	0.1	-0.5	0.986	0.80
HADS	14	103	27.3	0.7	28	6.7	9	40	-0.3	-0.5	0.983	0.81

Table 6.31: Descriptive statistics for measures in Study 2c

	MH	LS	S&C	PH	E&A	P&D	PN	SN	VM	P&C	SM	H
Mean Score	2.18	3.14	3.32	2.42	2.91	3.05	3.14	2.08	2.26	3.34	2.88	2.63
% Scoring 1	25.5	11.3	7.7	23.8	27.1	14	14.2	43.9	30.2	10.4	7.5	17
% Scoring 6	0	4.7	6.7	1	5.6	6.5	10.4	1.9	0	7.5	0	0
Inter-item correlations <.3	5	9	11	8	9	10	9	11	6	10	7	7

Table 6.32: I.ROC item means; proportion of participants scoring 1 & 6; number of inter-item correlations <.3 in Study 2c

Internal Consistency

Internal consistency for total scores of each measure was acceptable to good, ranging from .73 (RSES) to .82 (HADS) (Table 6.31). For I.ROC, Cronbach's alpha was 'fair' ($\alpha=.745$), but Social Network was found to be redundant. All measures had at least one redundant item (Cronbach's alpha higher if item removed). I.ROC and WSAS showed similarity in their redundant items (I.ROC: Social Network; WSAS: Family and Relationships), although the I.ROC item made only a marginal difference of .002 to the alpha value. Inter-item correlations for I.ROC were also fairly low however, with only 15 of the 66 inter-item correlations exceeding the acceptability limit of .3 (Cohen, 1988) (Table 6.32).

Convergent validity

Convergent validity results are presented in Table 6.33. As predicted, I.ROC correlated positively with self-esteem ($r=.51$, $p<.001$), and negatively with anxiety and depression (HADS total: $r=-.61$, $p<.001$), such that people with fewer

Measure/ subscale	N	R=	95% CI		Power
			LL	UL	
RSES	93	.513**	.35	.65	1
WSAS	84	-.389**	-.56	-.19	.96
HADS	92	-.606**	-.651	-.348	1
Anxiety	92	-.373**	-.496	-.129	.89
Depression	92	-.608**	-.684	-.285	1
WSAS	84	-.389**	-.56	-.19	.96

Table 6.33: Effect sizes, 95% confidence intervals and post-hoc power for measures in Study 2c

self-identified symptoms of depression and anxiety had higher levels of recovery, whilst those with higher self-esteem reported greater personal recovery. Scores on the Work and Social Adjustment Scale were likewise inversely correlated to I.ROC ($r=-.39$, $p<.001$); although the effect size was smaller, people showing greater levels of impairment in work and social adjustment scored higher on I.ROC.

Factor Analysis

Results of EFA testing with Study 2c data provided conflicting results; unlike the other Studies, Maximum Likelihood and Principal Axis Factoring outputs did not concur, and both analyses returned a high number of cross-loadings. A principal components analysis was also conducted to see if this method gave a clearer picture, however again the returned solution was messy, with items loading in different directions on the same factor. Given the muddled solutions produced by all three analyses, it was decided to adopt an EFA method

consistent with those used in the other analyses in this section (i.e. not PCA). As PFA is the recommended analytical method for small datasets, results of this solution are presented. PAF with promax rotation yielded three factors of between three and five items, and a final factor comprising a single item (Participation & Control) (Table 6.34). Single observed variables cannot be considered a latent factor on their own (Costello & Osborne, 2005), therefore the model was run with and without this item. When Participation & Control was excluded, the resulting three-factor solution explained 56% of the variance, with all loadings exceeding 3.7. Reliability analysis showed this item to contribute to the overall internal consistency of I.ROC however, suggesting that it should be retained.

i. Study 2c: Discussion

Whilst the concept of personal recovery has been most extensively applied within the context of mental illness, there is growing recognition however that it applies much more broadly (Perkins & Repper, 2015). Relevant to anyone who has experienced devastating and life-altering events; as such it is inextricably linked to the concept of trauma. Yet, there is limited work on personal recovery following psychological trauma. Results of this study provide the first support for recovery as a valid concept within trauma (Rudd et al, 2018), and support the validity and reliability of I.ROC as a

N	107				
Extraction	PAF				
Rotation	Promax				
KMO	.741				
Bartlett's	<.001				
Determinant	.063				
Communalities	.21 – .71				
# Factors	4				
Variance explained	60.45				
Factor	F1	F2	F3	F4	
alpha	.70	.59	.51		
Item loadings	MH	.56			
	LS		.82		
	S&C		.33		
	PH	.59			
	E&A			.54	
	P&D			.52	
	PN	.45			
	SN			.36	
	VM	.53			
	P&C				.70
	SM		.50		
	H	.70			

Table 6.34: Factor Analysis results, Study 2c

self-report recovery measure for use by trauma survivors. Internal consistency of I.ROC was acceptable, whilst significant correlations with measures of self-esteem, work and social adjustment and common mental health issues provide support for the convergent validity of I.ROC.

Results of this study did vary in a couple of important ways from those reported previously however. Firstly, participants tended to score lower than in other studies for the majority of I.ROC indicators. The difference in scores (Figure 6.5) was particularly pronounced for the Physical Health indicator. The impact of trauma on physical health has been widely reported (Irish et al, 2010; Neumann et al, 1996). Authors highlight the impact of psychological stress on the body (D'Andrea et al, 2011), and propose models conceptualising for the relationship between chronic stress and adverse health outcomes based on the theory of allostatic load (Friedman & McEwen, 2004).

Significant differences were also seen for Personal Network and Safety & Comfort (

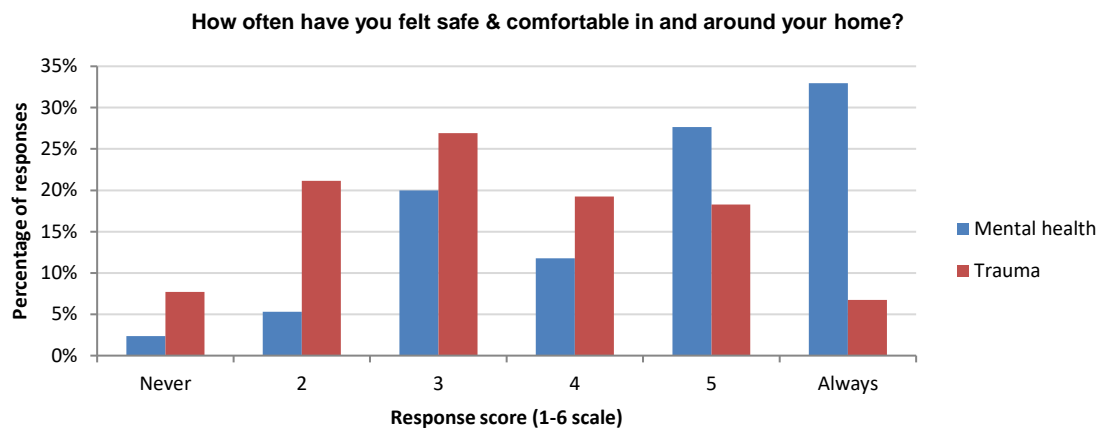


Figure 6.6), an indicator for which less than 7% of participants in Study 2c answered 'All the time', compared with over 23% (a significant ceiling effect) in all other studies. Differences in these items again likely reflect the complex trauma experiences of this population. Diagnoses of complex trauma are defined by the experience of recurrent traumatic experiences over an extended period, usually within specific relationships and contexts (Herman 1997; Courtois 2007). Complex trauma is therefore intimately linked to feelings of safety and to interpersonal relationships. The findings of this study highlight the importance of asking such

Chapter 6

questions in relation to recovery, particularly given that a high proportion of people with mental health problems have experienced abuse (Herman, 2015; see Chapter 2), and the proportion who have experienced trauma is likely to be even higher (Rudd et al, 2018; Appendix 22.a).

Differences in scores may also reflect the fact that participants in this study were accessing specialist NHS services. The need for this service may be indicative an earlier stage of recovery than for example the community mental health support seen in Study 1. It is also likely that this group is more homogenous in terms of mental health than other studies, and this may be reflected in I.ROC scores.

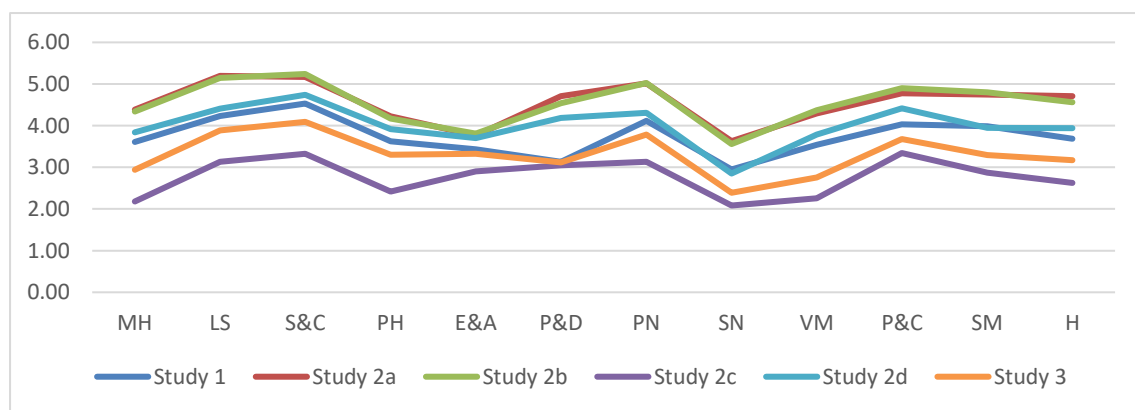


Figure 6.5: Mean scores for each I.ROC indicator in each study

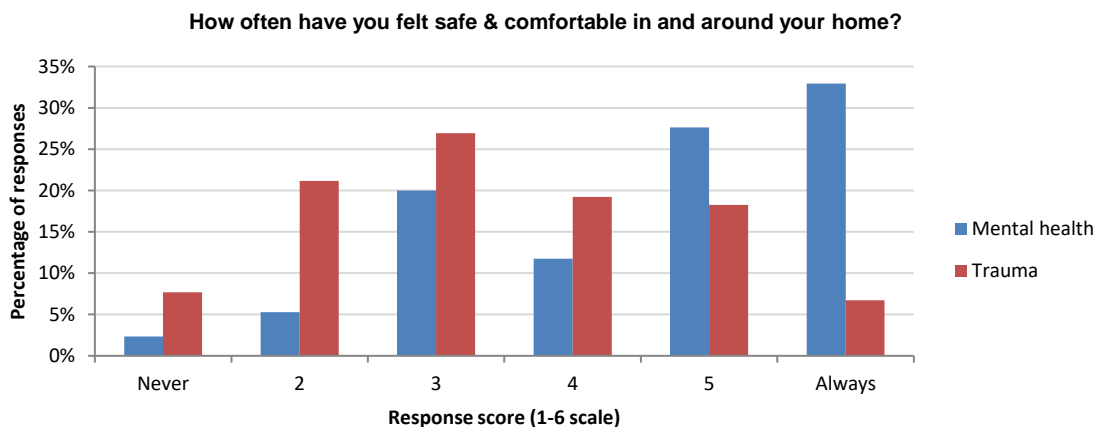


Figure 6.6: Distribution of scores for the Safety & Comfort indicator in mental health and trauma populations

The second aspect of difference was seen in the results of exploratory factor analysis, which suggested a model that varied significantly from those of the first three studies. The model identified in this Study excluded one item, Participation and Control, which loaded exclusively on a fourth factor. This item is not yet recommended for removal from the questionnaire however for several reasons. Firstly, internal consistency analysis showed Participation and Control to contribute

to the overall reliability of the measure. Secondly this analysis was conducted in order to evaluate the structural validity of I.ROC, and not to modify the instrument. Finally, the sample size used within this study was relatively small, particularly as is usually recommended for factor analysis (Preacher & MacCallum, 2003) (Gaskin & Happell, 2014). As these findings do vary to those previously reported, further research with a larger dataset is therefore needed. Research should examine question wording and subjective understandings of recovery to trauma survivors as well as the instrument's factor structure to determine the best solution.

Overall, the psychometric properties of I.ROC are largely supported within this study, providing further backing for I.ROC as a valid measure of recovery. This study extends previous findings by testing the instrument within a new population of adults accessing trauma-related support, and by evaluating the tool in a new self-assessment format.

6:3.5. Study 2d: Recovery Star

In this final investigative study, I.ROC was compared to one other leading measure of personal recovery, the Recovery Star. The research team identified this as a priority because of the similarities in the intended use of the two tools. As discussed in Chapter 3, whilst the majority of recovery measures have been developed to be used as stand-alone self-reports the Recovery Star, like I.ROC, is intended to be used collaboratively as a key-working tool. This makes it the most directly comparable measure to I.ROC from a feasibility perspective.

i. Study 2d: Methods

Researchers

Testing was carried out by BR and SH. SH oversaw recruitment and testing at Abertay, whilst BR oversaw testing in Jami.

Recruitment

Participants were students and staff at the University of Abertay Dundee, and service users at London-based Jewish mental health charity Jami. Participants were recruited through Abertay University using emails and the university online notice boards. Participants were sent the basic information about the study in the email/noticeboard, along with a link to the study, which was hosted online (Google/Survey Monkey). At Jami, support staff gave information on the study to each new person entering services and invited them to participate. There were no exclusion criteria at Abertay, and only length of time in service was used to exclude service users at Jami. This was to minimise the number of participants with prior knowledge and resulting bias towards I.ROC.

Materials

Two measures, I.ROC and the Mental Health Recovery Star (MHRS; Yetunde Onifade, 2011) were included within an online survey created using Survey Monkey (Penumbra) and Google Docs (Abertay). The first page of the survey online gave more detailed information regarding the study (Appendix 17). Participants consented to the study by clicking on 'I agree to participate in this study'. Participants were then asked to complete an online version of the demographics questionnaire (materials). Following this, participants completed the MHRS and I.ROC (I.ROC did not include the graphics and prompts from the 2012 version of the questionnaire) then filled in the feedback survey, before viewing a debrief page including contact details

Procedure

Between July and October 2017, participants were invited to complete I.ROC and the MHRS as part of an online questionnaire. Participants from Abertay completed the questionnaire online at a place of their choosing. Participants from Jami completed the questionnaire with a member of support staff, at a location of their choosing, following Jami policies

Participants

Participants comprised 21 men and 56 women ranging in age from 18 to 66 (mean age = 35.4)

Table 6.35: Quant. Study 2d Research methods

ii. Study 2d: Results

Participant Demographics

Participants comprised 21 men and 56 women ranging in age from 18 to 66 (mean age = 35.4).

		Mean Difference (I-J)	Std. Error	Sig.
No MH Probs.	Past MH Probs.	0.489	3.195	0.988
	Current MH Probs.	9.850*	2.984	0.006
Past MH Probs.	No MH Probs.	-0.489	3.195	0.988
	Current MH Probs.	9.361*	2.416	0.001

Mean I.ROC scores decreased significantly

Table 6.36: Scheffe's Post-hoc analysis examining the differences between mean I.ROC total scores for people with no history, previous history and current experience of mental health problems in Study 3

with increasing age ($r=.25^*$). A comparably large significant positive correlation was found between the Recovery Star and age ($r=.24^*$). The majority of participants (83%) reported a history of mental health issues. Over three quarters (78%) of participants reported having experienced anxiety and/or depression. Participants were asked both about their current and past mental health. This allowed comparison between people who have never experienced mental health issues, people who have experienced issues in the past but not currently, and people who are currently experiencing mental health issues. A one-way ANOVA showed these three groups to score significantly differently on I.ROC ($F=9.91, p<.001$). Post-hoc analyses using Scheffe's procedure (**Error! Reference source not found.**) revealed that whilst people reporting current mental health problems score significantly lower on I.ROC than people with no history and people with a past history of mental ill health, there was no significant difference in mean total I.ROC scores of people with

no history (mean=53.1) and people with a past history of mental health issues (mean=52.7).

Descriptive Statistics

	Items	N	Mean	Std Error	Median	Std. Dev	Min	Max	Skew	Kurtosis	Shapiro-Wilk	α
I.ROC	12	80	47.9	1.19	48	10.68	27	72	-0.14	-0.78	0.97	0.93
Recovery Star	10	77	74.8	1.9	78	16.7	29	98	-0.7	-0.13	0.94**	0.85

Table 6.37: Descriptive statistics, Study 2d

Complete I.ROC data (no missing items) was available from 99% of participants. Total scores ranged from 27 to 72 (mean =47.9; Table 6.37). Data was normally distributed. Indicator means were fairly high, ranging from 2.85 (Social Network) to 4.74 (Safety & Comfort); several items showed substantial ceiling effects (Table 6.38).

	MH	LS	S&C	PH	E&A	P&D	PN	SN	VM	P&C	SM	H
<i>Mean Score</i>	3.84	4.41	4.74	3.91	3.70	4.19	4.31	2.85	3.79	4.42	3.95	3.94
<i>% Scoring 1</i>	2.5	2.5	1.2	6.2	1.2	1.2	0	7.4	2.5	0	1.2	2.5
<i>% Scoring 6</i>	3.7	19.8	32.1	6.2	6.2	11.1	28.4	1.2	8.6	18.5	4.9	12.3
Inter-item correlations <.3	1	2	2	2	7	0	1	6	1	2	2	0

Table 6.38: I.ROC item means; proportion of participants scoring 1 & 6; number of inter-item correlations <.3 in Study 2d

Internal Consistency

Cronbach's alpha for both measures exceeded the acceptability benchmark (MHRS $\alpha=.85$; I.ROC $\alpha=.93$). Although the internal consistency of I.ROC was "excellent", there were two redundant items (Exercise & Activity and Social Network). At least 50% of inter-item correlations for these items fell below .3 (Table 6.38), however their removal increased the overall consistency by just .02.

Convergent validity

I.ROC correlated strongly with the total score of the Recovery Star ($r=.77^{**}$; 95% CI =.65 -.85), and all MHRS items correlated significantly with the I.ROC total (see 18.g19.i). I.ROC items also correlated significantly with the MHRS total, with the exception of Social Network ($r=.117$, $p=n/s$). Given the inclusion of social network questions within both of these measures, this is an unexpected result.

Factor Analysis

Exploratory factor analysis (PAF with Promax rotation) identified two factors with Eigenvalues >1, explaining 65.26% of the variance. The factor structure (Table 6.39) mirrored that found in Study 2a; only the two 'redundant' items (Social Network;

Exercise & Activity) loaded on factor two (interpersonal), and the internal consistency of this factor was again low ($\alpha=.52$).

Questionnaire Feedback

Twenty-four participants (31%) provided feedback on the questionnaires. Although the numbers were low, substantially more stated a preference for I.ROC (n=12) than the Recovery Star (n=1). As shown in Table 6.40, participants reported I.ROC to be more relevant and more comfortable to complete than the Recovery Star. Comments highlighted the brevity, clarity and positive wording of I.ROC; *“I find I.ROC to be much more positive and hopeful as it concentrates on the person I know I can become (again) and it allows me to work on the areas that are important to me.”* Participants commented on the holistic nature and usefulness of I.ROC; *“The [I.ROC] questions helped me to contextualise my thinking about mental health recovery, putting the focus on the subtle stages of recovery.”*

i. Study 2d: Discussion

This Study provides further support for the validity and reliability of I.ROC; results of structural and convergent validity and internal consistency are consistent with previous Studies. Internal consistency highlighted two items as redundant however, and as in Study 2a, these two same items were found to load on a separate factor (factor 2) from the rest of the questions. More research is needed to examine the fit and meaning of I.ROC items Exercise & Activity and of Social Network, and to question whether a ten-item I.ROC may perform well as a uni-dimensional measure of recovery.

N	80	
Extraction	PAF	
Rotation	Promax	
KMO	.892	
Bartlett's	<.001	
Determinant	0	
Communalities	.28-.85	
# Factors	2	
Variance explained	65.26	
Factor	F1	F2
alpha	.93	.52
Item loadings	MH	.70
	LS	.85
	S&C	.99
	PH	.73
	E&A	.56
	P&D	.51
	PN	.54
	SN	.73
	VM	.69
	P&C	.69
	SM	.95
H	.62	

Table 6.39: Factor Analysis results, Study 2d

		Agree	Disagree	Neither
The questions on this questionnaire helped me think about my recovery	I.ROC	58.3%	8.3%	33.3%
	Recovery Star	43.5%	17.4%	39.1%
There were questions on this questionnaire that I felt uncomfortable answering	I.ROC	8.7%	69.6%	21.7%
	Recovery Star	22.7%	54.5%	22.7%
There were questions on this questionnaire that I felt were not of great importance to my recovery	I.ROC	13.0%	60.9%	26.1%
	Recovery Star	22.7%	50.0%	27.3%
There were questions on this questionnaire that I did not completely understand	I.ROC	26.1%	60.9%	13.0%
	Recovery Star	22.7%	59.1%	18.2%
There were questions on this questionnaire that I did not wish to answer	I.ROC	18.2%	59.1%	22.7%
	Recovery Star	28.6%	57.1%	14.3%
I would be happy to fill out this questionnaire again	I.ROC	77.3%	13.6%	9.1%
	Recovery Star	61.9%	28.6%	9.5%
		The right length	Too long	Too short
How did you find the length of this questionnaire?	I.ROC	82.6%	17.4%	0.0%
	Recovery Star	63.6%	36.4%	0.0%
How did you find the scale used in this questionnaire?	I.ROC	87.0%	13.0%	0.0%
	Recovery Star	68.2%	31.8%	0.0%

Table 6.40: Proportion of answers to feedback questions in Study 2d for the participants who left feedback (n=24)

Findings of this study show that the Recovery Star and I.ROC are statistically as well as conceptually similar. Where the instruments did appear to diverge was in the experience of completing them; participants leaving feedback were almost unanimous in their preference of I.ROC, preferring both the format and the wording of the questions. Only a small proportion of participants left feedback, and this is recognised as a source of bias. It is possible for example that participants who preferred the Recovery Star more frequently chose not to leave any comments. Although this feedback is from a very small sample, and cannot therefore be generalised, it serves as a reminder of the importance of examining feasibility alongside statistical psychometrics. Feasibility of I.ROC is explored in detail within Chapter 7. Although I.ROC had excellent internal consistency, redundant items were again found in this Study

6:3.6. Study 2: Discussion

Studies presented in this section extend the findings of initial testing by examining the psychometric properties and feasibility of I.ROC in different populations, using a broader range of measures and analyses. Results add weight to the evidence supporting the validity and reliability of I.ROC.

Convergent (predictive) validity of I.ROC was assessed against a range of conceptually-related measures, with all correlations for total scale scores exceed the minimum benchmark requirement of 0.3, and post-hoc power analyses were above the minimum acceptable level of .8. I.ROC testing therefore meets the baseline benchmark for this criterion set in Chapter 3. As hypothesised, I.ROC correlated significantly with measures of personal recovery, clinical recovery, and recovery-related concepts including empowerment, hope, community living skills, self-esteem, general health and wellbeing. Across Studies 1 and 2, effect sizes were on average largest for the relationships with measures of personal recovery (.75-.77), whilst recovery-related (.49-.8²⁹) and clinical recovery measures (.39-.78) showed more variation and generally smaller correlations. This is consistent with findings of convergent validity testing of other measures; Andresen and colleagues for example, showed that correlations between measures of personal recovery are generally higher than those between measures of personal and clinical recovery (Andresen et al., 2010). Relationships between the QPR and personal, clinical and recovery-related measures also show a similar pattern, as discussed in Chapter 3, Section 3:3.5. This supports the conclusion that I.ROC is primarily a measure of personal recovery. The high correlation between I.ROC and the Recovery Star also provides the first conclusive support for the convergent validity of the latter measure with other recovery measures. A previous attempt by Killaspy and colleagues (2012a) reported no 'acceptable' convergence between the Recovery Star and the MHRM, although as discussed in Chapter 3, reporting of this relationship was flawed.

Strong correlations between I.ROC and measures of both recovery and wellbeing highlight the strength of the relationship between these two concepts. As discussed in Chapter 2 and argued by a growing body of authors (e.g. Slade, 2010c), wellbeing and personal recovery are conceptually overlapping constructs. It is argued in Chapter 2 that the close relationship between these two concepts opens up recovery as applicable to those without a lived experience of mental ill-health. Supporting this theory, I.ROC also correlated strongly with the GHQ-28; a measure of health for the

²⁹ Figures only shown for significant correlations between total scores.

general population; this suggests that I.ROC is a useful tool for assessing health and wellbeing in the general population. These findings imply that I.ROC could be successfully applied as a wellbeing and recovery tool within wider health and social care populations.

Differences in I.ROC scores and feedback within different demographics provides a challenge to this theory however. Participants without a personal experience of mental ill health found questions relating to mental health and hope irrelevant, whilst those with a history of mental health issues found the questions more useful and relevant overall. This highlights differences in the experience of completing I.ROC for people with and without a history of mental health problems, which may in turn reflect differences in the experience of wellbeing. Supporting this, I.ROC total scores were also generally lower for people with experience of mental illness, as demonstrated in Figure 6.5. Across all participants, those in Study 2c (trauma population) tended to score lowest; as argued in the discussion of that study, these results highlight the importance of extending the concept of recovery to this population.

Reliability analyses showed I.ROC to provide a consistent measurement of individual recovery over a short period of time. This finding was supported by a lack of significant variation in scores using the more sensitive measure of the GHQ. ICC values were as high as those reported for the top-rated measure for this criterion in Chapter 3, the QPR. This analysis therefore provides strong evidence supporting the reliability of I.ROC, but as TRT has only been assessed once, it still lags behind the weight of evidence for more established measures (e.g. IMRS; QPR).

I.ROC demonstrated good internal consistency, exceeding minimum acceptability thresholds within each dataset (Ponterotto & Ruckdeschel, 2007). This demonstrates a good level of homogeneity, with all questions measuring aspects of one overarching concept (recovery). Results of internal consistency testing are similar to those of measures evaluated in Chapter 3, and surpass the minimum benchmark requirements. Half the analyses in this section identified two items (Exercise & Activity; Social Network) as redundant however, and low inter-item correlations were found for several I.ROC indicators, suggesting a poor fit for these items.

Factor loadings for each Study shown in Table 6.41 demonstrate that no two factor structures were identical, but studies are consistent in their identification of more than one latent factor, which suggests a multi-dimensional model of recovery. With the exception of the data in Study 2c, EFA analysis of the datasets in these Studies returned factor solutions in which all twelve I.ROC items loaded significantly on two factors. Studies also concurred on the general distribution of items across the two factors. For example, within all of these datasets, Mental Health, Life Skills and Safety & Comfort loaded on the first factor, whilst Exercise & Activity and Social Network tended to load on the second factor. The consistency in the pattern of factor loadings across these Studies supports the reliability of the findings of the original study, although some differences were found. Studies varied on the placement of Physical Health, Purpose & Direction and Hope for the Future.

The factor structure identified in Study 2c differed substantially from that of all other Studies. Study 2c

varies from the other studies both in the size of the sample, which is only borderline large enough to complete the analysis, and the population from which it is taken (complex trauma), and it is unclear from this analysis whether the differing factor structure is reflective of one (or both) of these variables. More

research is needed with a larger sample from this population before any strong conclusions can be drawn.

	Study	VM	MH	LS	S&C	PN	P&C	SM	H	PH	P&D	E&A	SN
Factor 1	S1	x	x	x	x	x	x	x		x			
	S2	x	x	x	x	x	x	x	x	x	x		
	S3	x	x	x	x	x	x	x	x				
	S4	x	x	x	x	x	x	x	x	x	x		
	S5	x	x	x	x	x	x	x	x	x	x		
	Total	5	5	5	5	5	5	5	5	4	4	3	0
Factor 2	S1								x		x	x	x
	S2											x	x
	S3									x	x	x	x
	S4			x	x			x					
	S5											x	x
	Total	0	0	1	1	0	0	1	1	1	2	4	4
F3	S5										x	x	x
	Total	0	0	0	0	0	0	0	0	1	1	3	3
F4	S5						x						
	Total	0	0	0	0	0	1	0	0	0	0	0	0

Table 6.41: Distribution of factor loadings >.3 for each I.ROC item across the five investigative Studies (cross-loadings not shown)

It can be concluded from these analyses that I.ROC most likely consists of two highly correlated factors, loosely aligned to the descriptions of interpersonal and intrapersonal factors, as described in Study 1. As several different specific models have been identified, to determine the exact factor structure, the final study presented in section 3 will investigate the confirmatory factor analysis of I.ROC.

Ch6, Section 4. Study 3: Factor Analysis

The I.ROC questionnaire has been used at Penumbra for approximately ten years, during which scores have been stored on a secure online database, as described in Chapter 5. Working with approximately 1600 service users every week, the online database has become a vast source of routinely collected I.ROC information. The database was sampled to achieve the following aims:

1. To compare the scores from people receiving ongoing support to those seen within the empirical studies.
2. To evaluate the structural validity of I.ROC using factor analytical techniques.
3. To use the longitudinal data to explore change over time.
4. To use the demographic data to establish normative data.

i. Study 3: Methods

Researchers

All data cleansing and analysis was conducted by BR.

Participants

Routinely collected data was sourced from 5376 people aged eleven and up who used third sector community mental health services provided by Penumbra in Scotland, and completed at least one I.ROC between January 2012 and June 2017. No identifying information was included in the analysis.

Procedure

Data was downloaded from Penumbra's secure database on the 8th June 2017 (n=24,448). This data was cleaned to remove any duplicate (n=3801) and incomplete entries (n=260). Finally, as the format of I.ROC changed in 2012 (see Chapter 5), I.ROCs completed before 2012 were removed (n=3340). As the data collected in previous studies used a maximum of two I.ROC completions, only baseline data was used (n=4584) for structural validity analyses. Data was entered into SPSS and the demographics of the sample was analysed (see Chapter 6). Data was used both as a complete file, and as three age-stratified datasets: under 18's, working age adults (18-65) and older adults (65+).

Finally, incomplete data was removed (n=40), and the remaining data in the under 18's (n=890) and the working age adults (n=3521) datasets was split in half by randomly assigning numbers to each row using Excel's random number generator, sorting by size, and then splitting in half. The older adults' dataset was too small to split (n=104), and was used only within the EFA stage of structural validity testing. Comparability of split halves was checked using t-tests of age and I.ROC totals before use (see Chapter 6).

Table 6.42: Quant. Study 3 Research methods

Models were tested in AMOS v22. Model fit was assessed using six goodness of fit tests assessing both absolute (Chi-square (χ^2); χ^2/df ; RMSEA) and relative (NFI; CFI; TLI) fit. Non-significant χ^2 tests represent good absolute fit, but as χ^2 is sensitive to the size of the dataset (Gatignon, 2010), this test returned significant results for all models, therefore models were compared based on the size of the fit statistic and of the related χ^2/df . Overall for absolute fit statistics, smaller scores represent better fit, whilst for relative fit, higher scores represent better fit. Each model was assessed on the six fit indices individually, however as all models generally met cut-off values for acceptable fit (< .8 RMSEA; >.8 CFI; TLI; NFI), the models were compared against each other by ranking the values on each goodness of fit test and summing these to provide an overall rank score. Summary statistics are shown in Table 6.45. Detailed statistics and a structural diagram of each tested model can be found in 18.g19.b.

ii. Study 3: Results

Demographics

There is a small female majority (56% female³⁰) within the population accessing Penumbra services and this was reflected in Study 2c, where the data sampled had a 57% female majority (n=4544). As in the previous studies, gender had no significant effect on I.ROC scores ($t=1.939$, $p=0.053$, n/s). I.ROC data in this Study came from people ranging in age from 11 to 83, with an average age at baseline I.ROC assessment of 34.6 (SD:16.2). As in several of the previous Studies, age showed a small but significant positive correlation with I.ROC scores, such that older adults tended to score higher than younger participants ($r=.23^{**}$).

Data collected in this Study showed that across Penumbra, 48% of people report themselves to be unemployed (Table 6.43). This figure could be considerably higher, as only 24% of people state that they are in employment or education. The proportion of people reporting current employment or participation in education is

	N	4584
Ptp group		<i>Mental health Service Users</i>
Age Range		11-83
Mean Age (SD)		34.6 (16.2)
Male		1952 (43%)
Female		2592 (57%)
Scottish/ White British		2592 (57%)
Unemployed		2220 (48%)
Employed/ in education		1107 (24%)
History of/ current mental distress		100%

Table 6.43: Demographics, Study 3

³⁰ Data correct as of 8/1/2018

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lowest (12%) for adults (over 18's), with no difference in this percentage between adults of a working age (18-65) and those over 65.

Descriptive Statistics

I.ROC scores were approximately normally distributed, spanning the total possible range of 12 to 72 with a mean total of 39.8. Although sampled from the same population (albeit at different times), I.ROC scores from Study 3 were significantly lower than those from Study 1; overall, scores were lower than all but Study 2c (trauma population). Item averages ranged from 2.39 (Social Network) to 4.09 (Safety & Comfort). Social Network saw a substantial floor effect; over one third (40.3) of all scores recorded received the lowest possible rating of 1 (Never). A ceiling effect was also seen for Safety & Comfort, for which over one quarter of all scores were the highest possible (6). Most other items saw a more normal distribution of scores however (see Table 6.44).

	<i>MH</i>	<i>LS</i>	<i>S&C</i>	<i>PH</i>	<i>E&A</i>	<i>P&D</i>	<i>PN</i>	<i>SN</i>	<i>VM</i>	<i>P&C</i>	<i>SM</i>	<i>H</i>
<i>Mean Score</i>	2.94	3.88	4.09	3.30	3.33	3.12	3.79	2.39	2.76	3.68	3.30	3.17
<i>% scoring 1</i>	10.6	3.4	7	10.9	13.2	13.9	7.4	40.3	19.7	7.1	8.1	13.2
<i>% scoring 6</i>	2	13.5	23.6	6.2	11	5.7	18.5	3.8	4.7	11.7	5.7	7.3
<i>Inter-item correlations <.3</i>	1	2	5	4	4	1	5	8	2	3	1	0

Table 6.44: I.ROC item means; proportion of participants scoring 1 & 6; number of inter-item correlations <.3 in Study 3

Internal Consistency

For the dataset as a whole, Cronbach's alpha coefficient was 'Moderate' (Ponterotto & Ruckdeschel, 2007) at .86, and there were no redundant items. Most inter-item correlations met the .3 benchmark (Table 6.44), but Social Network saw several (8) correlations fall below this threshold, which suggests a weaker fit for this item.

Confirmatory Factor Analysis

The four models proposed previously in the published I.ROC literature were examined alongside the models identified in the Studies presented above. Model 1 tested the four-factor HOPE framework outlined by I.ROC developers (see Chapters 1, 5), which was assessed in a later collaborative study and found to be an adequate fit (Dickens et al., 2017). The second model was based on the two-factor inter and intrapersonal recovery structure identified in Study 1, as proposed by (Monger et al., 2013). Dickens and colleagues concluded that a unidimensional recovery model may be the best fit for I.ROC, therefore Model 3 loaded all twelve I.ROC items onto a

single latent factor (Dickens et al., 2017). Model 4 tested the two-factor structure identified by Dickens et al. Similar to the inter/intra dimensions of model 2, this model only switches the positioning of Hope for the future and Physical Health within the factors. Model 5 tested the factor structure of Studies 2 and 5. As the EFA results for Study 2c included a single-item factor (Participation & Control), which cannot be included within AMOS models, the EFA suggested model was interpreted in two ways. Firstly, a four-factor model was created by including a second-order 'recovery' factor (Model 7). Secondly, Participation and Control was removed from the model to create a three-factor solution (Model 8).

MODEL	1	2	3	4	5	6	7	8
	HOPE	Inter/Intra (Study 1)	Uni	4-Factor Dickens et al	Study 2a&5	Study 2b	Study 2c	
# FACTORS	4	2	1	2	2	2	4	3
# ITEMS	12	12	12	12	12	12	12	11
X ²	1017.4	1299.8	1384.2	917.6	1305.7	1022.6	988.1	732.4
P	<.001	<.001	<.001	<.001	<.001	<.001	<.001	<.001
DF	48	55	54	55	55	55	51	41
X ² /DF	21.2	23.6	25.6	16.7	23.7	18.6	19.4	17.9
NFI	.939	.922	.917	.945	.921	.938	.941	.951
CFI	.941	.925	.92	.948	.924	.942	.943	.953
TLI	.92	.91	.92	.937	.909	.93	.927	.937
RMSEA	.067	.071	.074	.059	.071	.062	.064	.061

Table 6.45: Results of Confirmatory Factor Analysis of 8 I.ROC structural models

Goodness of fit tests for each model are shown in Table 6.45. All models were found to have adequate fit statistics, with RMSEA values below .8, and NFI and CFI values greater than .9. Of these models, Model 4 and Model 8 provided the best solutions, with Model 4 scoring higher on absolute fit and Model 8 higher on relative fit statistics. There are several reasons why at this stage, Model 8 is not assumed to be the better model. Firstly, comprising only eleven I.ROC items; Model 8 differs to all other models, which all include the full twelve I.ROC items, and are still a reasonably good fit. Secondly, internal consistency analyses across the Studies have shown Participation and Control to contribute to the overall reliability of the measure. Thirdly, with the exception of Study 1, exploratory and confirmatory factor analyses were conducted here in order to evaluate the structural validity of I.ROC, and not to modify the instrument. Brevity was a key issue for I.ROC developers (Chapter 5), and consequently each question was designed to measure a different recovery component. Participation and Control is intended to measure key aspects of empowerment, a fundamental component of personal recovery (Leamy et al., 2011);

see Chapter 2 for discussion). Finally, as argued by Gordon et al (2012), “*excessive reliance on factor analysis can result in situations where experiences of importance to respondents are found to be statistically unrelated and thus omitted*” (Gordon et al, 2012, p.200).

As the results of the traditional CFA analysis thus did not result in one clear conclusion, a final step was undertaken. This final stage of analysis sought to test a series of modifications to Model 8 to determine whether a slight change to this model could provide a better fit without the removal of the Participation & Control item. All the models outlined above were compared to try to identify a single modified model that best fits the data as shown in Figure 6.7. First, Participation & Control was added to each of the three factors in Model 8 in turn, and the fit of the three adjusted models (Models 9-11) was compared to the original. Adding Participation & Control to the second of the three factors improved the absolute fit (Model 13: χ^2/df : 17.513; RMSEA: .06) of Model 8.

Modification indices in the adjusted model (Model 11) were evaluated and used to make further adjustments to the model using a process of sequential modification (Hutchinson, 1998; MacCallum et al., 1992), in which modifications are made sequentially based on examination of the modification index, and the model is re-run after each adjustment to assess the change to overall model fit. A high modification index (MI = 387.896) reflected strong covariance between Physical Health and Exercise & Activity; this suggested that the two items, originally assigned to different factors, might fit better within the same factor (as covariance is restrained to items within the same factor). The model was therefore re-run twice with these two items in the same factor (factor 2; Model 12 and then factor 3; Model 13); model fit was seen to improve when Physical Health and Exercise & Activity were both positioned within factor 3 (Model 13).

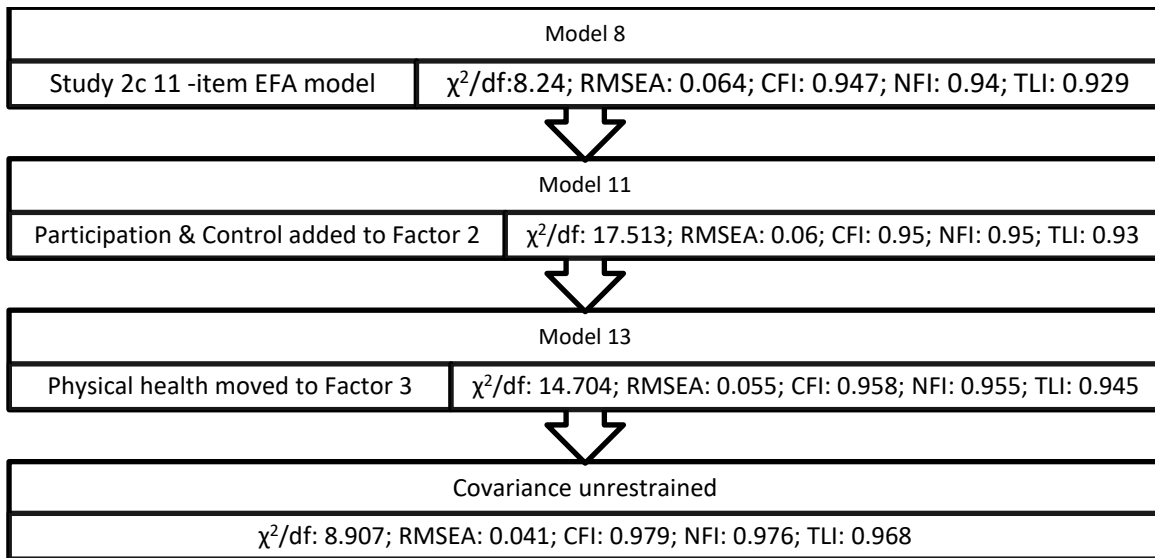


Figure 6.7: CFA fit statistics for each step of modification of the final model

The final adjusted model (Model 13, see Figure 6.8), comprising three equally-weighted factors, showed the best fit statistics overall ($\chi^2/df: 8.907$; RMSEA: .041 (90% CI LL: .035, UL: .048); CFI: .979; NFI: .976; TLI: .968) (see Appendix 19.b). Factor loadings all exceeded .45; reliability was 'moderate' for Factor 1 (Factor 1: $\alpha=.75$) and 'fair' for Factors 2 and 3 (Factor 2: $\alpha=.71$; Factor 3: $\alpha=.71$). Descriptive statistics and internal consistency for the three subscales in each Study are shown in Table 6.46. Convergent validity of the factors with each measure in Studies 1-5 is shown in Table 6.47. Descriptions of each factor are given in Box 6.1.

Factor 1 'Personal & Mental Wellbeing' (*Mental Health; Valuing Myself; Hope for the Future; Personal Network*): Items loading on this first factor explore elements of mental wellbeing such as optimism, self-esteem and mental health, and question respondent's satisfaction with their close personal relationships.

Factor 2: 'Daily Living' (*Life Skills; Self Management; Safety & Comfort; Participation & Control*): Items within the 'Daily Living' factor relate to elements of functional recovery, and examine the respondent's ability to manage and control elements of their day to day life.

Factor 3: 'Activity & Physical Health' (*Exercise & Activity; Social Network; Purpose & Direction; Physical Health*): Questions pertaining to involvement in social, employment, and leisure activities all load onto this final factor. Physical Health, which impacts and can be affected by, one's ability to participate in such activities, is also included within the third factor.

Box 6.1: Label and description of each of the three I.ROC subscales

Study		1	2a	2b	2c	2d	3
	N no missing data	158	229	236	96	4544	80
	Minimum acceptable α	0.65	0.65	0.65	0.6	0.7	0.6
F1: Personal and Mental Wellbeing	Mean (SD)	14.9 (4.8)	18.4(3.6)	18.3(4.1)	10.2(3.1)	12.7 (4.2)	15.8(4.4)
	Median	14.5	19	19	10	12	15.5
	Range	5-24	7-24	7-24	4-19	4-24	6-24
	α	0.81	0.81	0.84	0.68	0.75	0.86
F2: Daily Living	Mean (SD)	16.8(3.9)	19.9(3.2)	20.1	12.7(3.4)	15.0 (4.2)	17.5(4.1)
	Median	17	21	21	12.5	15	18
	Range	5-24	9-24	6-24	4-21	4-24	7-24
	α	0.74	0.77	0.87	0.62	0.71	0.86
F3: Meaningful Activity & Physical Health	Mean (SD)	13.1(4.2)	16.3(3.4)	16.1(4.1)	10.5(3.3)	12.2 (4.3)	14.6(3.3)
	Median	13	16	16	11	12	15
	Range	4-24	6-24	5-24	4-20	4-24	7-24
	α	0.66	0.66	0.79	0.5	0.71	0.65

Table 6.46: Descriptive statistics and internal consistency of I.ROC subscales as measured by Cronbach's alpha in each study

iii. Study 3: Discussion

Confirmatory Factor Analysis showed this model to be a good fit, although fit statistics for the four-factor HOPE framework upon which I.ROC is currently used in practice were almost equally as good. This finding supports the use of this framework as a valid model for recovery-oriented practice (use in practice is discussed in Chapter 7).

The overall best-fit solution was derived from the factor structure of data in Study 2d. This model only included 11 of the 12 I.ROC items, but given the brevity of the instrument, removal of the 'redundant item' would leave out important aspects of personal recovery. Instead, a

Study		N	F1	F2	F3
1	RAS	134	.699**	.579**	.591**
	BASIS-29	143	-.612**	-.464**	-.309**
2	Herth Hope Index	86	.779**	.449**	.494**
	IPAQ	73	.034	-.056	.243*
	CLSS-37	50	.723**	.645**	.620**
	MDES-27	129	.382**	.472**	.364**
	Wellbeing Scale	96	.447**	.532**	.430**
	RSES	121	.609**	.565**	.419**
3	GHQ-28	218	-.599**	-.514**	-.357**
	GHQ-28	235	-.791**	-.707**	-.609**
4	RSES	93	.492**	.365**	.324**
	WSAS	84	-.262*	-.395**	-.239*
	HADS	92	-.516**	-.487**	-.401**
5	Recovery Star	76	.759**	.758**	.530**

Table 6.47: Correlations of the three I.ROC factors identified in Study 3, with measures from each Study

process of modification of this model was undertaken in order to develop a new theoretical model for future structural validity testing. Modification resulted in a model with excellent fit statistics, in which the twelve items are equally spread across three factors, labelled 'Mental and Personal Wellbeing'; 'Daily Living'; and 'Activity and Physical Health'. The final model is very similar to the two-

factor model derived from the EFA testing in Stage 2, with the 'Activity and Physical Health' factor of the final model corresponding exactly to the 'intrapersonal' factor of the derived model (also identified in testing by Dickens et al, 2017). In fact, the correlation between the first two factors in the final model is very high (.87), and this may yet suggest that the two-factor model is indeed preferable, particularly from the consideration of parsimony. The two models should be tested further using an independent sample to clarify which is indeed the better fit for I.ROC.

For the purposes of this thesis however, the three-factor solution is applied as it provides the best overall fit for the data used within these Studies. It also is a logically sensible solution; the relationships between items within each factor are readily apparent, and the factors identified in within this model solution are reflective of the dimensions of recovery described by Lloyd and colleagues (2008), with the three factors loosely adhering to the recovery dimensions of Personal, Social and Functional Recovery. This suggests that I.ROC measures a wider, more holistic and multi-dimensional model of recovery than covered by models of personal recovery such as CHIME (see Chapter 2 for review). This finding concurs with the systematic review of recovery measures (Chapter 3), which found that measures of personal recovery commonly are not purely measures of personal recovery, instead measuring a wider recovery construct.

Limitations

Researchers appear divided on the subject of modification of models using Confirmatory Factor Analysis; some argue that as CFA is a technique designed to test pre-defined theories or hypotheses, modifications should not be made during this stage (e.g. Hurley et al, 1997). Yet, modification is commonly seen within published CFA models (Breckler, 1990), and research has shown that where the sample size is large (>1500) and testing assumptions are not violated, modified models can produce consistent results (Hutchinson, 1998). It is acknowledged though that as the models tested using CFA have been adjusted, the fit of the final proposed model must be independently assessed (Cliff, 1983; MacCallum et al, 1992); this was not possible in the current testing,

as no further data was available. Additionally, although CFA and EFA were conducted using separate data, some came from the same overall sample (people accessing Penumbra’s services 2012 - 2017). The CFA conducted here cannot therefore be said to be a truly independent test of structural validity; more testing is needed to evaluate the proposed model with new data.

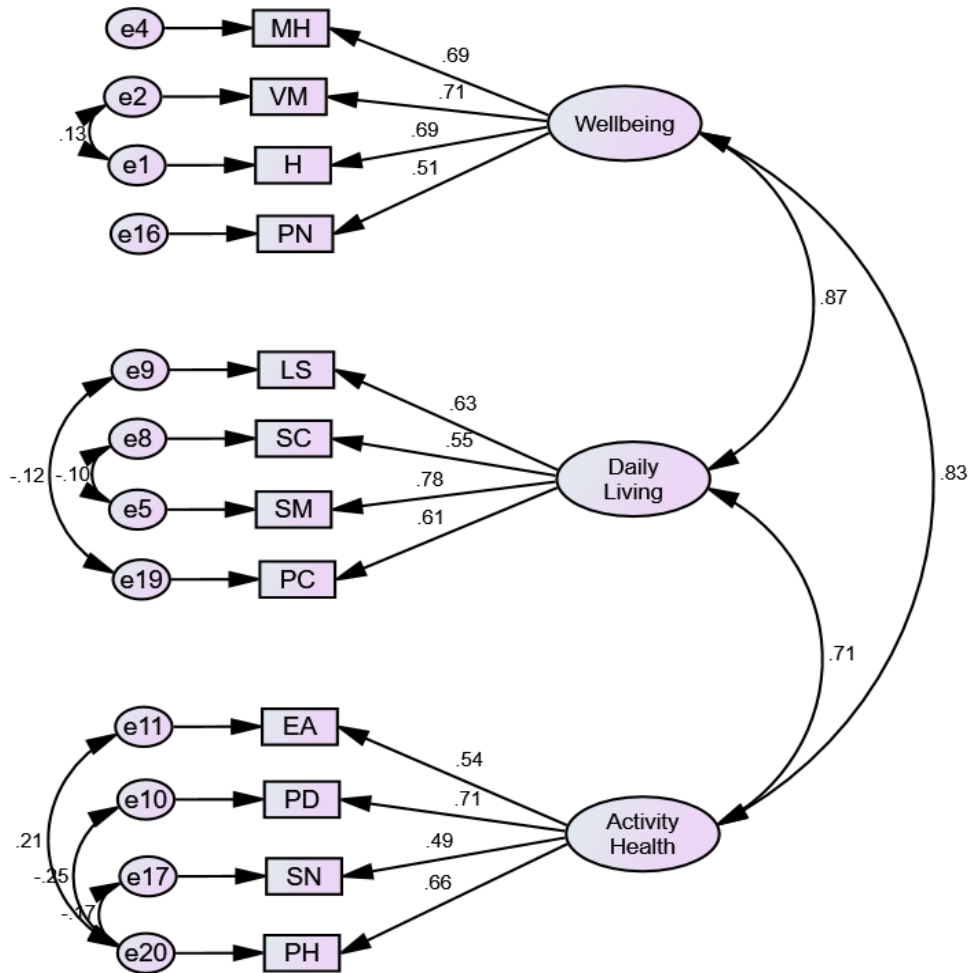


Figure 6.8: Best-fit structural model of I.ROC (Model 18). The three factors are labelled: Personal & Mental Wellbeing; Daily Living; Activity & Physical Health. Numbers represent factor loadings, covariances and error values.

Ch6, Section 5. General Discussion

In this Chapter, investigative and routinely collected I.ROC data from over six thousand people were used to evaluate the psychometric properties of the Individual Recovery Outcomes Counter. Analysis of data from six separate datasets generally support the validity and reliability of I.ROC, and results of each test meet the benchmarks for psychometric properties of recovery measures set in Chapter 3 (for overview, see Chapter 8, Table 8.2).

Validity and Reliability of I.ROC

Feedback from participants supports the face validity and feasibility of I.ROC, with participants reporting the tool to be useful and user friendly. Structural validity testing of I.ROC revealed several alternative models with good fit, including pre-existing models such as the four domains of the HOPE framework for recovery-oriented practice upon which I.ROC was created (see Chapter 5). Good model fit for the HOPE framework as seen in these studies was also demonstrated in the research group's 2017 paper (Dickens et al, 2017), providing statistical support for the model underpinning I.ROC developers' approach. This approach and its relationship with I.ROC will be examined further within the following Chapter (Ch 7). Testing revealed several models with better overall fit than HOPE however, the best of which is a three-factor model, with factors labelled 'Mental and Personal Wellbeing'; 'Daily Living'; and 'Activity and Physical Health'. Supporting the construct validity of I.ROC, the three domains align with recovery dimensions identified within the literature (Lloyd et al., 2008), and high correlations between the three factors are reflective of the continuing debate as to the nature and closeness between different recovery dimensions, as discussed in Chapter 2.

I.ROC scores showed a high level of agreement across repeated testing sessions, supporting its test-retest reliability. As I.ROC is designed to measure change in recovery over time, establishing reliability over a period of time when no change is expected is a crucial first step. This enables practitioners to be confident that any change in people's scores is reflective of actual change rather than random variation; although, as test-retest reliability has only so far been tested in a non-clinical sample from the general population, more research is needed to determine consistency of measurements for people with mental health issues. Test-retest is only an initial stage of assessment for a measure that is intended for repeated use; more research is needed to investigate change over time and sensitivity to change. These psychometric properties have only been infrequently tested for recovery measures so far (Chapter 3); longitudinal studies are therefore required for personal recovery instruments in general in order to assess their ability to reflect progress towards recovery

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Internal consistency of I.ROC total scores was generally good and subscale scores exceeded the lower limits of acceptability (Ponterotto & Ruckdeschel, 2007). I.ROC does therefore appear to be measuring a single construct (recovery), and results of construct validity testing including convergent validity and the structural validity outlined above demonstrate that this construct is consistent with current understandings of personal recovery.

As predicted, convergent validity with personal recovery instruments was strong, and I.ROC also correlated significantly with measures of clinical recovery and recovery-related constructs. These findings mirror reported relationships between recovery measures and other outcomes instruments which show diminishing strengths of correlations between (in descending order) measures of personal recovery, clinical recovery and recovery-related elements (Andresen et al, 2010). This provides substantial evidence of the validity of I.ROC as a measure of personal recovery, and adds to the weight of evidence arguing that personal and clinical recovery are separate (but related) constructs (e.g. Slade et al, 2012; Chapter 2). Strong correlations between I.ROC and measures of both recovery and wellbeing highlight the strength of the relationship between these two concepts. As discussed in Chapter 2 and argued by a growing body of authors (e.g. Slade, 2010c; Andresen et al, 2010), wellbeing and personal recovery are conceptually overlapping constructs. It is argued in Chapter 2 that the close relationship between these two concepts opens up recovery as applicable to those without a lived experience of mental ill-health. Supporting this theory, I.ROC correlated strongly with the GHQ-28; a measure of health for the general population; this suggests that I.ROC is a useful tool for assessing health and wellbeing in the general population. These findings imply that I.ROC could be successfully applied as a wellbeing and recovery tool within wider health and social care populations.

Testing I.ROC in different populations

Differences in the distribution of I.ROC total and indicator scores were seen between the datasets of studies with different sample demographics. Samples taken from non-mental health populations such as students and staff scored highest, whilst those taken from service user populations (mental health and/or specialist trauma services) tended to score lowest.

One indicator that showed particular divergence was Purpose & Direction, identified as 'not important to recovery' in feedback from participants in Study 1. Participants accessing mental health services (Studies 1,4,5) scored significantly lower than those who generally are not (Studies 2,3,6). This difference is likely to reflect the sampling strategy within the different studies; service user samples as discussed above, tend to have high unemployment rates. Where non-service user populations were used, the samples included very high proportions of staff and students, all of whom were obviously employed at the time of the study. Feedback also reflected a comprehension of this question as related directly to employment. It therefore appears that employment currently moderates the relationship between Purpose & Direction and recovery. I.ROC developers were clear (Chapter 5) that this question was not intended as a measure of employment; further modifications to its wording are therefore recommended to reduce the focus on employment.

Participants with experience of trauma scored significantly lower than those from a general mental health population. Researchers have highlighted the fact that for many, personal recovery encompasses recovering from the 'trauma of mental illness' (Baxter, Diehl 1998, Costanzo 2016, Deegan 1996). Deegan described the traumas associated with living with a mental health diagnosis, which can include the impact of stigma, poverty and inequality, as well as experiences of abuse within the mental health system; she concludes that, *"sometimes recovering from mental illness is the easy part. Recovering from these deep wounds to the human heart takes much longer"* (Deegan 1996). Findings reported here demonstrate that recovery measures can successfully be used in trauma populations, and further identify areas of greater need for this group of people than for those accessing community mental health services.

Differences in I.ROC scores seen within and between these studies suggest that I.ROC can distinguish between individuals based on their experience of mental ill-health and/or adverse events. Interestingly, I.ROC was not able to distinguish between participants who self-reported a past (but not current) experience of mental health issues and those with no history of mental health

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problems. This finding supports the argument proposed by (Davidson & Roe, 2007) that personal recovery can be considered an outcome as well as a process, in which people with past experience of mental health issues can reach the same state of recovery or wellbeing as people who have not experienced such issues (see Chapter 2 for discussion of recovery as a process and as an outcome). It may also suggest however that whilst I.ROC is sensitive to current mental health problems, it is not sensitive across the full spectrum of recovery. Small or subtle differences in the experiences of people who have reached a high level of recovery may not be captured by the I.ROC questions.

I.ROC Scale

Whilst Likert scale responses are prone to skew, particularly when the scale includes no mid-point (Dawes, 2008), several I.ROC items showed significant levels of skew; floor effects were widely seen for Social Network, whilst Safety & Comfort and Personal Network in particular saw widespread ceiling effects. This finding may suggest that the current 1-6 scale is not adequately capturing the responses of all people using the measure. One solution to this was proposed by (Dickens et al., 2017), who found that a four-point scale would provide a better statistical solution. Longer scales have been found to be more reliable and are preferred by respondents over scales with between two and four points however (Preston & Colman, 2000). In practice, more scale points provide more room for movement up and down the scale, and can help stimulate discussion – both points raised during qualitative research with I.ROC users covered within Chapter 7. It is clear though that the 1-6 I.ROC scoring scale would merit further investigation. This should include both quantitative and qualitative exploration of how the scale works, to ensure a solution that is both meaningful and statistically effective. This point will be returned to within the final Chapter which sets out a range of suggestions for future research and I.ROC developments.

Redundant items

Two redundant items, Social Network and Exercise & Activity, were found within half of the studies, and low inter-item correlations were seen for both items across all studies. Additionally, Social Network provided a poor fit for some of the extracted model solutions during factor analysis, whilst Participation &

Control did not load onto any factor in Study 2d. These findings may suggest the need to remove some indicators to improve the instrument's psychometrics. However, I.ROC is intended as a useful tool to stimulate meaningful outcomes-focused conversations, and the psychometric properties of the measure therefore need to be balanced against its usability (Fitzpatrick et al., 1998). I.ROC is designed in the first instance as a practice-based tool; each question is intended to stimulate conversation about a separate aspect of personal recovery, the construct validity of which have been established as demonstrated in Chapter 2. Social connections and empowerment (including participation & control) in particular are identified as key components of personal recovery (Leamy et al., 2011); items covering similar themes are included within several measures of personal recovery (Chapter 3). Whilst Exercise & Activity is not commonly included within measures of personal recovery, as discussed in Chapter 2, a growing body of evidence supports its inclusion (e.g. Rosenbaum et al, 2014; 2015; Lamont et al, 2017). All twelve indicators were therefore retained within the total measure. This decision was supported by results of factor analysis, within which all items were found to load significantly onto the extracted factors within the majority of studies, and all items proved a good fit within the final factor solution in Study 3.

Results do highlight these items as problematic however, and it is therefore recommended that future studies seek to explore these items further. In particular, qualitative exploration of people's understanding of the questions may help to identify any underlying issues. In the next Chapter therefore, current opinions of I.ROC are explored. A series of recommendations for the future testing and development of I.ROC based on the combined results of these Chapters will then be presented in the final Chapter.

i. Limitations

Several elements of the data collection and analysis methodology within these studies could be improved upon. Empirical studies relied on data collected from convenience samples, which can introduce participant bias to the data. Some studies (Studies 5 and 6) had fairly low sample sizes, falling below the accepted

rules of thumb particularly for factor analysis. Missing data was dealt with using listwise deletions following removal of items with less than 95% response rates. Although this is an accepted method where there is a small amount of missing data, and where data is missing at random as in the current studies, debate continues and many argue that imputation of missing values provides a better solution (Acock, 2005). The majority of statistical methods employed within these analyses are found to be relatively robust to assumption violations (Norman, 2010). Non-parametric statistics were therefore only used to analyse data within the current studies in cases where skew or kurtosis was greater than ± 2 , or where multiple assumptions were violated, but non-parametric statistics or transformation of the data may have provided a more accepted and conservative approach. To ensure that results were interpreted correctly, non-parametric results were also calculated (18.g19.i). Comparisons of the two approaches found no substantial differences between non-parametric and parametric results. These issues are debated in more detail within Chapter 4.

ii. Implications

The high reliability of I.ROC supports routine use of the tool, evidencing the ability of the measure to detect actual changes in recovery, not random variation. I.ROC has shown strong correlations with measures of related concepts including personal recovery, clinical outcomes, hope and wellbeing. Results of testing with adults with experiences of mental health and trauma, as well as adults with no history of mental distress show the applicability of I.ROC across different populations. Findings suggest that I.ROC could be utilised as a measure of global personal wellbeing. This will be discussed further within the concluding Chapter.

Chapter 7. Consequential Validity and Feasibility

Ch7, Section 1. Introduction

This chapter explores current I.ROC use in practice from the perspective of service users and staff (for methodology, see Chapter 4), in order to evaluate the consequential validity and feasibility of the measure.

Results of traditional psychometric testing in Chapter 6 provide support for the face, structural and convergent validity and reliability of I.ROC as a measure of personal recovery. Measures designed for routine use in a practice environment need to be not only statistically viable, but usable and useful (Lakeman, 2004). Reviews of routine outcome measures (ROMs) in Australia show that current tools are not being implemented successfully (Happell, 2008c), and are widely considered to be a bureaucratic, meaningless exercise. Happell points to a lack of 'consumer participation' in measure development and use as a reason for this. Slade suggests that ROMs fail because their feasibility is not routinely assessed (Slade et al, 1999). Feasibility relates to the extent to which an instrument is:

“Suitable for use on a routine, sustainable and meaningful basis in typical clinical settings, when used in a specified manner and for a specified purpose.” (Slade et al, 1999, p 245).

The review of measures provided in Chapter 3 demonstrates that although recovery measures are commonly developed in consultation with people with lived experience, feasibility is often underreported. Likewise, consequential validity – the social and personal consequences of use of a tool (Messick, 1995; Hubley & Zumbo, 2011) has also not been widely considered. Feasibility and consequential validity should therefore be considered equally important aspects of an instrument's psychometric properties as the more commonly reported statistical aspects of reliability and validity (Slade et al., 1999).

These aspects of I.ROC's psychometric properties thus provide the focus for this Chapter. Qualitative accounts of people who have used the tool in practice are explored, and feasibility is assessed against Slade and colleague's checklist

for investigating feasibility (see Chapter 4). Consequential validity considers the impact of I.ROC use at an individual, service, and organisational level.

7:1.1. Aim

To evaluate the consequential validity and feasibility of I.ROC through analysis of synthesised qualitative accounts of I.ROC use from people using the tool (staff and service users), to answer the following questions:

- How does actual use of I.ROC in practice as related by frontline staff and service users match up to best practice guidance?
- What are the consequences of using I.ROC for people using services, staff and the organisation more widely?
- What are the perceived benefits of I.ROC use, and do these appear to outweigh the costs?

Ch7, Section 2. Methods

Fifty-nine Penumbra stakeholders participated in interviews and focus groups across the four projects, which all used a similar design. Semi-structured interview schedules guided interviews and/or focus groups (Table 7.1), which were recorded using a Dictaphone, and transcribed verbatim. To ensure participant anonymity, identifying information was removed and names were replaced with ID codes (Appendix 1616.b).

Ref	Title	Methodologies	Population(s)	N	Year
Project 1	Student Project	Focus Groups	Service Users	7	2013
			Staff	11	
To explore SUs experiences of using I.ROC during their support and the role it plays in their recovery. Staff focus groups also explore experiences of using the tool on a professional level.					
Project 2	Meaningful & Measurable	1-1 interviews,	Staff from Penumbra (P) and Angus council (A)	6 (P); 6(A)	2014 - 15
		Focus group		5 (P); 4 (A)	
To develop and pilot approaches to the collection and analysis of personal outcomes data and use of this information within organisations. The project also included content analysis (both quantitative and qualitative) of I.ROC comments					
Project 3	I.ROC Story Interviews	1:1 Interviews;	Staff	7	2015
		Focus Groups/ Group interviews	Staff	9	
To capture the story of the development and implementation of I.ROC through interviews with people involved in its development (developers) and early use. Mixed-methods documentary analysis used as secondary methodology.					
Project 4	Narrative Research Project	1:1 Interviews;	Service Users	12	2015
		Group interviews	Service Users	2	
To investigate the role of support within the narrative accounts of people using mental health services who identify as making progress towards recovery.					
Totals			Service Users	21	
			Staff (Penumbra)	38	

Table 7.1: Qualitative Projects methodology overview table

7:2.1.1 Data Analysis

Interview transcripts from each project were initially analysed separately using thematic analysis methods following Braun and Clarke's (2006) process of data familiarisation, coding, searching for and reviewing themes. Comparison of themes across the four Projects revealed many similarities, particularly regarding current use of I.ROC in practice, but also themes unique to each Project not specifically related to I.ROC use. In order to focus on I.ROC usability, data from across the four projects was synthesised and analysed together again using a thematic analysis approach.

7:2.1.2 Project 1: Student project (NM)

This study, originally an undergraduate psychology student project at Abertay University, sought to investigate staff and services user experiences of completing I.ROC and its role within recovery, through a series of five focus groups.

Researchers

All research design, data collection and transcription was completed by psychology student NM in consultation with BR and supervised by SH.

Recruitment

Participants were recruited across three Penumbra projects, all of which provide social inclusion services to an adult mental health population. Service users and staff from Dundee, Arbroath and East Lothian services were invited to participate by their service managers, who were initially contacted with details of the project via email.

Procedure

Five focus groups (two service user; three staff focus groups) were conducted by NM in each Penumbra service office. Each comprised between two and five participants. To guide conversation during the focus groups, semi-structured interview schedules (Appendix 17). were used. Questions were adapted from a questionnaire used to evaluate use of the Recovery Star (Imoniore & Okonkwo, 2009). Questions for SUs and staff differed slightly to reflect staff experiences related to the use of I.ROC within a support work setting and SU experiences related to personal recovery and development. Questions focused on the consistency of use of I.ROC across the organisation, the support relationship, usability of the tool, and its links to personal recovery. Prompts were used where needed to elicit more detail. Each group lasted between 20-30 minutes.

Participants

One service manager, ten front-line practitioners and seven service users. The total sample comprised thirteen women and five men, with a reported mean age of 43.

Table 7.2: Project 1 Research methods

7:2.1.3 Project 2: Meaningful and Measurable (M&M)

As part of the ESRC funded collaborative action research project entitled 'Meaningful and Measurable' (Miller & Barrie, 2016b), Penumbra collaborated with Angus Council to investigate the use of internally-developed outcome measurement tools. The project explored the extent to which tools used within each organisation promote a personal outcomes focus within conversations with service users. The research also sought the experiences of staff in having these conversations and in using the tools to record outcomes (Robertson et al., 2015; Rudd, 2015).

Researchers

Participant selection was conducted by one staff member with an appropriate level of clearance at each organisation. This person did not then play any further part in the research process. Interviews were conducted by two researchers – one from each participating organisation. Researchers swapped organisations for the interviews, to ensure independence/detachment, deeper scrutiny, greater staff anonymity and greater openness from staff. An impartial researcher from Edinburgh University conducted the follow-up focus group, and a second transcribed the interviews.

Recruitment

A stratified sampling technique was used to identify frontline staff from each organisation for interviews. Research project partners rated samples of previously recorded outcome measure paperwork for each staff member, based on an evaluation template agreed by the research team. Ratings were used to identify six staff from each organisation who demonstrate the range of poor to good outcome measure reporting techniques. All staff within the participating Penumbra service (Angus Nova) were invited to attend the follow-up focus group.

Procedure

Semi-structured interviews and focus group were conducted using jointly-developed interview schedules (Appendix 17). Interview participants were asked to bring an anonymized copy of a recent review to discuss during the interview to talk through an example of how they use their respective outcome measure, and what information they record and where. Penumbra staff interviews and the focus group were held at the Angus Nova Office. The focus group was attended by practitioners from both Penumbra and Angus Council (total n=9) and focused on common understanding of outcomes. Interview and focus group recordings were transcribed, and the transcripts were analysed for emerging themes. Interviews ranged in length from 40-50 minutes, and the focus group lasted approximately 1 hour 30 minutes.

Participants

Six Penumbra frontline practitioners participated in interviews; five participated in the focus group.

Table 7.3: Project 2 Research methods

7:2.1.4 Project 3: I.ROC Stories

This project aimed to gather recollections of I.ROC development from key I.ROC stakeholders within Penumbra, in order to develop a cohesive account of the early development of the measure, and to develop an understanding of how I.ROC was intended to be used. Interviews also explored the subsequent roll-out of I.ROC and its current use.

Researchers
All research design, data collection and transcription was conducted by BR in consultation with the research team.
Recruitment
Participants were selected based on their knowledge, understanding and input to specific aspects of the I.ROC development and implementation journey. A snowball sampling strategy was used such that key stakeholders initially identified were asked to suggest further individuals for interview.
Procedure
Seven staff participated in one to one interviews, and ten took part in focus groups ranging in size from two to six participants. Participants were interviewed using a semi-structured interview structure (Appendix 17). Interviews started with a broad, open ended question, “could you tell me what you remember about the early development of I.ROC?” Participants were then prompted where necessary to recount their experiences of developing the measure and embedding it within Penumbra.
Participants
Four male and thirteen female staff from Penumbra (n=16) and the Scottish Recovery Network (n=1) participated in the I.ROC story interviews. The sample comprised senior managers (n=5), support managers (n=5), administrators (n=2), support staff (n=3) and a learning & development facilitator.

Table 7.4: Project 3 Research methods

7:2.1.5 Project 4: Narrative Interviews

This project was designed by members of Penumbra’s research committee. Supervised by BR, the group is comprised of approximately ten frontline practitioners working across the organisation, with academic backgrounds in psychology, nursing, social work and research methods. The project primarily aimed to capture the stories of people using Penumbra services, to build a picture of recovery as experienced by service users in Scotland, and to examine the role of services within these narratives.

Researchers
All research design, data collection and analysis was conducted by the Research Group. Interviews were conducted by trained mental health practitioners at Penumbra. This ensured that all interviews were conducted by someone familiar to the participant, and who was trained to provide support if needed during or following the interview. All interviewers received one to one training in interview methodology and support.
Recruitment
All service users within the projects employing a Research Group member were given the details of the project and invited to participate; it was explained that the project sought the experiences of people who felt they had made progress in their recovery journey, and it was left to the service users to decide for themselves whether they fitted this description
Procedure

People with a lived experience of personal recovery who were using services provided by Penumbra were asked to participate in a one to one semi-scheduled interview (Appendix 17) with a trained member of support staff. Testing took place at a location of the participant's choosing, under the MHO's lone working policy. Participants were asked to tell their story, and were then asked specifically about the support they had received and the role they felt it played in their recovery. In cases where the interview lasted more than 45 minutes, the researcher stopped the interview for a 15 minute break before continuing. Participants were informed that they were free to break or discontinue at any time, and in one instance, an interview was completed over two days.

Participants

Fifteen service users participated in fourteen interviews (one interview was completed with two participants). Seven men and eight women ranging in age from 33 to 62 (mean = 48.5) participated in the study. Participants reported mental health issues of varying duration and complexity. For some, mental ill health was a relatively new experience (minimum 5 years), but many had lived with mental health issues for most of their lives, in one case over 40 years.

Table 7.5: Project 4 Research methods

Ch7, Section 3. Findings: Overview

Data from each project was initially analysed separately using thematic analysis methods as described in Chapter 4. Detailed results from individual projects can be found in the following reports: (Project 1: Mitchell, 2014; Project 2: Rudd, 2015; Project 3: Chapter 5; Project 4: Appendix 18). A summary of the methods, findings and critique of each project is presented in Table 7.6, highlighting the similarities and key differences between each project. A summary of the critique and questions arising from each project demonstrates how and why each round of data collection was conducted.

Comparison of themes across the four Projects reveals many similarities, particularly in relation to how I.ROC is used in practice, and what users perceive to be the benefits and challenges of its use. There are also many themes unique to each Project that do not relate specifically to I.ROC or Penumbra's approach however. In order to focus on I.ROC usability, data from across the four projects was synthesised. The findings presented below focus on common themes across two or more Projects that relate directly to the feasibility and consequential validity of I.ROC, as summarised in Table 7.7.

Ch7, Section 4. Findings: Feasibility

7:4.1. I.ROC use in current practice

As an initial assessment of feasibility, this section compares staff and service user accounts of how I.ROC is used in practice to the recommendations and

guidance for its use issued by Penumbra summarised in Table 7.8 (for full descriptions, see Appendix 18).

Ref	Project 1 Student Project 2013	Project 2 Meaningful & Measurable 2014-15	Project 3 I.ROC Story Interviews 2015	Project 4 Narrative Research Project 2015
AIM	To explore people's experiences of using I.ROC during support both as service users and staff, and to further examine the role I.ROC plays in recovery.	To evaluate Penumbra staff's approach to the collection and analysis of personal outcomes data using I.ROC and use of this information in practice.	To capture the story of the development and implementation of I.ROC through interviews with people involved in its development (developers) and early use.	To investigate the role of support within the narrative accounts of people using mental health services who identify as making progress towards recovery.
METHOD	Focus Groups with service users (n=7) and frontline staff (n=11)	1-1 interviews and focus groups with frontline staff from Penumbra (n=11)	1:1 Interviews and focus groups with senior managers (n=5), service managers (n=5) and others (n=6) involved in I.ROC development/ early implementation	1:1 and group Interviews with service users (n=12)
FINDINGS	Staff and service users were generally positive about I.ROC, how it is used and the ways in which it can support the development of a good therapeutic relationship and recovery.	Staff felt confident using I.ROC and were clear about the purpose and potential benefits of using it. Whilst staff were confident in using the tool and in the process of recording the information, there seemed to be more variability in their note taking with staff differing in their understanding of who should record the information and when recording should occur	Service users were not systematically involved in the development of I.ROC. The purpose of I.ROC and its position within the organisation have changed over time. Themes within the interviews were: Who was involved; Contextual factors; I.ROC purpose; Creating I.ROC; Testing; Implementation.	People talked openly and honestly about their experiences of ill health and recovery, and of mental health services, in which it was clear that for many, Penumbra was but one branch in a tree of support. Interviews were multifaceted, and included discussion of a wide variety of topics. I.ROC was identified as but one of many tools that can be helpful.
CRITIQUE	This research focused on the experiences of a relatively small number of individuals completing the I.ROC conversation, but did not examine the whole process of I.ROC use. Recording and reporting for example, weren't covered. It also looked at the experiences of I.ROC use in isolation, not in relation to wider support.	This project focused on current use of I.ROC by frontline practitioners. It did not examine the thoughts, intentions or experiences of other primary stakeholders, for example senior managers. With recruitment occurring only in a few select services, this views and experiences may not be reflective of practitioners more broadly, and do not capture critical viewpoints. It also did not explore how I.ROC use may have changed over time.	Focusing on the experiences and opinions of I.ROC developers, this project did not examine the impact of I.ROC on its intended end users. Using a snowball recruitment method, it may be that not all relevant people were identified. Likewise, people who experienced early use but did not support the process were not identified during recruitment. More critical perspectives may therefore have been missed.	Using a convenience sampling method, this research project captured the views of people who in general reported positive support experiences, but these may not be representative across Penumbra.
FURTHER Q's	How do staff actually use I.ROC? What are practitioners' experiences of recording and reporting outcomes using I.ROC? How does use of I.ROC in practice actually compare to reported use?	How is I.ROC use perceived and experienced by other stakeholder groups, including practitioners who are critical of its use? What was the original purpose of I.ROC, and how was it intended to be used? How does I.ROC fit within wider experiences of support?	What are the recollections of early I.ROC use for people who are not supportive of its use? What role does I.ROC play in support and recovery for people using services?	What role does I.ROC play in support for people who do not have positive support experiences? What are the barriers and challenges to support identified by these people?

Table 7.6: Overview of the four qualitative projects used in the analysis for Chapter 7

I.ROC use in current practice		Project 1	Project 2	Project 3	Project 4	
<i>I.ROC use in practice</i>						
Feasibility	Who uses I.ROC?	6	13	6		
	Baseline assessments	7	18	3		
	Frequency of use	1	8			
	Location of use	1	8			
	Time to complete	5	11	3		
	How I.ROC is completed	81	161	66		
	Reporting	1	14	9		
	Training		7	26		
	<i>Barriers & challenges</i>					
	Individual	Lack of engagement	7	10	9	
Acceptance/Honesty		7	6	1	16	
Service	Staff attitudes	1		27		
	Service models		2	9		
	Resource restrictions		3	31		
	Recording & Reporting	20	31	7		
<i>Personal consequences</i>						
Positive	Personal recovery	12	5	7	44	
	Facilitated self-assessment	21	51	11	12	
	Therapeutic relationship	4	28	18	37	
	Support planning	31	40	15	21	
	Review progress	21	28	7	6	
Negative	Emotional impact	34	37	7	5	
	Disempowerment	3	5			
<i>Societal consequences</i>						
Positive	Penumbra's approach	16	63	150	17	
	Reporting	1	21	38		
Negative	Service recovery		7	3		
	Performance monitoring	3		4		

Table 7.7: Frequency of codes relating to each of the synthesised I.ROC themes across the four qualitative projects

Who should use I.ROC?
People experiencing mental health problems, but relevant to everyone (I.ROC Guidance; Penumbra, 2012; Appendix 4.f.iii)..
I.ROC usage targets
> 2,500 assessments completed per year across the organisation (Penumbra, 2016); no targets are set for proportion of supported people with an assessment..
Baseline assessments
Should be “completed as soon as reasonably practical” (Penumbra, 2012, p.9) at the start of support
Frequency of use
Recommended for use on a three-monthly basis, but the need for flexibility in this is acknowledged (Penumbra, 2012)
Time to complete
The tool should be used within a single sitting, but it is recognised that it may sometimes be necessary to complete I.ROC over two sessions (I.ROC e-learning), and practitioners are encouraged “not to rush” (Penumbra, 2012, p.14).
How should I.ROC be completed?
I.ROC is used as a facilitated self-assessment, with the person receiving support answering the questions. The practitioner uses the questions to open up a conversation about where the person sees themselves in their recovery, and what their outcomes and hopes for the future might be.
Recording
Scores and notes are recorded on a printed answer sheet with space for comments, then transferred manually to an online database. Guidance prompts staff to use comments boxes to record the conversation, including reasons for scores, evidence of progress/achievements, significant events, and any thoughts or reflections. (Penumbra, 2018b).
Training requirements

> 75% of staff to have attended I.ROC training (Penumbra, 2017b; Appendix 20.c); all frontline workers (unless working within short-term or crisis services) will regularly use the tool.

Table 7.8: Penumbra's recommendations for I.ROC use

7:4.1.1 How I.ROC is actually used in practice

Across the four Projects, descriptions of I.ROC use by staff fit well with guidelines for use outlined in Table 7.8.

d) Who uses I.ROC

Staff aim to complete I.ROC with all participants, except where there is a significant lack of comprehension or engagement, as discussed in. Participants described how although I.ROC is optional, most people choose to complete it.

“There has been some resistance from service users but this goes when people give it a go, and most do.” P3_16

This demonstrates flexibility and choice for people in using the tool, an important dimension of recovery-oriented practice (Le Boutillier et al, 2011a), as discussed further in Section 7:5.3.1z).

e) Baseline measurements

Baseline measurements are completed within the first two or three sessions after someone enters service, up to approximately two weeks after the official start date. For practitioners, using I.ROC so quickly at the start of support initially felt uncomfortable, *“because our first appointment as well is more about information, and getting to know each other” P3~13*, but most have grown accustomed to using the tool on this timeframe,

“It’s a doddle to introduce it because... The welcome pack, when somebody first comes in to service, we always put one in it...” P2_1

Recounting how the features of the tool were explained and potential benefits highlighted, practitioners describe a process of ‘selling’ the tool to the person they were supporting.

“Initially I sell it as a self-assessment tool to guide us where you are needing support and that is how I would introduce it to someone.” P2_6

As Penumbra does not enforce I.ROC use for service users, the organisation is reliant on staff to ensure the measure gets used as discussed within Section 7:4.3.n).

f) Reviews

Following baseline assessment, I.ROC is used as recommended, on an approximately three-monthly basis. Staff were clear that the timing of reviews is flexible, with completion dependent upon the service user's current situation.

“There's the expectation that you redo the I.ROC at the 3-month review, but you could come up to that 3 monthly period and find out that that person is maybe not in a fit state to do it.” P2~8

Despite the occasional need to delay or speed up the process, three months was felt to be the right time frame on which to review I.ROC, providing a measurement that gives a clear picture of changes, but not so frequent as to be a hindrance

*“I think that three months is spot on really. I think if you used it every month it would be too quick.” P1~5**

Recommendations for routine outcome measures state that they should be completed “on admission, review (every 91 days) and at discharge’ (Coombs & Meehan, 2003, p.163), and are thus consistent with I.ROC guidelines and actual use. This time period is fairly arbitrary and not fully evidence-based however (Happell, 2008b). In reality, frequency of use varies, often dependent on the reporting requirements of the organisation. Three months is consistent with use of other recovery measures in practice though (e.g. Lloyd et al., 2015), and staff find the regularity of I.ROC useful. For example, one manager in a service providing long-term support described how she had noticed patterns in people's I.ROC's over time, which had helped identify a barrier to their recovery.

“I think we've all found it quite good for is you can sometimes pick up patterns in people... I says to people that I line manage...did you know that at that set time something happened in that person's life? You be ready for the next – have something on so that they cover that. So I notice now with January, this person's started a class so she's not got the February troubles now.” P3~5

Although arbitrary, three months is therefore found to be a feasible and useful time period over which to review I.ROC.

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g) Location of use

No recommendations are made by Penumbra as to where I.ROC should be completed, and staff accounts showed a range of settings are used, from office spaces, the person's own home, or a public place depending on the preferences of the person, and the availability of space within an office environment. Ten staff members across the first two Projects described how for them, the process of completing an I.ROC usually occurs outside of service user's homes, often in a public space such as a café or library. Practitioners discussed difficulties of privacy and confidentiality that could arise from completing I.ROC in public settings, but also argued that as they worked within social inclusion projects, this setting is consistent with the overarching aims of the service. Staff agreed that, no matter the location, it should: reflect the needs of the service user, be quiet, and provide a good level of privacy to ensure confidentiality.

"It's understanding the individual and giving them the choice...I might choose, say, a local café and it's got booths and it's got background music and it's quite informal... I say we will choose. And if they're comfortable and they enjoy that... Because it's about them becoming less socially isolated." P2_3

Staff seemed confident in their ability to complete I.ROC within most physical environments. This would appear to support the feasibility of I.ROC in that it is simple, accessible and flexible enough to be used within a range of environments.

h) Time to complete

Length of time required to complete I.ROC is dependent on several personal and interpersonal variables including time in service, level of engagement, service user/practitioner relationship, practitioner's interview style, events from the quarter to be reviewed, and events occurring on the day. One supported person described how the additional conversation could positively change their perspective;

*"If I came in and filled it out straight away and I was in a negative mood I might go 2 2 2 2, but if I have a chat for half an hour I might go 3 3 3 3 3." P1~5**

Assessments are usually completed within a single support session, and last between 10 minutes and 1 hour. Getting enough time to complete I.ROC properly is a challenge (see section 7:4.3), and staff acknowledged that in some cases I.ROC may need to be completed over multiple sessions. Both staff and service users recognised the importance in maintaining flexibility in the process to enable a personalised approach, adapting to the personal style and needs of each person.

Whilst staff appeared confident in their ability to judge when and how to adapt the process, flexibility can compromise consistency and there is a danger that staff adaptations influence the process and outcomes of I.ROC (see Section 7:4.3.r).

Discussion relating to this theme therefore highlighted the underlying challenge of balancing flexibility with consistency in the use of outcome measures as discussed further in Section 7:4.3.r).

i) How I.ROC is completed

Practitioners' descriptions of I.ROC as *"like a self-assessment tool for them"* P2_6, and *"about team work"* P1~11 emphasise both the collaborative and personal nature of the 'facilitated self-assessment' process. Prompts and questions are used to initiate a holistic conversation looking at what impacts on a person's wellbeing, and what they want to work on.

"It opens up a conversation, that's how I use the I.ROC because some people don't want to discuss anything but you could ask the question why have you valued yourself at a two and not a three here, so it opens up that conversation and you might get something else out of it so that's how I use it and I find that quite useful." P2_5

Staff adapt their style depending on the person being supported, for example by reading questions aloud or encouraging the service user to read it themselves. Practitioners' approach also changes over time as they get to know the person, and the service user becomes more familiar with I.ROC.

"...at the beginning you do talk to them, you introduce what I.ROC is, its objectives and stuff, but that lessens as time goes by and you can kind've take a wee bit of a step back." P1~12

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Such changes in usage style are to be expected with interview-based tools, but present a challenge regarding 'accuracy' and consistency, key aspects of reliability, as discussed in Section 7:4.3.r).

j) Recording

The inclusion of comments boxes accompanying each item on the I.ROC answer sheet is considered a positive addition to the measure, although analysis shows their use fluctuates (Rudd, 2015). Notes can be written by the practitioner or service user, and views differed on what was most effective. Most frontline practitioners recognised a clear purpose to the recording process, for example to note differences of opinion between staff and service user, or to illustrate the meaning of scores,

“The notes bit comes in really effective; you say ‘well look you’re saying your wanting to do... and this was on your plan, and this was on your goals; and for the last 12 weeks you feel you haven’t move on.’ Well that’s... where that discussion then comes from, ‘well why haven’t you moved on? What other support do you need?’” P2_6

Others lacked this understanding, and whilst some staff across the first two Projects acknowledged the importance of consistent recording practices, this view was most strongly emphasised by service and senior managers in Project 3.

“Well the reason - how I put it across is that, like 'you're a coach, so if you're working with this person and then you change or you change working people, if you then go to your next person and you see that their last I.ROC was this, but you've noticed a change, there's nothing there to tell you why. How useful is that to you? It's not, is it?” P3_17

Understanding of reasons for recording I.ROC results was therefore mixed. Different appreciation of the purposes of recording by frontline staff and managers revealed challenges in communicating between different organisational levels. For a more detailed discussion of current I.ROC reporting practice, see Penumbra's report from the Meaningful and Measurable project (Rudd, 2015).

k) Training

Approximately one quarter of Penumbra staff attended I.ROC training in the last financial year (Penumbra, 2018c). Feedback for I.ROC training is good; 98% of people attending I.ROC training in 2017-18 found the training to be of value, had learned everything they had hoped to learn during the day, and felt confident that they would be able to apply what they had learned at work (Appendix 2020.a).

Whilst new frontline staff participating in qualitative Projects in this thesis related completing I.ROC training as a matter of course when they first joined the organisation, managers identified a continued training need across the organisation,

“There’s people that haven’t had the training yet so all they know is from someone else, and if the someone else is telling - does not have a good attitude toward it, then...” P3_1

This need referred both to staff who had not yet attended the basic I.ROC training, but also to a wider need to develop the skills of staff in recording and reporting I.ROC data, conducting outcomes focused conversations and embodying a coaching, strengths-based and personalised approach;

“I still think we could have more focus and training on teaching people how to – to ask questions... And really getting to know the people that they’re working with and being able to sort of phrase questions in a way that’s hopeful.” P3~4

Training is recognised as an effective methodology for evoking and maintaining culture change (Schraeder et al, 2004). Participants’ discussions on this theme highlight the importance of training both for skill development and the promotion of an I.ROC (and recovery) supporting culture. I.ROC is placed by participants within a wider training programme, and training on this subject is acknowledged as fundamental to the organisation’s recovery approach.

7:4.2. Individual level challenges

l) Lack of engagement

Practitioners described ways in which people they worked with were actively or more commonly, passively 'resistant' to I.ROC, for example by responding to the questions when asked but engaging as little as possible.

"He was resistant the first time I did it, not keen, and again I went into, "You don't have to do this." But he was like, "Well, you want to do it. I suppose I'll do it." Sort of thing. So we did it and... So the first time, we eventually got answers out of him. But it was very difficult and he was quite closed." P2_2

Passivity towards I.ROC was also seen within some service user accounts,

[Do you think that staff promote the use of the I.ROC tool?]
*"I don't know. Every three months it just pops out. I just have to do it." P1~5**

Practitioner's reasoning for lack of engagement fell into three categories. Firstly, some service users were viewed as being resistant to paperwork in general. Two staff members described their view that resistance to paperwork is a negative consequence of long-term service use, whereby people become overwhelmed by or disillusioned with therapeutic tools in general following years of often ineffective use. Staff acknowledged that this also affected the use of other tools such as personal plans. Other service users are described as feeling 'forced into it' (n=3), or as though they had no choice. Feelings of disempowerment and lack of choice may also stem from long-term service use (Davidson & Roe, 2007), and practitioners reflected that disempowerment was more broadly linked to reluctance to engage with any form of support. Finally, three practitioners identified a group of service users who simply have no interest in I.ROC, or who feel it is not relevant. This was linked to both lack of comprehension and feeling forced into support or support activities, however it may also be the case that the timing just isn't right for some people; as suggested by stage models of recovery, engagement with support usually follows early periods of resistance and lack of awareness (Davidson et al., 2010).

Service user opinions on why they do not want to or do not like completing I.ROC were not investigated during the qualitative projects reported here; it is

acknowledged therefore that people receiving support are under-represented in relation to this topic.

Cases within which service users refused or were unable to complete I.ROC are the exception to the rule however; eight out of nine practitioners followed up discussion of lack of engagement with ways in which they tackled this, whether through practical changes to the support approach or simply by remaining patient and giving time for the support relationship to become established. Tools including the HOPE toolkit and I.ROC were described as flexible enough for them to be effective for most service users. A good knowledge of the materials and confidence in applying them allowed some practitioners to draw on the tools without a physical copy present

“Often what you’re actually doing without them knowing is you’re doing it verbally, and then updating the plan afterwards so you’ve got a record in their file. So I’m not actually sitting there with a document, but I’m still using the same thinking.” P2~7

Whilst lack of engagement is recognised as a challenge for staff, this theme reveals deeper challenges to the use of outcome measures. As identified within these qualitative accounts, such challenges include the tension between personalisation and standardisation, and how to engage disempowered service users, whilst being mindful of the fine line between ‘encouragement’ and coercion.

m) Honesty and acceptance

Reflecting the transition between ‘pre-contemplation’ and ‘contemplation’ stages of the trans-theoretical recovery journey as described by Davidson et al (2010), and discussed in Chapter 2, service user accounts (Projects 1 and 4) suggest that inability to engage with support is reflective of a deeper reluctance to engage with or accept their situation. Accounts are also supportive of a non-linear staged recovery process; reversion to denial was observed by participants towards the end of the support journey. Practitioners recall how a fear of moving on from services or losing support often resulted in service users lowering their scores

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“They don’t want to look like they’re getting on too well, because they don’t want the support to be withdrawn. So they’ll tend to put themselves further down the scale.” P2_1

Fear of moving on from services was commonly reported throughout the interviews, usually in relation to ‘accuracy’ of I.ROC scores. Reductions in scores at this stage were perceived by staff as a ‘manipulative’ attempt to prolong support, but such changes reflect valid concerns about one’s ability to live well without support. The recovery paradigm is widely criticised for not reflecting the current realities of ‘life on the outside’ for vulnerable people;

“By emphasizing the role of recovered patients in overcoming their impairments to enter mainstream society, there is a silence about the social and political state of the latter... socially included, recovered patients find themselves disproportionately exposed to pathogenic social forces associated with the deprivations of class, race and gender.” Pilgrim, 2008, p.301

The role of society was seen within service users’ accounts in Project 4. Asked what barriers they had faced, and what stopped them moving on, participants described feeling under pressure to ‘be normal’: to have jobs, cars, houses and children. Participants talked of the negative impacts of societal pressures, intrapersonal and internalised stigma on their own recovery

*“I think society’s getting sicker...there’s a lot more problems, but there is a lot more pressure...I mean I was quite perfectionist, and quite obsessive and very kind of concerned of what other people thought of me when I was younger.” P4~11**

Service user perspectives were also reflective of a neoliberal, individualistic world view (Bayetti et al, 2016). Despite recognising the role played by societal factors such as stigma and poverty, the majority (five out of nine) of participants identified themselves as the biggest barrier to recovery. They described their own inability or a reluctance to be honest with themselves about their position and their need for help, and how this needed to be overcome in order to make progress towards recovery.

*“The thing that doesn’t work in my support is myself. I have got to be mind-over-matter, I have got to try things, I can easily say no all the time and not achieve anything, but...what doesn’t work well in my support is if I don’t engage in support, with the support worker, and I don’t engage with anything, I just cut myself back.” P4_1**

Staff were seen as playing only a small part in overcoming these barriers; as one service user put it, *“it’s up to the individual. Just like the old saying, you can...lead a horse to water but you can’t make it drink” P4_1**. This highlights the perceived central role of personal responsibility and autonomy in recovery, but also the impact of self-stigma

“[So, what things have stood in the way of you moving on? Any barriers, difficulties, challenges?] I think as I say, my - I think it’s my personality” Narr_int_13

Self-stigma is recognised as a mediating factor in personal recovery (Chan & Mak, 2014); as this quote demonstrates, internalisation of negative opinions can greatly impact a person’s belief in their ability to recover.

The role of self-acceptance and honesty in support was highlighted within the accounts of six staff and eight service users, and was acknowledged as an emotional challenge particularly for service users who engage fully with I.ROC.

“[What difficulties/challenges have you faced completing I.ROC?] “Having to be truthful... having to be truthful because I kind’ve go ‘round saying ‘I’m fine... everything’s fine...’ and I wear a mask and when I’m doing my I.ROC I have to lose that mask... I have to be me and truthful.” P1~2*

Discussion on this theme again revealed underlying challenges fundamental to the recovery paradigm. Service user accounts reported here reveal the central role of the individual within recovery and support, but also highlight the negative impact of a recovery paradigm (stemming from a societal model) that is overly self-deterministic (see Chapter 2).

7:4.3. Service level/ operational barriers

Three themes were common amongst barrier discussions at a service level: negative staff attitudes; limitations or restrictions caused by particular service models; and a lack of necessary resources (time, staff and technology).

Although presented separately below, these barriers are interlinked; service type and availability of resources impact on the beliefs and attitudes of practitioners, whilst the design and location of services influence the availability of resources. Practitioner’s pre-existing feelings regarding the materials may

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also influence where they choose to work and how they both utilise and experience the resources they have available.

n) Staff attitudes & Practitioner Buy-in

Positive staff attitude has been identified alongside training in recovery as essential for successful implementation of a recovery-oriented approach (Tsai et al., 2011). Constructive organisational culture impacts service user perceptions of agency support for recovery (Clossey & Rheinheimer, 2014). Engagement with a recovery programme can increase practitioners' pro-recovery behaviour, and improve service user ratings of recovery-promoting relationships (Slade et al., 2015a). For a more detailed discussion of factors affecting recovery-oriented practice, see Chapter 2. Service and senior managers and training facilitators in Project 4 described negative attitudes of staff as a continuing, albeit reducing, barrier to good I.ROC use, particularly amongst long-term staff:

"Whilst [staff] will still say 'oh but the people I've worked [with] for the last twenty years don't want to use this', I'm still saying 'it's about the way you sell that to them, it's about your approach towards it, your attitude towards it'" P3_1

Negative attitudes held by long-term staff were viewed as stemming from either an inherent reluctance to change, or from unfavourable early experiences during the original roll-out of the tool, which was acknowledged to have been *"pretty negatively promoted, and it was pretty negatively received"* P3_1. A general disregard for I.ROC was believed to then be inherited by new staff within certain teams, where I.ROC training is not prioritised and new team members receive little or no guidance in how to use the tool, and/or are exposed to the negative views of their team. This is a particular issue where managers themselves hold these opinions.

"There were some managers who were resistant to...I.ROC. And it was really a huge learning curve, the influence that that...could have on how the rest of the staff embraced or didn't embrace the whole idea of using I.ROC." P3_4

Some managers described staff 'resistant' to using I.ROC employing similar methods as service users who do not engage, by using it as minimally as possible, for example by not recording any notes.

“We've had a lot of resistance from them, from the staff, and you know, there'll be completed I.ROCs but with absolutely no narrative, so what use is that to anybody really?” P3_17

Penumbra's approach makes it mandatory for practitioners to inform people that they support about I.ROC and to offer it to them, but does not make completion a requirement for people using its services. To ensure a high level of uptake, Penumbra therefore relies on buy-in from staff; to effectively sell the tool, practitioners need to not only be competent in I.ROC delivery and understand why they are using the tool, but to believe in its use (Slade et al, 1999).

Such an approach highlights the conflict between recovery and standardised measurement. Informed choice is recognised as a key aspect of personalisation (Leadbeater, 2004) and recovery-focused support (Le-Boutillier et al, 2013), but giving people the binary option of outcome measure or no outcome measure, and relying on the 'persuasion skills' of staff may mean that less data is collected. It is however also likely to mean that data that is collected is of a higher quality.

Staff belief in recovery and internal motivation are recognised as crucial for successful implementation of recovery-oriented practice (Williams et al, 2016). Staff who are enthusiastic and engaged in the process of I.ROC use may thus be more likely to engage in a meaningful conversation with the I.ROC respondent, which in turn is likely to improve the quality of the experience and the meaningfulness of the data collected. Yet, it is important to recognise that I.ROC is but one of several recovery focused tools used by practitioners on a daily basis. Staff participating in Project 1 highlighted that general communication with people using services is more significant than I.ROC in promoting recovery.

Services therefore face the challenge of promoting and encouraging use of outcome measures in such a way as to ensure a good level of meaningful uptake, without isolating staff or enforcing use of tools that are not always relevant.

o) Service models

Penumbra operates a wide range of service models, some of which are not suitable for standard I.ROC use (see Penumbra, 2018f for description of Penumbra services). I.ROC cannot be used as a measure of recovery within services providing short term support, for example a crisis support, or short breaks respite service, within which people are not supported long enough to use I.ROC twice, or in some cases to merit its use at all.

One service manager in Project 3 talked about how her service has recently been extended to include 'First Response' crisis support. This service, she explained, is unable to use I.ROC because of the short-term and intensive nature of the service. Specific crisis support provides targeted, intensive support to people going through mental health or wellbeing crises, and people accessing such services are very often not able to give any attention to reflective tool use. Furthermore, they are often in the service for only a very brief period of time; this makes the fairly long time I.ROC takes to complete unfeasible. Research shows however that recovery approaches can be successfully applied in intensive psychiatric services (Armstrong & Steffen, 2009), and personal accounts demonstrate that recovery approaches are every bit as important, if not more so, within these settings (e.g. Milan, 2011). Supporting this, service users in Project 1 recounted their experiences of the positive role I.ROC can play in overcoming crisis,

*"[I.ROC] is also good when you have a crisis - how far you've gone back again and then after your crisis you do another one and it shows how far you've come from that time of crisis to where you are now." P1~3**

But whilst measures have been developed specifically for use in first episode psychosis (e.g. Chen et al., 2005), personal recovery measures developed for use across diagnoses have yet to be adapted for such intensive services. One Penumbra service manager did describe how in her new crisis service, although I.ROC couldn't be used, the indicators still served as a framework for reporting,

"I.ROC is the basis of an outcomes approach, that's how I see it. It helps me as a manager focus on outcomes and think about reporting [even if it can't actually be used]." P3_16

Use of outcomes measures can take time out of support; I.ROC brevity is described by practitioners as variable, but can last for upwards of an hour and a half. Where the frequency of support provided is low, for example social inclusion projects often offer fortnightly or even monthly sessions, this can make it difficult to fit it in without significantly impacting the other support provided.

“If you’re with a supported living service, you might be spending 3 hours a week with somebody...whereas it might take us months to get that amount of time. So it was difficult for us...to just make the time...to try and do the I.ROC so that it was meaningful” P3~9

Less intensive support services do have some advantages when it comes to I.ROC use however. It is likely that people using such services are largely experiencing less severe mental health issues, or are at a later stage in their recovery journey, increasing the chances of full engagement in the process.

“Usually...at the time they come to Penumbra, they are wanting to work on their wellbeing. So...they are at a certain level where they are able and they want to interact.” P2~2

Stage of recovery has been identified as significantly impacting the types of personal goals people set (Clarke et al., 2012), and their level of hope for the future (Copic et al., 2011). Chiba and colleagues (2011) report a significant relationship between stage of recovery and ‘benefit finding’, whilst Kaplan et al (2012) find a significant relationship between stage of recovery and participation in social activities. It therefore seems likely that there is also a relationship between recovery stage and level of engagement with recovery-oriented services, however this relationship has not yet been explored within the research.

A different challenge is presented by long term support services, within which people receive intensive support ongoing over many years. This can make it difficult to maintain a sense of movement and purpose for both service users and staff. For people whose progress is particularly slow, it is suggested that I.ROC does not adequately reflect the changes made.

“It’s...the least rewarding for making a difference for people, because they’re not making huge differences, they’re making

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small differences, and it's the keeping well, and maintenance in the most positive sense that it can be used, to keeping people afloat" P3_1

This may provide more of a challenge to staff than to service users; seven service users participating in Project 4 stated their liking of I.ROC, and described many different hopes and goals for the future. This group included people in supported living and supported accommodation projects, with an average length of time in service of over four years. However, supported living service recipients came almost exclusively from one project, in which service users had recently moved from a shared residency to independent tenancies. This move was highly regarded by all the participants involved, and the positive change in circumstance may have impacted their views of support and future outcomes.

Using one outcomes measure across services that range substantially in intensity and frequency poses a significant challenge. For a measure to be feasible, it must be adaptable to the situation in which it is used. In the case of I.ROC, questionnaire format and guidance have not been adjusted for different settings. Staff accounts identify ways in which the tool is being adapted in practice however, suggesting that modifications may enable it to be considered feasible for different situations. Future studies should seek to further explore possible adaptations of the measure.

p) Resource restrictions

"The resource is fantastic, the resources available to give it its best shot are shocking" P3_1

Availability of adequate resources is identified as one of the key challenges to successful implementation of recovery-oriented practice (Chester et al., 2016; Cone & Wilson, 2012). Some maintain that as recovery is the main aim of all mental health services, resources cannot become an excuse for not implementing ROP;

"I think there's a lot of nice and supportive and cosy discussions that go on in the third sector...If we're serious about this, then we need to be serious about it... It's people's lives" P3_8

Many researchers agree; Davidson and colleagues for example, argue

“if what you are offering is not oriented to promoting recovery, then what is it for? And if there are ways in which what you offer could be more recovery-oriented, and thereby more effective at achieving its aims, would you not want to learn about it and try it?” (Davidson et al., 2006, p.643).

Supporting this argument, Mankiewicz and Truter (2014) report positive experiences implementing a recovery approach within NHS acute services, despite limited resources and increasing budget cuts.

Mirroring challenges reported by Tickle and colleagues (2013) in reference to use of the Recovery Star, lack of time was identified by the majority (n=7) of managers in Project 3 as the biggest resource barrier to successful I.ROC use. Time restrictions could be a consequence of service design, as described above, however one manager also pointed to staffing and funding issues as the cause. Hourly funding rates were blamed for much of this, as such contracts often do not include funding for time spent on administration, travel or training (CCPS, 2012). Front-line staff acknowledged that I.ROC can take a long time, occasionally requiring completion over multiple visits, and that this could present a difficulty where the number of allocated support hours is low, however participants also referenced the fact that I.ROC is short and doesn't have to take a long time. It was felt that the timing issue largely stemmed from the need to transfer I.ROC data onto the online database following completion of the questionnaire. This was seen as a duplication of effort, and a cause of unnecessary travel time back to an office to upload results.

“The ‘lot of work’ is not the assessments and the reviews and the support planning, the ‘lot of work’, particularly for supported living services, is staff don’t have admin time.” P3_1

Current steps to address this challenge, including technological adaptations of I.ROC, are described in Chapter 8. Resource issues were described by some as contributing to the continuation of negative attitudes to I.ROC within the organisation, however this argument was inverted by other participants, who viewed staff complaints regarding resources as resulting from practitioner's resistant attitudes.

“These different forms of resistance...I’ve got a whole list of: ‘there’s no money; done it already; we...tried it before, it didn’t work; ...people we work with are far too ill; it doesn’t fit with the needs of the people we work with; they don’t have this, they don’t have that; I don’t have the time; I don’t understand’. You know, it’s just never ending, and that – that’s just what you expect...It’s a human response to being asked to do something different” P3_8

This quote reflects many of the ‘abuses’ or misuses of recovery identified by Slade and colleagues (2014). Whether used as an ‘excuse’ or not, it is undeniable that services are under increasing pressure to provide support with very limited resources (CCPS, 2012). Resources such as staffing levels and digital support systems affect the time available to complete recovery-promoting tools such as I.ROC, and can result in staff burnout, hindering the development of recovery-supporting therapeutic relationships (Onken et al., 2012). Under-resourcing should therefore be considered a serious risk factor for successful implementation of recovery tools and approaches.

q) Recording & Reporting

I.ROC data is stored on a secure online platform called Carista. This database is intended to be used as a complete online filing system for social care organisations. Although it has been in use for as long as I.ROC (see Chapter 5 for details), the extent to which Carista is used remains variable. A small number of services do not use this system at all for recording data; the majority keep basic service user data on the system, including I.ROC records; whilst at the top end, some services are opting to go paperless, using Carista to record all activities and notes.

“I just set a date and said ‘right, from the first of March/April... all notes will be on Carista. So, I did that, and was a bit like (gasp) at the time, but actually, people - I think staff prefer it.” P3_17

Despite the enthusiasm for the system demonstrated by some as in the quote above, many frontline staff (Project 2) and managers (Project 3) voiced their frustration with Carista and the current process of data recording, describing it as “clunky”.

“Doing the I.ROC, doing the support plan, doing the review, they’re normal, everyday things. It’s the input to Carista, you

know...they need to be familiar with a database, Carista is not the most user-friendly, it's clunky." P3_1

Managers in particular highlighted the challenge for staff to get time in-front of a computer, and described difficulties they had finding or reporting on data, particularly in regards to extracting individual or aggregated reports.

Not all staff were negative in their review of Carista, however even those who liked the database highlighted concerns, for example the extent to which data held on the system is confidential, and described ways in which they moderated their reporting as a consequence of the system, as exemplified in the quote below,

"Oh, the [Carista] is a doddle... [But] I might not necessarily put on something that's too personal that might not be relevant to... If somebody else was seeing them." P2_1

Although this does not directly affect the feasibility of I.ROC per se, difficulties recording and reporting using Carista may put off staff who associate the two, and it will impact the quality of the data produced using I.ROC. Developers have designed a new digital version of I.ROC to mitigate this issue, and this will be discussed in Chapter 8.

r) Flexibility vs Consistency

I.ROC use was described consistently across the Projects as a collaborative three-monthly facilitated self-assessment. I.ROC was described as providing a way of measuring recovery which is systematic yet flexible enough to be personalised.

"The whole point in the tool I would suggest is that there's got to be some kind of consistency in order that we can measure. I mean obviously you might adapt your working style to the individual because everybody is an individual but at the same time the process is the same for everybody." P1~8

Service users reported that staff do not influence the way in which the tool is filled out, despite providing examples of ways in which the style of completion could vary.

[Do you feel that staff influence the way the questionnaire is filled out?] “No...not for me anyway. Because you’re explained what to do and everything but you have to be totally honest with yourself and go with your own... not be swayed by anybody else.” P1~1*

Staff appeared confident in their ability to adapt I.ROC for most situations. One participant described adapting I.ROC to ask the questions whilst out for a walk with the respondent. Such flexibility in how, when and where I.ROC is conducted promotes a personalised approach.

“It’s understanding the individual and giving them the choice. And where you go... Like, I might choose, say, a local café and it’s got booths and it’s got background music and it’s quite informal. I say I... I say we will choose. And if they’re comfortable and they enjoy that... Because it’s about them becoming less socially isolated.” P2_3

Yet, practitioners also voiced concern that scores may not be ‘accurate’. Staff described how adaptations in their approach were compounded by service user variables such as mood, comprehension and beliefs:

“They don’t want to look like they’re getting on too well, because they don’t want the support to be withdrawn. So they’ll tend to put themselves further down the scale.” P2_1

Practitioners reported feeling uneasy when their beliefs about the person’s situation do not reflect the scores given, and described challenging service users on their answers when they felt them to be ‘inaccurate’. The accepted method of dealing with differences of opinion was to reflect this in the comments that accompany I.ROC.

P3~4: *“I guess another thing we learned quite early on was that some people were saying they were scoring 6’s but that’s their opinion of where they are...And maybe not ours...and you’re thinking...where do we base that? Do we base that on what their perception of how they are is, or... you know”*

P3~5: *“But you can put your comments and in my opinion he’s a ...”*

P3~4: *“...so it’s good having the little boxes, people have said that, because you could get a...wrong read if you just took everything a person was saying from their perspective”*

'Accuracy' concerns may reflect a genuine observation of the person being supported; the example above suggests that staff are often using I.ROC to challenge the people they support to think more optimistically about their recovery. However, such concerns also seek to highlight the challenge that staff face in rescinding their 'professional' status during recovery-focused support (Davidson et al., 2006). Use of recovery measures in particular relies on the workers' ability to challenge and encourage, whilst at the same time accepting the superior insight the person has into their own situation over their own professional judgement (Davidson, 2005).

It is clear that staff and service user perspectives on the service users' recovery do not always concur. Given the preferred collaborative process of completion, it is unrealistic to expect that this tool can be used without staff opinions' influencing service users' answers. Previous studies have revealed differences between practitioner-only and collaborative ratings for some recovery measures (Killaspy et al, 2012), although in contrast to the experiences related in these Projects, collaborative ratings were found to be higher than those of the practitioners. Differences between self-report, practitioner-only and collaborative ratings have yet to be examined however. This is recommended for future examination of I.ROC.

7:4.4. Discussion of Feasibility

Slade and colleagues describe the feasibility of an outcome measure as the important and inherent part of its psychometric properties that demonstrates the suitability of the tool for routine, sustained and meaningful use in practice (Slade et al, 1999). Supportive of the tool's feasibility, I.ROC use in practice is consistent with guidance and recommendations set by Penumbra, however this section has also highlighted some potential feasibility issues.

Individual variation in staff methods of using I.ROC, whilst good for personalisation may affect the reliability of results. Although only twelve questions in length, I.ROC can take a long time to complete. Whilst it is noted that, as a discursive tool, this time is of value within support, its required

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duration does make I.ROC a difficult tool to use particularly when time is a scant resource. In its current format, I.ROC is also unfeasible for use in the brief interventions and crisis services which account for an increasing proportion of Penumbra's core business (Penumbra, 2018f).

At the individual level, I.ROC appears well-liked, and as explored in the following section, participants in these Projects were able to identify several positive outcomes of using the tool. Meaningful I.ROC use requires engagement, honesty and acceptance from respondents however, which makes it emotionally and cognitively demanding. As such, it will not be a feasible tool for use by everyone. A high level of skill is also needed from the supporting professional to guide the collaborative process. As twelve simple questions, I.ROC can be used by anyone, but to use the tool well and as intended requires considerable skill.

Perhaps then it is helpful to think of I.ROC feasibility on two levels. The first considers I.ROC as a basic 12-item questionnaire; the instrument is occasionally used as a self-report measure, for example in research settings (Rudd et al, 2018; Appendix 22.a). As such, I.ROC appears brief, simple and relevant. Used in this way, I.ROC meets feasibility criteria (Slade et al., 1999). However, used in this way, I.ROC misses the point; it is intended as not only an outcomes measure but a therapeutic tool, and must be considered as such. In which case, the feasibility of I.ROC becomes less about brevity and simplicity for professionals, and more about whether the time taken to complete the tool is worthwhile. This is considered in the next section, which explores the consequential validity of I.ROC.

Ch7, Section 5. Findings: Consequential validity

Consequential validity comprises two components (Messick, 1995). The first evaluates the extent to which the labelling of an instrument fits with its intended use and assesses the values users assign to these labels. The second considers the positive and negative implications of using the tool, at a personal and societal level.

7:5.1. I.ROC Label

7:5.1.1 I.ROC Labelling: Recovery

Service users' definitions of recovery (Project 4) are reflective of the concept as a subjective and individual experience (Schinkel & Dorrer, 2007) and incorporate elements of clinical, social, personal and addiction models³¹.

Descriptions encompassed elements of both 'recovery in' and 'recovery from' mental illness (Davidson & Roe, 2007). Similar to themes identified within service user narratives (Tooth et al, 2003), some participants related recovery to remission of symptoms or return to full functioning; *"I'm determined to get rid of the depression as far as possible"* (P4_10*). People's hopes for recovery included maintaining where they currently were, and being able to manage their illness: *"I would like to get back to self-medicating again"* P4_2*. Recovery was also represented as a return to where the person was before their illness, or being able to live a 'normal' life (n=4), in which the ability to maintain a positive social network was a significant feature.

"I just want to be able to interact, go to weddings and birthdays etc. and just have like what I would call a normal life." P4_8*

Ten key components of recovery were identified across interviews in Project 4 as crucial to the move towards recovery. Consistent with I.ROC items, these included: 'mental health'; 'hope'; 'independence & empowerment'; 'confidence & self-worth'; 'identity'; 'relationships'; 'meaningful activity'; 'self management'; 'life skills' and 'home'. This demonstrates that people using I.ROC conceptualise recovery in a similar way to the model underpinning I.ROC.

Recovery was described as relating to a journey which included increased hope for the future, self-management, and resilience, personal growth and a desire to 'move on'. One participant described recovery as a process of reconstruction following a storm. He used the analogy of the rebuilding of the Tay Bridge to

³¹ For a full table of recovery themes, see appendix

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emphasise how recovery is not simply about replacing what was lost, but about making improvements to become stronger and more storm-resistant.

“The Tay Bridge was built for a purpose - to get a train from one side to the other side...But it wasn't strong enough to get - and one night, it collapsed. So I've got to do much the same - rebuild myself to get to the same means...And the new bridge was built stronger, better - so it's much the same way that I've got to be able to, uh, be stronger and better - to cope with whatever this - is thrown at me. The old bridge was a literally for going through the storm - the bridge went through a storm, it collapsed. I more or less collapsed, and that's what I've got to do with myself.”

P4_13

These descriptions are consistent with conceptualisations of personal recovery as a journey of personal growth, resilience and rebuilding (Deegan, 1988), as described in Chapter 2, Section 2:3.2. Across the Projects, participants' discussion of the I.ROC label itself was generally positive. People alluded to a change in how I.ROC was referenced in the day to day language of the organisation, with the majority of people now only using the acronym.

“We're losing the acronym now aren't we? We're not putting the actual words on it any more [no it's just I.ROC, yes]...Nobody has to explain Hoover or Heinz; I.ROC will be the same” P3~2

This quote provides evidence of the impact of the recovery 'branding' (Hatch, 2008) Penumbra has invested in; the participant referred to the I.ROC label with a sense of pride, comparing it to well-known household brands, and stating their hope that I.ROC would have a similar prominence in the future. This same participant did point out their disappointment with the change from i-ROC to I.ROC,

“When the design was done, that was the one thing that I thought, oh it's a shame that it's actually lost that because that little 'I' looked like an individual... In my mind represented the individual” P3~2

This demonstrates the multiple different ways a logo can be interpreted, and the personal meaning this interpretation can hold, a subject explored in detail by Salgado-Motejo et al (2014).

7:5.2. Personal consequences of I.ROC use

Implications of using I.ROC are multi-faceted and largely positive. I.ROC was described as promoting personal recovery by helping to identify priorities and demonstrate change over time, both at a personal and a service level. At the individual level, I.ROC facilitates the establishment of good staff-service user relationships, informs personalised support planning, helps people to review their progress and to sustain hope for the future. Negative consequences of use at this level included the potential for I.ROC to act as a trigger to distressing memories or thoughts. At the societal level, I.ROC proved useful for reporting service level outcomes and impact, and was identified as fundamental to the successful implementation of the HOPE approach. Staff raised concerns that I.ROC could be used as a performance monitoring tool.

7:5.2.1 Positive personal consequences

s) Personal Recovery

Practitioners across all Projects positively appraised I.ROC's role supporting personal recovery through promoting reflection and planning, and mapping change;

"The positives for me certainly with a gentleman that I worked with was to actually see how his life has totally changed when he looked at that and thought 'I didn't really realise how ill I was when I first came in and the importance of being socially included'." P2_6

Service users also referenced I.ROC as a useful reflective and planning tool which plays a significant role within their personal recovery and wellbeing (n=7). They described how, through comparisons between scores at different time points, I.ROC helps to maintain hope for the future,

"It's good to look back you know... to see the journey that you have made and how much progress that you can make...its fantastic to look forward and hope that you make more of a journey if you've still got... a while to go which I still have."
P1~2*

It was pointed out by one practitioner however that the support work occurring between reviews was more important than the tool itself.

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“[I.ROC] is a small part of it for me, it’s about turning up and engaging as much as scoring it and observing and analysing that engagement.” P1~10

Certainly, in the narrative interviews conducted in Project 4, I.ROC references accounted for only a small proportion of references to support. People described using a variety of tools and techniques to help them manage their mental health; half of participants referenced I.ROC, but only a few without any prompting. Those who did discuss it described the tool as a ‘helpful review of your whole life’, a useful method of visualising progress and identifying areas to work on.

I.ROC use can therefore support personal recovery by facilitating reflection of where the person is and promoting discussion of where they want to get to. Such use is dependent on the skill of the practitioner and the quality of the therapeutic relationship.

t) I.ROC: Facilitated self-assessment and conversational aid

Discussions of the approach taken by staff emphasised the role of the service user, describing I.ROC completion as *“the epitome of personalisation” P3_17*. Practitioners positioned themselves in a collaborative but supporting role, with their input varying depending on service user needs,

“Although it is primarily for them we do it with them to make sure that they’re using the I.ROC to its best potential... Sometimes they don’t understand some of the questions so we have to be there and make sure that they do understand it and what the I.ROC is actually looking for.” P1~9

Service users in the current Projects also described I.ROC use as a collaborative process, and their discussions supported the importance of this approach to their feeling of being valued,

*“They talk you through every step and ask you how you feel... it’s not just a case of do you think you’re a number today... they’ll ask you how you feel...how do you think you’ve come on.” P1~2**

Velpry (2008) has suggested that a service user’s perspective and responses to outcome measures may be negotiated or co-constructed through the process of discussing outcomes with their practitioner. Trauer (2010a) identified the promotion of dialogue between service user and practitioner as one of the

potential benefits of using outcome measures. Collaborative completion of I.ROC is reflective of a recovery approach as described by Bhanbro and colleagues (2016), who argued that

“this approach values service users as partners in a collaborative relationship with staff who work together to identify and pursue an individual’s personal goals” (Bhanbro et al., 2016, p.1).

I.ROC prompts and questions, alongside the guidance materials, are used by staff to initiate a holistic conversation looking at what impacts on a person’s wellbeing, and what they want to work on. Practitioners described how they help service users to explore their answers to each indicator, seeking to help themselves and the person they support gain an understanding of the reasons for scores.

“Say somebody says a three for the first question they score – “So why is that three?” And we can get into a little bit of discussion about where they’ve been with their mental health and their views and people say, ‘Oh, I’m feeling okay just now, but there was a wee while where I wasn’t’...So it can be good for...facilitating discussion.” P2_2

The respondent is encouraged to reflect on their self-evaluation, helping both parties gain insight into how the supported person has been feeling, and what is impacting upon their wellbeing.

*“I think I.ROC is helpful in ways... You see all what goes on with your health...yea, capability or your un-capability. If you're capable, I think I wasn't capable enough on a few of them and I thought 'well that really helps to realise the illness'...If I'm, if I'm a point 4 or something, I'll say 'why am I point 4?' maybe I need myself to be healthier or eat healthy foods or things like that.” P4_3**

Emphasis placed on the conversational aspect of completion by participants provides more evidence of the shifting purpose of I.ROC, from standalone outcome measure to key working tool, as discussed in Chapter 5.

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u) Building the 'therapeutic' relationship

I.ROC was described by staff as a “way in” (P3_16) to working with people. For those new into service, the structure of the tool provides a way of broaching subjects that may not otherwise form the focus of early conversations,

“It’s quite non-threatening... In a good way. If I want to ask other questions – like, “Did you have a shower this week?” and “Are you eating well? Are you sleeping well?” You can ask that, sort of, when you have a bit more relationship. But as a sort of starter, it’s... It’s good. It does what it’s meant to do” P2_3

Collaborative exploration of a service user’s answers to I.ROC indicators can deepen personal and professional insight into the person’s wellbeing

“He’s opened up about [his Schizophrenia] and he’s talked about it. I think, by using this, we’ve been able to talk about some things that we maybe wouldn’t have been able to talk about...By asking some of the questions and he’s coming out...with things that maybe hadn’t come up in, kind of, general conversation.” P2_2

This helps establish a support relationship based on mutual understanding, within which the service user is the expert of their own experience, and the practitioner assumes the role of recovery partner (Gehart, 2012). As quality of the therapeutic relationship has been demonstrated to be the best predictor of outcomes for people with mental health problems (Tallman & Bohart, 1999), and is a significant mediating factor in the relationship between hope and recovery (Hyun et al., 2014) the importance of this cannot be overstated.

The significance of the support relationship was clearly demonstrated through service user interviews in Project 4. For these participants, positive experiences with services were most commonly discussed in terms of individual relationships with social workers, GP’s, support workers and other professionals. A common theme within the interviews was the identification of a particular person, usually a professional, as the turning point in their recovery journey;

*“I went through a part when I changed support workers and I’ve had 2 before [name], and I, I just think that [name] was the one that made me motivate myself”. P4_9**

Participants were asked to identify what qualities or attributes were important in a worker, to facilitate a good support relationship. Service users described someone they could talk to who would listen attentively, non-judgementally and in confidence, but also someone they could laugh with, was positive, friendly and who they had common interests with. Equality and mutuality, trust and respect were spoken of clearly as key factors in good support relationships. People appreciated being on the same level and working alongside support staff who were 'human' in their approach.

*"I think it's quite refreshing to...have somebody that's...quite open about...the imperfections of being a human being...she would never proclaim to know all the answers, ...but would help you, encourage you to find your own way. P4~11**

These themes mirror those reported within the literature, for example Borg and Kristiansen identify "*empathy, respect, and a general person-to person investment.*" (Borg & Kristiansen, 2004; p.495) as recovery-promoting attributes.

Early use of I.ROC can increase transparency within the relationship, clarifying the aims of support both for the service user and the staff member by providing a structured framework for talking about the aims and expectations of each party.

"I think that if you are new to Penumbra now and you're told 'this is how we work, this is the framework, these are the tools, I think that just gives staff such a head start in terms of being absolutely clear in terms of what our intention is, what our ambition is as opposed to being just being told, well you're a support worker and this person needs you to support them to go shopping...to clean their house, to pay the rent and so on – it's got to be about the whole person" P3_15

This links back to the developer's references to 'intentionality' within support; a key term used by managers describing factors influencing I.ROC development (see Chapter 5), intentionality refers to the delivery of purposeful, directional support. Practitioners described how for people who enter support without a specific overriding issue to focus on, a structured I.ROC conversation can provide clarity.

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“I think it’s like a starting tool to get young people to think about their support and what to focus on, ‘cause sometimes they can come out, and it’s just like anything that’s an issue, but then breaking it down into steps and stuff to look at” P3~13

One manager took this notion of intentionality further, arguing that by providing focus and structure, I.ROC helps establish clear boundaries, the importance of which has been noted particularly for peer support work (Walsh et al, 2018).

“Here’s a guide that will keep you focused, it will keep you professional, and it will keep you in the role of a paid worker, especially if those kind of boundaries or just people you’ve been supporting a long time become a bit blurred at times. It keeps that ‘I am the worker, you are the supported person’ clear as to ‘I am here to do a job...Now that’s not about the ‘them and us and we’re different’ there’s a kind of mutual respect as two human beings but, one is paid to be in the other person’s life. And sometimes we need to remind the staff of that, and the people that you are supporting of that” P3_1

Boundaries within support relationships remains a contentious issue; within recovery-oriented practice, it is argued that maintaining strict professional boundaries inhibits development of a recovery partnership, and consequently many of the accepted lines of traditional therapeutic relationships need to be re-drawn (Chen et al., 2013). For example, within the current studies, one service user described the relationship with his practitioner as ‘like a friendship’, and talked openly about the importance of this relationship within their recovery.

*“I was able to actually express myself, go into detail about what has happened and my entire life and everything like that - and be comfortable with you to the point that... I could say anything - I mean like, I feel like actually it's a friendship...A kinship so to speak” P4_8**

Although friendship is not commonly encouraged within traditional support relationships, ‘friendship-like helping relationships’ which allow the service user to ‘show and give affection’ have been shown to have the greatest positive impact on recovery (Borg & Kristiansen, 2004).

It appears from these accounts that effective I.ROC use both impacts and is impacted by, the quality of the therapeutic relationship. I.ROC can be used to

help establish transparent, trusting relationships, whilst existing positive relationships can help ensure a meaningful, truthful I.ROC conversation.

v) Support planning

Person-centred planning has been widely linked to better outcomes for people using mental health services (Tondora et al., 2014), and is a core element of recovery oriented practice (Lodge et al., 2016; Tondora et al., 2012; Miller et al., 2017). Participants within these studies identified I.ROC as integral to the process of planning support, through the identification of priority areas to work on. Guidance (Appendix 4.f.iii) encourages staff to use the process of completing I.ROC and reviewing results to stimulate discussion around what's important to the person and where they want to get to. Priorities, hopes and outcomes identified through this conversation are used to populate the support plan included within the HOPE toolkit.

"I think it identifies the areas that you should be working on. It kind've co-insides with when you're doing the support plans you know... it could be that they're isolated and don't have much social stuff that will be blaringly obvious on their social networks or their purpose and direction - they're all linked - so I think it has a big impact on what support you then end up giving or if you're maybe adjusting it." P1~11

The role I.ROC plays within elements of support planning such as goal development and discussion of personal outcomes was clear within service user accounts. For some, I.ROC had proven such a successful goal planning tool that it now forms a structure for discussing goals and hopes for the future. For example, when asked about their goals for the future, one participant in Project 4 responded,

*"My goals would be, there's still a couple of areas of the I.ROC that are lower than I would like so, but at least we've identified them, and we can tackle them positively and already between myself and my support worker, we're looking at ways of 'right, this is how we can tentatively step in that direction and keep everything else working, and tackle them as well." P4_10**

This example also highlights the collaborative approach taken to I.ROC completion, and how this feeds into the wider support approach; whilst

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describing his goals, the participant refers to steps that he and his support worker are taking together. The inclusion of his support worker within his description gives a sense that he is not alone, and feels supported in working towards his goals. Staff accounts of I.ROC use also support the collaborative approach taken to I.ROC use and support planning.

“It’s a collaborative thing. It’s not just for staff to do to a service user... You need to engage the person with it. So you’re like... What can you do? What can I do? Sort of thing. And what can we both do? And then it does...link in with the ‘My Plan’ that we use as well.” P2_2

By providing a structure for reflecting on where the person is, what is important to them and where they want to get to, I.ROC therefore plays an important role in person-centred support planning within Penumbra.

Visual aide

After completing the I.ROC questions, scores can be plotted on a radar chart, referred to by Penumbra as a ‘Spidergram’. Graphs can be used to see the pattern across one set of results, or to compare multiple sets of scores. This visual component of I.ROC appeared particularly important to practitioners during support planning. Spidergram images present a clear pattern of areas of relative strength and weakness; service users recalled how useful this can be in enabling them to “see it in black and white” P1~2*. I.ROC provides a way of helping people evaluate how things are going in different areas of their life, and to explore which of these areas are most important to them,

“Once you’ve done the questions and you’ve plotted on the wee graph then you get a spider gram, then I think it’s a visual thing for the service users to look and see where’s good in their life and where’s bad, what areas are we gonna handle and to work on. You can just see at a glance...” P1~13

For some, the Spidergram image appeared to play a part not only in support planning, but also in internal processes of recovery, including the person’s acceptance of their current situation, mental health and wellbeing

*“Somebody will say ‘oh you’re really low’ but until you see it you won’t believe it... you know... you then believe it.” P1~3**

Acceptance, awareness and insight of illness and current reality are features of several stage models of recovery, including those of Young and Ensing (1999),

and Andresen and colleagues (Andresen et al., 2003). Biringier and colleagues identified “*developing an understanding of oneself and one’s mental health problems*’ as one of five themes of experiences of support (Biringier et al., 2016, p.1). An early stage model of recovery by Davidson and Strauss (2002) describes a four-part process of ‘self and identity reconstruction’, with the second part described in a later review as “*taking stock of the strengths and the weaknesses of the emerging self, and assessing possibilities for change*” (Davidson et al, 2010, p.215). Based on this model, the process of visualising areas of relative strength and weakness, for example using a Spidergram, could in itself support progress towards recovery.

w) Reviewing progress

I.ROC encourages reflection of life over the past few months, how far people have come on their journey and what they want to achieve. Repeating I.ROC every three months allows scores to be tracked longitudinally, and for changes to be identified and evaluated. Spidergram images were again seen as a key component in this process; by superimposing two sets of scores on one graph, movement on each indicator is easily visualised and assessed. When used in conjunction with support plans, this can facilitate evaluation of the progress made in support.

“It is a good way when you are reviewing it in terms of saying well, look we have not moved on this area, why?” P2_6

A similar observation regarding the importance of a visual representation of scores was made by Tickle and colleagues in their qualitative evaluation of the Recovery Star (Tickle et al., 2013). They described how practitioners felt the plotting of results on the tool’s star-shaped graph could provide a helpful image of change over time, although it was also felt that this could reinforce negative emotions for people who feel they are not making any progress. Whilst reviews can indeed highlight lack of progress, participants pointed out that recovery is not expected to be a linear process, and that I.ROC can be useful even during difficult periods. Service users recalled how in tougher times, Spidergrams can provide a visual reminder of their growing resilience. By comparing progress at

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different time points, people can see how far they have come, and that they have overcome difficulties before.

“This time last year my I.ROC was perfect...I had almost left the service and then my whole world came crashing down again... I did another I.ROC at the very beginning of this year and from when I did my I.ROC say in October to when I did it in January there was a big drop but that’s because there’s really lots of challenges...crises... deaths...things in my family; but it actually gave me the... when I redid it in January it showed me that I could still... I was still low... but I wasn’t as low as when I first came into the service... I dropped back but it wasn’t as low as it was before because I won’t go back that low but I do know what I need to work on...” (P1~3)*

In this example, regular reviews enabled I.ROC to be used as a tool to improve or bolster mood; for many (n=10), one of the greatest benefits of using I.ROC was its role as a visual affirmation of the positive changes that have been made.

As a longitudinal measure, I.ROC provides the opportunity to reflect on change over time, and this is seen as one of its core attributes. Graphical representations of scores such as I.ROC’s spidergrams enable people to visualise their progress, making changes they have perhaps not previously recognised or engaged with a tangible reality.

7:5.2.2 Negative personal consequences:

x) Disempowerment

Participants described the methods through which they encourage people to use I.ROC, and reported how such experiences were a challenge that could be sometimes be overcome through patience and open communication about the purpose of using I.ROC, but not always.

“It’s not for everyone, definitely. It would be good if it was for everyone but some people just have resistance and even if one years’ time... two years’ time it changes and people say oh I’ll use it now I’m in a better place but some people are just suspicious.”
P1~10

“I’ve got a huge challenge just getting a lady I support to do one. She just keeps saying no... no. I’ve explained to her what it is, I’ve taken the materials along and asked her to look at it... no. she just

will not engage with me at all to do it. That is the biggest problem I have. Everybody else is fine once you explain what it is and explain as you're going along .. But that lady just won't. I don't know what to do". P1~13

Although the first of the two quotes above suggest that service users' right to choose whether or not to complete I.ROC is generally respected, the second demonstrates that staff see people choosing not to complete it as a failure. Whilst Penumbra do not insist on I.ROC use for all people using services, there is an expectation that all frontline workers will use it regularly, as discussed in Section 7:4.1. One consequence of this may be that staff feel pressured into using I.ROC even when people they support are reluctant. Supporting this assumption, staff reported that some feel forced or coerced into completing I.ROC;

"I think there's resistance by certain service users just because they feel like it is something that's done to them." P1~10

Although this sentiment wasn't reflected by people using services, some participants expressed a neutrality or dislike towards using I.ROC, which could reflect a belief that they only use it because they have to.

***"[How do you feel after completing an I.ROC with the support worker?] There is no difference for me... it's just nothing at all really."** P1~5**

Key attributes of recovery-oriented services are that they are person-centred and empowering, for which informed choice is fundamental (Le Boutillier et al., 2015). Whilst the concept of informed choice is extensively discussed within the recovery literature, it has largely not been considered in terms of recovery outcome measurement. Questions therefore remain as to how best to implement standardised measurement, without impeding people's right to choose. Scheyett et al suggest that

"given the importance of recognizing consumers' unique experiences and characteristics within recovery, a single "ideal" recovery instrument may not be necessary; in fact, it may be counter to the diversity of recovery paths and experiences explored by consumers and social workers."
(Scheyett et al, 2013, p. 299)

y) Emotional impact

I.ROC can evoke difficult or negative emotions, as described by both staff and people accessing services. For some service users, I.ROC results had served as a stark reminder of how difficult their life has been.

*“I was shocked because like the emotional part of it I thought I was fine ... I wasn’t...and when I was truthful with myself that’s when I realised that...no I’m not ok.” P1~3**

Practitioners acknowledged the potential for questions to elicit difficult emotions not just for the people they support, but also for themselves. This was felt to be particularly the case during baseline assessments, when service users are less familiar with the process and have yet to make any progress towards their outcomes, or when the person has experienced a difficult few months.

“I think it can be upsetting to you [as a worker] as well because ... I’m seeing someone who’s coming in and you’re going through their personal network and they say ‘well I’ve no got anybody’ P1~16

Tickle and colleagues reported similar concerns amongst practitioners using the Recovery Star (Tickle et al., 2013), who felt that visual representation of results can reinforce negative emotions for people who feel they are not making any progress. Such concerns are one factor behind Penumbra’s decision to maintain use of the tool as a facilitated assessment rather than offering it as a self-report measure (Ion et al, 2013).

I.ROC eliciting negative emotions was generally seen as the exception within these Projects however; service users’ reflections on their emotions during completion more commonly described the experience as positive and rewarding, particularly when results show a person’s scores to have increased.

“It can be a really positive experience if you can see clearly that people have moved on or taken positive steps.” P1~8

As practitioners participating in these studies use I.ROC on a weekly or sometimes even daily basis, it is good to see that I.ROC does not routinely cause significant negative emotions, however the potential for this should not be ignored. There is some evidence that recovery-oriented practice can be considered a protective factor against staff burnout (Kraus & Stein, 2013), and it

may therefore be the case that occasional negative experiences using recovery focused tools are outweighed by the positive effects of a recovery approach. Nevertheless, it is important that the potential for I.ROC to elicit negative emotional responses is clearly communicated, and the frequency of such responses is more extensively evaluated.

7:5.3. Societal consequences of I.ROC use

7:5.3.1 Positive societal consequences

z) Penumbra's Approach

*"In terms of the... The areas it covers, I think it tried to cover everything. The home, opportunity, people and empowerment."
P2_3*

I.ROC is framed within a wider framework for recovery-oriented practice (HOPE framework). I.ROC is recognised as a central component of this approach;

"[I.ROC] pulls everything together, it pulls all the other bits and pieces together...to fit into some kind of jigsaw rather than just be disparate workshops that happen because, well we've always done it, but now it makes sense... So, it feels like it's at the core of what we're trying to promote within Penumbra as an organisation." P3_6

Language from I.ROC and other HOPE tools pervaded narrative interviews with service users in Project 4, in the words of both the interviewers and the interviewees, which suggests that the framework has begun to truly influence culture in the organisation. For example, one exchange between interviewer and interviewee went as follows:

"Aye. Well I'd been there for 8 years and taken my pills. I wasn't really having much on an outdoor life. It was indoors most of the time. And it was no job. [So kind of like you felt like there was no purpose and direction?] Aye..."

Service users described the wider approach as solution focused, supporting people to think about and work towards their outcomes, goals and hopes for the future.

"With Penumbra, it's more like let's get into the nitty gritty so to speak, and let's address this properly, and we'll see how we can

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*see where you are now and let's see what we can get to in the future" P4_8**

People using services showed an appreciation for the work of Penumbra in supporting their journey of recovery.

"My support worker has very much tailored the support towards myself, I mean, I know that there are guidelines and whatnot underneath that help tailor that support, but it doesn't feel like I'm being forced down a route in order to get my recovery on - the way it feels, it feels very, very personal...The way that my recovery's being - being managed, that would definitely be the good side of it."
P4_10*

Penumbra's approach was identified by participants as being different from that offered by other services. Three people using services described the organisation's support as more personalised than support experienced elsewhere, particularly (although not solely) within public services.

"I've had all sorts of different therapies and stuff through my life, but in comparison to the kind of support I get with NHS, it's much more practical, it's much more honest and realistic." P4~11*

Tools	#
WRAP	3
CBT	1
MDCT (Mindful Behaviour Cognitive Therapy)	1
Mindfulness	1
Speech/language based/NLP	1
I.ROC	7
Support Plans	1
Sleep Diary	1
Chronic Pain Diary	1
Week Plan Diary (Support Plan)	1
Money Planner	1
Sleeping Well	1
Eating Well	1
SMART Tools	1
Positive thinking book	1
Timetables	1
Goal setting tools	1
Assertiveness	1
Anger management	3

Table 7.9: Tools referenced within project 4 interviews

Frequently referenced (Table 7.9), I.ROC

and the HOPE toolkit played an important part within Penumbra support for approximately half of participants in Project 4, and was part of what set Penumbra apart from other services they had experienced,

"Yeah... you're a person not a number. Like other health professionals you're a number...you're a person here it's your journey...it's your recovery... it's your support." P1~3*

All participants in Project 4 described using a variety of tools and techniques to help them manage their mental health. Some such as WRAP were widely used, evidence-based methods or instruments, whilst others had been developed or adapted by the person themselves,

*"I sometimes go to the computer and just look up some more positive quotes and quotes that get me motivated...I've got a lot of them written down in a book and I like to share some of them as well." P4_1**

In some interviews, clear links were made between using tools and techniques, and increased self-management. For example, one man described his battle with depression. He highlighted the fear of recurrence of symptoms as the biggest barrier in his recovery. His main concern was that the symptoms of depression may return after he moves on from services, leaving him unable to cope and without support, however he described how use of the Penumbra tools had increased his confidence in his ability to self-manage.

*"Now that I know the stuff from the toolkit and stuff from I.ROC, I would lean on them first, I wouldn't really have to come back and see a support worker to ask what they are again, because I have built them into my daily life." P4_10**

Unprompted references to I.ROC were made in both discussing goals and hopes for the future, and in recognising achievements, suggesting that I.ROC provides a helpful structure for discussing, or perhaps even thinking about these elements.

*"I felt the - the social - you know the part in the I.ROC - I think the - I think it's the Social Network...I think that's improved a lot... Not a lot, but it's slowly - slowly improving. I'm pleased with that, I'm pleased with that; pleased I'm making progress with people." P4_14**

I.ROC did not provide a helpful structure for everyone; in some cases (n=2), 'I.ROC' seemed to be used as a general catchall for the tools used within support, and for some, the concepts of HOPE and I.ROC had become conflated, causing confusion.

*"It's probably just I've said it all already- the People part's always the best bit - the People part of the I.ROC... It's not the I.ROC, it could be the HOPE - People stands for - I mean P stands for People in HOPE, HOPE, yeah. I think it's - the People part's the best one, aye." P4_14**

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Not all participants were so decisively positive in their review of the instruments on offer either. One participant described how he sometimes found the approach too structured and “claustrophobic”.

“I get sick of it all, because it's ongoing, it goes on and on, and the planners go - a planner for this, a planner for that and then I feel like tearing them up and chucking them out the window.”

*P4_14**

I.ROC, supported by a wider set of tools to support recovery focused practice, is embedded within Penumbra’s HOPE framework. Reflective of effective recovery focused practice, Penumbra’s approach is described as personalised, strengths-based and recovery-focused. This approach is considered by service users to be different to what is offered within other mental health services. Recovery branding within the organisation, to which HOPE and I.ROC are key, has created a common language of recovery shared by people both using and working within services, demonstrating the impact of such tools on the culture of the organisation.

aa) Reporting

For service and senior managers, value was also given to the aggregate results that I.ROC can provide. Aggregate reports were described as helpful in identifying priorities at a population level for people entering the service, and in demonstrating change over time. This information is used at a service level to target extra support and resources to staff, and to provide evidence of the work of the service to funders.

“I think the graphs are handy for like social work reporting and that. Just to show that it does work. That's how we measure our outcomes and it's quite useful for that because we are a recovery service, so across the service, over time, well you'd expect to be seeing improvement. So it's quite handy for that.”

P2~7

Managers (n=4) described how they felt use of I.ROC data for reporting was helping to improve recording practices and evaluate staff performance, and practitioners (n=5) remained confident that they could use I.ROC and report results without the risk of negative consequences.

“With I.ROC it's always been expected that scores will go up and down, it's not a case of somebody starting with all 1s and then

moving to all 6s, because in mental health that just doesn't happen. But you have the text box, so it's never just been about the scores - it's about the scores and the reasons for the scores. So we know that the information is being used with that understanding." P2~10

This suggests that I.ROC information can be meaningful at an aggregate level for service and organisational reporting, whilst remaining useful to frontline practitioners.

7:5.3.2 Negative societal consequences of I.ROC use

bb) Service Recovery

Not all staff were convinced of the usefulness of aggregated I.ROC information, feeling instead that aggregate data was only of importance centrally, and had little to do with support work,

"I think it's the head office that likes these sorts of charts. They love all that. [Laughter, "and how"]. We don't. We just focus on the individual. You know. And even, if there's a progression... it's about the service, it's all about the individual." P2~8

Although this member of staff clearly states their values of personal recovery, this quote serves to highlight tensions that can arise when the motives behind an organisational approach are not thoroughly communicated. Lack of understanding of reasons for reporting and subsequently recording I.ROC data could lead to wider issues, for example, a belief that the pursuit of a recovery agenda by the organisation is financially and bureaucratically motivated (LeBoutillier et al, 2015). Requirements for use of I.ROC at an organisational level did appear to conflict at times with the realities of using I.ROC, to the detriment of the staff and the service user. For example, one practitioner described how they felt pressured into using I.ROC by the system of coloured alerts³² built into the Carista database to remind staff when an I.ROC is due.

³² (green = I.ROC completed within the past 3 months; amber = I.ROC is due to be completed; red = I.ROC assessment overdue)

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“you’re flagging up on the system that it’s amber and then it’s going to go in to red...and then you’ve got the young person coming in and because maybe you’ve not seen them...it could be like a month in between and obviously anything in a month could have happened but sometimes you’re kind of thinking ‘I know you really need to talk about that, but we need to get this I.ROC done” P3~12

Such systematic processes sit in stark contrast to the personalised, flexible approach that Penumbra developed I.ROC and the wider framework to create. Balancing different users’ needs and the ways in which these needs are communicated remains a key challenge for successful use of routine outcome measures.

cc) Performance Monitoring

One service manager raised concerns about use of I.ROC for performance monitoring purposes, particularly if results are presented out of context.

“There was a graph ...it was a percentage of how many did I.ROC and it looked – it didn’t look good because we had so many people referred and like, sometimes half of them never engaged at all...it looked bad and it went up on a slide in front of all the managers or something and I was like, I wasn’t happy” P3~9

A similar concern was raised by another manager who responded to a feedback survey during I.ROC development (see Chapter 5),

“It can be seen as putting pressure on to my team and myself. For example if the people looking at the outcomes do not like them or they start setting targets for outcomes/recovery.” P5:3

Put under pressure to use I.ROC and record the results accurately, some staff are told that their performance is indeed being monitored,

“I’m trying to get people to put in as much information in the I.ROCs as possible, because I keep saying to people, remember, it’s not just me that sees it, [lists senior managers] can all see it, so you know, you need to be very aware of what you’re recording, it needs to be recovery focused” P3_17

This is a commonly highlighted concern within the field of outcomes research (Cook, 2017). Miller & Barrie (2016a) identified performance management as the greatest threat to effective use of outcomes data within their recent action

research project, which investigated the use of outcomes measures within health and social care in Scotland. Top-down, statistically driven approaches to outcome measurement were seen as the most commonly adopted by organisations seeking to use outcomes data for performance management purposes. Participants felt that performance management approaches to outcomes measurement were reductive, and erode the meaning of outcomes data for both service users and staff. The report suggests that use of outcomes data should instead focus on internal applications such as practice improvement and service development.

7:5.4. Discussion of Consequential Validity

The term consequential validity is used to describe the impact of using an instrument, and considers both the positive and negative consequences of its application at both a personal and societal level. Staff and service user accounts of I.ROC use revealed several positive and negative consequences both for the person responding to the questions and for the organisation using the tool. Participants reported ways in which I.ROC could facilitate the recovery journey, for example by facilitating reflection and helping them identify their progress. Positive consequences were widely consistent with descriptions of recovery-oriented practice, in which professional support relationships and personal support planning are identified as fundamental to the development of a culture in which people using the services are 'heard' (Kidd et al, 2015). Several negative consequences of using I.ROC were also identified. At a service level, these focused on perceptions of conflicting interests of the individual and the organisation in the collection and use of I.ROC data. Staff voiced the concern that I.ROC data could be used for performance monitoring purposes, a common concern in relation to outcome measurement (Miller & Barrie, 2016). At the individual level, participants related that I.ROC could in a minority of cases cause emotional distress. This finding evidences the need for use of the tool to remain as a facilitated self-assessment; as any emotional distress that is caused by completing the questions can then be worked through together in a safe and supportive environment. Participants also reported that some people feel pressured or coerced into using I.ROC; again, whilst not a common finding,

forced completion of I.ROC undermines its use as a personal recovery tool. Empowerment and choice are key components of recovery-orientated practice, and systematic use of standardised outcome measures, particularly when only one measure is offered, thus presenting people with a binary choice of outcome measure or no outcome measure, could be argued to contradict such practice. Service users assisting the development of the HiWay measure stated the preference for use of the measure, including when to introduce it within support and the frequency of use, to be on their terms (Boniface et al, 2015). Introduction of such a strategy within Penumbra may help overcome feelings of disempowerment for people using I.ROC.

Ch7, Section 6. General Discussion

Focusing on current use in practice, this Chapter assesses the feasibility and consequential validity of I.ROC use in practice using synthesised data from several qualitative research Projects.

7:6.1. Actual vs intended use in practice

Feasibility of I.ROC for routine use in practice was considered by comparing accounts of actual and intended use, drawing particularly on the accounts of service users and staff in the first two qualitative Projects. Frontline Penumbra practitioners in Project 2 provided detailed accounts of how, when and where I.ROC conversations are conducted. I.ROC is completed on a three-monthly basis with almost all supported people. I.ROC completion was described as a process of facilitated self-assessment, within which the tool is used to elicit a conversation exploring the service user's wellbeing, personal outcomes and hopes for the future. I.ROC use was considered a flexible process which varied between people and over time. Mirroring this, participants in Project 1 argued that flexible use of the tool was crucial to a personalised approach, but this can compromise consistency.

Recording and reporting I.ROC data was another key theme of the second qualitative Project. Describing how they record I.ROC data, staff were confident that use is consistent across the team, yet note-taking appeared affected by personal style. Format and content of accompanying notes is dependent on what the service user wants recorded, but whilst this causes variability in the

data, it is again seen as a critical element of empowerment and personalisation. Discussion on this theme by managers in Project 3 highlighted that lack of understanding regarding the purpose of recording can also cause variation in recording styles however.

Descriptions of I.ROC use were similar across all Projects, and showed a high level of consistency with I.ROC guidance. This is important because use of routine outcome measures in practice has been shown to vary considerably from the recommendations of tool developers (Happell, 2008c). One reason for this is argued to be the lack of consideration given to an instrument's feasibility during its development (Slade et al, 1999). It follows therefore that routine use of the tool as originally intended should reflect feasibility. As actual use of I.ROC in practice was found to be relatively similar in most regards to guidelines on its use, feasibility of the tool is supported.

7:6.2. Positive consequences of use

Interviews and focus groups with staff and service users identified several positive consequences of I.ROC use, many of which stem from the collaborative way in which it is used. Strong evidence exists within the literature for the impact of the 'therapeutic relationship' on outcomes for service users (Anthony & Mizock, 2014), collaborative support relationships based on a mutual humanity are identified as essential for the success of recovery oriented practice (Borg & Kristiansen, 2004; Chester et al., 2016). Therapeutic relationships were central to discussions of what works in support within service user interviews in Project 4, and support relationships were recognised as crucial to successful use of I.ROC within all Projects. Collaboration was a key theme within Project 1, participants emphasised the importance of completion as a supportive, interactive process, and this theme was mirrored within later projects.

Practitioners in Projects 2 and 3 described I.ROC as particularly useful within the establishment of new therapeutic relationships, by providing a structure encouraging transparency and exploration of both staff and service user's

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hopes and intentions for support. Managers saw this as a useful way of establishing boundaries in the support relationship, although this remains a contentious issue both within Penumbra and within the wider recovery debate (Borg & Kristiansen, 2004). Similar to the described benefits of use of the Recovery Star (Tickle et al., 2013), I.ROC can be used to gather new information; its use ensures that difficult topics are covered early in support, and joint exploration of the indicators facilitates a deeper, mutual understanding of underlying issues and priorities for the service user. I.ROC questions were described as both holistic and ‘providing focus’ for those entering service, for whom their current situation may feel overwhelming.

A central part of I.ROC discussions in Project 3, the ability to aggregate results was acknowledged to be helpful for service and organisation level monitoring. Aggregate baseline information and change over time was described as useful for identifying key areas for service improvement, and for demonstrating impact to external stakeholders such as funders. Service-level benefits of I.ROC use mirror those expected of routine outcome measures. As argued by (Happell, 2008a) however, the ROMs currently in use do not reflect personal outcomes. The results of the current study suggest a role for I.ROC as a ROM that addresses this gap in service level reporting. In Scotland, use of personal outcomes tools to measure service level outcomes presents a major challenge (Miller & Barrie, 2016); tools must remain meaningful at a personal level, whilst providing the service with quantifiable results. Successful use of outcome measures requires clear guidance and training on outcomes focused conversations, reflective reporting, and use of aggregate results (Cook, 2017.)

Person-centred planning, defined as *“an ongoing process of collaboration between an individual and his or her care team members, which results in the co-creation of an action plan to assist the person in achieving his or her unique goals”* (Miller et al, 2017, p.6), is recognised a fundamental aspect of recovery (Department of Health and Human Services, 2004), and of supporting people to achieve personal outcomes (Miller et al, 2017). Across the four projects reported here, ‘enabling personal planning’ emerged as a key theme in discussions of the positive applications of I.ROC. Particularly for people not

used to being asked their opinion or thinking about the future, identification of personal outcomes can be a difficult process, and practitioners can be sceptical about supported people's ability to engage in this process (Zubkoff et al., 2016). Both practitioners and people using services in Project 1 described how the I.ROC conversation and review of progress can help to overcome this challenge, by engaging people in a structured conversation about their personal strengths, priorities and intended outcomes for support that could then be used to inform development of a personal plan. Three-monthly reviews enable progress towards goals set within support plans to be collaboratively evaluated, and provide service users with a positive affirmation of the changes they have made. This was identified by service users in Project 1 as a helpful process even during challenging periods when no progress or negative changes had occurred, by serving as a visual reminder of their growing resilience and their ability to make progress. This is consistent with previous studies which have found that actively engaging in the personal planning process can increase a person's confidence and self-management skills (Adam & Greider, 2014; Tondora et al., 2014).

Discussion of the benefits of I.ROC use showed agreement across studies and different stakeholder groups that I.ROC plays a useful role within personal recovery, even where conceptualisations of recovery differ. Service user accounts of support in Project 4 provided a picture of what recovery means to people using I.ROC. In accordance with previous studies (e.g. Brown & Kandirikirira, 2008), participants described their experiences in terms that made clear the journey of learning and discovery they had been on, and which highlighted not only the roles played by others in this process, but also by themselves, with many highlighting the importance of independence, freedom and responsibility. These accounts are consistent with the conceptualisation of recovery adopted within I.ROC and the wider HOPE framework, as described in Chapter 1, providing further evidence of the face validity and relevance of the measure.

People using services talked openly and honestly about their experiences of ill health and recovery, and of mental health services in which for many, Penumbra was but one branch in a tree of support for which I.ROC represents just one leaf. Participants recognised Penumbra's approach to support as different, describing the impact of tools and techniques used by workers, as well as the personal qualities of the staff. This finding was consistent with accounts of I.ROC use in other projects, which positioned I.ROC as both one of several key-working tools, and as a central component of Penumbra's recovery-focused approach. Flexibility to use the tool as and when appropriate, and to adapt the style of use to suit each person was recognised across all Projects as fundamental to maintaining I.ROC's status as a useful tool. Miller and colleagues point out that such an approach is crucial to personalisation; *"being person-centered requires flexibility and adaptability, to meet people wherever they are in their recovery process."* (Miller et al., 2017; p.11) Staff discussions across the Projects elicited an underlying sense of ownership of I.ROC and a sense of pride in the tool and how it is used.

7:6.3. Do the benefits of using I.ROC outweigh the costs?

Several issues related to I.ROC use affect its feasibility, both at a personal and at a service level. Negative consequences of use were also identified, and included disempowerment and emotional impact of completing I.ROC at the personal level; at the service level, lack of communication regarding intended outcomes of I.ROC use related to perceptions of 'service recovery' and performance management.

The recovery journey is a unique, non-linear experience. I.ROC use as a way to measure this journey can be immensely personal, emotional and challenging, depending on current stage of recovery. Accounts of I.ROC use within the initial Project demonstrated that engagement with I.ROC requires self-perception and honesty; this can be a stressful or otherwise negative experience for people who feel they have not made progress. Lack of honesty and acceptance of one's mental health and current situation was identified as a key barrier to I.ROC use, and to recovery in general by service users. A person's ability to open up and discuss their feelings honestly was found to impact both their

willingness to engage in the process of completing I.ROC, their resulting sense of empowerment or disempowerment in the process, and the potential emotional impact of the tool. Acceptance and insight are identified as the starting point for recovery, particularly within stage models (Davidson et al., 2010); motivation for change and the key role played by the person within their own recovery journey is widely recognised (Leamy et al., 2011). This is consistent with service user accounts in Project 4 of a three-stage model of recovery. Participants described a pre-recovery stage of illness, trauma, crisis and survival. A middle phase was defined by growing awareness of illness, help seeking, and finding effective support. One theme which emerged strongly at this point within people's stories was the importance of honesty in being able to come to terms with, acknowledge or accept the situation. The final stage represented a hope for the future for participants in this study, and was defined by independence, autonomy and a life beyond support. For a more detailed discussion of stages of recovery, see Chapter 2. For discussion of Project 4 themes, see Appendix 18.

Investigation of manager's experiences of developing and using I.ROC in practice in Project 3 revealed several service level barriers to use, including staff attitudes, service models and resource restrictions. Database issues and concerns regarding accuracy and confidentiality of data were reported by practitioners across the Projects. Challenges reported here closely resemble those identified in practitioner experiences of using of the Recovery Star (Tickle et al., 2013), and within the implementation of ROP more broadly (Gee et al., 2016). Resource availability was identified as a significant factor within the successful implementation of recovery-oriented practice (Chester et al., 2016). Given the importance of the therapeutic relationship, it is also not surprising that staff attitudes are identified as one of the key moderators of ROP success within the literature (Tsai et al, 2011). Service level barriers to I.ROC use are closely linked, with two-way relationships apparent between each barrier. Availability of adequate resources, particularly time (e.g. lack of time to attend training) may impact staff attitudes towards the measure, whilst service models (e.g. 24-hour supported accommodation vs. low-intensity social support) may

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affect the availability of such resources. Staff already holding particular beliefs or expectations regarding recovery may also be predisposed towards working in certain types of services. This highlights the importance of a constructive organisational culture (Clossey & Rheinheimer, 2014), within which a transparent framework for recovery can be successfully communicated across all service models, as discussed in Chapter 2.

Given its current format as a facilitated self-assessment requiring substantial time and cognitive ability, and the three-month review period needed to complete as intended, I.ROC is acknowledged to generally be unsuitable for use in crisis-level, very short-term services, or services working with people with serious cognitive impairments (although some evidence now suggests that I.ROC can be used successfully with people with alcohol related brain damage; Rudd & Smith, 2017). Implementation of I.ROC is pricey, both in terms of upfront costs and investment in resource allocation and staff training. From this perspective, I.ROC could be argued to be unfeasible as it fails to meet several of the criteria set out by Slade and colleagues (1999). However, it appears that Penumbra intend I.ROC as the flagship for a recovery-oriented approach and see the tool as far more than a routine outcome measure. Services across health and social care are coming under increasing pressure to evidence the personal outcomes of the work that they do, and mental health organisations are encouraged to engage in recovery-focused reform (see Chapter 2 for discussion). It therefore seems likely that the positive outcomes of I.ROC use identified within this Chapter outweigh the barriers and potential negative consequences. External support for this conclusion comes from the experiences of organisations that have implemented I.ROC. For example, Palmer (2015) writes

“from an organisational perspective, introducing I.ROC has demonstrated a commitment and drive to ensure we are placing our service users in the driving seat of their recovery journeys... It ensures that we are asking for the service user’s perspective and creating a partnership between worker and service user, establishing a client centred approach.” (Palmer, 2015, p. 37).

Organisations seeking to both establish recovery-oriented practice and measure the recovery outcomes of people using their services, should therefore consider

I.ROC a viable option, but only if they are willing to invest time and money in its implementation.

7:6.4. Limitations

This chapter presented the secondary data analysis of four qualitative studies. Although all designed to investigate elements of the development and use of I.ROC, or the experiences of service users supported by Penumbra, Projects varied in terms of original aim and population. For example, questions felt to be pertinent to the aims of this project (e.g. 'what do you see as the purpose of I.ROC) were asked directly within some of the component studies, but not in others. Project 4 for example focused on the experiences of Penumbra service users and the impact of service use on recovery more widely, with only a small number of direct references to I.ROC, but its wider frame of reference provides context for I.ROC within Penumbra support. The analytical approach evolved over the length of this project (see Chapter 4), in order to incorporate relevant themes from each of the component projects whilst also reflect emerging themes from across the synthesised dataset.

The influence of the researcher's position within Penumbra and the inherent proximity of all I.ROC-related research to the organisation is acknowledged as a potential source of bias, particularly for studies employing a face to face method of data collection with staff who may be concerned about their responses impacting their employment. Staff and service users from only a small number of projects in which I.ROC is used well, and the culture is most reflective of the organisation's HOPE framework chose to participate. In Project 4, people were invited to participate if they felt they had made positive progress towards recovery. Whilst helpful for reviewing the potential benefits of I.ROC, these Projects do not reflect the full range of views on recovery, or I.ROC use. Follow-up studies should seek to balance the views of staff and service users represented here therefore by actively recruiting participants who are less positive about its use, or who do not feel they have made significant progress in their recovery. More research should also be done to evaluate the use of I.ROC, its benefits and barriers, out-with Penumbra.

7:6.5. Implications

These findings support those reported in Chapter 3 and published in the paper by Ion et al (2013), which found that I.ROC has high usability, a crucial element of routinely used outcome measures (Trauer, 2010b). With reported benefits spanning personal and service-level outcomes, this Chapter supports use of I.ROC to both measure and make a difference to recovery for people using mental health services. Barriers to successful use of I.ROC cover both individual and organisational challenges, and highlight the need for cultural support for recovery, staff training and guidance. Finally, this Chapter highlights the importance of support relationships in successful recovery oriented-practice, and suggests a role for I.ROC within development of the therapeutic relationship.

Chapter 8. Discussion and Conclusions

Ch8, Section 1. Introduction

The research presented over the course of the past six Chapters responds to the growing need for culturally relevant, psychometrically sound and practically useful measures of personal recovery (Law et al., 2012). Driven by mental health charity Penumbra's desire to assess the validity of the recovery measure they had developed, this thesis has presented an applied evaluation of their recovery measurement tool, the Individual Recovery Outcomes Counter (I.ROC). The multiple levels at which I.ROC is intended for use, for example as a systematic measure and a therapeutic tool, necessitated a holistic approach to psychometric evaluation, with the objective of answering the following two research questions:

- To what extent can I.ROC be considered a valid and reliable measure of personal recovery?
- To what extent can I.ROC be considered a feasible, efficacious and useful tool for application in mental health services?

Ch8, Section 2. Methods

As outlined in Chapter 4, a mixed methods action-research approach was employed, combining traditional psychometric analysis with qualitative exploration of the use of I.ROC in practice to holistically assess the validity and reliability of I.ROC as a meaningful measure of recovery. Literature relating to recovery was reviewed in Chapter 2 to contextualise I.ROC within current theory, research and practice, and to provide an initial evaluation of the content validity of the measure. A series of four qualitative studies were used as the primary sources for an examination of the I.ROC development process (Chapter 5), and to evaluate the consequential validity of I.ROC (Chapter 7). Service users and staff participated in interviews and focus groups exploring how I.ROC is used in practice, and opinions on the efficacy of this approach. Quantitative data collected from five investigative studies was used alongside routinely collected data to assess structural validity, convergent validity and reliability of I.ROC, the results of which are presented in Chapter 6. Other comparable measures of personal recovery presented in the literature were

systematically reviewed in Chapter 3, and the findings used to establish a set of benchmarks against which I.ROC's psychometric properties are assessed.

Ch8, Section 3. Findings

8:3.1. Review of the literature on recovery

Recovery is commonly described as a journey of personal growth beyond mental illness, which occurs irrespective of the persistence of clinical symptoms (Anthony, 1993). It is defined by the discovery of hope, positive self-identity, empowerment, purpose and meaning, and connection with people, including family, friends and community (Brown & Kandirikirira, 2007). As demonstrated in Chapter 2, interest in recovery has grown rapidly over the past decade. Recovery rhetoric now underpins mental health policy across the western world (Slade et al., 2008), and mental health services are coming under increasing pressure to evidence that the work they do is recovery-oriented. Despite a huge growth in interest in recovery, the concept itself remains vague; a multitude of papers have attempted to pin down a working definition of recovery with varying success. So far, the best operational definition of recovery comes courtesy of Mary Leamy and her colleagues, who define the processes of recovery as consisting of five domains labelled Connectedness, Hope, Identity, Meaning and Empowerment (CHIME; Leamy et al, 2011). This definition is not exhaustive however; as demonstrated in Chapter 2, CHIME fails to sufficiently recognise several processes which can impede or facilitate recovery, including physical and mental health and wellbeing, and having a safe and secure base from which to work towards recovery. Chapter 3 demonstrates that although such aspects are commonly unaccounted for within theoretical models, they are often represented within measures of personal recovery.

This thesis therefore offers a broader operational definition of personal recovery as both process and outcome. Distinct but overlapping the concept of clinical recovery, personal recovery is considered to comprise Seven core domains are recognised within this model, including the five CHIME components plus 'daily living' (including personal safety & security), and 'physical and mental health and wellbeing'.

Recovery has been critiqued for putting too much emphasis on personal responsibility and control, not allowing for cultural differences or duly acknowledging the role of other people or society (Bayetti et al, 2016; Hopper, 2008). This is

reflected in the current model by positioning personal and clinical recovery within the social environment, highlighting the interplay between mental illness, wellbeing and social and cultural factors. This conceptualisation maps well against the twelve indicators contained within I.ROC, as shown in Table 2.5, Chapter 2.

As reported in Chapter 5, I.ROC was developed to measure recovery at both a personal and aggregate level, to evaluate the extent to which the service helps people achieve recovery outcomes; put another way, one use for I.ROC is to measure the extent to which a service is recovery-oriented, a key objective of mental health policy in Scotland (Scottish Government, 2017) and internationally (Slade, 2010a). Recovery-oriented practice is hopeful, inclusive and respectful; it promotes equality and human rights, citizenship and meaningful participation in community and social activities, and encourages positive risk-taking (Chapter 2, Section 2:3.4.). Accounts of Penumbra given by people using its services (Chapter 7) are consistent with this description, and I.ROC is identified as a significant aspect of the organisation's approach, supporting ecological validity of the instrument.

Chapter 2 revealed that services that fully embrace a recovery philosophy are those which, like Penumbra, adopt a culture that is person-centred, strengths-based, educational and empowering (Le Boutillier et al, 2015). Research shows that many organisations have only superficially adopted recovery (Davidson et al, 2005; Drake & Whitley, 2014). Implementation of recovery-oriented practice requires significant culture change at all organisational levels (Clossey & Rheinheimer, 2014). Recovery measures like I.ROC are argued to play a key role in such culture change, by enabling the recovery-orientation of services to be evaluated (Slade, 2010). Descriptions of both I.ROC implementation (Chapter 5) and its current use in practice (Chapter 7) given by stakeholders demonstrate a broader variety of ways in which recovery measures can facilitate culture change, for example through development of a recovery 'brand' and a shared language of recovery, which helps operationalise the recovery framework.

8:3.2. Recovery measurement

Mental health and social care organisations are coming under increasing pressure to measure the outcomes of the support that they provide. Scottish government literature promotes the use of outcome measures for the evaluation of quality in healthcare services (Coia & Glassborow, 2009). Popular routine outcome measures have been widely criticised for not taking a user perspective (Happell, 2008a) and not considering feasibility of use in practice during psychometric evaluations (Slade et al., 1999). Measures of personal recovery are identified as one alternative to such ROM's. Promoting the measurement of personally-meaningful outcomes from a user-perspective, recovery measures can be used to help evaluate and improve the recovery-orientation of services (Slade et al., 1999). A future role is even envisioned for such measures in the development of accreditation for recovery-focused practice (Slade et al., 1999). Consequently, a burgeoning number of recovery instruments have become available, which measure different aspects of the concept, and at different levels. For example, tools exist to evaluate a service's recovery orientation; to measure people's attitudes towards or knowledge of recovery; and to measure outcomes, processes or stages of recovery at a personal level.

Chapter 3 systematically reviewed instruments designed to measure recovery at a personal level. Ten measures were identified as comparable to I.ROC in that they: quantitatively measure recovery from the perspective of the person experiencing it; are applicable irrespective of mental illness diagnosis; and have been scientifically scrutinised. These instruments were evaluated based on four criteria: involvement of people with lived experience in the tool's development; (traditional) psychometric properties; feasibility of use in practice; and applicability to the Scottish context (including conceptual fit with CHIME and the wider seven-component model). Results showed that no measure yet meets all evaluating criteria to a high enough standard to be considered a 'gold standard' against which I.ROC could be compared. For example, whilst RAS demonstrates the most consistent structural validity; the QPR has the best internal consistency; development of the CRM demonstrates a very high level of user involvement; but only the Recovery Star was designed to be used collaboratively, as a key working tool. These findings were used to develop a set of benchmarks for reviewing different aspects of I.ROC's psychometric properties, as shown in Table 8.2.

8:3.3. I.ROC Development

I.ROC was created by Penumbra in order to ‘measure the distance travelled’ of people using its services, and to demonstrate ‘meaningful’ organisational impact. Reconstruction of the I.ROC development process in Chapter 5 showed it to follow an ‘action research’ design, although not explicitly planned that way, in which decisions were guided by experienced mental health practitioners, some of whom can draw on their own lived experience of recovery. The iterative cycle of collective reflection and action through which I.ROC was constructed, reviewed, and reconstructed although unusual, resembles the process used to develop tools such as the Recovery Star (MacKeith, 2011; Onifade, 2011) and HiWay (Boniface et al., 2015). Initially, development and testing procedures were determined by the practical requirements and constraints of Penumbra. This process appears less methodical than the item creation and validation procedures employed for most measures reviewed in Chapter 3, but latter stages of I.ROC development and testing (post-KTP, 2011) have followed a more systematic approach. Consequently, on the whole, I.ROC development is not incomparable to that of other recovery measures.

8:3.4. Face Validity

Feedback from practitioners and people with lived experience explored in Chapter 5 was found to support the feasibility and face validity of I.ROC. Participants were positive in their assessments of the measure, describing it as comprehensive, relevant to recovery and easy to use. Staff described how the format of the measure elicits a sense of pride and value in their work, but several challenges were identified relating to the structure and wording of the questionnaire itself. Participation & Control and Self-management were reported to be too similar; several questions were identified as consisting of too many parts; Purpose & Direction was described as too focused on employment, even after wording changes. This feedback therefore identified several areas for further examination, which were explored during the following quantitative testing.

8:3.5. Statistical psychometric testing

Recent reviews have highlighted the need for more ‘substantial and robust’ evaluation of the psychometric properties of tools designed to measure recovery

(Shanks et al., 2013). This section of the thesis aimed to address this for I.ROC. In general, the quantitative findings support published studies which show I.ROC to be a valid and reliable measure of recovery (Monger et al, 2013; Dickens et al, 2017). As demonstrated in Table 8.2, results of I.ROC statistical testing shows I.ROC to be broadly comparable to the ten measures of personal recovery reviewed in Chapter 3, meeting and generally surpassing all minimum benchmarks set within the review.

Internal consistency of the overall measure and of the three subdomains was good, with coefficients exceeding the minimum cut-offs of acceptability set by Ponterotto & Ruckdeschel (2007) in almost all cases. Results showed that I.ROC is a reliable tool, providing a consistent measurement of individual recovery over a short period of time (average 8-12 days). The results suggest that I.ROC is not as sensitive to minor changes as the GHQ. I.ROC scores showed no significant change over a period of approximately 8 days, whilst the smaller sample that completed the GHQ at both time points showed a small (but not significant) reduction in scores at time two. This suggests that, in line with developers' recommendations, I.ROC measures change over a longer period of time but cannot reliably highlight smaller changes on a short time frame. More testing is needed to evaluate sensitivity to change of the measure.

Tools developed to measure recovery should comprehensively reflect all underlying 'dimensions of recovery' (Ralph, 2000), rather than focus on one particular aspect (Sklar et al, 2013). To evaluate the extent to which I.ROC reflects the multifaceted nature of recovery, convergent validity of the scale was assessed. Total and subscale I.ROC scores were found to correlate as expected with a range of clinical, personal and recovery-related measures. As predicted, correlation effect sizes show I.ROC to be more closely associated with wellbeing and personal recovery than clinical recovery and measures of individual components of recovery. These findings are similar to those reported for other recovery measures, as outlined in Chapter 3, and support the construct validity of I.ROC as a measure of personal recovery. Findings also provide evidence supporting the existence of separate but closely related concepts of clinical and personal recovery, as proposed within several models of recovery (e.g. Whitley & Drake, 2010).

Exploratory Factor Analysis findings varied between datasets, but largely revealed a structure similar to two-factor solutions reported by Monger et al (2013) and Dickens

et al (2017). Confirmatory Factor Analysis showed two-factor structures to be a similarly good fit to the four-factor HOPE framework, supporting both the finding of the original study (Monger et al, 2013) and the validity of the model adopted by Penumbra as the basis of their recovery approach (see Chapter 1 for further description). An iterative application of CFA concluded however that a three-factor model of recovery provides the best fit for I.ROC; the factors, labelled 'personal & mental wellbeing', 'daily living' and 'activity & physical health' are consistent with the broad conceptualisation of personal recovery used within this thesis (see Chapter 2). Each stage of the factor analysis conducted within this process suggested a different model for I.ROC. This is not an uncommon problem; published studies of other recovery measures have frequently reported significant variation in results of factor analysis (see Chapter 3). One reason for this may be the level of subjectivity required during the analysis and interpretation of factor analysis, as discussed in Chapter 4. Nevertheless, it is recommended that further research with a fully independent sample should be conducted, to compare the fit of two, three and four factor solutions for I.ROC to try to further clarify the instrument's underlying structure.

There are several other elements of I.ROC's psychometrics that could be improved. Significant floor or ceiling effects on some items indicate an issue with the 1-6 scale, as highlighted in the 2017 study by this research group (Dickens et al, 2017). Additionally, Social Network and Exercise & Activity correlated far lower with the other I.ROC questions than all other indicators, whilst Purpose & Direction commonly returned low inter-item correlations. These findings are consistent with the qualitative feedback outlined in Chapter 5, which suggested confusion or dissatisfaction with the wording of these questions. Changes to wording or format of these items are therefore recommended; further investigation into the I.ROC questions must be carried out in collaboration with people with lived experience of recovery to ascertain the best way to improve these items.

8:3.6. Feasibility and Consequential Validity

Practitioner and service user accounts of working with I.ROC were explored in Chapter 7 to evaluate the consequential validity and feasibility of the instrument. Designed to be used as not only an outcomes measure but also a therapeutic tool,

feasibility must consider both uses, weighing traditional feasibility markers such as brevity and simplicity for professionals, with an evaluation of whether the time taken to complete the tool is worthwhile. Results outlined below and summarised in Table 8.1, demonstrate that the feasibility pro's and positive outcomes of I.ROC use identified within this thesis outweigh the barriers and potential negative consequences.

I.ROC has become well embedded within routine support practices in Penumbra. Accounts of use in practice are broadly consistent with best-practice guidelines developed by the charity; staff report using the tool as a facilitated self-assessment on a three-monthly basis with almost all people they support, and I.ROC was described as a useful and usable tool by both practitioners and service users.

At an individual level, I.ROC is described by participants in Chapter 7 as facilitating recovery by guiding reflection and encouraging a focus of strengths and positive change. Many other perceived benefits of the tool identified by staff and people using services stem from the collaborative and reflective way in which it is used. For example, participants described I.ROC as providing a framework for outcomes-focused conversations and facilitating the development of strong therapeutic relationships, recognised as a fundamental property of ROP (e.g. Hyun et al., 2014; see Chapter 2, Section 2:3.4). The visual representation of change over time provided by I.ROC was identified by participants as helpful in reviewing progress, and the process of completing the instrument informs personal support planning, another key aspect of ROP (Miller et al, 2017). Managers found I.ROC results useful for reporting recovery-related service outcomes and helping support implementation of Penumbra's approach. These themes are consistent with descriptions of recovery-oriented practice, which emphasise partnership, collaboration, empowerment, person-centred planning and a strengths-based approach (Le Boutillier et al., 2015); and with recommendations for implementing ROP, in which the importance of a constructive organisational culture is highlighted (Clossey & Rheinheimer, 2014). For a more detailed discussion of recovery-oriented practice, see Chapter 2. Several potential issues regarding I.ROC use were also identified however. Recording practice showed considerable variation, and participants were concerned about the accuracy and confidentiality of the collected data. Staff portrayed different

understandings of the reasons for recording and reporting I.ROC data, which were linked to concerns that I.ROC implementation was administratively driven and may be used for performance management purposes; a common concern regarding the use of outcomes data (Miller & Barrie, 2016). Practitioners’ negative attitudes towards I.ROC were identified as a small but persistent challenge by managers, particularly amongst long-term staff resistant to change. Faster uptake of I.ROC training by new staff was identified as a way of preventing such attitudes developing.

Consequential validity	
Positive consequences	Negative consequences
Providing a framework for outcomes-focused conversations	Disempowerment
Building the therapeutic relationship	Emotional impact of completing I.ROC
Informing personal support planning	‘Service recovery’
Reviewing progress	Performance management
Reporting recovery results	
Supporting personal recovery	
Enabling Penumbra’s approach to recovery-oriented practice.	
Feasibility	
Pro's	Con's
Short	Takes time
Simple	Needs training
Relevant and meaningful for most people/services	Not relevant for all services/people
Acceptable; flexible process; does not duplicate other information collected	Accessibility of content could be further improved
Perceived to be of value by staff and service users	Cost attached
Used as recommended without significant difficulty	

Table 8.1: Weighing the pro's and con's of I.ROC use

Insufficient resources, particularly time, was frequently reported as a barrier. I.ROC completion is described as a process of facilitated self-assessment, within which the tool is used to elicit a conversation exploring the service user’s wellbeing, personal outcomes and hopes for the future. The level of engagement and honest reflection required from respondents to use I.ROC in this way means that it frequently takes an hour or more to complete. The process can be cognitively and emotionally demanding for service users, which means that in its current format, I.ROC is not a good fit for all service models or for all people, and it is recommended that alternative formats are considered. For example, changes could incorporate more pictures, or simplify the language to improve accessibility. One such adaptation is proposed in Ch8, Section 5.

critierion	Top measures	Measures meeting benchmark	Benchmark minimum requirements	Does I.ROC meet minimum benchmark?	
Consumers involved in development	CRM; QPR	7	Development included focus groups/interviews with consumers as part of an iterative development process	Yes	At least some development group members with lived experience; service user feedback gathered through focus groups as part of an iterative development process
Use in practice	RAS	6	At least one study reporting use of the measure in ROP or elsewhere	Yes	Chapter 7 explores the use of I.ROC in practice
Method of use	MHRS	10	The instrument is developed to be used as a self-report	Yes	Designed as a facilitated self assessment; evaluation of use as such not published
Stakeholder feedback	QPR; RAS	6	Staff or service user feedback on measure collected and reported	Yes	Feedback on the measure was published by Ion et al, 2013
Chime total score	QPR; MHRM	8	90% or more items mapping successfully to CHIME; all 5 areas of CHIME covered by the questionnaire.	Yes	92% of items map to CHIME; all 5 areas covered
Test retest reliability	QPR	4	Test-retest reliability evaluated in at least one study; reporting of the results includes the length of time between testings and rationale for this. Correlation coefficient as a minimum requirement for analysis.	Yes	ICC range =.85** to .91** for total and subscales
Inter-rater reliability	MHRS		This criterion is not routinely assessed in psychometric evaluations of recovery measures; no benchmark is set for I.ROC	-	Not assessed
Internal consistency	QPR	5	Internal consistency reported for total measure and subscales; coefficient relates to a rating of 'fair' or above using acceptability matrix.	Yes	Results range from .75 to .92 for total and from .5 to .87 for subscales across the studies; only one subscale in one study failed to meet the minimum 'fair' acceptability
Predictive validity	SISR (QPR)	6	Predictive validity against a range of measures assessed in at least one study. Hypotheses clearly stated; coefficients reported and meeting a minimum standard of 0.3 (medium effect size; George & Mallery, 2003); power >0.8	Yes	I.ROC total score correlations exceeded 0.5 and reached significance in the expected direction with all measures of personal recovery, clinical recovery and recovery-related constructs (e.g. hope) with the exception of IPAQ
Structural validity	RAS	5	Structural validity using factor analysis or Rasch analysis methodology assessed in at least one study; EFA factor retention based on more than one method (e.g. scree plot; Eigen values); adequate sample size (based on 10 ptps per item rule of thumb)	Yes	Iterative process of factor analysis used to assess structural validity across six Studies. Results suggest a three-factor solution.
Cross-cultural validity	RAS	9	Not routinely assessed (50% measures did not report cross-cultural validity), cross-cultural validity testing should follow the establishment of basic psychometric properties. No benchmark is set for this criterion.	-	Cross-cultural validity is currently being assessed in several international studies as discussed in this Chapter.
Responsiveness	MHRS		The majority of measures have not been assessed for responsiveness. No benchmark is set for this criterion.	-	Not assessed

Table 8.2: Comparing I.ROC psychometric results to Chapter 3 benchmarks

Ch8, Section 4. Strengths & limitations of research approach

Each specific aspect of this research has been evaluated within the body of this thesis, but the main overarching strengths and limitations of the approach as a whole are examined here to provide an overarching critique of the method. The literature review presented in Chapter 2 was conducted over a six-year period, and covered the full, broad scope of the research project, making the amount of literature to be reviewed very difficult to manage, particularly for a single researcher. A similar limitation was experienced in Chapter 3; data collection and evaluation using the data extraction tool was completed largely by one researcher. Although each step of the analysis and conclusions were agreed by the research supervisor, and a second researcher used the extraction tool for a small number of the included studies to triangulate findings, the potential for bias in this process is acknowledged. Several sources of bias were also identified within the methodologies used in the empirical studies within this thesis as discussed in Chapter 4. These included sampling and recruitment biases, and the effect of participants' prior knowledge or relationship with I.ROC and/or Penumbra. Variation in the approaches taken to each study provided a broader set of results and helped reduce bias in the collection and interpretation of results, but caused considerable difficulty when deciding how to thematically analyse the results of qualitative studies, resulted in long delays between collection of data and analysis in some cases, and also caused variation in the amount of demographic data collected between studies making cross-comparisons challenging.

The key limitations outlined above and also the strengths of this thesis stem from the extensive volume of data and studies included within this thesis, as well as from the action research and mixed-methods approach taken to data collection and analysis, as discussed below.

8:4.1. Volume of data

Studies used within this thesis were conducted as part of a larger multi-faceted research project evaluating and developing I.ROC. For the sake of brevity, a subset comprising four qualitative and six quantitative studies was selected. These were chosen to represent the full breadth of psychometric properties evaluated and the full range of participant demographics in the fewest possible studies. This still represents a substantial volume of data however; in total quantitative data from 10,139 people,

and qualitative data from 59 I.ROC stakeholders was included. Literature dedicated to recovery and recovery measurement was equally sizeable. Deciding how best to analyse and present these studies in a way that produced a consistently clear narrative but allowed for adequate academic depth presented a significant challenge. For example, themes arising from the initial analysis of each of the four qualitative projects were extensive, but no one project covered all aspects of I.ROC use in practice from enough perspectives to enable them to be used in isolation. In order to cover themes in enough detail, the full findings from each individual project could therefore not be included. Instead, an overview of findings most relevant to I.ROC use in practice was presented, enabling discussion and evaluation of each of the key themes.

8:4.2. Action Research

As this research project evolved from a knowledge transfer partnership (see Chapter 1), and was completed in situ within Penumbra, an action research methodology was adopted. The strengths of this approach lie in its focus on collaboration, 'real world' knowledge and applications. For tool development, action research necessitates the genuine inclusion of the people intended to use it, and involves an iterative process of development and redesign based on the opinions and experiences of immediate stakeholders. This approach ensured that I.ROC evaluation and modification met the key criterion of meaningful involvement of people with lived experience (Law et al., 2012).

A widely-recognised ethical issue in action research (see Brydon-Miller, 2008 for a detailed discussion of action research ethics), one of the main challenges of this approach has been balancing the conflicting demands of business and research. This has been tackled by maintaining open and honest communications, including clear statement of the objectives and values of each partner, and recognition of the hierarchies within the research team (see **Error! Reference source not found.**). The project was initiated by Penumbra and driven by their desire to have their pre-existing instrument 'validated' (Borsboom et al, 2004). The collaborative and embedded nature of the research resulted in a loss of experimental control (Davis & Valfer, 1976); for example, to some extent the timing of planned studies was determined by current priorities of Penumbra, and the other work commitments of

the researcher within their role at the organisation. Statistical approaches to instrument development, such as described by Hinkin (1998), for example the use of principal components analysis for the removal of items (Reise et al, 2000), could not be applied as the existing tool was too short, and already widely used. Any potential modifications to I.ROC needed to fit the requirements of the organisation who needed a holistic, comprehensive and useful instrument for use as both an outcomes measure and conversational, collaborative tool (Boniface et al., 2015), and were generally happy with the existing design of the questionnaire. One positive implication of this was that a broader and more holistic view of psychometrics which accounted for use in practice, was needed (Messick, 1989), as discussed below.

8:4.2.1 Researcher positioning

The lead researcher was ensconced within Penumbra throughout the project and took on the position of project manager for the duration of the research. This facilitated the collaboration and consultation with stakeholders, a fundamental aspect of action research, and enabled a higher level of access to knowledge, research, support and study participants than would have otherwise been possible. Close ties between the researcher, the organisation and I.ROC may have also influenced the data collection and analysis process in less positive ways however. Particularly for qualitative research examining the feasibility, face and consequential validity of the measure, the fact that this research was not entirely independent of Penumbra may have resulted in sampling and reporting bias (see Chapter 4 for discussion).

Although the anonymity and confidentiality of participants in each study was clearly stated, staff and service users holding more critical views of I.ROC may have felt uncomfortable participating, particularly in research using an interview or focus group design (and thereby less anonymous in nature than e.g. a survey). Steps were taken to increase the distance between Penumbra and this research in such cases; for example, focus groups in Project 1 were conducted by an independent student from Abertay, whilst Angus council and Edinburgh University staff conducted interviews for Project 2 as part of a collaborative project (Miller & Barrie, 2016; Rudd, 2015). Nevertheless, it is important to note the applied nature of this research when considering the feedback and experiences of staff and people using services reported in Chapters 5 and 7. Further research exploring feasibility and consequential validity within other organisational settings is therefore recommended.

8:4.3. Mixed Methods

A mixed-methods approach to evaluating I.ROC was taken. This enabled a broader psychometric evaluation than can be completed using either quantitative or qualitative methods alone (Hasson-Ohayon et al, 2015), and ensured that statistical assessment was balanced against exploration of usability and feasibility, to develop a tool that is both scientifically sound and useful in practice (Slade et al., 1999). The pragmatic approach employed meant that many of the studies were conducted simultaneously. Although this is a less popular method than sequential designs, simultaneous use of qualitative and quantitative paradigms is fairly common within evaluation research (Palinkas et al, 2011). The two paradigms were used within this research to fulfil a complementarity function (Palinkas, 2011), to answer different but related questions about the psychometric properties and usability of I.ROC. As the action research approach taken meant that stakeholder opinions were often collected as an integral part of the research process and did not need to be collected separately through qualitative analysis, the simultaneous use of the two approaches is not considered problematic.

Ch8, Section 5. Discussion & implications for practice

Overall, this thesis provides support for the validity and reliability of I.ROC as a measure of recovery for people with past or present experience of mental ill-health (both clinical and self-reported). Findings demonstrate that I.ROC can be a useful tool for monitoring outcomes in mental health and social care settings. Inclusion within I.ROC of indicators focusing on physical health and activity suggest a use for I.ROC within wider evaluations, for example of physical activity interventions. Some now propose that recovery is situated within a wider framework of wellbeing, arguing that recovery is the *“journey through which people experience wellbeing”* (Papadopoulous et al, 2013, p. 145). Convergent validity with measures of general wellbeing support this view, and suggests that I.ROC could prove useful within wider health and social care settings, for example to help apply the recovery model in physical healthcare and rehabilitation (Bennett et al, 2014). Findings also provide initial support for the validity and reliability of I.ROC as a measure of self-reported recovery for people with trauma-related diagnoses, again demonstrating the wider application of I.ROC beyond the general community mental health environment for which it was initially developed.

I.ROC's focus on conversation and personal outcomes supports its use within supportive relationships. Researchers have long argued that recovery measures should not be used in a 'sterile manner' (Neil et al., 2009), but rather be used as aides to goal setting; information given during measure-driven discussions should not sit in isolation but be acted upon (Macpherson et al., 2015). Feedback from people who use I.ROC as practitioners, managers and people accessing mental health services demonstrates the feasibility, utility and positive outcomes of using I.ROC as a tool to promote as well as measure recovery-oriented practice.

In evaluating I.ROC, several issues relating to recovery-oriented practice and the use of outcome measures more broadly were highlighted.

The current focus on recovery within mental health policy (Slade, 2010) encourages services to adopt a recovery-orientation, and services are under increasing pressure to evidence the extent to which their work is recovery-oriented (Williams et al., 2012). This thesis defines recovery-oriented practice (ROP) as the delivery of mental health services that are hopeful, inclusive, respectful, person-centred, strengths-based, educational and empowering. Such services actively promote equality, human rights, citizenship and positive risk-taking. Central to recovery-oriented practice is the development of support relationships grounded in equality, mutual respect and humanity, trust and empathy (Borg & Kristiansen, 2004).

Whilst support for ROP is fairly unanimous, organisations have been slow to fully embrace recovery; changes in language not reflected by practice or attitudes (Boso et al., 2009; Kidd et al., 2015; Morera et al., 2017). Studies exploring the barriers to implementing ROP highlight a range of issues at the level of policy (Edgley et al., 2012; Pilgrim, 2008; Shera & Ramon, 2013), organisational culture (Clossey & Rheinheimer, 2014; Le Boutillier et al., 2015; 2011a), and individual staff attitudes, knowledge and behaviour. Challenges at each of these levels identified within the exploration of I.ROC development (Ch 5) and use in practice (Ch 7) result in several key recommendations for the support of ROP.

Research shows that recovery-oriented practice requires significant culture change, with recovery embedded in policy and practice across all organisational levels (Le Boutillier et al., 2015). In *Penumbra*, this was facilitated by the development of a

recovery 'brand' (Hatch, 2008). Centred around recovery tools I.ROC and HOPE, Penumbra uses consistent language, colours and images across all documentation to emphasise links between different tools. This provides practitioners with a clear approach supported by key working tools, and has created a common language of recovery shared by people both using and working within services. Organisations looking to implement a recovery approach should therefore consider how to best 'brand' recovery within their services

Positive staff attitude is essential for successful implementation of a recovery-oriented approach (Tsai et al., 2011). Staff belief in recovery and internal motivation are recognised as crucial for successful implementation of recovery-oriented practice (Williams et al, 2016), whilst engagement with a recovery programme can increase practitioners' pro-recovery behaviour (Slade et al., 2015a). Perceived autonomy and choice in the adoption of recovery values is crucial for staff to fully embrace the ideals of the paradigm. Clear bi-directional communication at every stage of culture change is crucial, enabling staff to feel involved and make informed decisions. As demonstrated within accounts of early I.ROC implementation (Ch 5), unclear and inconsistent communication when implementing organisational change can consequently lead to resistance or slow uptake (Greenhalgh et al., 2004).

Early resistance to I.ROC was overcome through a combination of staff consultation, training and recovery branding. Staff accounts of current I.ROC use subsequently elicited an underlying sense of ownership in I.ROC and a sense of pride in the tool and how it is used. This identifies a potential challenge in rolling out use of recovery tools beyond the organisation in which they are developed; for many, being able to fully get behind use of a tool comes not just from understanding how to use it, but also feeling involved in its development and deciding how to use it. Organisations looking to implement an outcome measure such as I.ROC should therefore consider how they can involve staff in this process.

Involvement of people with lived experience in the development of recovery-oriented practice is also crucial (Gillard et al, 2012; Slade et al, 2014). Involvement helps ensure accurate reflection of issues of importance to the people who will be using the service. Early I.ROC development lacked service user involvement, resulting in selection of indicators to reflect the intentions of the organisation, rather than

specifically what matters to people using services. Inclusion of people with lived experience can also be beneficial for their personal recovery, for example by facilitating movement beyond the negative constraints of the service user label (Hutchinson & Lovell, 2013). In keeping with this, service users who were eventually involved in the latter stages of I.ROC development reflected positively on this experience as empowering, and described how it made them feel heard and included. Not all people with lived experience want to be involved in service design however, and others complain of “*tokenism, slow progress and consultation fatigue*” (Pilgrim, 2008, p. 299). Involvement must therefore be genuine, intentional and optional.

Services are under increasing pressure to provide support with very limited resources (CCPS, 2012). Resources such as staffing levels and digital support systems affect the time available to complete recovery-promoting tools such as I.ROC, and can result in staff burnout, hindering the development of recovery-supporting therapeutic relationships (Onken et al., 2012). Under-resourcing should therefore be considered a serious risk factor for successful implementation of recovery tools and approaches.

Challenges embedding recovery in practice also arise from the “*polyvalent’ capaciousness of the term*” (Hopper, 2008, p. 307). Ambiguity may be an inherent property of a concept which describes a unique and subjective experience (Cameron & McGowan, 2013), but differences in understanding become an issue when interpreted differently within mental health practice; (Le Boutillier et al., 2015), or indeed how it is measured. Review of measures in Chapter 3 demonstrates that accepted instruments show little conceptual consistency, meaning that evaluations based on the measurement of ‘recovery’ are examining different things. This may be symptomatic of the inherent challenge of measuring a personal journey of recovery with standardised measures.

No matter the extent to which items on a questionnaire fit with a commonly agreed conceptualisation of recovery, its subjective nature will mean that there will be people for whom the instrument isn’t a good fit. Informed choice is recognised as a key aspect of personalisation (Leadbeater, 2004) and recovery-focused support (Le-Boutillier et al, 2013), but systematic use of standardised outcome measures often

does not allow non-use as a valid choice. For example, Penumbra do not make it mandatory for service users to complete I.ROC, but staff descriptions of 'selling I.ROC' to people who don't want to use it reflected a sense of failure if the service user did not engage in I.ROC use.

When only one outcome measure is used, people are presented with a binary choice of outcome measure or no outcome measure, contradicting key aspects of recovery focused practice such as empowerment and choice. Seeking a 'gold standard' for recovery measurement is perhaps therefore the wrong objective. Researchers should instead be seeking to create a suite of high-quality tools to measure this elusive concept in a variety of ways. Detailed information on the characteristics, similarities and differences between these measures should be made available to allow people in recovery to make an informed choice about what method best suits their needs. Guidance on how to map items across different measures and transpose their scoring would help services to produce comparable recovery-outcomes data without employing just one standardised instrument. Practitioners should be trained to offer a range of approaches to recovery measurement and personal planning so that services offered can be tailored to the needs of the individual.

To measure such a unique and varied concept, recovery measures must include subjective components, and their use must be flexible. I.ROC fits this description; use is described by practitioners as systematic yet flexible enough to be personalised. However, continued staff concerns that scores may not be 'accurate' reveal tension between personalisation and standardisation in the use of outcome measures. Organisations are under increasing pressure to balance conflicting demands to capture subjectively meaningful yet standardised, objective and quantifiable outcomes (Miller & Barrie, 2016a). As discussed within the work of Miller and Barrie (2016) and Cook (2017) in Scotland, use of personal outcomes tools to measure service level outcomes presents a major challenge. Tools must remain meaningful at a personal level, whilst providing the service with aggregable results, but because quantifiable data is arguably easier to collect and interpret, organisations tend to focus more on quantifiable outcomes than on the preservation of meaning at a personal level (Miller & Barrie, 2016a). Consequently, outcome

measurement has become largely eponymous with performance monitoring and quality assurance (Happell, 2008c). Measures can still prove useful within mental health care however, particularly if they collect qualitative as well as numerical data, and are used collaboratively as part of support (Hoy, 2014). Yet, as the current investigation of I.ROC use has shown, even where this is the case, concerns remain. To overcome staff concerns, it should be clearly communicated that aggregate outcomes data are used for practice improvement and service development only. Tool use must also be supported with clear guidance and training on outcomes focused conversations and reflective reporting, and guidelines on the use of aggregate results, for example to support good practice and improve services, not to set targets for performance monitoring.

Ch8, Section 6. Recommendations & future research

Based on the findings of this thesis, and on the observations made above, several avenues for further research are identified. As described below, work has already begun to pursue some of these recommendations.

8:6.1. Questionnaire modification

Findings of both quantitative and qualitative analysis in this thesis suggest several modifications to the scoring and wording of questions within I.ROC might be beneficial. Quantitative analysis identified I.ROC indicators such as Purpose & Direction, Social Network and Exercise & Activity as potential issues; these indicators do not show the same strength of inter-item correlations as the rest of the questions, and internal consistency findings from some studies marked them as redundant. I.ROC was also found not to correlate significantly with a measure of physical activity, suggesting divergence of these concepts. Themes arising from qualitative analysis suggest that one issue may be the wording of these items. It is therefore recommended that a further mixed methods study is conducted in order to first identify ways in which these questions can be improved, and then test the effects of changes on psychometric properties of the instrument.

Research should also seek to ascertain the most advantageous scoring system for I.ROC. Using the current format, several questions showed significant skew, and some participants felt that the 1-6 scale was 'too extreme', whilst others proposed a longer, ten-point scale. A further collaborative study by the current research group

recommended reducing the scale to four points (Dickens et al., 2017), however studies suggest that scales with four or less points are not popular with users (Preston & Colman, 2000). This research only examined the performance of the scale at baseline; as the tool is designed to measure change over time, a longitudinal research design could be used to further investigate this issue. Alternatively, an experimental design could be used in which each participant completes I.ROC using a variety of different scale options. Results could be compared to recovery ratings on a battery of recovery measures including a recovery analogue scale similar to that employed in the evaluation of the QPR (Beck et al., 2012), and feedback could be gathered from participants to assess which option gives the best results and is most acceptable to end users.

8:6.1.1 Development of I.ROC for different populations

As demonstrated in Chapter 6, I.ROC shows significant differences across the age range, with scores decreasing with age. Although this pattern of results could be reflective of genuine differences in the overall wellbeing of participants, it could also reflect differences in the relevance or acceptability of the questions for different age groups. For example, the question 'how often have you felt you have the skills you need to look after yourself' may be less relevant to young adults still living with their parents, particularly when used alongside prompts such as 'paying bills' and 'managing money'. Likewise, questions such as 'purpose and direction' may appear less relevant for retired older adults, particularly if, as suggested in Chapter 5, this question is still interpreted by respondents as relating to paid employment.

The prospect of adapting I.ROC for different age groups is currently being addressed by Penumbra, who began development of a version designed specifically for a younger population at the end of 2017. Feedback from high school pupils collected during an initial scoping exercise suggested that whilst all indicators were perceived as important, the language of the questions and particularly of the prompt words was not as acceptable to young people. Based on this feedback, a draft measure has been developed, and face and content validity of the measure are currently being evaluated in a collaborative project with a cross-section of third-sector partner organisations. For further details, see Appendix 21.a.

8:6.1.2 Digital adaptation of I.ROC

There is a burgeoning focus on e-health and technologically aided therapy within mental health (Hollis et al, 2015); the development and use of new health-based apps both for personal and clinical use is expanding rapidly. The benefits of using digital health solutions have been fairly well documented (Clough et al., 2017); e-health can increase capacity and reduce financial overheads of mental health services (Alvarez, 2002). For people using services, e-health solutions can improve access to services, reduce stigma attached to service use and provide a more flexible and tailored package of support (Kummervold et al., 2002). Authors have noted the potential for use of digital technology in recovery-oriented practice, recognising that the broad range of e-health solutions facilitate informed choice, control and self-management, and improve access to peer support (Gammon et al., 2015).

In response to the growing support for e-health, Penumbra has recently developed a digital version of I.ROC, which can be completed online or via an app. Digital I.ROC is still intended for use as a collaborative tool, and the format is very similar in design to the current paper-based tool. Using the digital tool, respondents can now additionally:

- Identify the level of priority for each indicator (high/medium/low priority)
- Select aims for the twelve indicators (increase/maintain/decrease score)
- Record personal outcomes linked to each indicator
- Set an immediate action or first step towards this outcome

Although computer-based versions of a pre-existing tool are often assumed to retain the validity of the paper-based version, this may not be the case (Noyes & Garland, 2008). Moreover in the case of I.ROC, additional aspects have been added to the questionnaire in the digital version, and these have not been tested. Research is therefore needed to assess the validity and reliability of this new format. In particular, research should examine how the digital system affects the conversational approach. A proposal for how to conduct this research is shown in Appendix 21.c.

8:6.1.3 Longitudinal analysis

Test-retest analysis has shown that I.ROC provides reliably consistent results over a short period of time. The measure is developed to measure change in recovery over

time; now that there is evidence supporting the reliability of I.ROC, future studies should seek to evaluate the extent to which the instrument is sensitive to change using a longitudinal design such as employed by (Oliveira-Maia et al., 2016) in the evaluation of the MHRM, or (Williams et al., 2015). Again, a mixed-methods design is recommended to simultaneously explore the experiences of people using I.ROC and how these change over time.

8:6.1.4 I.ROC use as a measure of general wellbeing

Results of convergent validity testing in Chapter 6 demonstrated that I.ROC correlates strongly with measures of wellbeing, and the literature review in Chapter 2 revealed considerable overlap between recovery and wellbeing. This suggests a potential use for I.ROC as a measure of general wellbeing within non-mental health populations. In line with this, student participants disclosing no mental health problems, whilst scoring significantly higher on I.ROC than those with current mental health issues, did not show particular ceiling effects (see Chapter 6 for details). Applications of I.ROC to non-mental health populations should therefore be explored. One study currently underway in Australia provides an initial step towards this by testing the convergent validity of I.ROC and the 'Optimal Health Wheel', a measure designed to test health and wellbeing outcomes for people completing the Optimal Health Programme, a psycho-social educational programme used across community mental health and chronic disease settings (see Appendix 21.d).

8:6.1.5 Cultural validity

Cultural validity was one of the only psychometric properties evaluated in the systematic review of recovery measures in Chapter 3 which was not assessed for I.ROC during this thesis. This property is an important aspect of construct validity, establishing the extent to which the instrument can be considered to be a valid measure for use within different populations and cultural contexts. Studies are currently underway across several countries including Spain, the Netherlands, the Czech Republic, Finland and China to translate and validate I.ROC, as detailed in Appendix 21.b.

8:6.1.6 Overcoming the barriers to successful I.ROC use

Several barriers to successful I.ROC use were identified in these studies, many of which (e.g. resource restrictions; staff attitudes) reflect previous findings on the challenges of implementing recovery-oriented practice. Future research should seek to explore how such barriers can be overcome, perhaps seeking to compare I.ROC in situations in which previous recommendations for establishing recovery-oriented practice (e.g. Le Boutillier et al, 2011a) have and have not been followed.

Ch8, Section 7. Conclusion

Overall, this thesis provides support for the validity, reliability and feasibility of I.ROC as a measure of personal recovery. Results of psychometric testing show the tool to have comparably good properties to other measures of recovery, and feedback from users is positive. Areas for further development of I.ROC are identified; future research should investigate potential improvements to scoring and question wording. I.ROC demonstrates the potential for measures of recovery to be used to both measure change and promote recovery within mental health services, but several challenges remain. Recovery-orientation requires wholesale culture change, and barriers to I.ROC use are reflective of the challenges this presents. Future research should seek to explore how barriers identified within this thesis can be overcome

Appendices

Appendix 1. Ethics approval letters

1.a. Study 1 ethics approval letter

LC/JS/SHS/11/P/006

20 December 2018

Bridey Monger, 47 Atheling Grove, South Queensferry, Edinburgh, EH3 09PF

Dear Bridey

Re: Investigating the validity and reliability of the individual Recovery Outcomes Counter

Thank you for your very comprehensive application to the School of Social and Health Sciences Research Ethics Committee for ethical review of the above project proposal. We are pleased to say that you have **conditional approval** to proceed.

The conditions are:

The letter of invitation:

- That you please reword this to remove the rather coercive aspects, viz: the change from a passive to a direct form of address to the recipient; the reference to 'needing' volunteers; the reference to the researchers being 'extremely grateful' for the recipient's participation – at this stage potential participants should only be asked whether they wish to hear more about the study, not being asked to consent to participate
- That you reconsider the accessibility of the language: will potential participants know, e.g. what an 'outcome measurement tool' is?

PIS:

- That you include further information on how exactly participants would go about withdrawing from the study
- That you include a little more information about Penumbra and its relationship with Abertay University.
- That the information about omitting questionnaire items is placed in the 'What you will be asked to do' paragraph rather than in the 'After the questionnaires' paragraph
- That the information about the study contributing to the gaining of an educational qualification is given early on in the PIS
- That you consider the accessibility of the language in the PIS; e.g. will potential participants know what a 'principal investigator' is?
- That you change the reference to time to complete the testing session from 'should take...' to 'taking approximately....'

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- That you assure participants that the participation incentive is not contingent on participants completing all items in all questionnaires

The debrief:

- That contact details for supervisors are given in addition to those of the PIS

Finally, you should ensure that potential participants are given adequate time between being informed about the study (PIS) and consenting to take part in it (e.g. normally in an NHS research project this would be a minimum of 24 hours). You also need to consider the presentation of all materials: Abertay-based research projects require to be printed on Abertay headed paper. We also wondered about participant fatigue: after a two hour session will people be able to usefully complete a relatively demanding feedback sheet? Is the item 'There were questions on i-ROC that I didn't wish to answer' necessary given that participants should have felt able to omit such questions in any case?

We hope you find this feedback helpful. Please would you confirm (via email) to Mrs Jennifer Smith in the School Office (j.smith@abertay.ac.uk) your acceptance of the conditions.

Good luck with your study

With kind regards

Yours sincerely

Dr Lloyd Carson

Chair, SSHS REC

1.b. Study 2 & 3 ethics approval letter

AL/CR

22 February 2012

Bridey Monger

Division of Nursing & Counselling

Level 3

Kydd Building

Dear Bridey

This is to notify you that you have been granted **full ethical approval** to collect data for your project entitled 'Investigating the validity and reliability of the Individual Recovery Outcomes Counter with a student population'. This is subject to the following standard conditions:

- You must remain in regular contact with your project supervisor
- Your supervisor must see a copy of all experimental materials/research tools and your procedure **prior to commencing data collection**.
- If you make any substantive changes to your project plan you must submit a new ethical approval application to the committee. Application forms and the accompanying explanatory document are on the Intranet. Completed forms should be handed in to the School Office, School of Social and Health Sciences, Level 5, Kydd Building.
- Any changes to the procedures must be negotiated with your supervisor.
- We would also ask that you ensure that a break is offered after completing the battery of tests – before the feedback form.

Failure to comply with these conditions will result in your ethical approval being revoked by the Ethics Committee.

Should you have any queries please contact your supervisor.

Yours sincerely

School Ethics Committee

School of Social & Health Sciences

Appendices

1.c. Study six ethics approval letter

RL/MT/CR/SHS/13/P/015

22nd January 2014

Bridey Rudd, Division of Nursing & Counselling, Level 3, Kydd Building

Dear Bridey

This is to notify you that conditional approval has been granted for you to collect data for your project entitled '**Using Penumbra's routinely collected I.ROC data**', but is subject to the following conditions:

- You must remain in regular contact with your project supervisor
- Your supervisor must see a copy of all research tools and your procedure *prior to commencing data collection*.
- If you make any substantive changes to your project plan you must submit a new ethical approval application to the committee. Application forms and the accompanying explanatory document are on the Intranet. Completed forms should be handed in to the School Office, School of Social and Health Sciences, Level 5, Kydd Building.

This proposal has been submitted on outdated paperwork. Please ensure that all future submission use the new paperwork. Contact your Division representative if you have any queries regarding this.

A separate risk assessment form must be completed for all projects. This is the case even for studies where there are minimal issues. This is a requirement of the University Health and Safety Committee, ratified by the University Research Committee, and implemented by the School Research Ethics Committee. A risk assessment is embedded in the latest version of the ethics forms. This should be logged with the Secretary for the School Research Ethics Committee prior to data collection beginning.

Failure to comply with these conditions will result in your ethical approval being revoked by the Ethics Committee.

I would be grateful if you could contact Mrs Carol Ramsey in the School Office on c.ramsey@abertay.ac.uk as soon as possible to advise that you accept the conditions stated.

Should you have any queries please contact your supervisor.

Yours sincerely

School Ethics Committee, School of Social and Health Sciences

1.d. Study 5 ethics approval letter

Mail – 1107644@abertay.ac.uk

<https://outlook.office.com/owa/?realm=usd.ac.uk&exsvurl=1&ll-cc=2...>

Research Ethics application 'Evaluation of the validity and reliability of I.ROC as a measure of personal recovery in adult survivors of complex psychological trauma: a secondary analysis of audit data '

Abertay Ethics System <abertayethics@sutherland.pw>

Fri 19/05/2017 10:02

To: BRIDEY RUDD <1107644@abertay.ac.uk>;

This application has been granted full approval. The standard research conditions apply.

--

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1.e. Study 6 ethics approval letter

RL/MT/CR/SHS/13/P/027

24th June 2014

Bridey Rudd, Division of Nursing and Counselling, Kydd Building

Dear Bridey

Investigating the recording practices of staff using outcome measurement tools (part 2)

This is to notify you that the Ethics Committee have looked at your resubmission and you have been granted full ethical approval to collect data for your project as entitled above. This is subject to the following standard conditions:

- You must remain in regular contact with your project supervisor
- Your supervisor must see a copy of all experimental materials and your procedure prior to commencing data collection
- If you make any substantive changes to your project plan, you must submit a new ethical approval application to the Committee. Application forms and the accompanying explanatory document are on the Intranet. Completed forms should be handed in to the School Office, School of Social & Health Sciences, Level 5, Kydd Building, Dundee
- Any changes to the procedures must be negotiated with your supervisor

Failure to comply with these conditions will result in your ethical approval being revoked by the Ethics Committee.

Should you have any queries please contact your Supervisor.

Yours sincerely

School Ethics Committee

School of Social & Health Sciences

1.f. Project 1 ethics approval letter

CW/CR

18th September 2013

Nuala Mitchell
192A High Street
Burntisland
Fife
KY3 9AH

Dear Nuala

An exploration of staff and service users' experiences in relation to the Individual Recovery Outcomes Counter (I.ROC)

This is to notify you that the Ethics Committee have looked at your resubmission and you have been granted **full ethical approval** to collect data for your project as entitled above. This is subject to the following standard conditions:

- i You must remain in regular contact with your project supervisor
- ii Your supervisor must see a copy of all experimental materials and your procedure prior to commencing data collection
- iii If you make any substantive changes to your project plan, you must submit a new ethical approval application to the Committee. Application forms and the accompanying explanatory document are on the Intranet. Completed forms should be handed in to the School Office, School of Social & Health Sciences, Level 5, Kydd Building, Dundee
- iv Any changes to the procedures must be negotiated with your supervisor

Failure to comply with these conditions will result in your ethical approval being revoked by the Ethics Committee.

Should you have any queries please contact your Supervisor.

Yours sincerely

School Ethics Committee
School of Social & Health Sciences

Appendices

1.g. Project 2 ethics approval letter

RL/MT/CR/SHS/13/P/017

10th March 2014

Bridey Rudd

Division of Nursing and Counselling

Kydd Building

Dear Bridey

Investigating the recording practices of staff using outcome measurement tools

This is to notify you that the Ethics Committee have looked at your resubmission and you have been granted **full ethical approval** to collect data for your project as entitled above. This is subject to the following standard conditions:

- i. You must remain in regular contact with your project supervisor
- ii. Your supervisor must see a copy of all experimental materials and your procedure prior to commencing data collection
- iii. If you make any substantive changes to your project plan, you must submit a new ethical approval application to the Committee. Application forms and the accompanying explanatory document are on the Intranet. Completed forms should be handed in to the School Office, School of Social & Health Sciences, Level 5, Kydd Building, Dundee
- iv. Any changes to the procedures must be negotiated with your supervisor

Failure to comply with these conditions will result in your ethical approval being revoked by the Ethics Committee.

Should you have any queries please contact your Supervisor.

Yours sincerely

School Ethics Committee

School of Social & Health Sciences

1.h. Project 3 ethics approval letter

JM/MR/CR/SHS/14/P/014

13th January 2015

Mrs Bridey Rudd, Division of Nursing & Counselling, Kydd Building,

Dear Bridey

Investigating the I.ROC story: Key stakeholder perspectives

This is to notify you that the Ethics Committee have looked at your submission and you have been granted **full ethical approval** to collect data for your project as entitled above. This is subject to the following standard conditions:

- i. You must remain in regular contact with your project supervisor
- ii. Your supervisor must see a copy of all experimental materials and your procedure prior to commencing data collection
- iii. If you make any substantive changes to your project plan you must submit a new ethical approval application to the committee. Application forms and the accompanying explanatory document are on the Intranet. Completed forms should be resubmitted through the Research Ethics Blackboard course.
- iv. Any changes to the procedures must be negotiated with your supervisor

Failure to comply with these conditions will result in your ethical approval being revoked by the Ethics Committee.

Should you have any queries please contact your Supervisor.

Yours sincerely

School Ethics Committee

School of Social & Health Sciences

Research **Ethics** application 'Telling the I.ROC story - further details'



Abertay **Ethics** System <abertayethics@sutherland.pw>
 Fri 19/05/2017, 10:01
 BRIDEY RUDD ✉

Reply all |

Inbox

This application has been granted full approval. The standard research conditions apply.

--

The University of Abertay Dundee is a charitable body, registered in Scotland number SC016040

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1.i. Project 4 ethics approval letter

RL/MT/CR/SHS/13/P/014

22nd January 2014

Bridey Rudd, Division of Nursing & Counselling, Level 3, Kydd Building

Dear Bridey

This is to notify you that conditional approval has been granted for you to collect data for your project entitled '***What makes a difference to me? Investigating the experiences of people using Penumbra's services***', but is subject to the following conditions:

- You must remain in regular contact with your project supervisor
- Your supervisor must see a copy of all research tools and your procedure *prior to commencing data collection*.
- If you make any substantive changes to your project plan you must submit a new ethical approval application to the committee. Application forms and the accompanying explanatory document are on the Intranet. Completed forms should be handed in to the School Office, School of Social and Health Sciences, Level 5, Kydd Building.
- This proposal has been submitted on outdated paperwork. Please ensure that all future submission use the new paperwork. Contact your Division representative if you have any queries regarding this.
- A separate risk assessment form must be completed for all projects. This is the case even for studies where there are minimal issues. This is a requirement of the University Health and Safety Committee, ratified by the University Research Committee, and implemented by the School Research Ethics Committee. A risk assessment is embedded in the latest version of the ethics forms. This should be logged with the Secretary for the School Research Ethics Committee prior to data collection beginning.

Failure to comply with these conditions will result in your ethical approval being revoked by the Ethics Committee.

I would be grateful if you could contact Mrs Carol Ramsey in the School Office on c.ramsey@abertay.ac.uk as soon as possible to advise that you accept the conditions stated.

Should you have any queries please contact your supervisor.

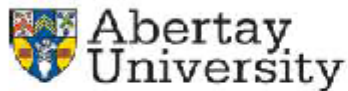
Yours sincerely

School Ethics Committee

School of Social and Health Sciences

1.j. Chapter 6 Wellbeing measures ethics approval letter

From: Ramsey, Carol <C.Ramsey@abertay.ac.uk>
Sent: Fri 13/11/2015 14:52
To: HOWARTH, NICOLA;



Project Reference Number: SHS_T_2015-16_497
Project Title: **Is the I.ROC measure of recovery a 'good' measure of mental well-being?**

Proposer: **Nicola Howarth**
Matriculation number: 1207519
Programme: BSc (Hons) Psychology, Stage 4

Supervisor: Scott Hardie

The above Project has been granted Full ethical approval.

Standard Conditions:

- i The Proposer must remain in regular contact with the project supervisor.
- ii The Supervisor must see a copy of all materials and procedures prior to commencing data collection.
- iii If any substantive changes to the proposed project are made, a new ethical approval application must be submitted to the Committee. Completed forms should be resubmitted through the Research Ethics Blackboard course.
- iv Any changes to the agreed procedures must be negotiated with the project supervisor.

Additional Conditions:

Failure to comply with these conditions will result in ethical approval being revoked by the Ethics Committee.

SHS Research Ethics Committee

Appendix 2. Letters from research collaborators



Dear Committee member.

I am writing to confirm that Penumbra is a partner in a Knowledge Transfer Partnership with the University of Abertay, Dundee which aims to validate an outcomes tool for people with mental health problems (i-ROC).

We have been using a version of i-ROC for the past 3 years across our services. This has involved over 1000 service users. The information obtained from this process forms a key part of agreeing a support plan with our service users. We have told our service users that we are undertaking a validation process and that this will be part of an educational/research programme.

As an organisation we understand the ethics involved in this type of research and will ensure that all participants are aware of how the data collected will be used.

If you require any more information please do not hesitate to contact me.

Yours Sincerely,

Nigel Henderson



Penumbra (UK) Ltd, 57, Colinton Road, Edinburgh EH10 5JN

Tel: 01475 2196 | Fax: 01475 2584
Enquiries@penumbra.co.uk

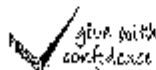
9th December 2013

To Whom It May Concern,

Re: Bridey Monger. PHD

I am writing on behalf of Penumbra to confirm that we are in accordance with Bridey Monger using routinely collected LROC data for the purposes of research connected with her current PHD with Abertay University.

JANE CUMMING
Development Manager



Head Office: 57 Colinton Road, Edinburgh, EH10 5JN
Company No: 21542, Scottish Registered Office No: 215420097

www.penumbra.co.uk



Martin B Cohen Centre
Gault Way, Deansbrook Road
Edgware HA8 9DL
020 8458 0000
info@jamiuk.org
jamiuk.org

To whom it may concern,

I am writing to confirm that Jami are willing to participate in research that compares the use of The Individual Recovery Outcomes Counter (IROC) and Recovery Star.

Yours faithfully,

Louise Palmer
Area Manager

Louise.palmer@jamiuk.org

Appendix 3. Knowledge Transfer Partnership:

3.a. KTP Associate Final Report

The following were the objectives of the KTP project as set out in the KTP Grant Application and Proposal Form.

In 2007, Penumbra developed I.ROC, a personal recovery measurement tool specifically for use within the mental health support services it provides. Its widespread use across the organisation highlighted the need for the psychometric properties of I.ROC to be assessed. The project aimed to establish I.ROC's validity and reliability to allow Penumbra to increase internal and external confidence in their product and set an example of outcome measurement best practice for Scotland.

The key objectives of the project were to:

- Scope Penumbra's services for report
- Search the academic the literature with a view to establishing current understanding of best practice in the management of recovery
- Review existing data held by Penumbra: Data analysis; database creation and statistical analysis of online database
- Critically evaluate the criteria used in the I.ROC system
- Validate the indicators against existing recovery measures
- Refine I.ROC tool based on analytical findings
- Determine best practice with regard to operation of the I.ROC by interviewing staff and service users
- Report & disseminate results, including 4 academic papers

The overall aim was to establish the reliability and validity of the IROC and to ensure that its use became fully integrated across the work of the organisation. The project also provided Penumbra with an opportunity to determine the extent to which its support and resources are appropriately targeted in order that it can provide the best service possible to its clients and funders.

2. If these objectives changed, say whether or not the changes were approved by the LMC and describe the reasons for the changes.

The partnership has met all of the key objectives outlined in the initial report. Some aspects became redundant following initial analysis. For example, pilot analysis of the I.ROC data collected and stored by Penumbra highlighted the limited utility of this data set in terms of meeting the aims of the project, vis a vis the assessment of the reliability and validity of I.ROC . .

Pilot focus groups with staff and service users showed the need for changes to be made to the tool before the main project could begin. The focus of the project therefore moved towards the development of a user-friendly tool which met users' demands, thus increasing face validity. Following re-development, the project focused on a robust validation of the tool, to set up the criteria necessary to improve staff confidence in the project. It was agreed that only after this could implementation, piloting and best practice be explored. All changes to the outcomes and the overall timeline were agreed by the LMC.

3. State what you consider to have been the final objectives for your Project to which you were working.

The final objectives for the project have been to:

- Design a more user-friendly, ecologically valid I.ROC
- Establish the validity and reliability of I.ROC with both a mental health and a 'normal' population
- Establish best practice & produce guidance for using the tool
- Implement a training regime for staff
- Publicise the tool as widely as possible,
- Publish results, reviews and progress of validation in academic journals
- These outcomes have all been achieved.

4. Give an account of your project describing the main activities, milestones (with dates) and outcomes.

March 2011-Sep2011

- Review of the recovery literature, outcomes and measurement tools & techniques
- Reformulation of the project methodology based on findings of the review and initial analysis of existing data set

Comparison of I.ROC to other recovery tools – mapping of the most similar and extensively validated tools

- Focus groups throughout Scotland with service users and staff
- Analysis of Penumbra online database
- Applied & accepted for MRes at Abertay (25/8/11)

Sept 2011 – March 2012

- Re-design of I.ROC completed
- Ethics application for main validation approved
- 17 Penumbra staff trained as testers for validation study (28/10/11)
- Main validation study started in January 2010
- Teaching on Nursing & Counselling student programme at Abertay (February)
- Presentation of I.ROC & validation initial results at Refocus on Recovery conference (March 4-7 2012)
- Presentation of I.ROC at Data Outcomes retreat (March 8-9 2012)
- Ethics application for validation with staff & students at Abertay submitted & accepted
- Paper on outcome measurement written & accepted (published in the March/April publication of Mental Health Today)
- Internal presentations & reports of I.ROC & validation

April 2012 – September 2012

- Completion of service user validation (April)
- Completion of student validations (September)
- Completion of data analysis
- Written report on validation findings (September)
- Presentation at Mental Health Europe conference (June 13-17), resulting in interest from organisations across Europe, and a strategic partnership with a Psychotherapy practice in England.
- Paper for publication on validation findings (September 2012)
- Completion & submission of all other papers currently being written, including a literature review and a further paper on the validation results (September 2012)
- Training of managers & other staff on I.ROC best practice (June-Sept 2012)
- Report on best practice (Sept 2012)
- Accepted for world conference in Milan (Aug 12), taking place in November
- Official launch of I.ROC & validation (Sept)
- Completion of Masters thesis (Aug), resulting in acceptance onto the PhD programme at the University of Abertay.
- Successful completion of management PDA

5. Provide an analysis of changes made to planned activities as your Project progressed, and lessons you learned from the experience.

The main problem encountered at an early stage of the project was the realisation through my improved knowledge of similar projects, of the time and people resources usually needed for a robust validation. I spent the first three months of the project doing an in-depth review of the literature relating to the project, and as a

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result of this and conversations with researchers I met through various networking opportunities, I saw that most studies took at least two years and a large research team. For this reason, maximising time efficiency became a priority for me, and I made changes to the plans accordingly. For example, I completed a brief analysis of Penumbra's database, using the results to demonstrate to the management committee that no further analysis was needed at this stage (as per the original plan). The removal of an in-depth analysis of the database progressed the original project plan by approximately 3 months.

I ran focus groups across Scotland with key stakeholders in I.ROC, the resulting information gathered was used to increase the scope of the project by professionally redesigning I.ROC. I redesigned I.ROC based on the qualitative data collected from service user and staff focus groups, and proposed these changes to the management committee for approval. They were so pleased with the changes and the feedback from the focus groups that we agreed to hire a graphic designer to create a professionalised design based on my changes. This process has greatly improved the potential use for I.ROC, and improved staff attitudes towards the tool. I.ROC now looks significantly different to any other similar tool on the market – it is the only tool that uses colour and pictures to improve user involvement in the questionnaire – and thus improves its potential as Penumbra's USP.

6. Give your views on the effectiveness of the Project and how satisfied you are with its outcomes. Please comment on whether you feel the Project made good use of the resources provided by the Company and Knowledge Base Partners.

I think that the project has been very effective at achieving its outcomes. Almost 200 service users took part in the validation, with testers enjoying their role so much that they asked for more ways to be involved with testing in the future. Students and staff at the University of Abertay were also involved in the validation. Four students participated as testers as part of Abertay's student research summer scheme, offering them the opportunity to get directly involved with real-world research.

The results of the validation proved I.ROC to be a robust, valid and reliable tool, which as a result of staff and service user input has been professionally redesigned. Managers' training on I.ROC has been completed and they are all delighted with the changes. The statistical evidence provided during the training has encouraged staff

that the changes not only look good, but are now supported by a strong evidence base. This has helped staff to gain confidence in and understanding of its use.

As a result of the project, Penumbra has improved brand awareness, winning a care accolade this year for services in which I.ROC is routinely used. The project results have been presented at international conferences, and interest in using the tool has come from health and social care services across Europe.

The financial, time and human resources have been well spent. The travel budget funded the conference trips. Human resources were used to accomplish the testing. All partners' time has been well allocated to achieve maximum project outputs.

7. How satisfied do you think others involved in the Project are with its outcomes?

	Extremely Satisfied	Very Satisfied	Satisfied	Dissatisfied
Chairman of the LMC	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Company Supervisor	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Academic Supervisor	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Other members of Project Team	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>
Adviser	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>
Others with a stake in the project objectives	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>

8. Provide a relevant explanation for your answer to Q7, in particular commenting on individuals who are either extremely satisfied or dissatisfied.

- Company partners: The project has raised Penumbra's profile internationally. I.ROC was mentioned in a key note address in Australia. I.ROC's redesign has improved staff's attitudes towards using the tool, and has begun to change the culture of the organisation. It has led to increased spending on marketing, helped win tenders, improved Care Inspectorate grades, and win a Care Accolade.
- Academic partners: The project was included as a case study to Universities Scotland, and received very positive feedback. It has led to changes in the undergraduate teaching, and provided research opportunities to students. The conferences and papers published have improved the school's profile.
- Other stakeholders: The redesign of I.ROC has improved staff understanding of outcome measurement and recovery focused working. This improves their job satisfaction as they are more able to visualise the results that their work is

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achieving, and have the relevant tools to work more efficiently and strategically with service users to make a real difference. For service users, we have now designed a tool that reflects their wishes, which is easier to use and feels less like a bureaucratic exercise. This has started to be reflected in staff surveys and qualitative data from service users.

9. Describe what additional resources would, in your opinion, need to be deployed in the future to achieve maximum benefit from your Project.

- The validation of I.ROC could have been improved by increased human resources in the project. With more staff dedicated to the task, the validation could have included a greater number of participants, which would have improved the robustness of the findings.
- To maximise the work already done, Penumbra will need to maintain money and time invested in the publicising of I.ROC. The results of this project will also be maximised by ensuring more investment across the charity in their brand image, product development and marketing. In the future, I will be helping to achieve these goals.
- In order to increase the robustness of the findings, human resources and money could be spent on an external validation within a mental health population.

10. Accurate and complete records and documents relating to your project should have been prepared to ensure its satisfactory closure. List what documents you have lodged and with whom in connection with your Project.

- I have completed a PDA in Project Management, which has consolidated the outcomes of my work within a portfolio now lodged by Penumbra.
- I have completed a Masters by research on the KTP project work, which has been lodged by Abertay and is also kept as a record by Penumbra.
- Penumbra have been provided with regular updates in their internal and external news briefings, and with project briefing reports.
- I have written papers for publication on the project outcomes, which will be lodged when accepted by academic journals such as Mental Health Today and The Psychiatrist.

11. Describe what training you have provided to staff in the host Company and/or what additionally you have done to ensure that the host Company will be able to take advantage of your project work after its completion.

- I trained Penumbra staff as testers to carry out the validation. This has made them project champions who are able to explain the process and the results.
- I have run training on I.ROC for all Penumbra managers and have led the initial phase of training for Penumbra support workers. Penumbra's training team have participated in this training and are now proficient in running it.
- I worked closely throughout the project with the I.ROC development manager, and kept in close communication with the CEO, ensuring that both these key stakeholders fully understand all stages of the work, including its future applications.
- The company and academic partners are drawing up an agreement for further collaboration.
- I will be continuing in employment within Penumbra, ensuring my continued involvement. I have secured funding to pay for the tuition fees of the first year of a PhD study which will take forward this work
- I have been involved in meetings with the data management company to improve the reporting process.
- We have developed improved staff guidance and an accompanying toolkit of resources to help staff to use I.ROC to best effect.

3.b. KTP Certificate of Excellence



3.c. LMC Minutes
Tayside Knowledge Transfer Partnership

Penumbra & University of Abertay Dundee

KTP Programme No 8078

Local Management Committee Meeting (LMC)

10.30 am on Tuesday, 30th August 2011

At Penumbra, Edinburgh

MINUTES

Present: Jane Cumming (Chair/Facilitator)
Robin Ion (Academic Supervisor)
Marcus Wood (Adviser)
Bridey Monger (Associate)
Anne Wilson (note taker)

Welcome & Apologies

Marcus introduced himself to the LMC and noted that he has taken over from Atholl Reid who has retired. Jane provided Marcus with a copy of the i-ROC questionnaire and was happy to provide some background. Marcus confirmed that he understands the project as he was part of the application approval process and felt it also had some synergy with other NHS Lothian projects with which he is involved. Any questions or clarification will be raised during the meeting.

Apologies were noted from Nigel Henderson and Scott Hardie.

Minutes from Last Meeting & Matters Arising

The minutes of the first LMC held on 29 April 2011 have already been agreed via email and submitted to KTP as part of the grant payment process. There were no matters arising.

Chairman's Report

Marcus confirmed that he is happy with a verbal report from the Chair but would expect it to cover two main points a) Is the project still strategic? and, b) Are there any organisational changes?

In terms of the first point, Jane confirmed that the project is integral to the direction of the organisation. Internally, the KTP work has recently been presented to the Board of Penumbra and will shape the work we do in the future. Externally, it will help us to evidence people's progress. In addition we are now in a position to generate information from the tool, demonstrating the power of what it can do. Once validated, the product would be marketed and launched. Jane provided an example where in Aberdeenshire Council they are considering using our outcomes system to sit alongside their Care First database. Marcus noted that this was excellent example of something which should be recorded as a line on the Facilitators Report as an outcome, as this is a live document which will help in producing the final report.

Associate Presentation (slides attached at end of minutes)

Project Progress - Bridey firstly presented her work since the last LMC which included finishing the literature search (the paper is currently being reviewed by Robin) and completing her mini project (involving staff questionnaire, analysis of database, conducting focus groups).

Bridey went on to outline her proposed plan for the next 4 months and noted that this has changed slightly since the original project plan due to the fact that a lot of the data analysis was completed as part of the mini project, resulting being 2-2½ months ahead of schedule. It was therefore proposed that we move to Stage 5 – Evaluation of Outcome Indicators which is seen as the most significant part of the project. This was approved by Marcus.

Marcus thanked Bridey for her great presentation and noted that she should have no problem when it comes to presenting at the Associate Seminar (see below).

Training & Personal Development

Bridey provided some feedback on KTP Module 3 in Warwick where she learnt a lot about leadership, teamwork and assertiveness and was required to do a presentation at the end. Overall this was an extremely enjoyable and useful event and it was good to meet other Research Associates. Marcus also recommended that Bridey should attend one of the KTP Associate seminars as she will be required to do a 15 minute presentation at one of these towards the end of her project. Robin agreed to forward information on the one in Dundee which is due to take place soon.

Bridey has completed and submitted her proposal for her Masters, which has now been accepted. Robin requested that £700 from the Associate Development budget be used as a contribution towards the Masters course; the remainder of the fee being written off by the University (£2,600). Marcus questioned why Abertay charge, when most offer it for free to Research Associations. Robin responded that this is simply University policy. **The £700 contribution was then agreed.**

With regard to management qualifications, Marcus noted that there is a KTP management programme which is currently contracted to AA Technology. They offer accredited training and may be a cheaper option. Robin questioned whether the management money must be spent on this, or whether a research qualification could be considered. Bridey noted that she doesn't see herself going down the management route and would prefer to look at research possibilities. Marcus noted that he would recommend project management and leadership and suggested two possible routes (Prince 2 or APM), however he acknowledged that this is Bridey's budget and as long as the proposals are considered and supported by academic and company supervisors, then it can be spent as seen fit, as effectively it is about the personal development of the Research Associate.

Bridey then noted other training and personal development opportunities as follows:

- Mental health research training (one of which is free and the other £10). **AGREED**
- Refocus on Recovery Conference where she would present a paper (abstract being submitted this week) costing £349. Robin noted that he will also be attending. **AGREED**

Appendices

- BPS (British Psychological Society) Membership £57. **AGREED**
- IoP Summer school 2012 (eg. 2 day event £280, 5 day event £700)
- Abuse, trauma & dissociation training (£250). **AGREED**

Assertiveness and Statistics training (available internally)

Marcus reported that he was happy with all of the above but noted that any training costing £500 or more requires LMC approval, however, this can be done via email.

Academic Supervisor's Report

Robin presented his report and noted two main points:

Getting the literature review finished is important, however, the original deadline of July was too tight. Marcus noted that he is fairly flexible on the timetable and noted that some tasks will take longer, and others shorter than anticipated, however, revised dates/timescales should be entered in the Facilitator's Report for approval at the LMC.

Embedding the outcomes measures in the organisation is important to ensure its relevance, use, and consistency. Robin felt that this is something that Abertay could facilitate and it would be a key output for the university. Jane noted that internally, we need to be clear about the target projects for using iROC as it in its current form it is not suitable for all projects, however, in a year's time we could look at varying it for specialised projects. Penumbra has also discussed re-launching the revised and validated tool and having Abertay involved in this would give it even more credibility.

Overall Marcus noted that as long as the overall objective of the project is the same, he is happy for the detail of the work plan to change as long as he is advised along the way. However he reiterated the importance of ensuring that all key outputs/outcomes, milestones, revised dates, additional tasks etc are recorded on the facilitators report as this will help greatly in writing the final project report, where assessors will be looking for 'added value'.

With regards to the working relationship, Robin felt that perhaps there needs to be more contact between himself and Bridey. Marcus confirmed that KTP would expect academic supervisors to spend on average a half day per week with the associate, although this can be worked to fit the project. He would also recommend a weekly meeting with the company supervisor and monthly management meetings.

Company Supervisor's Report

Nigel was not present, no questions arising from report.

Facilitator's Report

Marcus confirmed that this is an important document. It should be produced by the Associate and presented by the Chair at the LMC. It was agreed that there was no need to discuss this in full as it has been referred to throughout the meeting, however, Jane noted that the Facilitator's Report does clearly reflect that we are ahead in certain areas. Marcus noted that risk management does need to

be considered, and therefore having time in hand is good. The Associate should think about probability, impact and mitigation of each of the project tasks.

Financial Statement

Marcus considered the financial statement presented and noted that the forecast column, the University need to complete the '*committed*' column as this is known expenditure (ie. associate salary, academic & secretarial support, additional associate support). Any further items agreed at LMC, such as the £700 from Associate Development for the MSc should be registered under the '*planned*' column.

Marcus recommended that Bridey/Robin liaise with the university finance department about 4 weeks prior to the LMC to ensure the financial statement is up to date. Marcus also noted that it would be useful for Bridey to keep a spreadsheet of her own expenditure on the following headings: associate development, travel & subsistence, equipment & consumables. Marcus went on to **approve** the financial statement, including expenditure to date.

Marcus then reported that from 1 September 2011 the TSB (Technology Strategy Board) are insisting on quarterly invoices, which must include a copy of the LMC minutes. Due to the timing of meetings, there will be one quarter that does not coincide with an LMC. It was therefore recommended that Robin circulates the Financial Statement to LMC members for approval via a virtual meeting.

Adviser's Report

As reported at the very beginning of the meeting Marcus noted that the KTP budget has been cut as a result of the Government's spending review. The KTP have approved a record number of projects and reported that the funds will be lost if not invoiced or spent. In the future the quality bar is therefore going to be higher, as there will be less funds available, however, there is a particular interest in SMEs and selected projects will not all be about technology.

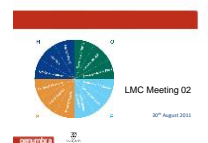
Jane asked if there was any time bar for applying for more KTPs. Marcus responded that there was no time limit, however, there might be a reduced grant rate (up to 50% less) for project proposals within 5 years of a successful application.

Final Report

Already mentioned earlier; keep the Facilitator's report constantly updated to assist in producing the final report.

Any Other Business

Marcus requested that LMC papers be issued 2 weeks prior to the meeting. Minutes should be produced within one week.



Appendix 4. Evolution of I.ROC: example pages

Full measures available on request

4.a. PROWD Version 1



Home –

a safe and secure place to live

Oppportunity –

to pursue meaningful leisure, recreation, education
and work possibilities

People –

As friends, confidantes and supporters

Empowerment –

Fully involved in decisions affecting own life

Best Hope



Mental Health

Mental health relates to a balance of our physical, emotional, social and spiritual needs. We all experience fluctuations in our mental health as we experience life events such as trauma, illness, bereavement or simply changes in our lives. Some people may be diagnosed with a mental health problem, but we all experience mental health problems to greater or less degree. It is important that we all look after our mental health as we do our physical health as this will help us to recover.

6. I **don't** label myself as a person with problems

5. I can cope with my feelings most of the time

4. I am learning how to solve my problems

3. I know how to get the help I need for my problems

2. It's **hard** for me to cope with my feelings a lot of the time

1. My mental health problems make it hard for me to ever feel happy

4.b. PROWD Version 2

INTRODUCTION to PROWD

At Penumbra we feel it is important to know if the work we are doing is of value to those who use our services. We seek to enable people we work with to recover and to fulfil their potential.

It is also important for you as a user of our services to know if what we do is working for you.

In order to do this we want to ask you a series of questions that will tell us how you are feeling. The questions relate to areas of life that we believe are important to mental health and well-being. They are in four sections entitled Home, Oppportunity, People and Empowerment.

The first time you complete the questions, whether you are new to our services or whether you have been using a Penumbra service for a period of time, will give us an indication of how you are right now. We will use this as a baseline measurement. We will then repeat the questions at a review time and this will tell us if things are changing for you or if things are still the same.

We hope that answering these questions does not upset you in any way but if it does you should not carry on and you should talk to your support worker about how you are feeling. Please note that this is a measurement tool, this is not a planning tool or a therapeutic tool but by answering these questions we will be clearer regarding which areas are the most important for you to work on and we will then be able to plan your support more effectively. Your support worker will work with you to carry out any necessary reviews or changes to your support/recovery plan that may be required as result of you completing this exercise.

We wish to thank you for your co-operation and for taking the time to complete the questions.

SECTION 1: Home

For each heading, use the scale below to rate what applies to you at this time. Circle the relevant number.

SCALE: 1 = Never 4 = Often
 2 = Almost Never 5 = Most of the time
 3 = Sometimes 6 = All of the time

MENTAL HEALTH - relates to a balance of our physical, emotional, social and spiritual needs. We all experience fluctuations in our mental health as we experience life events such as trauma, illness, bereavement, or simply changes in our lives. Some people may be diagnosed with a mental health problem, but we all experience mental health problems to greater or less degree. It is important that we all look after our mental health as we do our physical health as this will help us to recover.

How often do you feel well and healthy?

1 2 3 4 5 6

LIFE SKILLS - are the range of skills that enable us cope with the demands of everyday life. Included in life skills would be the practical skills we need to look after ourselves such as those we need manage our homes, and the interpersonal skills we need to get by day-to day. Having the range of life skills we need is important to our sense of well - being and therefore recovery.

Do you feel you have the skills you need to look after yourself and help your recovery?

1 2 3 4 5 6

SAFETY AND COMFORT - our homes should be a place that provides us with safety and comfort, somewhere where we can feel that we are not at risk. We should all be able to live in a home where we can relax, rest and where we can gain the strength we need to recover and maintain our well-being.

How often do you feel safe and comfortable in your home?

1 2 3 4 5 6

4.c. i-ROC version 1

INTRODUCTION to i-ROC

At Penumbra we feel it is important to know if the work we are doing is of value to those who use our services. We seek to enable people we work with to recover and to fulfil their potential.

It is also important for you as a user of our services to know if what we do is working for you.

In order to do this we want to ask you a series of questions that will tell us how you are feeling. The questions relate to areas of life that we believe are important to mental health and well-being. They are in four sections entitled Home, Oppportunity, People and Empowerment.

The first time you complete the questions, whether you are new to our services or whether you have been using a Penumbra service for a period of time, will give us an indication of how you are right now. We will use this as a baseline measurement. We will then repeat the questions at a review time and this will tell us if things are changing for you or if things are still the same.

We hope that answering these questions does not upset you in any way but if it does you should not carry on and you should talk to your support worker about how you are feeling. Please note that this is a measurement tool, this is not a planning tool or a therapeutic tool but by answering these questions we will be clearer regarding which areas are the most important for you to work on and we will then be able to plan your support more effectively. Your support worker will work with you to carry out any necessary reviews or changes to your support/recovery plan that may be required as result of you completing this exercise.

We wish to thank you for your co-operation and for taking the time to complete the questions.

4.d. i-ROC version 2: Included in HOPE Toolkit

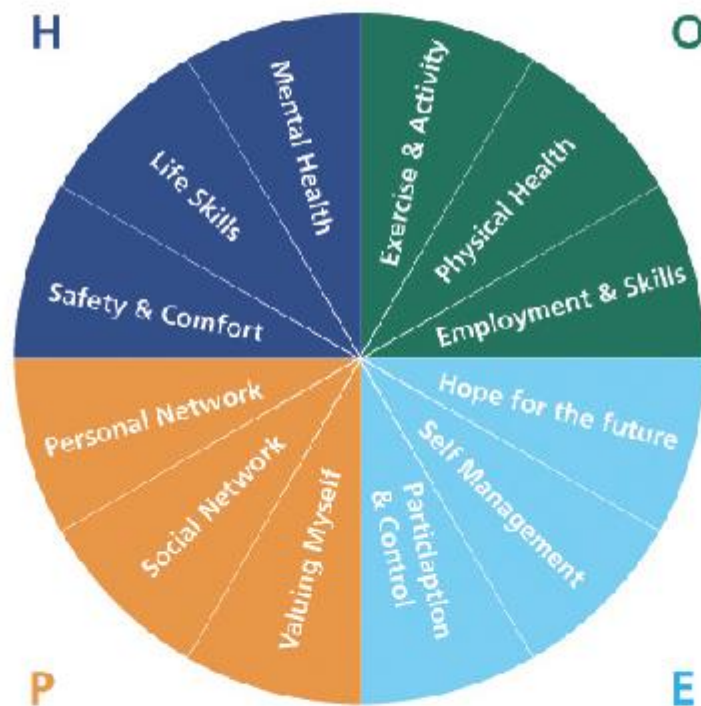
Contents

- A. *i-ROC*
- B. Personal Plan
- C. Personal Plan Review
- D. Healthy Living Plan
- E. Money Plan
- F. Medication Plan
- G. Employment Development Plan
- H. Weekly Activity Plan
- I. PATH
- J. Wellness Recovery Action Plan
- K. Risk Assessment
- L. Crisis Plan
- M. Crisis Plan Review
- N. Planning & Review Timetable



HOPE

- HOME** a safe and secure place to live
- OPPORTUNITY** to pursue meaningful leisure, recreation, education and work possibilities.
- PEOPLE** as friends, confidantes and supporters
- EMPOWERMENT** fully involved in decisions affecting own life.



4.e. i-ROC version 3: KTP developments

LIFE SKILLS

Cooking

Cleaning

Managing Money

Coping Skills

Numeracy & Literacy



Paying Bills

Being a good neighbour

Hygiene

Shopping

In the past 3 months...

How often have you felt you have the skills you need to look after yourself?
Some words to help you think about this question are: *(read words above)*



SAFETY AND COMFORT

Relaxing

Restful

Safe

Rejuvenating



Neighbourhood

Comfortable

Clean

Affordable

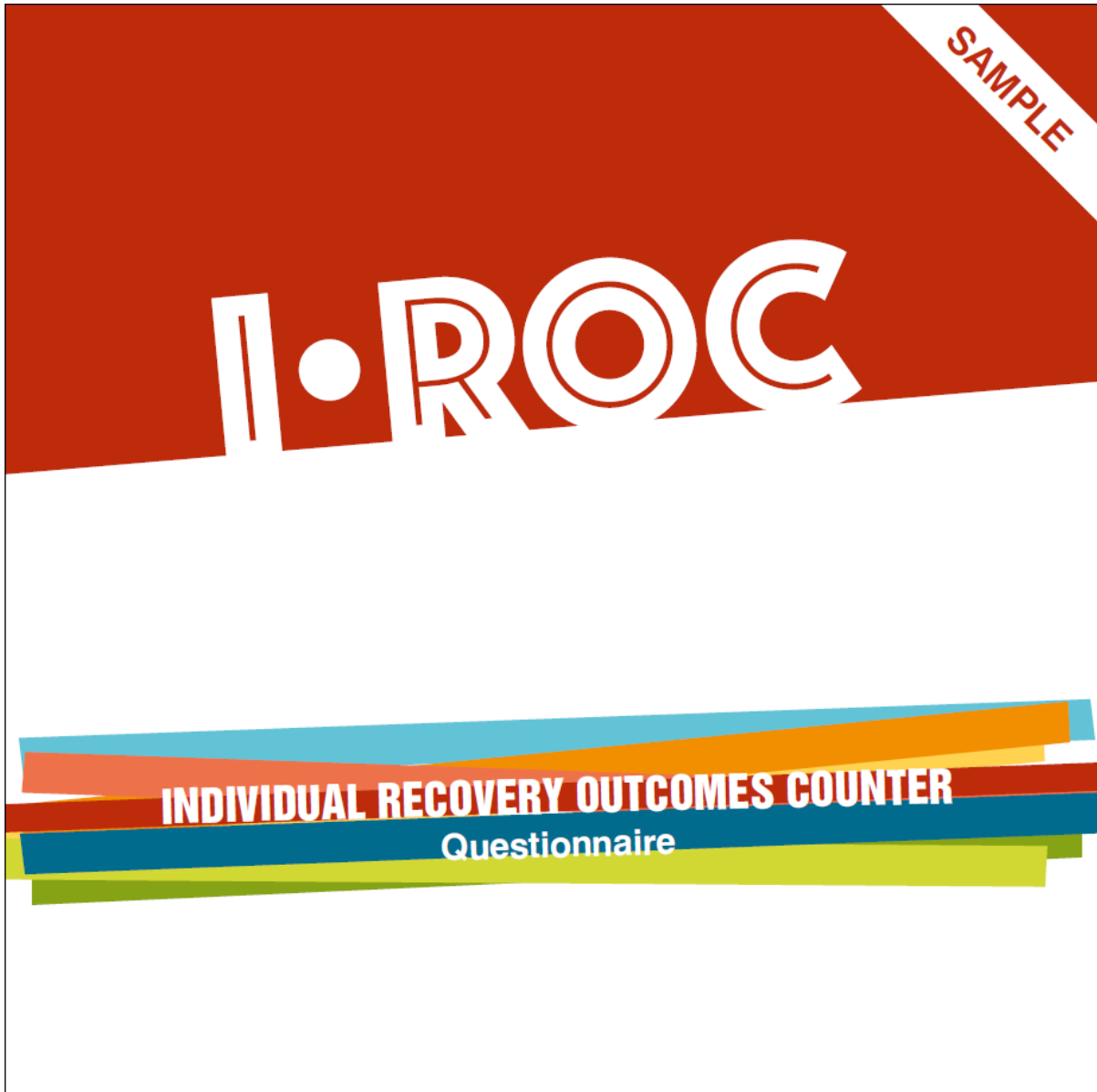
In the past 3 months...

How often have you felt safe and comfortable in and around your home?
Some words to help you think about this question are: *(read words above)*



4.f.I.ROC Current: Paper Version

4.f.i. Questionnaire booklet



Recovery

Penumbra believes, and statistics show, that people can and do recover from mental illness. Recovery means different things to different people because everybody is different.

Experiencing mental ill health brings many losses, which may include relationships, employment, self-esteem and hope. However, recovery doesn't only mean regaining what has been lost; it may mean a new start.

Recovery doesn't necessarily mean being 'cured' or living without medication or support. It does mean being in charge of your own life, with real choices under your control.

Recovery offers hope.



opportunity physical health

- ◆ Eating
- ◆ Sleeping
- ◆ Fitness
- ◆ Healing
- ◆ Drinking
- ◆ Smoking
- ◆ Pain
- ◆ Health Checks
- ◆ Weight
- ◆ Communicating Problems



opportunity physical health

In the past 3 months...
How often have you felt
physically healthy?



4.f.ii. I.ROC answer-sheet



Name _____ Date _____



MENTAL HEALTH

In the past 3 months... How often have you felt mentally & emotionally healthy, happy and well?	1	2	3	4	5	6
--	---	---	---	---	---	---

Notes

LIFE SKILLS

In the past 3 months... How often have you felt you have the skills you need to look after yourself?	1	2	3	4	5	6
---	---	---	---	---	---	---

Notes

SAFETY & COMFORT

In the past 3 months... How often have you felt safe and comfortable in and around your home?	1	2	3	4	5	6
--	---	---	---	---	---	---

Notes



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8 WHO? WHY? WHEN?

Who is I-ROC for?

I-ROC is principally designed for use by people who currently have and/or are recovering from a mental health problem.



The indicators however relate to well-being and are therefore relevant for everybody.

I-ROC can be used by anyone.

Why are we asking these 12 questions?

Each of the 12 indicators have been carefully selected to form part of the I-ROC questionnaire and are considered relevant for health and well-being. Each has been reviewed by a number of focus groups and has been tested as part of a validation process.

Further explanation of this is in the guidance for each indicator (p17-41).

When should I ask the questions?

I-ROC should be completed **as soon as reasonably practical** when you begin working with someone as:

- It creates a baseline for measuring recovery.
- It identifies areas that may be particularly important to focus on.
- It gives a start point for personal planning.

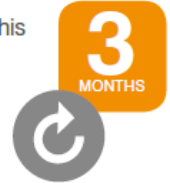


When should I repeat the questions?

You should aim to review the questions **every three months**:

- This enables measurement of recovery.
- Evidences and encourages progress.
- Prompts review of plans if no progress has been made.

If it is not possible to repeat I-ROC every three months you should record reasons for this and arrange to review at an appropriate time.



HOW DO I ASK THE QUESTIONS?

Introduce I-ROC

You must introduce I-ROC to the person you are working with by explaining its purpose:

- To measure recovery.
- To improve health and well-being.
- To help create personal plans.
- To let us know if the work we are doing is making a difference.
- To evidence the quality of work we do.

You should give the person a copy of the I-ROC questionnaire, explain that there are 12 questions and explain the scale as follows:



- 1 → Never
- 2 → Almost Never
- 3 → Sometimes
- 4 → Often
- 5 → Most of the time
- 6 → All of the time




Before you begin you should:

- Ask the person to let you know if they are unclear about anything.
- Let the person know they can refuse to answer any of the questions if they wish.
- Tell the person to stop if they are upset by any of the questions.
- Explain information is confidential and will be stored securely and in accordance with organisational policies.



Asking the Questions?

- **ASK** each question in turn.
- **CHECK** that the person is clear about what the question is asking.
- **CLARIFY** any confusion/misunderstanding.
- **REFLECT & EXPLORE**
You do this by asking supplementary questions highlighted by  symbol in guidance notes.
- **USE FACTS** known to you to sensitively challenge responses e.g. "Are you sure you haven't been taking any exercise – have you not been going for a walk sometimes?"
- **DON'T DISAGREE** with a response but to help the person think back over the past 3 months and give as accurate an answer as possible.



14

WHAT SHOULD I DO OR NOT DO?

DON'T

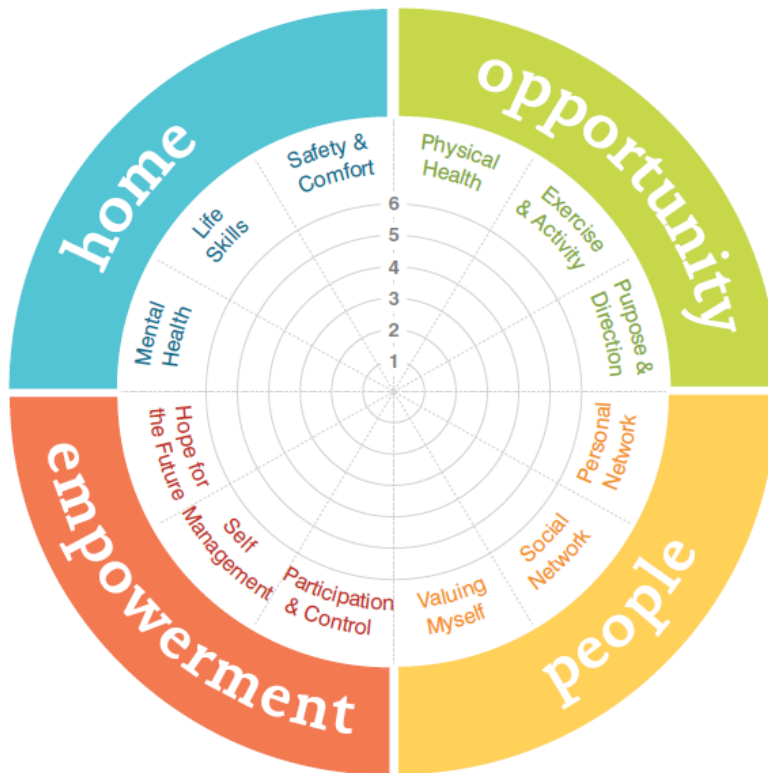
- ✗ Proceed if you are unsure how to use I-ROC
- ✗ Rush
- ✗ Disagree with scores (it is a self assessment)
- ✗ Be disappointed if scores go down
- ✗ Leave the person with no next steps
- ✗ Continue if person is distressed in anyway. If this is the case you should:
 - Stop the questionnaire
 - Talk through cause of distress
 - Discuss ways forward
 - Make a plan with agreed next steps
 - Call for assistance if required

DO

- ✓ Use your knowledge of the person to ask specific questions
- ✓ Use facts to sensitively challenge responses
- ✓ Be aware of how comfortable the person is throughout
- ✓ Be positive about the possibility of progress and recovery
- ✓ Reflect on scores
- ✓ Hold the Hope
- ✓ Celebrate progress
- ✓ Agree next steps after completing I-ROC questionnaire
- ✓ Set a date for review
- ✓ Take previous I-ROC to review to enable comparison
- ✓ Ask for support/training if you are unsure about using I-ROC
- ✓ Introduce and explain I-ROC
- ✓ Explain how information will be used
- ✓ Explain information is confidential
- ✓ Be positive about how I-ROC can help
- ✓ Ask the questions clearly
- ✓ LISTEN carefully
- ✓ Take as much time as the person needs
- ✓ Help the person reflect by asking supplementary questions



4.f.iv. I.ROC Spidergram Pad



4.g. I.ROC New Development: App Version



Main Navigation

- Dashboard
- Reports
- HOPE Toolkit
- Calendar
- Clients
- Manage Clients
- Archived Clients
- Mobile Applications
- Other
- Shop
- e-learning

Mrs Anne Brown - New I.ROC

Empowerment Participation & Control

Save answers ?

In the past 3 months...

How often have you felt involved in the decisions that affect your life?

- Making Decisions
- Having a say
- Being involved
- Being heard
- Informed
- Opinions
- Choices
- Campaigning
- Asking Questions

1 NEVER 2 ALMOST NEVER 3 SOMETIMES 4 OFTEN 5 MOST OF THE TIME 6 ALL THE TIME

notes

Previous Next

I.ROC 08/05/2017
✕

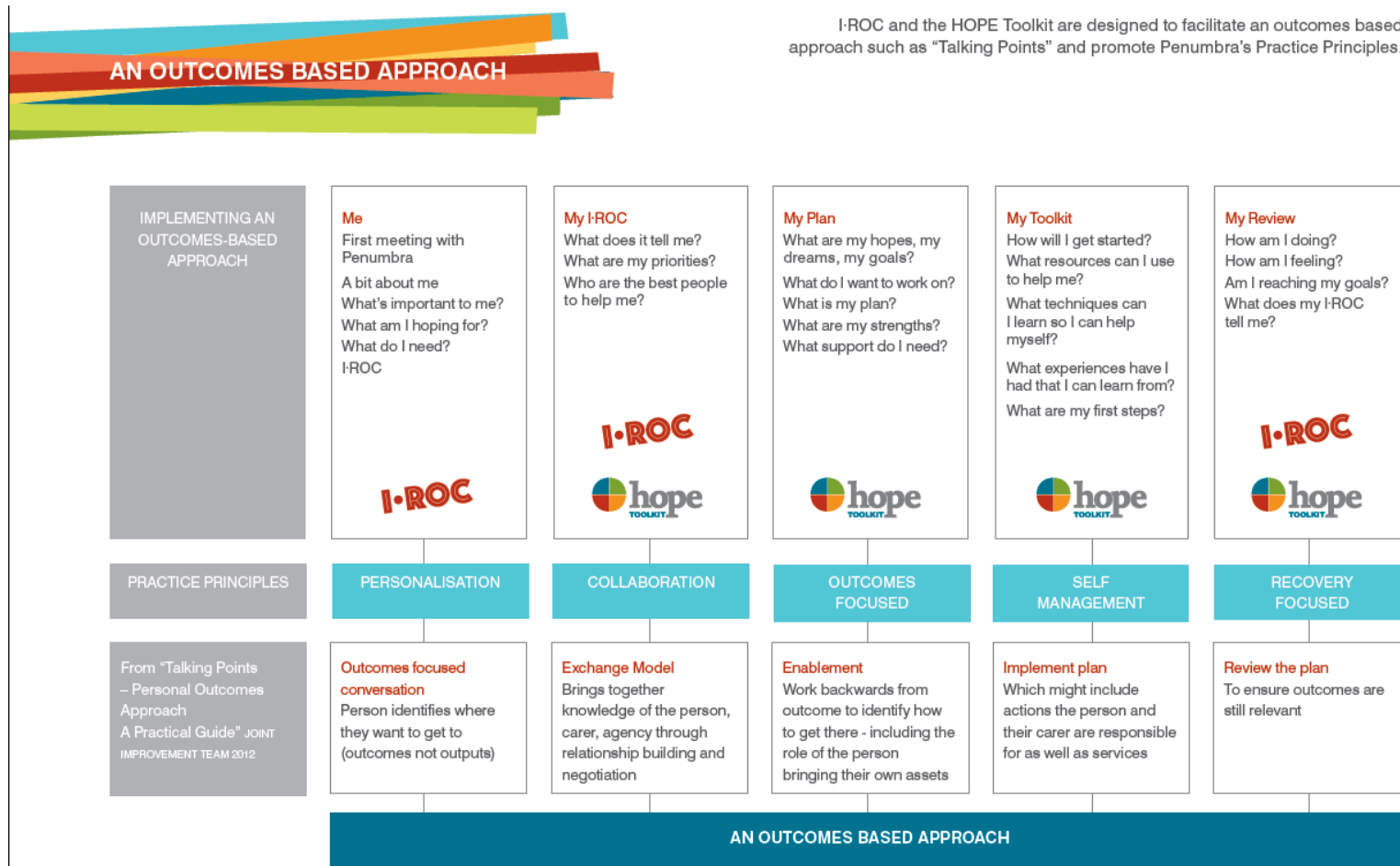
Mouse over or click on the score value to see more information.

Mental Health	4	Current score: 5
Life Skills	5	Base score: 3
Safety & Comfort	5	Priority level: High
Physical Health	4	Aim: Maintain
Exercise & Activity	5	Outcome: I am connected to the area that I live and I am doing things I enjoy.
Purpose & Direction	4	Action: Join the local health walk
Personal Network	4	Lisa is now going to college and volunteering. Lisa is also thinking of joining her joining her local health walk as she feels that this will help her feel healthier and fitter and will help her to meet new people.
Social Network	5	
Valuing Yourself	5	
Participation & Control	4	
Self-Management	5	
Hope For The Future	6	

Close

Appendix 5. HOPE Toolkit: Example Pages

I-ROC and the HOPE Toolkit are designed to facilitate an outcomes based approach such as "Talking Points" and promote Penumbra's Practice Principles.



This toolkit is designed to be used within a coaching or mentoring style of relationship that is underpinned by the following values and practice principles:

VALUES

Respect

The Coach and the Coachee respect each other and what they bring to the relationship. In particular the Coach respects the Coachee, their preferences, aspirations, learning style, skills and strengths.

Equality

The Coach is not the expert in the relationship; both Coach and Coachee bring experience, knowledge, skills and strengths. The Coach avoids jargon and respects the Coachee as the expert of their own experience. The coach facilitates a mutual process.

Hopefulness

The relationship should be characterised by optimism and positive thinking. The Coach holds the hope if and when the Coachee has none and works to build hopefulness in the Coachee. This is achieved by using positive language and adopting a "can do if..." approach. Ultimately this can only be achieved if the Coach is hopeful for positive outcomes.



When Coaching 4 HOPE the Coach is the navigator - helps plan the route, makes sure the route leads to the destination, helps reset if there is a wrong turning, and supports the driver. It is the **Coachee who is the driver**, who sets the destination and decides the route to take.

PRACTICE PRINCIPLES:

Personalisation

Rather than presuming that a “one size fits all”, it is essential to enable people to have support built around their personal needs, choices and aspirations. Ensuring that people move from being (passive) recipients of pre-determined services to being active participants in planning, shaping and reviewing their own services. A personalised service is flexible and focused on delivering the outcomes identified by the person.

Collaboration

Both people work together to create plans and goals that will take the Coachee forward in their chosen direction. The Coach should respectfully and constructively challenge the Coachee using known facts and by checking perceptions. The Coach should ensure that responsibilities and tasks are clearly defined and should ensure that both remain focused on the way ahead.

Outcomes Focused

Defining personal outcomes is critical to personalisation. Outcomes are the result of the time, support, and other resources that are invested in providing a service. Outcomes represent the person’s hopes for the future and if the person themselves describes the results they want to achieve then those resources are focused in helping them in a way that is meaningful for them. A personalised service places those outcomes at the centre of the planning and evaluation of support. At Penumbra I-ROC and the HOPE Toolkit are used to help identify personal outcomes.

Self-Management

A coaching relationship should be creative and constructive. Both the Coach and Coachee are encouraged to imagine and investigate potential solutions to barriers and obstacles. The Coach can introduce plans, tools and tips but ultimately what works best is that the Coachee is enabled to find solutions that work best for them and that promote the person taking control of their own health and wellbeing, learning and preventing triggers for difficult times and also making use of resources that help maintain and improve wellbeing. The more we can manage our own health and wellbeing the more we can help prevent crisis, we can lessen the impact of stressful events and we can sustain recovery.

Recovery Focused

Recovery relates to the achievement of potential. It is personal and is not a linear process. An effective Coach recognises the individuality of recovery, values the journey each person takes and ‘fades in and out’ of the journey as required by the Coachee.


I-ROC

What does my I-ROC tell me? Does it identify specific areas I may wish to focus on?

HOME 

OPPORTUNITY 

PEOPLE 

EMPOWERMENT 

Add in any comments, thoughts, and ideas from your I-ROC and what you think is important to you.

Appendix 6. Literature review: methodology

Two major searches and reviews were undertaken over a period of six years. The first was conducted at the beginning of the PhD, in July 2011. This review sought to identify all recovery literature up to July 2011 in order to understand recovery, identify key themes and recovery measures. The initial literature search formed the basis for all subsequent research, providing a bedrock of knowledge around key recovery themes, models and measures. The second review was conducted in March 2017, and sought to update the results of the first review, highlighting key progressions in the understanding of recovery and the development of new measures and techniques. This final review also sought to map the influence of recovery through research, policy and practice. As such, it can be considered a scoping review.

6.a. Search Strategy

Early stages of literature searches in both 2011 and 2017 followed the three-step method recommended for systematic reviews (Aromataris & Ritano, 2014), with the exception that, given the size of the published literature base, inclusion of grey literature was unfeasible within the main searches. Grey literature was therefore searched for separately using Google and mental health organisation and policy-related websites (e.g. Scottish Recovery Network; Scottish Government; Mental Health Foundation), and in 2017 this was restricted to content related directly to the Scottish content.

6.b. Search criteria

First, relevant databases were identified and were used to search for published academic literature on the subject of recovery. The databases searched were:

- Google Scholar
- PsycArticles
- Psychological & Behavioural Sciences
- Sage
- Science Direct
- Swetswise
- The University of Abertay's search engine

The same key search terms were used in each database, to identify journal articles with recovery or synonyms within the title, abstract or list of key words. The key words were used in the order below, with databases being searched using the next pairing of words if the last returned a large number of articles. Databases were searched using the following combinations of key words:

- 'Recovery' + 'Mental Health'
- 'Recovery' + 'Mental Illness'
- 'Recovery' + 'Mental'
- 'Rehabilitation' + 'Mental [Health]' NO 'Recovery'
- 'Outcomes' + 'Mental [Health]'
- 'Measuring Outcomes' + 'Mental [Health]'
- 'Personal recovery' NOT 'Mental health' NOT 'Mental Illness'

Searches were not restricted by year (both searches ranged from conception of database, to current date). The initial search in 2011 began by not applying any further criteria, and returned a total of 1,941,940 results. Restrictions were then applied to the 2011 and 2017 searches to increase the relevance of the results list. Included articles were therefore restricted by language (English only; full text: 2011; abstract and title: 2017), type of publication (peer reviewed journal article) and subject area. Subjects included were:

- Mental health
- Mental health services
- Psychology
- Mental illness
- Social science & humanities
- Health Sciences
- Specific diagnosis (e.g. depression)

This resulted in 143,339 papers in 2011 and 78,228 papers in the 2017 search.

Article titles were then read, and if they appeared relevant, the abstract was also read. Searches within each database were discontinued when BR read through 500 titles without finding any relevant, novel articles. For the 2011 literature review, all papers with abstracts fitting the criteria (n=278) were then downloaded and read in full. For the 2017 search, papers fitting the criteria were added to a RefWorks database. This list was too long at over 3000 papers to be reviewed within the resources available for the project. As the scoping review aimed to give a high-level overview and map of the field of recovery, it was decided to focus purely on papers

Reason for removal	# Articles
Population	41
Addictions	18
Forensic	10
First episode psychosis	5
Learning disability	3
Veterans	1
Perinatal	1
Older adults	1
Eating disorder	1
Child/adolescent	1
Not personal recovery	8
Clinical	3
Functional	1
Other	4
Not peer reviewed	28
Not mental health	7
Total	84

App_Table 1: Papers removed from 2017 review by category

with recovery in the title to give a proxy representation for the full literature dedicated to the subject.

6.c. Exclusion criteria

Recovery is of course a fairly common term within academic papers, although it is used with widely varying meanings and it therefore took a number of attempts, particularly in 2011, to identify the correct search terms and refinements. A high proportion of papers used the key words but were not actually discussing personal recovery. For example, many papers used the terms recovery and mental illness/health, but were actually discussing symptom remission, recovery following physical health issues or recovery following a disaster. Additionally, many papers relating to recovery out-with the health sphere were not excluded by the search criteria; common amongst these were papers relating to:

- Recovery from medical conditions or recovery of self in the face of ongoing/chronic medical conditions (e.g. cancer)
- Data recovery (IT)
- Economic recovery
- Disaster recovery including a mental health component
- Group or social recovery following war
- Clinical/psychiatric/medical papers discussing drug or therapy treatment & remission of symptoms with no measure of personal recovery

Variations in the meaning of recovery are also clearly reflected within mental health literature, particularly within specialist psychiatric settings, such as child and adolescent psychiatry, forensic services and addictions. Recovery as it applies within specialist populations thus remains unfortunately beyond the scope of this review. Further limitations were therefore added to the searches to remove common topics that whilst relevant, complicate the picture of recovery at this stage. If exclusion based purely on the title was not possible, the abstract was also read. Key phrases used within the abstracts that were selected for full reading included:

- Recovery model
- Recovery-oriented
- Recovery outcomes
- Recovery-focused
- Mental health recovery
- Recovery movement
- Personal recovery
- Recovery attitude
- Recovery principles

6.d. Manual Search

When the papers found through the database searches were read in full, the references of those identified as highly relevant or influential (e.g. reviews of recovery or compendiums of recovery measures) were scanned to identify any literature that had been previously missed. Citations for key papers were also

checked. Finally, the publication lists of the most prolific and widely referenced authors (e.g. Mike Slade, Larry Davidson) and research groups were mined for any further relevant papers. This added 35 studies in 2011, and 101 papers in 2017, bringing the final totals of papers reviewed to 313 at time1 and 933 at time 2.

6.e. Analysis

This review was conducted in two stages, a narrative summary and a content analysis.

6.e.i. Narrative summary

Firstly, following the literature search in 2011, a narrative summary of the literature on recovery was conducted. All articles identified in the search were read in full, and a summary of the methodology and findings of each paper was written alongside a brief critique. From these summaries, key themes were identified and used to write a descriptive overview of the field of recovery in 2011.

6.e.ii. Scoping review and Content analysis

A scoping review seeks to map the scrutinised field of research, often providing a graphical representation of the findings. To enable a quantifiable mapping of recovery research, the Refworks reference list of papers with recovery in the title was exported to Excel, where formulas³³ and filters were used to search and refine the data, providing a statistical synthesis of the recovery literature (section x). The full list was also used to update the findings of the 2011 search, and to review recovery measurement (see Chapter 3).

Content analysis was used as the primary methodology for this scoping review, following guidelines set out by (Drisko, 2015) wherever possible. Titles and abstracts of papers identified through the 2017 search were read several times, and a coding matrix comprising questions and variable codes (Table 2) was developed.

Key word searches were used to code the data. Overarching categories (e.g. participant group) and key words (e.g. service user; professional) were identified inductively during several readings of the data. Abstracts and titles were then

³³ Formulas used the format: =ISNUMBER((SEARCH("*word*",A1,1))), to search for words within titles and abstracts

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searched using the key words to create key word matrices for each category. Using key word search matrices is a quick and objective way in which to identify potential codes, however it relies on papers using standard phrasing, for example 'the aim of this paper is to...', and will not easily pick up papers that state their intentions in a different way, for example, "we evaluated the psychometric characteristics of a new measure of the recovery construct" (Ahmed et al., 2013). In order to include as many papers as possible, a broad range of synonyms were used for each key word (e.g. key word = "aim"; synonyms = "objective"; "the purpose"; "sought to" "intention was". Searches were conducted with word stems and wildcards (e.g. "desc*"), as well as full words and relevant phrases (e.g. "to describe"). Matrices were then manually sense-checked before codes were applied. Where no keywords were matched, abstracts were again read and codes manually applied.

Reference	Title Primary	Abstract	Include?	Reason	Country	Measures	Study type
Kissman, K. and Maurer, 2002	East meets West: Therapeutic aspects of spirituality in health, mental health and addiction recovery	The effects of eastern and western spiritual practices in promoting physical and emotional healing are identified. Buddhism, Hinduism and other eastern spiritual beliefs and practices have much to contribute to western ways of understanding the spiritual elements of holistic healing.	No	Addictions			
Kleintjes, S. et al, 2012	South African mental health care service user views on priorities for supporting recovery: implications for policy and service development	The paper documents the views of South African mental health care service users on policy directions and service developments that are required to support their recovery. Semi-structured interviews were conducted with forty service users and service user advocates. A framework analysis approach was used to analyse the qualitative data. Service user priorities included addressing stigma, discrimination and disempowerment, and the links between mental health and poverty...	Yes		South Africa		Qualitative
Klockmo, C. et al, 2012a	Knowledge and attitude regarding recovery among mental health practitioners in Sweden	The aim was to investigate the knowledge and the attitude regarding recovery among practitioners working in the Swedish mental health system, Personligt Ombud (PO), Supported Housing Team (SHT) and Psychiatric Out Patient Service (POPS), to determine whether and how knowledge and attitude regarding recovery differ between the three services. A web-based questionnaire based on the Recovery Knowledge Inventory was sent to the participants. Participant selection ensured that different parts of Sweden were represented...	Yes		Sweden	Recovery Knowledge Inventory	Quantitative

App_Table 2: Example excerpt from 2017 review spreadsheet

Appendix 7. Literature review: additional tables

Author	Recovery quote	Recovery theme
Fei-Yeng Kwok, 2009	“The key elements in my recovery from bipolar illness have been the social acceptance and support of my friends, the restoration of my self-confidence in overcoming social stigma and my awareness of the benefits and dangers of medications. To these, I need to add—my hope for the realization of my future dreams.” (p.236)	<ul style="list-style-type: none"> • Social support • Personal relationships • Self-confidence • Stigma • Knowledge of illness • Hope • Empowerment
Friedman, 2004	“I knew instinctively that getting back to work would be the most therapeutic thing I could do for myself.” (p.196)	<ul style="list-style-type: none"> • Employment • Meaningful activity • Empowerment
Fisher, 2003	“The most important elements in my recovery were a therapist who believed in me, the support of my family, steadfast friends, and meaningful work. My therapist responded to my dream of becoming a psychiatrist by saying, “I will go to your graduation.” I felt confirmed. Once again I could dream and have a life. Several years later he came to my graduation from George Washington University Medical School.” (p.67)	<ul style="list-style-type: none"> • Belief of others • Social support • Personal relationships • Support relationships • Employment • Meaningful activity • Education • Goals
Armstrong, 2010	I gained love and trust from people who have been hurt like me. I gained confidence from people who were lost and regained their lives. (p.261)	<ul style="list-style-type: none"> • Peer support • Hope-inspiring relationships
Fekete, 2004	I am happy to say that many of my symptoms have abated. For this I credit the medical community and especially the influence of Zyprexa...I like who I am now. I finished my doctoral program and received my PhD in 1994. I still love to write...2004. I have been a college teacher for 8 years and have loved every bit of it...I have personal relationships now. I have good friends. I have a good life. (p.193)	<ul style="list-style-type: none"> • Medication • Self-liking • Education • Meaningful activity • Employment • Personal relationships

App_Table 3: Common themes in published personal narratives

Authors	Method	Themes Identified	
Sullivan, 1994	Open ended and Semi-structured 1-1 interviews, standardised questionnaire	<ul style="list-style-type: none"> ▪ Medication ▪ Community Support ▪ Service ▪ Spirituality ▪ Knowledge of the illness 	<ul style="list-style-type: none"> ▪ Self-will ▪ Vocational activity ▪ Mutual aid/supportive friends ▪ Significant others
Ridgway, 2001	Qualitative document analysis of published autobiographies	<ul style="list-style-type: none"> • Reawakening hope • Understanding & acceptance • Engagement & Active Participation • Active coping 	<ul style="list-style-type: none"> • Positive sense of self • Meaning & purpose • Complex, non-linear journey • Support & partnership
Tooth et al, 2003	Focus groups, interviews, thematic analysis	<ul style="list-style-type: none"> ▪ Active sense of self ▪ Determination to get better ▪ Acceptance & support from friends & family 	<ul style="list-style-type: none"> ▪ Achieving something ▪ Own illness management & acceptance ▪ Realisation of need to help themselves
Piat et al, 2009	Semi-structured interviews exploring the differing views of recovery as it relates to illness and wellness.	<p>In relation to illness:</p> <ul style="list-style-type: none"> • Cure • Dependent on medication • Returning to my former self 	<p>In relation to wellness:</p> <ul style="list-style-type: none"> • Taking charge in life • A process • Evolving toward a new self
Thomas & Rickwood, 2016	Case study	<ul style="list-style-type: none"> ▪ Hope ▪ Self-identity 	<ul style="list-style-type: none"> ▪ A meaningful life ▪ Responsibility

App_Table 4: Examples of recovery themes identified through qualitative research

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Transtheoretical model	Pre-contemplation	Contemplation	Preparation	Action	Maintenance
(Davidson & Strauss, 1992)		Awareness of a more active self	Taking stock of self	Putting self into action	Appealing to the self
(Baxter & Diehl, 1998)		Crisis <i>Recuperation</i>	Decision <i>Rebuilding independence</i>	Awakening <i>Building healthy interdependence</i>	
(S. L. Young & Ensing, 1999)		Initiating recovery		Regaining & moving forward	Improving quality of life
(Pettie & Triolo, 1999)	Why me?	Meaning of illness	What now?	Reconstructing identity	
Roe & Ben-Yishia, 1999	Separating self from illness	Illness becomes object	Self as narrator	Self as protagonist	Integrating self & illness
Spaniol et al (2000)	Overwhelmed by the disability		Struggling with the disability	Living with the disability	Living beyond the disability
Jacobson (2001)	Recognising the problem			Transforming the self	Reaching out to others
Andresen et al (2003)	Moratorium	Awareness	Preparation	Rebuilding	Growth
Ralph et al (2004)	Anguish	Awakening, insight	Action plan	Determination	Wellbeing
Davidson et al, 2010b	Pre-recovery	Contemplation	Preparation	Action	Living beyond disability
Leamy et al, 2011	Pre-contemplation	Contemplation	Preparation	Action	Maintenance
Song & Shi, 2009	Novitiate recovery (struggling with disability)		Semi-recovery (living with disability)		Full recovery (living beyond disability)
Mental health providers forum, 2009	Stuck	Accepting help	Believing	Learning	Self-reliant
Noiseaux et al, 2008	Descent into hell	Igniting a spark of hope	Developing insight Activating instinct to fight back	Discovering keys to well-being	Maintaining equilibrium between internal and external forces Perceiving light at the end of the tunnel
Bradshaw et al, 2007	Demoralisation		Developing and establishing independence		Efforts towards community integration
Merryman & Riegel (2007)	Occupational dependence		Supported occupational performance	Active engagement in meaningful occupations	Successful occupational performance
NIMH, 2004	Dependent/unaware	Dependent/aware		Independent/aware	Interdependent/aware
Lapsley et al, 2002		Glimpses of recovery	Turning point	Road to recovery	
Peden (1993)		Turning point & professional support	Determination; work; personal network support; successes		Self-esteem & Maintaining balance
Noordsy et al, 2002		Hope	Taking personal responsibility	Getting on with life	

App_Table 5: Stage models of recovery mapped against the Transtheoretical model of change. Adapted from Davidson et al, 2005

Key word	# Occurrences	
	Title	Abstract
Connectedness		
Relationship*	12	146
Connect*	3	53
Social*	66	317
Family	17	83
Hope		
Hop*	148	162
Identity		
Identit*	147	65
Meaningful Activity		
Purpose*	146	138
Meaning*	13	130
Leisure	3	4
Employment	7	46
Spiritual*	13	30
Empowerment		
Empower*	14	113
Citizenship	3	8
Autonom*	0	21
Management	54	126
Health & Wellbeing		
Physical*	4	47
Wellbeing*	3	19
Positive psychology	2	6
Happy	1	1
Strength*	6	58
Daily living		
Trauma	0	10
Housing	19	51
Daily living	0	3
Function*	4	76
Safe*	2	24

App_Table 6: Frequency of occurrences of key words relating to each recovery component within recovery literature

Appendix 8. List of measures and abbreviations

Personal Recovery Measures		
Adult Consumer Forms	ACF	Roth, 2005 (in Campbell-Orde et al)
Agreement with Recovery Attitudes Scale	ARAS	Murnen SK & Smolak L (1996)
Bipolar Recovery Questionnaire	BRQ	Jones, S. et al, 2013
Collaborative Recovery Model	CR	Marshall, S. et al, 2009
Colorado Client Assessment Record (CCAR)-Recovery	CCAR	Ellis et al, 1984
Consumer Recovery Measure	CRM	DeRoche et al, 2009
Consumer Recovery Outcomes System	CROS	Miller, 2005; Bloom, 2004
Crisis Hostel Healing Scale	CCHS	New York Crisis Hostel Project, 1988
Developing Recovery-Enhancing Environments Measure	DREEM	Dinniss et al, 2007
Illness Management and Recovery Scales	IMRS	Mueser et al. 2005
Individual Recovery Outcomes Counter	I.ROC	Monger et al, 2012
Levels of Recovery from Psychotic Disorders Scale	LORS	Sousa, 1998
Maryland Assessment of Recovery in Serious Mental Illness	MARS	Drapalski et al, 2012
Mental Health Recovery Measure	MHRM	Young & Bullock, 2003
Milestones of Recovery Scale	MORS	Fisher, D. et al, 2009
Milestones to Recovery	MTR	Doyle, 2012
Multi-Phase Recovery Measure	MPRM	Farkas, M in Burgess et al, 2010
My Voice, My Life	MVML	Gordon, S. et al, 2013
Ohio Mental Health Consumer Outcomes System	OMHCOS	Roth, 2005 (in Campbell-Orde et al)
Personal Growth and Recovery scale	PGRS	Russinova (unpublished)
Personal Vision of Recovery Questionnaire	PVRQ	Ensfield et al, 1998 (in Campbell-Orde)
Playback impact scale	PIS	Moran, G. and Alon, 2011d
Procovery Evaluation Instrument	PEI	Mancini, M. et al, 2013
Provider Expectations for Recovery Scale	PERS	Salyers et al, 2013
Psychosis Recovery Inventory	PRI	Chen et al. (2005)
Questionnaire about the Process of Recovery	QPR	Neil et al, 2013
Recovery Assessment Scale	RAS	Giffort, D et al, 1995
Recovery Enhancing Environment Measure	REE	Ridgway & Press, 2004
Recovery Interview	RI	Heil & Johnson, 1998 in Ralph et al
Recovery Markers Inventory	RMI	Olmos-Gallo et al, 2009
Recovery Markers Questionnaire	RMQ	Ridgway et al., 2003
Recovery Measurement Tool	RMT	Ralph, 2000
Recovery Process Inventory	RPI	Jerrell, J. et al, 2006
Recovery Star	MHRS	MacKeith & Burns, 2008
Recovery Styles Questionnaire	RSQ	Drayton et al, 1998
Rochester Recovery Inquiry	RRI	Hopper et al, 1996
Schizophrenia Patient Outcomes Research Team Scale	PORT	Resnick et al,2004; 2005
Self-Identified Stage of Recovery	SISR	Andresen, 2007
Service-user Recovery Evaluation	SeRvE	Barber, J. et al, 2012
Short Interview to Assess Stages of Recovery	SIST-R	Wolstencroft et al 2010
Staff attitudes to recovery scale	STARS	Crowe et al., 2006
Stages of Recovery Instrument	STORI	Andresen, R. et al, 2006
Stages of Recovery Scale	SRS	Song and Hsu, 2011
Subjective Recovery Assessment Scale	SRAS	Lee, 2009 unpublished

Recovery Knowledge/Attitudes		
Beliefs about recovery and WRAP	BARW	Doughty et al, 2008
Recovery Attitudes Questionnaire	RAQ	Borkin, J.R. et al 1998
Recovery Attitudinal pre-post survey	RAPS	Cook et al, 1995
Recovery Elements Assessment Questionnaire	REAQ	Siu et al, 2012
Recovery Interventions Questionnaire	RIQ	Ellis, G. and King, 2003
Recovery Knowledge Inventory	RKI	Bedregal et al, 2006
Recovery Knowledge Questionnaire	RKQ	NIMH in England (2007
Recovery Orientation	RO	Resnick et al, 2005
Recovery Self Assessment	RSA	O'Connell et al. (2005)
ROP evaluation measures		
Families Healing Together	FHT	Rue, L. et al, 2016
Illness Management and Recovery Scales	IMR	Mueser et al. 2005
	Fidelity	
INSPIRE	INSPIRE	Williams, J. et al, 2015a
Magellan Recovery Culture Report Card	MRCRC	Farkas, M in Burgess et al, 2010
Peer Outcomes Protocol	POP	Campbell et al, 2004 (in Campbell-Orde et al)
Pillars of Recovery Service Audit Tool	PoRSAT	Higgins, 2008
Promoting Recovery in Mental Health Organisations	PRO	Olmos-Gallo et al, 2010
Recovery Based Program Inventory	RBPI	Ragins (unpublished, in Burgess et al, 2010)
Recovery Centred Measures	RCM	Chandler, D. and Wilson, 2014
Recovery Oriented Practices Index	ROPI	Mancini & Finnerty, 2005
Recovery Oriented Service Evaluation	ROSE	American Association of Community Psychiatrists (AAPC)
Recovery Oriented Systems Indicators Measure	ROSI	Dumont et al. (2005)
Recovery Promoting Relationships Scale	RPRS	Russinova, Z. et al, 2011
Recovery Promotion Fidelity Scale	RPFS	Armstrong, N. and Steffen, 2009
Scottish Recovery Indicator	SRI2	Scottish Recovery Network, 2011
Recovery - Related elements measures		
Canadian Occupational Performance Measure	COPM	Law et al., 1990
Community Living Skills Scale	CLSS	Smith & Ford, 1990
Herth Hope Index	HHI	Herth, 1992
Hope Scale	HS	Snyder et al, 1991
Leadership Education and Training Assessment	LETA	Bullock et al (unpublished; in Ralph et al)
Making Decisions Empowerment Scale	MDES	Rogers et al, 1997
Mental Health Confidence Scale	MHCS	Carpinello et al, 2000
Modified Engulfment Scale	MES	McCay & Seeman, 1998
Outcomes Star	OS	MacKeith, 2011
Personal/Organizational/Extra-organizational Empowerment Scales	POEES	Segal, Silverman, & Temkin, 1995
Reciprocal Support Scale	RSS	Silver, Bricker, Pesta, & Pugh, 2002)
Relationships and Activities that Facilitate Recovery Survey	RAFRS	Leavy et al, 2002
Social health scales	SHS	Carlson, J. et al, 2011
Social inclusion measre	SI	Ryan, T. et al, 2013
Staff Relationships Scale	SRS	Hornik, Ralph, & Salmons, 1999
UCLA Loneliness Scale V3	UCLALSV	Russell, 1996
Well-Being Scale	WBS	Campbell & Schraiber, 1989
WEMWBs	WEMWBs	Tennant et al, 2007

App_ Table 7: List of measures and abbreviations

Appendix 9. CHIME Mapping Tool

Measure	CHIME Category	CHIME subcategory	Relevant to recovery?	How would you categorise this item?	Any comments
CRM (1-4 Scale Strongly Agree - Strongly Disagree)					
Lately I feel I have been making important contributions					
I have hope for the future					
I am reaching my goals					
I have this feeling things are going to be just fine					
Recently my life has felt meaningful					
Recently I have been motivated to try new things					
I get a lot of support during the hard times					
In most situations I feel totally safe					
My life is often disrupted by my symptoms					
Sometimes I am afraid someone might hurt me					
I have people in my life I can really count on					
Life's pressures lead me to lose control					
I have friends or family I really like					
My symptoms interfere less and less with my life					
When my symptoms occur, I am able to manage them without falling apart					
I'm starting to feel fairly confident about getting my life back on track					
My life is really good now, and the future looks bright					
I feel like I'm nothing but a sick person now					
Because others believe in me, I've just started to think maybe I can get better					
I am just beginning to realize that illness doesn't change who I am as a person					
I am now beginning to accept the illness as part of the whole person that is me					
I am happy with who I am as a person					
I feel as though I don't know who I am any more					
I have recently begun to recognize a part of me that is not affected by the illness					
I am just starting to realize that I can still be a valuable person					

App_Table 8: CHIME Mapping tool

Appendix 10. Systematic review data extraction tool & scoring

Category	Criteria	Details/Comments	Scoring	Max	Min
Other measures included in the analysis:		Space given for up to 14 measures	(Sum of total number of measures used) <4 = 1; <7 = 2; <10 = 3; 10+ = 4)	4	0
	Name		(Count of recovery measures used) 1 per measure	3	0
	Convergent Validity Effect Size	scores recorded for correlations between total scores where available. If subscales only were reported, the highest and lowest significant effects were recorded, but scores were calculated from the lowest significant effect	(Effect size score summed for all measures used in paper, then divided by the number of measures) 1 = 0.1, 2 = 0.3, 3 = 0.5	3	0
	N	Power analysis; rule of thumb (FA)	(sum of (2 for totals/all subscales meet reqs; 1 for subscales where some do and some don't meet reqs; -1 for sig total scores/all subscales not meeting req; 0 for n/s)/number of possible measure correlations (number of measure correlations * 2)) 2 = totals/all subscales meet reqs; 1 = subscales where some do and some don't meet reqs; -1 = sig total scores/all subscales not meeting req; 0 = n/s	2	0
Sample size	Overall; Internal consistency; TRT; Interrater; Structural; Convergent; Divergent; Predictive Cross-cultural; Criterion; Responsiveness	N; Space given for each type of validity and reliability under investigation (Used to calculate power (convergent validity; reliability) and check the rule of thumb rule (factor analysis) - see N above)			
Was the sample size adequate?	Overall; Internal consistency; TRT; Interrater; Structural; Convergent; Divergent; Predictive Cross-cultural; Criterion; Responsiveness		Yes = 1 / No = -1 / Don't Know = 0	1	-1
Was the percentage of missing items given?	Overall; Internal consistency; TRT; Interrater; Structural; Convergent; Divergent; Predictive Cross-cultural; Criterion; Responsiveness		Yes = 1 / No = -1 / Don't Know = 0	1	-1

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% Missing data	Overall; Internal consistency; TRT; Interrater; Structural; Convergent; Divergent; Predictive Cross-cultural; Criterion; Responsiveness		3 = <=10%; 2 = <=20%; 1 = >20%	3	0
Did the paper include the following?	Power calculations		Yes = 1 / No = -1 / Don't Know = 0	1	-1
	Evaluation of normality		Yes = 1 / No = -1 / Don't Know = 0	1	-1
	Adequate description of software		Yes = 1 / No = -1 / Don't Know = 0	1	-1
	Adequate descriptive statistics		Yes = 1 / No = -1 / Don't Know = 0	1	-1
	Percentage of the respondents who had the lowest possible (total) score		Yes = 1 / No = -1 / Don't Know = 0	1	-1
	Percentage of the respondents who had the highest possible (total) score		Yes = 1 / No = -1 / Don't Know = 0	1	-1
	Minimal important change (MIC) or the minimal important difference (MID)		Yes = 1 / No = -1 / Don't Know = 0	1	-1
	Description of how missing data were handled		Yes = 1 / No = -1 / Don't Know = 0	1	-1
Does the paper report the following demographic data?	median or mean age (with standard deviation or range)?		Yes = 1 / No = -1 / Don't Know = 0	1	-1
	distribution of sex?		Yes = 1 / No = -1 / Don't Know = 0	1	-1
	important disease characteristics (e.g. severity, status, duration) and description of treatment?		Yes = 1 / No = -1 / Don't Know = 0	1	-1
	setting(s) in which the study was conducted? e.g. general population, primary care or hospital/rehabilitation care		Yes = 1 / No = -1 / Don't Know = 0	1	-1
	countries in which the study was conducted?		Yes = 1 / No = -1 / Don't Know = 0	1	-1
	language in which the HR-PRO instrument was evaluated?		Yes = 1 / No = -1 / Don't Know = 0	1	-1

	method used to select patients adequately described? e.g. convenience, consecutive, or random		Yes = 1 / No = -1 / Don't Know = 0	1	-1
	percentage of missing responses		Yes = 1 / No = -1 / Don't Know = 0	1	-1
Were any of the following Internal consistency stats calculated?	for Classical Test Theory (CTT): Was Cronbach's alpha calculated?		Yes = 1 / No/Don't know = 0	1	-1
	for dichotomous scores: Was Cronbach's alpha or KR-20 calculated?		Yes = 1 / No/Don't know = 0	1	-1
	for IRT: Was a goodness of fit statistic at a global level calculated? e.g. χ^2 , reliability coefficient of estimated latent trait value (index of (subject or item) separation), or Rasch analysis		Yes = 1 / No/Don't know = 0	1	-1
Internal consistency stats (recovery measure total and subscales)	Recovery measure total	Ratings based on Ponterotto & Ruckdeschel, 2007 (sheet 1)	"Excellent" = 4; "Good" = 3; "Moderate" = 2; "Fair" = 1	4	0
	Subscales (space for 10)	Subscale alpha scores/number of subscales (max 10)	$\geq 0.8-0.89 = 1$	4	0
Was the unidimensionality of the scale checked? i.e. was factor analysis or IRT model applied?	CFA; EFA; Rasch analysis; Other; None		None = 0; 1 point for each of the others	4	0
	N	Space to give N for CFA and EFA	1 point awarded for $N \geq$ (measure items * 10)	1	0
For exploratory factor analysis	Extraction method		1= both extraction & rotation reported; -1 = neither	1	-1
	Rotation				
	Retention method		1 = 2 or more methods used; -1 = none reported	1	-1
	Factors extracted	N			
	Variance explained	%			
For CFA	Model tested	Description of model			

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	CFI	These were the most commonly reported statistics, with every CFA paper reporting at least one. These scores were therefore used for evaluation	1 for reporting; CFI values between 0.80 and 0.95 indicating acceptable fit (1); values greater than 0.95 suggesting excellent fit (2) (Hu and Bentler 1999); lower = 0	3	0
	RMSEA		1 for reporting; RMSEA between 0.05 and 0.08 indicate acceptable fit (1), and below 0.05 show excellent fit (2); higher = 0	3	0
	Chi Square	These were not reported frequently enough to draw any comparisons, so were not scored other than a point for inclusion	1 for reporting	1	0
	NFI		1 for reporting	1	0
	NNFI		1 for reporting	1	0
	Other		1 for reporting	1	0
For Rasch analysis	Item infit		If both <2 = 1, else 0	1	0
	Item outfit				
	Item reliability estimate		0 = <0.7; 1 = 0.7 (acceptable) ; 2 = 0.8 (good); 3 = 0.9 (excellent)	3	0
	Person infit		If both <2 = 1, else 0	1	0
	Person outfit				
		Person reliability estimate		0 = <0.7; 1 = 0.7 (acceptable) ; 2 = 0.8 (good); 3 = 0.9 (excellent)	3
Reliability testing: did the paper report the following:	Test retest; Inter-rater; None; Other		None = 0; 1 point for each of the others	3	0
For TRT	Were at least two measurements available?		Yes = 1 / No = -1 / Don't Know = 0	1	-1
	Were the administrations independent?		Yes = 1 / No = -1 / Don't Know = 0	1	-1
	Was the time interval stated?		Yes = 1 / No = -1 / Don't Know = 0	1	-1

	Was the time interval appropriate?		Yes = 1 / No = -1 / Don't Know = 0	1	-1
	Were patients stable in the interim period on the construct to be measured?		Yes = 1 / No = -1 / Don't Know = 0	1	-1
	Were the test conditions similar for both measurements? e.g. type of administration, environment, instructions		Yes = 1 / No = -1 / Don't Know = 0	1	-1
	Were there any important flaws in the design or methods of the study?		No = 1 / Yes = -1 / Don't Know = 0	1	-1
	for continuous scores: Was an intraclass correlation coefficient (ICC) calculated?		Yes = 1 / No = -1 / Don't Know = 0	1	-1
	for dichotomous/nominal/ordinal scores: Was kappa calculated?		Yes = 1 / No = -1 / Don't Know = 0	1	-1
	for ordinal scores: Was a weighted kappa calculated?		Yes = 1 / No = -1 / Don't Know = 0	1	-1
	for ordinal scores: Was the weighting scheme described? e.g. linear, quadratic		Yes = 1 / No = -1 / Don't Know = 0	1	-1
	for CTT (absolute measurements): Was the Standard Error of Measurement (SEM), Smallest Detectable Change (SDC) or Limits of Agreement (LoA) calculated?		Yes = 1 / No = -1 / Don't Know = 0	1	-1
For Other methods	More than one measurement time?		Yes = 1 / No = -1 / Don't Know = 0	1	-1
	Were the administrations independent?		Yes = 1 / No = -1 / Don't Know = 0	1	-1
	Was the time interval stated?		Yes = 1 / No = -1 / Don't Know = 0	1	-1
	Was the time interval appropriate?		Yes = 1 / No = -1 / Don't Know = 0	1	-1
	Were patients stable in the interim period on the construct to be measured?		Yes = 1 / No = -1 / Don't Know = 0	1	-1
	Were the test conditions similar for both measurements? e.g. type of administration, environment, instructions		Yes = 1 / No = -1 / Don't Know = 0	1	-1

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	Were there any important flaws in the design or methods of the study?		No = 1 / Yes = -1 / Don't Know = 0	1	-1
	for continuous scores: Was an intraclass correlation coefficient (ICC) calculated?		Yes = 1 / No = -1 / Don't Know = 0	1	-1
	for dichotomous/nominal/ordinal scores: Was kappa calculated?		Yes = 1 / No = -1 / Don't Know = 0	1	-1
	for ordinal scores: Was a weighted kappa calculated?		Yes = 1 / No = -1 / Don't Know = 0	1	-1
	for ordinal scores: Was the weighting scheme described? e.g. linear, quadratic		Yes = 1 / No = -1 / Don't Know = 0	1	-1
	for CTT (absolute measurements): Was the Standard Error of Measurement (SEM), Smallest Detectable Change (SDC) or Limits of Agreement (LoA) calculated?		Yes = 1 / No = -1 / Don't Know = 0	1	-1
For TRT	Time 1 & 2 mean		1 point awarded for reporting mean scores	1	0
	Method		[To inform scoring of effect size]		
	Effect size		Pearsons: 1 for 0.1, 2 for 0.3, 3 for 0.5; ICC: 3 for >0.7; Kappa>0.2 = 1; >0.4=2; >0.6=3; >0.8=4 (awarded for one, not all)	3	0
	Lower & Upper CI		1 point awarded for reporting confidence intervals	1	0
For Inter-rater:	Method		[To inform scoring of effect size]		
	Effect size		Pearsons: 1 for 0.1, 2 for 0.3, 3 for 0.5; ICC: 3 for >0.7; Kappa>0.2 = 1; >0.4=2; >0.6=3; >0.8=4 (awarded for one, not all)	3	0
	Lower & Upper CI		1 point awarded for reporting confidence intervals	1	0

For predictive validity:	Were hypotheses regarding correlations or mean differences formulated a priori (i.e. before data collection)?		Yes = 1 / No = -1 / Don't Know = 0	1	-1
	Was the expected direction of correlations or mean differences included in the hypotheses?		Yes = 1 / No = -1 / Don't Know = 0	1	-1
	Was the expected absolute or relative magnitude of correlations or mean differences included in the hypotheses?		Yes = 1 / No = -1 / Don't Know = 0	1	-1
	for convergent and divergent validity: Was an adequate description provided of the comparator instrument(s)?		Yes = 1 / No = -1 / Don't Know = 0	1	-1
	for convergent and divergent validity: Were the measurement properties of the comparator instrument(s) adequately described?		Yes = 1 / No = -1 / Don't Know = 0	1	-1
	Were there any important flaws in the design or methods of the study?		No = 1 / Yes = -1 / Don't Know = 0	1	-1
	Were design and statistical methods adequate for the hypotheses to be tested?		Yes = 1 / No = -1 / Don't Know = 0	1	-1
	What method was used?				
	Other (please specify)				
	Were confidence intervals reported?		1 point awarded for reporting confidence intervals		
	If yes, please detail for primary measure				
For cross-cultural validity:	Were both the original language in which the HR-PRO instrument was developed, and the language in which the HR-PRO instrument was translated described?		Yes = 1 / No = -1 / Don't Know = 0	1	-1
	Was the expertise of the people involved in the translation process adequately described? e.g. expertise in the disease(s) involved, expertise in the construct to be measured, expertise in both languages		Yes = 1 / No = -1 / Don't Know = 0	1	-1

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	Did the translators work independently from each other?		Yes = 1 / No = -1 / Don't Know = 0	1	-1
	Were items translated forward and backward?		Yes = 1 / No = -1 / Don't Know = 0	1	-1
	Was there an adequate description of how differences between the original and translated versions were resolved?		Yes = 1 / No = -1 / Don't Know = 0	1	-1
	Was the translation reviewed by a committee (e.g. original developers)?		Yes = 1 / No = -1 / Don't Know = 0	1	-1
	Was the HR-PRO instrument pre-tested (e.g. cognitive interviews) to check interpretation, cultural relevance of the translation, and ease of comprehension?		Yes = 1 / No = -1 / Don't Know = 0	1	-1
	Was the sample used in the pre-test adequately described?		Yes = 1 / No = -1 / Don't Know = 0	1	-1
	Were the samples similar for all characteristics except language and/or cultural background?		Yes = 1 / No = -1 / Don't Know = 0	1	-1
	Were there any important flaws in the design or methods of the study?		No = 1 / Yes = -1 / Don't Know = 0	1	-1
	Comparative validity of the two versions tested?		Yes = 1 / No = -1 / Don't Know = 0	1	-1
	for CTT: Was confirmatory factor analysis performed?		Yes = 1 / No = -1 / Don't Know = 0	1	-1
	for IRT: Was differential item function (DIF) between language groups assessed?		Yes = 1 / No = -1 / Don't Know = 0	1	-1
	Any comments				
	What were the languages involved? (Original & translation)				
For criterion validity	Can the criterion used or employed be considered as a reasonable 'gold standard'?		Yes = 1 / No = -1 / Don't Know = 0	1	-1
	Were there any important flaws in the design or methods of the study?		Yes = 1 / No = -1 / Don't Know = 0	1	-1

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	for continuous scores: Were correlations, or the area under the receiver operating curve calculated?		Yes = 1 / No = -1 / Don't Know = 0	1	-1
	for dichotomous scores: Were sensitivity and specificity determined?		Yes = 1 / No = -1 / Don't Know = 0	1	-1
	Any comments				
For responsiveness:	Was a longitudinal design with at least two measurement used?		Yes = 1 / No = -1 / Don't Know = 0	1	-1
	Was the time interval stated?		Yes = 1 / No = -1 / Don't Know = 0	1	-1
	If anything occurred in the interim period (e.g. intervention, other relevant events), was it adequately described?		Yes = 1 / No = -1 / Don't Know = 0	1	-1
	Was a proportion of the patients changed (i.e. improvement or deterioration)?		Yes = 1 / No = -1 / Don't Know = 0	1	-1
	Comments				
	Time interval				
	Responsiveness: for continuous scores: Were correlations between change scores, or the area under the Receiver Operator Curve (ROC) curve calculated?		Yes = 1 / No = -1 / Don't Know = 0	1	-1
	for dichotomous scales: Were sensitivity and specificity (changed versus not changed) determined?		Yes = 1 / No = -1 / Don't Know = 0	1	-1
Were any other statistics reported?	Response		Yes = 1 / No = -1 / Don't Know = 0	1	-1
	If yes, please describe				
Total Possible Score				136	-78

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	5 = entirely construed by people with LE; 4 = at least some developers with lived experience; all decisions checked/consulted with a consumer group; 3 = decisions checked/consulted with a consumer group or at least some developers with LE (+2); 2= focus groups/interviews as part of iterative development process; 1=interviews or focus groups to start development, then no further involvement;
	Taken from Shanks et al, or where data unavailable, mapped manually
	Between 0 and 5
	$((\% \text{ rounded down to nearest } 10)/10) + \#CHIME \text{ elements}$
	0 publications = 0, 1-2 = 1, 3-5=2,>5=3
	0 publications = 0, 1-2 = 1, 3-5=2,>5=3
	Basic count
	Sum of previous three criteria
	Self-assessment = 1; Self-assessment with process for discussion = 2; Collaborative assessment/described ability to use as such =3; Evaluated as a collaborative measure = 4
	What do staff and service users think about its use in practice? 0 = N/A; 1 = any data collected; 2 = any data collected, mixed feedback; 3 = any data collected, +ve feedback; 3 = SUs data collected, mixed feedback; 3 = data from more than 1 source, -ve feedback; 4 = data from more than 1 source (including Sus), +ve feedback
	Sum of previous two criteria

App_Table 9: Systematic review data extraction tool

Appendix 11. Systematic Review: Raw scores

	Reproducibility	Reliability	Predictive	Structural	Total structural	Cross-cultural	Responsiveness
CRM	-2.00	1.00	0.00	4.50	4.50	0.00	0.00
IMRS	-1.25	5.00	5.68	0.58	0.58	-0.75	0.00
I.ROC	0.00	12.50	2.75	4.75	6.75	0.00	0.00
MARS	-0.67	9.33	5.05	2.89	4.89	0.00	0.33
MHRM	-0.86	5.00	5.86	1.57	3.57	0.71	0.00
QPR	-1.00	11.77	6.77	2.33	5.83	2.00	0.20
RAS	-0.73	4.64	4.23	2.78	6.78	0.93	0.07
RPI	-1.50	5.33	4.75	1.33	1.33	0.00	0.00
MHRS	-0.50	12.50	1.38	1.00	1.00	0.00	0.50
SISR	-0.67	1.67	6.94	0.00	0.00	0.00	0.00
STORI	-1.60	5.92	1.53	0.40	2.40	0.80	0.00

App_Table 10: Systematic review: raw scores for quantitative criteria





Appendix 12. Detailed description of benchmarks

CRITERION	BENCHMARK (MEDIAN)	MEASURES EXCEEDING BENCHMARK	MEASURES JUST MEETING BENCHMARK	MEASURES SCORING BELOW BENCHMARK	TOP SCORING MEASURES	TOP SCORE	DESCRIPTION OF REASONS FOR TOP SCORE	BENCHMARK MINIMUM REQUIREMENTS
Consumers involved in development	2	CRM; QPR; RAS	IMRS; MHRM; RPI; MHRS	SISR; STORI; MARS	CRM; QPR	4	Development team includes peer researchers/PLE; all decisions approved by PLE consultancy group	Development included focus groups/interviews with consumers as part of an iterative development process
Use in research	2	MHRM; RAS	IMRS; QPR; SISR; STORI	CRM; MARS; RPI; MHRS	RAS	3	Used in a variety of studies exploring different aspects of recovery (max = 9(RAS))	At least one peer-reviewed publication using the measure in ROP or elsewhere
Method of use	1	IMRS; RAS; RPI; MHRS	CRM; MARS; MHRM; QPR; SISR; STORI	-	MHRS	4	Evaluated as a collaborative assessment	The instrument is developed to be used as a self-report
Stakeholder feedback	1	IMRS; QPR; RAS; MHRS	RPI; STORI	CRM; MARS; MHRM; SISR	QPR; RAS	4	Published positive feedback (including feedback from PLE) from more than one source	Staff or service user feedback on measure collected and reported
Chime total score	14	MHRM; QPR;	MARS; RAS; RPI; MHRS; SISR; STORI	CRM; IMRS	QPR, MHRM	15	All items map to CHIME; all five areas of the framework are covered by the questionnaire.	90% or more items mapping successfully to CHIME; all 5 areas of CHIME covered by the questionnaire.
Test retest reliability	2.25	IMRS; QPR; RPI; MHRS	-	CRM; MHRM; RAS; SISR; STORI	QPR	4.6	Multiple independent assessments using ICC's; effects sizes >0.7 reported	Test-retest reliability evaluated in at least one study; reporting of the results includes the length of time between testings and rationale for this. Correlation coefficient as a minimum requirement for analysis.
Inter-rater reliability	0	MHRS	CRM; IMRS; MARS; MHRM; QPR; RAS; RPI; SISR; STORI	-	MHRS	2	This measure receives the highest scoring by merit of having conducted an analyses where others have not. Neither the method nor the results were not strong though, so this is a very low baseline.	This criterion is not routinely assessed in psychometric evaluations of recovery measures; no benchmark is set for I.ROC
Internal consistency	3.5	MARS; MHRM; QPR; RAS; MHRS	-	CRM; IMRS; RPI; SISR; STORI	QPR	6.4	Internal consistency reported in multiple independent studies; coefficients are consistently approximately 0.9 or higher.	Internal consistency reported for total measure and subscales; coefficient relates to a rating of 'fair' or above using acceptability matrix.

CRITERION	BENCHMARK (MEDIAN)	MEASURES EXCEEDING BENCHMARK	MEASURES JUST MEETING BENCHMARK	MEASURES SCORING BELOW BENCHMARK	TOP SCORING MEASURES	TOP SCORE	DESCRIPTION OF REASONS FOR TOP SCORE	BENCHMARK MINIMUM REQUIREMENTS
Predictive validity	4.9	IMRS; MARS; MHRM; QPR; RPI; SISR	-	CRM; RAS; MHRS; STORI	SISR (QPR)	6.9	Papers evaluating SISR were particularly clear in detailing their methodology and results. Hypotheses were clearly stated, measures were well described. Sample sizes were big enough to maintain power. The QPR falls just behind SISR; this measure has been compared to a much larger variety of instruments. Effect sizes are generally high (>0.5) with measures of recovery and recovery-related scales (e.g. self esteem)	Predictive validity against a range of measures assessed in at least one study. Hypotheses clearly stated; coefficients reported and meeting a minimum standard of 0.3 (medium effect size; George & Mallery, 2003); power >0.8
Structural validity	3	CRM; MARS; MHRM; QPR; RAS	-	IMRS; RPI; MHRS; SISR; STORI	RAS	6.8	More frequently evaluated than any other measure, and using EFA, CFA and Rasch analysis, several papers have returned similar 5-factor structures for the RAS	Structural validity using factor analysis or Rasch analysis methodology assessed in at least one study; EFA factor retention based on more than one method (e.g. scree plot; Eigen values); adequate sample size (based on 10 ptps per item rule of thumb)
Cross-cultural validity	0	MHRM; QPR; RAS; STORI	CRM; MARS; RPI; MHRS; SISR	IMRS	RAS	0.9	The RAS again benefits from the proliferation of studies researching its properties; 7 studies have evaluated the cross-cultural validity of the RAS, although the quality of the papers is variable.	Not routinely assessed (50% measures did not report cross-cultural validity), cross-cultural validity testing should follow the establishment of basic psychometric properties. No benchmark is set for this criterion.
Responsiveness	0	MARS; QPR; RAS; MHRS	CRM; IMRS; MHRM; RPI; SISR; STORI	-	MHRS	0.5	Several of the measures have assessed responsiveness (MARS; QPR, RAS; MHRS) but only in a minority of studies. Where responsiveness was assessed, the quality of the reporting was generally not good; papers were let down by their lack of detail regarding any changes occurring in the interim period. MHRS received the highest score here as 50% of papers reported responsiveness.	The majority of measures have not been assessed for responsiveness. No benchmark is set for this criterion.

App_Table 11: Details of measures meeting, exceeding and failing to meet benchmarks

Appendix 13. Initial mapping of measures

	Literature Review
	Tools were identified through literature review (Chapter 2)
	Non self-assessments removed
	Those not designed for use as self-assessment were removed (e.g. Locus of control scale; (Wood & Letak, 1982)
	
	Diagnosis-specific measures removed
	As I.ROC has been designed for use with all people with experience of mental health problems, all diagnosis-specific measures (e.g. the Schizophrenia Quality of Life Scale (Wilkinson et al., 2000a) were also removed from the mapping exercise.
	
	Selection of 'best fit' where >1 measure same concept
	Where two measures covered the same concept (e.g. hope), the research group would assess which one appeared most often within relevant literature, and which most wholly covered the comparable concept within I.ROC.
	
	Selection of final measures
	In order to reduce burden on participants, the aim was not to have one measure for each of the 12 indicators, but to fit a smaller battery of scales which between them covered all of the concepts within I.ROC. Final selection was made based on relevance to I.ROC indicators, breadth and depth of questions, wording of questions, and length of questionnaire. We also took into consideration any costs involved in using the measures.

I.ROC Recovery Factors											
Mental Health	Life Skills	Safety & Comfort	Exercise & Activity	Physical Health	Purpose & Direction	Personal Network	Social Network	Valuing Myself	Participation & Control	Self Management	Hope for the future
BASIS-32	Independent Living Skills Survey	Needs and Resources Assessment	Leisure motivation Scale	Short Form-36	Community Living Skills Scale (CLSS)		Rosenberg Self-Esteem Scale	(Making decisions) Empowerment Scale		Herth Hope Index	
Mental Health Inventory - SF	Coping Skills Scale	Recovery Needs Level	IPAQ	GHQ	Collaborative Goal Technology	Multidimensional Scale of Perceived Social Support (MSPSS)	Index of Self Esteem	Locus of control scale	P/O/E Empowerment Scales	(Snyder) Adult State Hope Scale	
Mental Health Confidence Scale	Connor-Davidson Resilience Scale	Aims of Therapy Inventory				Social Network Scale	Wellbeing scale	Mental Health Confidence Scale	Miller Hope Scale		
Psychosis Recovery Inventory	Life Skills Profile-16	Camberwell Assessment of Need				Social Adjustment Scale	Beck Hopelessness Scale				
Brief Symptom Inventory	Social & occupational functioning scale	Wellbeing Scale				Inventory of Interpersonal Problems					
Kessler 10	CLSS	Reciprocal Support Scale									
Positive & negative syndrome scale	UCLA Loneliness Scale										
Brief Psychiatric Rating Scale	Social Functioning Scale										
Symptom Checklist 90-R	Community Integration Measure (CIM)										
Indiana Psychiatric Illness Interview	Social Support Questionnaire (SSQ)										
Non I.ROC Indicator Specific											
Spirituality	Spiritual wellbeing scale										
Wellbeing	WEMWEBS; Wellbeing scale; Psychological Well-Being Scales										
Quality of life	HoNOS; Quality of Life Interview; Wisconsin Quality of Life Index; Quality of Life Scale; Schizophrenia Quality of Life Scale; The Brief Quality of Life Interview; Satisfaction with Life Scale										
Functioning	Short Form 36; Global Assessment of Functioning; Global Assessment Scale; Role Functioning Scale										
Cognition	The Tennessee Self Concept Scale; WAIS-R; Scale to Assess Unawareness of Mental Disorder; Locus of Control Scale; Modified Engulfment Scale; Brief Core Schema Scales										

App_Table 12: All measures included in the Initial mapping of recovery-related concepts against I.ROC, listed under the I.ROC indicators against which they most closely map. Those highlighted in green were selected for inclusion.

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	CLSS	GHQ	Hope	IPAQ	MDES	Self-Esteem	Wellbeing	Total	
Items	46	28	12	7	28	10	151 (39)		
Total number of items content matched to each I.ROC indicator									
I.ROC Indicators	MH	3	11				3	17	
	LS	11						11	
	S&C						6	6	
	E&A	2			7			9	
	PH		8				1	9	
	P&D	6	5				4	15	
	PN	6				1	4	11	
	SN	7				1	1	9	
	VM	1	1			9	10	21	
	P&C		2			16		11	29
	SM	9				4		3	16
	H		1	12		3		2	18

App_Table 13: Mapping of questions within the 7 measures against the 12 I.ROC indicators. Numbers represent the total items in each questionnaire that map onto each I.ROC indicator.

	I.ROC Indicators											
	MH	LS	S&C	E&A	PH	P&D	PN	SN	VM	P&C	SM	H
RAS	Not Dominated by Symptoms			Goal & Success Orientation		Goal & Success Orientation	Reliance on Others			Goal & Success Orientation	Willingness to Ask for Help	Personal Confidence & Hope
MHRM	Overcoming stuckness / Basic functioning/ Overall wellbeing			Learning & self-redefinition		New potentials			Learning & self-redefinition	Self empowerment	Advocacy/ Enrichment	New potentials
STORI				Meaning in life		Meaning in life			Positive identity		Taking responsibility	Hope
SISR	Overall well-being						Helping others	Social functioning/ role performance		Regaining autonomy	Disability management/ taking responsibility	Sense of hope

App_Table 14: Mapping the concepts covered by the four recovery measures shortlisted for comparison to I.ROC

Appendix 14. Detailed description of measures

This section provides a description of the eleven measures used within the studies. Where measures were used within testing with no modifications, the measures themselves are not included within the appendices. Copies of these measures are widely available within publications investigating their properties. Copies are also available directly from researcher BR on request. Where modifications were made prior to use (Wellbeing Scale), the amended measure is included (Appendix 15).

14.a. Personal Recovery Measures

i. Recovery Assessment Scale

Designed as a self-report questionnaire of personal recovery, the Recovery Assessment Scale (Giffort et al., 1995) is the most widely used measure of personal recovery within measure development and programme evaluation (see Chapter 3). A recent systematic review identified 77 papers reporting psychometric properties of the measure, including good internal consistency ($\alpha=.76-.97$), test-retest reliability and inter-rater reliability (ICC's = .94-.98) (Salzer & Brusilovskiy, 2014). Structural validity of the proposed five factor structure has largely been supported, and convergent validity has been reported with measures of personal recovery, alongside a plethora of related constructs including wellbeing, stigma, functioning, and psychiatric symptoms (Salzer & Brusilovskiy, 2014).

ii. Recovery Star

The ten-item Mental Health Recovery Star (MHRS; MacKeith et al, 2008) measures recovery using ten-step 'ladder of change' (Onifade, 2011). The MHRS shows good internal consistency ($\alpha=.85$ (G. L. Dickens et al., 2012)) and test-retest reliability, although inter-rater and convergent validity findings are mixed (Killaspy et al., 2012a) (see chapter 3 for full review). Although no published psychometric data was available at the time of the initial I.ROC validation testing, the MHRS has since become one of only three³⁴ scientifically scrutinised personal recovery measures developed within the UK. Widely used within practice settings, (Tickle et al., 2013),

³⁴ I.ROC and QPR are the other two UK-developed, psychometrically-tested measures

and developed as a collaborative key working tool, the MHRS is also conceptually and purposively similar to I.ROC.

14.b. Clinical/functional recovery measures

iii. BASIS-32

The Behaviour and Symptoms Identification Scale (BASIS-32, was designed by researchers at the McLean Hospital in America as a commercial measure of clinical symptoms and behaviour related 'patient outcomes' (Eisen et al., 1994), and is available in both an 'interviewer administered' and a self-report format. The tool is widely used as an outcomes measure, particularly within Australia and New Zealand, where national and state funders require mental health services to collect and use outcome data (Trauer et al, 2009). In Australia, BASIS-32 is one of ten tools recommended for use in the Australian Mental Health Strategy, forming part of the 'National Outcomes and Casemix Collection' of standardised measures (Pirkis et al., 2005). BASIS-32 measures clinical outcomes and as such can be used to establish the validity of I.ROC as an outcome measure more broadly. It has been used within psychometric testing of several other recovery measures, including RAS (Chiba et al, 2010b).

The psychometric evaluation of BASIS-32 has been described as "extensive and comprehensive" (Pirkis et al., 2005). Early evaluation of the measure focused on its validity and reliability within a psychiatric inpatient population (Eisen et al., 1994). Principal Components Analysis identified five subscales with eigen values greater than 1: relation to self/others; daily living/role functionality; depression/anxiety; impulsive/addictive behaviour; psychosis. Internal consistency ($\alpha=.89$, .63-.80 (subscales)) and test-retest reliability ($r=.65$ -.81) were good for both the subscales and the measure as a whole. Convergent validity was assessed against a battery of measures including the Psychiatric Symptom Assessment Scale (PSAS), the Mini Mental Status Exam (MMSE) and Lehman's Quality of Life Interview (QOLI). Assessment over a six-month period showed that BASIS-32 could successfully discriminate between participants living in the community, working, not working or hospitalised. Subsequent reports have largely managed to replicate these results under similar conditions (Russo et al., 1997), as well as within other populations (e.g. adolescents; (Hoffmann et al., 1997) and settings (Eisen et al., 1999). BASIS-32 has been evaluated in a growing number of countries (Cameron et al., 2007), cultures (I.

M. Cameron et al., 2007; Chow et al., 2001) and languages (Eisen & Culhane, 1999).

iv. General Health Questionnaire

The General Health Questionnaire (D. P. Goldberg & Hillier, 1979) is used to screen the general population for the presence of minor psychiatric ailments. Widely used in both physical and psychiatric health and social care settings around the world and translated into almost 40 languages (Sterling, 2011), psychometric properties of the various versions of the GHQ have been widely reported (e.g. (Willmott et al., 2008). Whilst not all research has supported the validity of the measure (Friedrich et al., 2011), these studies remain in the minority, with most reporting positive results (D. P. Goldberg et al., 1997) including good test-retest reliability (0.78-0.9; Robinson & Price, 1982), and excellent internal consistency (0.95; Failde & Ramos, 2000). The 28-item measure (GHQ-28; (D. Goldberg & Williams, 1988) comprises four subscales (7 items each): somatic symptoms, anxiety and insomnia, social dysfunction and severe depression. GHQ-28 asks for a participant's experiences in these areas over the past week, and is thus used as a measure of current physical and mental health. This questionnaire has been used in previous recovery measure validations, including the QPR (Neil et al., 2009).

v. Hospital Anxiety and Depression Scale (HADS)

The Hospital Anxiety and Depression Scale (Zigmond & Snaith, 1983) is a 14 item self-report measure assessing the presence and frequency of symptoms of anxiety and depression. Designed for a non-psychiatric hospital setting, the scale comprises two subscales (anxiety (HADSa); depression (HADSb)) of seven questions each, all scored on a four-point scale from 0 to 3 with higher scores reflecting a greater presence and/or frequency of the symptom being addressed.

HADS has been used prolifically since its development in 1983; by 1997, the tool had been translated into 22 languages and used within 26 countries. By the end of the 1990's over 700 papers reported HADS use (Bjelland et al., 2002) within a diverse range of practice and research settings including oncology (Vodermaier & Millman, 2011), Parkinson's disease (Rodriguez-Blazquez et al, 2009), and cognitively impaired nursing home patients (Haugan & Drageset, 2014).

Psychometric properties of the tool have been widely reported as good, and despite

continuing debate regarding the factor structure of the measure (Cosco et al., 2012), recent meta-analyses have supported the existence of the two-subcales (Norton et al., 2013), and its use in practice appears undiminished.

vi. Work and Social Adjustment Scale (WSAS)

This scale is a brief (5 item) self-report questionnaire measuring level of perceived impairment within five areas of work and social adjustment (ability to work; home management; social leisure activities; private leisure activities; close relationships) (Gelder & Marks, 1966; Marks, 1986). Scores are given on a nine-point Likert scale ranging from 0 (not at all) to 8 (very severely), with higher scores representing higher levels of impairment. Total scores range from 0-40, with scores above 20 suggesting moderately severe 'psycopathology', scores between 10 and 20 indicative of functional impairment with less clinical symptoms, and scores below ten representing a non-clinical population, however these threshold values are from studies with people with a diagnosis of OCD or depression (Mundt et al., 2002) Psychometric properties of the WSAS have been evaluated in several studies, which report generally good validity and reliability. WSAS is generally acknowledged to have a unidimensional factor structure, to be sensitive to change, treatment effects (Ghodsi et al., 2012) and symptomatic differences in population (Mundt et al., 2002). The WSAS has been tested within a variety of mental health conditions, including anorexia nervosa (Tchanturia et al., 2013), gambling addiction (Tolchard, 2016) and phobic disorders (Mataix-Cols et al., 2005).

14.c. Elements of personal recovery

vii. Community Living Skills Scale

Developed by a psychosocial rehabilitation centre consumer group, the Community Living Skills Scale comprises 46 items in four subsections: personal care, socialization/relationships, activities/leisure skills and vocational skills. Psychometric properties of CLSS were tested with a group of 50 service users at the centre, and the tool demonstrated 'good' internal consistency (Cronbach's alpha ranged from 0.74 – 0.84 for the subscales). The Personal Care subscale of CLSS was also found to correlate significantly with the Global Assessment Scale (GAS; (Endicott et al., 1976) ($R=0.41^{**}$), although the other three subscales did not.

The CLSS was included within a battery of tools for pre and post assessment of people completing a recovery promoting psychoeducational course (Bullock et al., 2000), which demonstrated a significant positive impact of the 'Leadership Education Program' on recovery. Developers of the Mental Health Recovery Measure (MHRM; (S. L. Young et al., 1999) and of the Personal Vision of Recovery Questionnaire (PVRQ; (Ensfield, 1998)) have reported concurrent validity with the CLSS, although it has not yet been used extensively (O'Malia et al., 2002). The measure does however cover the I.ROC indicator 'Life Skills' in considerable detail.

viii. Herth Hope Index

Since its development in the early 1990's, the Herth Hope Index has rapidly become one of the most popular hope scales (Schrank et al., 2008), used in research around the world; amongst them China (K. S. Chan et al., 2012), Sweden (Benzein & Berg, 2003), the Netherlands (van Gestel-Timmermans et al., 2010) and Norway (Rustøen et al., 2003). Psychometrics of the HHI have been thoroughly scrutinised during this time with studies in a variety of participant groups, which include Iranian cancer patients (Abdullah-zadeh et al., 2011), homeless children (Herth, 1998) and female prisoners (Nedderman et al., 2010). Internal consistency is high, with estimates ranging from .78 (Phillips-Salimi et al., 2007) to .97 (Herth, 1992), and test-retest reliability is good ($r=.79$, (van Gestel-Timmermans et al., 2010); $ICC=.86$, Chan et al, 2011)

ix. Making Decisions Empowerment Scale

The 28 items that make up the Making Decisions Empowerment Scale were co-designed by researchers and a consumer research advisory board before it was piloted with members of a self-help programme. MDES has been the focus of studies within multiple countries (e.g. Sweden (Hansson & Björkman, 2005); Japan (Yamada & Suzuki, 2007)) and populations, including self-help group participants (Rogers et al., 1997), outpatients (Wowra & McCarter, 1999) and inpatients (Strack et al., 2007). It is included as a subscale of the Ohio Mental Health Consumer Outcomes System Ohio Outcomes System (OOS), developed to measure the treatment outcomes of all adults receiving public mental health services in Ohio (Breedlove, 2005).

MDES comprises five two-item factors: 1) self-efficacy-self-esteem; 2) powerlessness; 3) community activism; 4) righteous anger; and 5) optimism-control

over the future. Internal consistency was 'high' (0.86, $n=261$ in the original study (Rogers et al., 1997). In a large scale study ($n=1827$) by Rogers and colleagues (Rogers et al., 2010), the MDES was tested against a battery of measures including the Lehman Quality of Life Scale (Lehman, 1995), the Herth Hope Index (Herth, 1992), and the Recovery Assessment Scale (Giffort et al., 1995). Internal consistency was found to be good ($\alpha=0.82$), and factor analysis confirmed the five-factor structure. Rogers and colleagues reported moderate levels of concurrent validity with these measures (hope: $r=0.67$, recovery: $r=0.67$, quality of life: $r=0.44$). MDES has previously been used within validation studies of recovery measures, including the QPR (Neil et al., 2009) and the Mental Health Recovery Measure (Rogers et al., 1997).

x. Rosenberg Self Esteem Scale

Use of the 10 item Rosenberg Self Esteem Scale (Rosenberg, 1965) within research is particularly extensive, as exemplified by its use within Schmitt and Allik's 2005 study, during which it was translated into 28 languages, and used alongside a battery of measure to explore cross-cultural variations in self-esteem in 52 countries (Schmitt & Allik, 2005). Debate within the literature focuses on the underlying factor structure of the measure; many studies support the original identification of a one-factor structure (global self-esteem) (Franck et al., 2008; Vasconcelos-Raposo et al., 2012), whilst others identify two factors (Boduszek et al., 2013), described as positive and negative self-esteem. Another criticism of the RSE is a potential reporting bias due to the positive and negative wording of the questions, although the effect and direction is disputed. Mullen and colleagues report a positive response bias in the RSE with a sample of older adults (Mullen et al., 2013), whilst Schmitt and Allik (2005) identify a negative item bias in their multi-national study, such that "most cultures possess a negative item bias, tending to report lower levels of self-esteem on negatively phrased items than would be expected given their responses to positive items", p.637. Psychometric properties have generally been reported as robust however; Schmitt and colleagues reported acceptable or higher ($>.7$) internal consistency for the measure in 50 out of 53 countries (Schmitt & Allik, 2005), and concurrent validity has been reported for a number of scales including the Internalized Stigma of Mental Illness Scale (ISMI) (Boyd et al., 2014) and the Recovery Assessment Scale; (P. W. Corrigan et al., 1999).

xi. Well-Being Scale-R

The Well-Being Scale is a self-report questionnaire which uses a variety of question formats including Likert scale, multi-choice and open text to explore and measure personal wellbeing. Although the Wellbeing Scale is described within the first Compendium of Recovery Measures (Ralph et al., 2000), information regarding the measure is scarce. Developed by a service user working group, and used as a measure within the well-cited Well-Being Project (Campbell & Schraiber, 1989), concept validity of the Wellbeing Scale is high. Whilst the Wellbeing Project has been widely referenced however (e.g. Wahl, 1999; Van Dorn et al, 2006; Segal et al, 2002), psychometric properties of the Well-Being Scale remain unreported.

At 151 questions, the questionnaire was considered too long to be used in full, however some of the items from this scale mapped more precisely to the Safety & Comfort I.ROC indicator than any other measure on the shortlist. A shortened version comprising 37 items of the original scale was therefore developed by the research group and used for data collection. During data analysis, a further four were removed, as they used a multi-choice but not a scaled response, and were unable to be converted to numerical scores.

Question selection was based on several criteria:

1. Conceptual relevance to I.ROC, particularly to indicators such as Safety & Comfort not covered by other selected measures.
2. Questions must be brief and comprehensive
3. Item response level; in the first instance, responses that required a text-based answer were removed from consideration
4. During analysis, multi-choice nominal level responses were also removed, as these could not be statistically compared to I.ROC scores.

Analysis therefore used a further revised 33-item version (Well-being Scale-R) of the original Wellbeing Scale (Appendix 15). The majority of questions (29) use a 1-5 Likert scale, with the rest using a 4 point Likert scale. Question wording was largely negative, with 26 of the items worded such that 1 reflected a positive score and 5 was reflective of a negative score. Scores were reversed before a total was calculated, so that all items used a positive scale with 5 reflective of higher wellbeing.

xii. International Physical Activity Questionnaire

Few measures were available for mapping against the Exercise & Activity I.ROC indicator, however the International Physical Activity Questionnaire (Booth et al., 2003), a robust and brief measure of physical activity and sitting time, was an easy choice. Developed in 2000, there are now four forms of the tool in English (short/long; self-administered/telephone). Faulkner and colleagues (G. Faulkner et al., 2006) reported on the psychometrics of IPAQ, including test-retest analysis and concurrent validity. Gauthier and colleagues (Gauthier et al., 2009) completed a translation and validation of IPAQ with French Canadians, and reported good test-retest reliability (24 hours) and convergent validity with a pedometer reading of 7 day step count. Intra-Class Coefficients scores for total activity at the two time points were good (0.93; CI: 0.86 to 0.97), and the correlation between IPAQ scores and step count was significant ($r=.66^{**}$). Psychometric properties of the physical activity measure were also assessed in a meta-analysis of 21 studies in 2012 (Kim et al., 2013). Results supported the convergent validity of IPAQ with measures such as accelerometers and pedometers, although the strength of correlations varied between indicators, and the authors recommended using the longer version for more precise results. IPAQ has been used extensively including multi-country studies (Bauman et al., 2009), as part of which, the long version of the tool has been translated into 22 languages. The shortest version, consisting of 7 questions, was selected for inclusion in the study, to keep testing as brief and uncomplicated as possible.

Scoring for the IPAQ followed the 2005 Guidelines. Following the recommendations, data from all participants responding “don’t know” to walking, moderate or vigorous activity items (n=19) were removed from analysis. The remaining data was converted

Walking MET-minutes/week = 3.3 * walking minutes * walking days
Moderate MET-minutes/week = 4.0 * moderate-intensity activity minutes * moderate days
Vigorous MET-minutes/week = 8.0 * vigorous-intensity activity minutes * vigorous-intensity days
Total physical activity MET-minutes/week = sum of Walking + Moderate + Vigorous MET minutes / week scores.

Calculations for activity MET (minutes/week) scores, IPAQ based on Guidelines (2005) (www.ipaq.ki.se/scoring.htm).

into MET scores using the following calculations

Appendix 15. Wellbeing Scale

Please mark or fill in your responses to the following questions. Take your time, but do not go back and change any answers after completing the questionnaire. Enjoy yourself. There are no right or wrong answers.

Please feel free to leave any questions that are irrelevant or you feel uncomfortable answering.

1. Where do you usually live?

- | | | |
|--|--------------------------------------|---|
| [1] Home,
hotel, or
apartment | [3] With
friends | [6] Streets |
| [2] With
parents or other
family members | [4]
Emergency
shelter | [7] Halfway
house or board
and care |
| | [5] Hospital
or institution | [8] Other |

2. If you don't have your own place to live, is it because

- | | | |
|--|---|--|
| [1] You
don't have
enough money | [3] You've
been evicted | [5] Other |
| [2] Can't
find a place to
live | [4] You've
been
discriminated
against | [6] I have
my own place to
live |

3. What percentage of your income is used to pay for your housing?

- | | | |
|----------------|---------------|--------------|
| [1] 100% | [3] 50% | [5] 0% |
| [2] 75% | [4] 25% | |

4. How much do you like living where you are?

- | | | |
|-------------------------------|----------------------------------|-------------------------------|
| [1] Like it a
lot | [3] Don't
care | [5] Dislike it a
lot |
| [2] Like it
somewhat | [4] Dislike it
somewhat | |

5. If you have a child or children, do/does he/she/they live

- | | | |
|--|---|--|
| [1] With
you? | [4] In a state
institution? | [7] Don't
know where
they live |
| [2] With a
spouse, former
spouse, or
family member? | [5] In a
foster home? | [8] No
children |
| [3] On their
own? | [6] In a
private
institution? | |

6. If you have a child or children, how satisfied are you with he/she/their living situation?

- | | | |
|-------------------------------|-------------------------------|--------------------------------|
| [1] Very satisfied | [3] Sometimes satisfied | [5] Not satisfied at all |
| [2] Generally satisfied | [4] Seldom satisfied | |

7. How would you describe your own state of *physical* health these days?

- | | | |
|-----------------------|---------------------|----------------------|
| [1] Excellent | [3] Only fair | [5] No opinion |
| [2] Pretty good | [4] Poor | |

8. How would you describe the general state of your *psychological and emotional* health these days?

- | | | |
|-----------------------|---------------------|----------------------|
| [1] Excellent | [3] Only fair | [5] No opinion |
| [2] Pretty good | [4] Poor | |

9. Thinking back over the past week, have there been any times when you felt you were under a lot of stress?

- | | | |
|-------------------------------------|----------------------------|---------------------------|
| [1] Not under a lot of stress | [2] Yes, just once | [4] Yes, many times |
| | [3] Yes, a few times | [5] No opinion |

When you feel stressed or just plain hassled, how often would you do the following:

10. ...How often would you say you would talk the situation over with others?

- | | | |
|---------------------|------------------------|----------------------|
| [1] Always | [3] Occasionally | [5] No opinion |
| [2] Sometimes | [4] Never | |

11. ...How often would you block it out by doing something active like exercising, sports or hobbies?

- | | | |
|---------------------|------------------------|----------------------|
| [1] Always | [3] Occasionally | [5] No opinion |
| [2] Sometimes | [4] Never | |

12. ...How often would you block it out by relaxing, reading, watching TV or getting some sleep?

- | | | |
|---------------------|------------------------|----------------------|
| [1] Always | [3] Occasionally | [5] No opinion |
| [2] Sometimes | [4] Never | |

13. ...How often would you see the situation as a challenge and face it head on?

- | | | |
|---------------------|------------------------|----------------------|
| [1] Always | [3] Occasionally | [5] No opinion |
| [2] Sometimes | [4] Never | |

14. Would you say things are going well in your life these days?

- | | |
|-------------------------------|-------------------------------|
| [1] All of the
time | [3] Some of
the time |
| [2] Most of
the time | [4] Seldom |
| | [5] Never |

15. Do you worry about things?

- | | | |
|---------------------------|------------------------|-----------------|
| [1] All the
time | [3]
Sometimes | [5] Never |
| [2] A lot | [4] Seldom | |

16. How often do you feel that your friends listen to you and consider what you have to say to be valid or important?

- | | | |
|-------------------------------|------------------------|-----------------|
| [1] All of the
time | [3]
Sometimes | [5] Never |
| [2] Most of
the time | [4] Seldom | |

17. How often do you feel that your family listens to you and considers what you have to say to be valid or important?

- | | | |
|-------------------------------|------------------------|-----------------|
| [1] All of the
time | [3]
Sometimes | [5] Never |
| [2] Most of
the time | [4] Seldom | |

18. How often do you feel that mental health professionals (people like psych-techs, nurses, doctors, counsellors) listen to you and consider what you have to say to be valid or important?

- | | | |
|-------------------------------|------------------------|-----------------|
| [1] All of the
time | [3]
Sometimes | [5] Never |
| [2] Most of
the time | [4] Seldom | |

19. How often, if ever, have you been told that you were resistant or rebellious if you disagreed with the opinions or advice of mental health professionals?

- | | | |
|-------------------------------|------------------------|-----------------|
| [1] All of the
time | [3]
Sometimes | [5] Never |
| [2] Most of
the time | [4] Seldom | |

20. How often do you feel lonely or isolated from other people?

- | | | |
|-------------------------------|------------------------|-----------------|
| [1] All of the
time | [3]
Sometimes | [5] Never |
| [2] Most of
the time | [4] Seldom | |

21. How often do you experience boredom in your everyday life?

- | | | |
|-------------------------------|------------------------|-----------------|
| [1] All of the
time | [3]
Sometimes | [5] Never |
| [2] Most of
the time | [4] Seldom | |

Appendices

22. How insecure do you feel about having or continuing to have adequate food, clothing, shelter, or income?

- | | | |
|-------------------------------|------------------------------------|------------------------------|
| [1] Always
insecure | [3]
Sometimes
insecure | [4] Seldom
insecure |
| [2] Usually
insecure | | [5] Never
insecure |

23. How much control or choice do you feel your family has over your actions or beliefs?

- | | | |
|-----------------|--------------------|----------------|
| [1] Total | [3] Some | [5] None |
| [2] A lot | [4] A little | |

24. How much control or choice do you feel your doctor or counsellor has over your actions or beliefs?

- | | | |
|-----------------|--------------------|----------------|
| [1] Total | [3] Some | [5] None |
| [2] A lot | [4] A little | |

25. How much control or choice do you feel the police or law enforcement has over your actions or beliefs?

- | | | |
|-----------------|--------------------|----------------|
| [1] Total | [3] Some | [5] None |
| [2] A lot | [4] A little | |

How much control or choice do you feel you have:

26. ...Over the amount or kind of medication you take?

- | | | |
|-----------------|--------------------|-----------------------------|
| [1] Total | [4] A little | [6] Not
applicable |
| [2] A lot | [5] None | |
| [3] Some | | |

27. ...Over what kind of treatment or service you receive for psychological or emotional problems?

- | | | |
|-----------------|--------------------|-----------------------------|
| [1] Total | [4] A little | [6] Not
applicable |
| [2] A lot | [5] None | |
| [3] Some | | |

28. ...Over the choice of mental health professionals to work with?

- | | | |
|-----------------|--------------------|-----------------------------|
| [1] Total | [4] A little | [6] Not
applicable |
| [2] A lot | [5] None | |
| [3] Some | | |

29. ...Over your own well-being in general?

- | | | |
|-----------------|--------------------|----------------|
| [1] Total | [3] Some | [5] None |
| [2] A lot | [4] A little | |

30. How often do you find that before a psychological or emotional problem becomes severe, there are signs, symptoms, or feelings that you can recognize?

- | | | |
|-------------------------------|------------------------|-----------------|
| [1] Always | [3]
Sometimes | [5] Never |
| [2] Most of
the time | [4] Seldom | |

31. If you do recognize a sign, symptom, or feelings that indicate you may be having psychological or emotional problems, how often can you take care of the problem before it becomes severe?

- | | | |
|----------------------------|---------------------|-----------------|
| [1] All of the time | [3] Sometimes | [5] Never |
| [2] Most of the time | [4] Seldom | |

32. How often do you feel satisfaction or achievement from things you do?

- | | | |
|----------------------------|---------------------|-----------------|
| [1] Always | [3] Sometimes | [5] Never |
| [2] Most of the time | [4] Seldom | |

33. How often do you do things that are enjoyable or fun?

- | | | |
|----------------------------|---------------------|-----------------|
| [1] Always | [3] Sometimes | [5] Never |
| [2] Most of the time | [4] Seldom | |

34. How often do you get the opportunity to learn new skills in your life?

- | | |
|----------------------------|------------------|
| [1] Always | [4] Seldom |
| [2] Most of the time | [5] Never |
| [3] Sometimes | |

35. How important is it to you to have free choice in picking your own therapist?

- | | |
|------------------------------|--------------------------------|
| [1] Very important | [3] Of little importance |
| [2] Somewhat important | [4] Of no importance |

36. How often have you been able to get the type of treatment you wanted for a psychological or emotional problem?

- | | |
|----------------------------|------------------|
| [1] Always | [4] Seldom |
| [2] Most of the time | [5] Never |
| [3] Some of the time | |

37. How often do you have dreams or plans to improve the quality of your life in the future?

- | | |
|----------------------------|------------------|
| [1] All the time | [4] Seldom |
| [2] Most of the time | [5] Never |
| [3] Sometimes | |

Thank you for taking the time to complete this questionnaire

Appendix 16. Additional details of data analysis

16.a. Full list of published recovery measure validations reporting test-retest reliability

Measure	Authors	Version	Sample size	Time between testing	Analysis	Results (total score or subscales if total not reported)
BRQ	(Jones et al, 2013)		28	1 month	Pearson's	r=.866**
CROS 3.0	(Miller, 2005)		102	mean=8 days	ICC	ICC=.69-.89
IMRS	(Mueser et al., 2005)	Both	50	2 weeks	Pearson's	(Practitioner) r=0.82; (Client) r=0.78
IMRS	(Salyers et al, 2007)	Both	59 (t1); 57 (t2)	2 weeks	Pearson's	(Practitioner) r=0.81** (Client) r=0.81**
IMRS	(Färdig et al, 2011)	Swedish	98 (t1); 72 (t2)	2 weeks	Pearson's	r=0.88*
		Practitioner				
		Client	102 (t1); 99 (t2)	2 weeks	Pearson's	r=0.84*
MARS	(Drapalski et al., 2012)		25	1 week	Pearson's	r=0.898
MHRM	(Young, & Bullock, 2005)		18	1 & 2 week	Pearson's	r=.92 (1 week); r=.91 (2 week)
POP	(Campbell et al, 2005)		41	2 weeks	Pearson's	r=.47-.85
PRI	(Chen et al., 2005)		20	2-4 weeks	ICC	ICC=0.54-0.87, mean =0.7
QPR	(Neil et al., 2009)		43	2 weeks	Pearson's	r=Intrapersonal: 0.874** Interpersonal: 0.769**
QPR	(Chien & Chan, 2013)	Chinese	40	2 weeks	ICC	ICC=.89**
RAS	(Corrigan et al, 1999)		35	2 weeks	Pearson's	r=0.88
RAS	(Chiba et al, 2010b)	Japanese; 24 item	24	1-2 weeks	ICC; WK	ICC=0.81**; (% questions, Kappa) 29.2% >0.61; 41.6% 0.41-0.6; 29.2% <=0.40
REAQ-PV	(Siu et al., 2012)	Chinese	32	2 weeks	ICC	23/24 items: 0.2-0.69; other item (role model): 0.17
RPI	(Jerrell et al, 2006)		185	2 weeks	ICC	ICC=.36-.63
RPRS	(Russinova et al, 2013)		58	16 days	ICC	ICC=.61-.72; Core Relationship Index: .75
RPRS	(Rosenberg et al, 2015)	Swedish	78	2 weeks	ICC	ICC= 0.231-0.822
MHRM	(Killaspy et al, 2012a)	Staff	138	(mean -14 days)	ICC	ICC= 0.7-0.89
		Collaborative		1-2 weeks	ICC	ICC = 0.71-0.82
SISR	(Chiba et al, 2010a)	Japanese	32	1-2 weeks	ICC; WK	ICC =SISR-B: 0.68**; WK= SISR A: 0.4 SISR B: 0.12-0.57
SRS	(Song & Hsu, 2011)		55	3-5 weeks	Pearson's	r=0.72*
STORI	Weeks et al		22	4 minutes ³⁵	Pearson's	r=0.9-0.96**

³⁵ A digit symbol coding sub-test from WAIS was used as a distractor task

16.b. Participant Reference Codes

–	Interview
~	Focus Group
:	Survey
*	Service user
	Staff
P1	Student project
P2	Meaningful & Measurable
P3	I.ROC Story
P4	Narrative Interviews
AR1	KTP Feedback Survey
	AR = Additional Resource
	Focus group = interview with 2 or more participants

16.c. Detailed discussion of the evaluation of statistical significance

i. P-Value

Statistical significance is most commonly reported using the p-value, which represents the probability that the calculated results are due to chance rather than an actual effect (i.e. the chance of a type-1 (α) error), and is usually reported using a cut-off of 0.05 or 0.01 (minimum significance of 0.05 is used here). Whilst undoubtedly an important element of test results to report, on its own, this value conveys very little information; it shows whether or not there is an effect, but not how much of an effect. Without this further information, no substantial conclusions about the practical applications of the findings can be drawn (Rodgers, 2010). Furthermore, p-values are dependent on two factors: the size of the effect and the size of the sample, meaning that the significance can be conflated by a large sample, and that this value cannot be used to determine the size of the effect. Additional information such as effect size, power calculations and margins of error (confidence intervals) should therefore be reported alongside the traditional p-value.

ii. Statistical Power

Statistical power is the probability of an analysis resulting in a type-2 (β) error (accepting the null-hypothesis when an effect is significant, i.e. a false negative) (J. Cohen, 1992b). Power is influenced by three factors (Gaskin & Happell, 2014a): sample size, significance criterion, and population effect size: Power calculations can be used at two time-points during a study; during the design of a study (a-priori), power calculations can be used to determine the sample size needed to minimise the probability of a α or β error. Calculations of power for previously analysed data (post-hoc) evaluate the error probability of a β error. Because a-priori power calculations controls for both type 1 and type 2 errors in the design and running of the testing, this is the most commonly recommended method, however given that large samples were generally recruited in the current studies, post-hoc power calculations have been conducted, and are evaluated against the current convention within social research of .80 (J. Cohen, 1992a). A level of .80 means that there is an 80% probability that the null hypothesis has not been incorrectly rejected. Power calculations were calculated using G*Power 3.1.9.2, a free statistical software package designed specifically for the estimation of power statistics (Faul et al., 2007; Faul et al., 2009)

iii. Effect Sizes

The effect size is the value output of a statistical test, which quantifies the size of the phenomenon being investigated, commonly relationship, group differences or group overlaps indices (Gaskin & Happell, 2014a). Effect size can also be thought of as the magnitude of the difference between null hypotheses and alternative hypotheses (J. Cohen, 1992b).

Where applicable, the standardised effect sizes of each statistical test used within this thesis are assessed using Cohen's conventions (J. Cohen, 1988) of 0.1 (small); 0.3 (medium) and 0.5 (large) as reported in (Gaskin & Happell, 2014a), but will be used with the caveat given by Cohen that these descriptors are relative and should be considered within the remit of the area of science and the specific factors of the study (J. Cohen, 1988).

iv. Confidence Intervals

Quantitative research typically involves the analysis of a sample of a much larger total population, in which statistical estimates of the population parameters are made based on this sample or a series of samples. Most statistical tests result in an output of a single value, which is a point estimate of the population value, and assumes the effect found within the sample to be representative of the population. Confidence intervals represent a different approach in which it is acknowledged that the point estimate is only an approximation of the true population value. This approach instead calculates the range of values within which the true population value is most likely to lie, based on the sample data (Gaskin & Happell, 2014a). Although the confidence intervals can be adjusted to be as wide or narrow as necessary based on the variability of the data and the level of confidence required, they are most commonly reported at the 95% level; that is the upper and lower values between which we can be 95% that the true value will fall. Calculation of confidence intervals uses the standard error of the sample; for a 95% confidence interval with a large sample, this is calculated as the point estimate $\pm (1.96 \times SE)$ (Howitt & Cramer, 2005).

Appendix 17. Additional Testing Materials

All materials used in the initial study are shown in full below. Later studies largely followed the same format for consent forms, demographics questionnaires, feedback questionnaires and debrief sheets. Where forms differ, they are included in sections

b-h below alongside any additional testing materials (excluding outcome measures).
All other forms are available on request.

17.a. Study 1
i. Invitation to Participate

October 2011

Dear Sir/Madam

Penumbra and Abertay University are currently working to further develop and “validate” i-ROC which is the questionnaire that we use within the organisation to measure your recovery. Validation involves making sure that i-ROC measures what it claims to measure and that it is a reliable tool. As part of the process we are looking for volunteers to assist us by taking part in the research. This would involve an interview with a member of staff who would ask you some questions related to i-ROC and other, similar tools. The interview would last approximately 2 hours.

Please take a moment to read over the participant information sheet, and consider whether you are interested in participating. As a token of our appreciation those who take part will be given a gift voucher of £10. If you agree to take part we will arrange your interview at a time convenient for you.

I am willing to participate Yes No

Name.....

Contact Number.....

Key Worker.....

Thank you.

Penumbra and Abertay University.

Penumbra is a charity (SC 010387) and a company limited by guarantee (SC 091542) registered in Scotland. Registered Office: Norton Park, 57 Albion Road, Edinburgh, EH7 5QY

Penumbra envisages a society where people with mental health problems expect recovery and are accepted, supported and have the resources to fulfil their potential.

i. Participant Information Sheet

Participant Information Sheet, Version 1.0 Created: 07/10/11

i-ROC: independent Recovery Outcomes Counter; Validation study

You are invited to participate in a research project. The following information is to help you decide if you want to take part. You can discuss this with people outwith the project if you want. You do not have to decide straight away.

Background to the study

Penumbra has developed a tool to help understand how their service users are, and how they have been feeling. It is a short questionnaire that asks about areas of life believed to be important to mental health, well-being and recovery. Recovery means living the life that you want to lead, being supported to achieve your goals, and being hopeful for the future, whether or not you currently experience symptoms of mental illness.

In order to check that the questionnaire works effectively and reliably, it is necessary to test it. These tests will tell us how it compares to other measures of recovery, and whether the questions it asks are the right ones. To do this, Penumbra are working with Abertay University, who are providing expert knowledge on how to conduct research.

Since March 2011, Penumbra and Abertay have employed a member of staff, Bridey Monger (Head Researcher) to oversee the testing of i-ROC. It is her job to run the study and to ensure a good working relationship between Penumbra and Abertay University. Bridey is also a research student at the University of Abertay, and will be using the data collected from this study to form part of her Masters of Research degree.

A more detailed explanation of this study will be given after each participant has completed their involvement in the study.

What you will be asked to do

You will be asked to complete three questionnaires with the aid of a support worker, who will be there to answer any questions you may have. You are welcome to have someone else with you during all parts of the project, for example a support worker, a family member or friend. This session will take approximately one and a half to two hours. There will be a break in the middle, but please feel free to take a break at any other point if needed.

The Questionnaires

The questionnaires that you will be asked to complete are the individual Recovery Outcomes Counter, the Recovery Assessment Scale, and BASIS-32. Questions relate to aspects of your physical and mental health, quality of life and your overall wellbeing. All questions are short and are answered by circling a number on a scale. Please note that you are under no obligations to answer any questions on any of the questionnaires that you find difficult or distressing. Our data will not be compromised in any way by you leaving out questions. Please note that you will still be entitled to receive a £10 Tesco voucher following participation if you choose not to answer questions.

After the questionnaires

Once you have completed these questionnaires, you will be asked a few questions about your experiences of filling them in. Again, you are free to leave any you wish not to answer.

What will happen to the information collected in the study?

The information collected in the study will be used to help develop i-ROC as a tool to measure personal recovery outcomes in mental health services. It will also be used as part of my Research Degree at the University of Abertay, looking at recovery measurement and the validation of i-ROC. The information collected will be stored securely by the Head Researcher, Bridey Monger. Data will be allocated a code so that information will be anonymised. Any identifying information will be stored separately. It will not be possible to identify any individual who takes part in this research as only the pooled responses of all participants will be reported. All data will be stored securely at Abertay University for 5 years and then destroyed.

Participation is voluntary

Participation in this study is entirely voluntary and you are free to refuse to take part or to withdraw from the study at any time, during or after taking part, without giving a reason. This will in no way affect your future support or your relationship with any support workers or other Penumbra staff. If you choose to withdraw from the study, you can contact Bridey Monger or Jane Cummings on the contact details below. You can also tell your support worker and they will contact the research team for you. Once you have contacted the team, your data will be immediately removed from the study and will not be used in any part of the research.

What happens now?

If you agree to take part you will be asked to complete a consent form. If you decide not to take part, this will have no bearing on your future care or support.

This research has been approved by the Research Ethics Committee of the School of Social and Health Sciences, University of Abertay, Dundee

Contacts

If you have any questions or would like to discuss this research further please contact me directly (Bridey Monger, 0131 475 2585). Alternatively, please feel free to contact my research supervisor, Robin Ion. If you would like to speak to someone else involved in the research at Penumbra, please contact Jane Cumming. Contact details can be found below.

Thank you very much for taking the time to read this information sheet.

Yours Sincerely,

Bridey Monger, Head Researcher

[Contact Details]

ii. Consent Form



CONSENT FORM

Title of Project: **i-ROC – individual Recovery Outcomes Counter Validation Study**

Name of Researcher: **Bridey Monger**

Please initial box

1	I confirm that I have read and understood the information sheet with the heading Participant Information Sheet Version 1.0 Created: 07/10/11 for the above study. I have had the opportunity to consider the information, ask questions and have had these answered satisfactorily.	<input type="checkbox"/>
2	I understand that my participation is voluntary and that I am free to withdraw at any time during or after the study, without giving any reason, without any medical care or legal rights being affected	<input type="checkbox"/>
3	I understand that the information from this study will be stored anonymously in a locked cabinet. This information will be held by the researcher until the end of the study, following which it will be stored securely at Abertay University for 5 years, and then destroyed.	<input type="checkbox"/>
4	I understand that the information collected in the study will be used by Penumbra to help develop i-ROC as a tool to measure personal recovery outcomes in mental health services. It will also be used as part of the principal investigator's Research Degree at the University of Abertay.	<input type="checkbox"/>
5	I understand that all data will be used anonymously for i-ROC development, research presentation and publication.	<input type="checkbox"/>
6	I agree to take part in the above study	<input type="checkbox"/>

Name of participant

Date

Signature

Name of person taking consent

Date

Signature

When complete, 1 for participant; 1 for researcher site file; 1 (original) to be kept separate from study results

iii. Demographic Questionnaire

Age:	
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Sex:	Male		Female	
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Cost Centre attended:	
------------------------------	--

Number of hours of support per week:	
---	--

Date started service:	
------------------------------	--

Number of previously completed i-ROC's:	
--	--

Length of time with mental illness (years & months):	
---	--

Clinical/Self Reported Diagnosis (Please circle either clinical or self):							
1.Schizophrenia		2.Depression		3.Anxiety Disorder		4.Bi-Polar Disorder	
5.Eating Disorder		6.Brain Damage		7.Dementia		8.Personality Disorder	
9.Addiction		10.None		11.Other			

Appendices

If other, please describe	
----------------------------------	--

Current Living Situation							
1.Living on own		2.With partner		3.With family		4.With others	
5.Rented		6.Owns property		7.Temporary		8.Hostel	
9.Supported Accommodation				10.Homeless		11.Other	
If other, please describe							

Current Employment Status							
1.Full time paid		2.Part time paid		3.Student		4.Volunteer	
5.Pupil		6.Unemployed		7.Retired		8.Other	
If other, please describe							

Educational Level Achieved							
1.Standard Grade/GCSE		2.Highers/A level		3.Advanced Higher		4.Degree/Higher degree	
5.SVQ/HND		6.Professional Qualification		7.No Qualifications		8.Other	

If other, please describe	
----------------------------------	--

iv. Testing Script

Before you start:

Make sure that you have everything you need for the break (tea/coffee/biscuits etc.). Ensure you know where the exits are in case of a fire, and where the toilets are. Make sure that you and your participant are comfortable and are sat so that you can both see the questionnaires. You will be reading the questions, but it is important that the participant can see the page too.

Welcome Script

Thank you very much for coming along today. Today's study is to look at i-ROC and how effective, valid and comprehensive it is. We are doing this study to help us to make Penumbra's services and the ways they measure your progress as effective and user friendly as possible. Your wellbeing at all stages of this process is of utmost importance to us. We do not intend to cause you any problems by asking you to participate in this project. If at any time you feel uncomfortable or unhappy about the questions that we are asking, please let us know. You are under no obligation to answer anything that you do not want to. Please take your time to read over the participant information sheet. Would you like me to read it to you? (Read sheet). Do you have any questions? (Answer all questions, and check they are happy with the answers) Are you happy to continue?

That's great. Once again, we greatly appreciate your participation today. If you change your mind at any time, have any questions, or would like to take a break, please just let me know.

Read Participant Information Sheet (PIS)/Give it to the participant to read

Are you happy to carry on to the consent form? Would you like me to read it to you? (*Read sheet*) Do you have any questions? (*Answer all questions, and check they are happy with the answers*) If you could sign two copies for me please, then you can take one home with you as a record of your attendance.

Thank you

Testing Script

As you know, I am going to ask you to fill in three questionnaires relating to your mental health, wellbeing and recovery. Before we get started with those, I would like to ask you some questions about you and your background. This information will help us make sense of our data, and make sure that any effects that we see are due to the answers that you give rather than, for example the service you attend. Does that make sense? Obviously this information will be useful to us, however if you feel that you would rather not answer any of the questions, that is fine. It will in no way affect your ability to participate in the rest of the study, or our ability to look at the answers that you provide. So, if you do not want to answer any of the questions that I ask you, please let me know and I will move on to the next question. You do not have to explain to me at any point why you have chosen not to answer.

Are you happy to continue?

Read the questions on the demographics questionnaire. Mark down any not answered & any comments they make about this.

Thank you very much. We are now ready to carry on to the main questionnaires. There are three of them and they take about 20 minutes each. After the first of the three questionnaires, we will take a break before continuing with the other two. Does that sound OK? Great. There are quite a lot of questions to get through, so whilst I would ask that you answer all the questions as fully as possible, for the purpose of this study, go with your first instincts and don't feel that you have to give long explanations for your answers. This will help us keep the study as short as possible, so that we don't get too worn out.

If you feel that there are any questions on there that you feel you would like to discuss in more depth, we can talk about it at the end, or you can discuss it with your support worker at a later date. Does that make sense?

Remember that we are testing the questionnaires, we are not testing you, so there may be questions that we would not normally ask you and as mentioned earlier you are free to leave any questions that you do not wish to answer, and I will not ask you why. Are you happy to continue?

Read the questions on the first questionnaire (i-ROC). Mark down any not answered & any comments they make.

That's great, thank you very much. We can now take a short break – about 15 minutes. Would you like a cup of tea or coffee? (Offer them anything they want, make small talk with them.)

Ok, we are now ready to get started with the next questionnaire. Once again, please answer fully, but go with your gut instinct. If you wish to not answer any of the questions, please let me know and we will skip to the next one. Are you happy to continue?

Read the questions on the second questionnaire (RAS). Mark down any not answered & any comments they make.

Great, thank you. Ok we just have one more questionnaire to do. As with the others, you are free to leave any questions that you don't want to answer. Are you ready to continue?

Appendices

Read the questions on the third questionnaire (BASIS-32). Mark down any not answered & any comments they make.

Fantastic, well done. We just have a couple more quick things to do, and then you will be done. Firstly, I would like to ask you a few questions about how you found those three questionnaires. This is to understand how you found them, and what you liked/disliked about them. Are you happy to answer the questions for me? Once again, if there are any questions that you don't feel happy answering, tell me and we will skip it.

Read the questions on the feedback questionnaire. Mark down any not answered & any comments they make.

Thank you very much for taking part today. I will just let you know some more information about what we have just done, and why and then we will be finished.

Read/let them read debrief. Ask if they have any questions.

Thank you once again for participating today. Your participation has been incredibly helpful. If you have any questions or comments after you leave today, please let me know. If you would rather speak to someone else, here are the contact details of the other researchers.

Give them the Contact Details sheet (Final Page), for them to take away

You are also free to discuss any of this with your support worker if you wish. Because today is confidential, I won't be sharing any of this information with anyone outside of the research team, but you are free to discuss the study with whomever you wish.

If it is ok with you I will pass your name and address to Penumbra who will forward your voucher to you. This does not form part of the information returned as part of the study.

Thank you.

Make sure that they take their consent form, and a copy of all contact details with them. They can also take the participant information sheet & debrief if they want.

End.

v. Feedback Questionnaire

Questions on BASIS-32 and RAS are specific to Study 1; all other questions asked in Study 2 and Study 6 as well.

General Feedback

We would like to hear what you thought of each questionnaire that you filled in today. Please tick the boxes or circle your answer to answer each question, and write any comments that you may have in the comments boxes below. If you don't have any comments, feel free to leave the boxes blank.

What was your favourite questionnaire?

i-ROC

RAS

BASIS-32

Why was this your favourite?

What was your least favourite questionnaire?

i-ROC

RAS

BASIS-32

Why was this your least favourite?

i-ROC Comments

RAS Comments

BASIS-32 Comments

I understood all the questions on i-ROC completely

1	2	3	4	5
Disagree completely	Disagree somewhat	Neither agree nor disagree	Agree somewhat	Agree completely

i-ROC helped me think about my recovery

1	2	3	4	5
Disagree completely	Disagree somewhat	Neither agree nor disagree	Agree somewhat	Agree completely

The questions on i-ROC are important for thinking about recovery

1	2	3	4	5
Disagree completely	Disagree somewhat	Neither agree nor disagree	Agree somewhat	Agree completely

How did you find the length of i-ROC?

1	2	3	4	5
Far too short	A bit short	The right length	A bit long	Far too long

Appendices

There were questions on i-ROC that I didn't wish to answer

1	2	3	4	5
Disagree completely	Disagree somewhat	Neither agree nor disagree	Agree somewhat	Agree completely

I would be happy to fill out i-ROC again

1	2	3	4	5
Disagree completely	Disagree somewhat	Neither agree nor disagree	Agree somewhat	Agree completely

I feel that the results of my i-ROC will be helpful for staff

1	2	3	4	5
Disagree completely	Disagree somewhat	Neither agree nor disagree	Agree somewhat	Agree completely

Please tick any questions from i-ROC that you felt were not of great importance to your recovery

Mental health	<input type="checkbox"/>	Life Skills	<input type="checkbox"/>	Safety & Comfort	<input type="checkbox"/>	Physical health	<input type="checkbox"/>
Exercise & Activity	<input type="checkbox"/>	Employment	<input type="checkbox"/>	Personal network	<input type="checkbox"/>	Social network	<input type="checkbox"/>
Valuing myself	<input type="checkbox"/>	Participation & Control	<input type="checkbox"/>	Self-management	<input type="checkbox"/>	Hope for the future	<input type="checkbox"/>

Please tick any questions from i-ROC that you felt uncomfortable answering.

Mental health	<input type="checkbox"/>	Life Skills	<input type="checkbox"/>	Safety & Comfort	<input type="checkbox"/>	Physical health	<input type="checkbox"/>
Exercise & Activity	<input type="checkbox"/>	Employment	<input type="checkbox"/>	Personal network	<input type="checkbox"/>	Social network	<input type="checkbox"/>
Valuing myself	<input type="checkbox"/>	Participation & Control	<input type="checkbox"/>	Self-management	<input type="checkbox"/>	Hope for the future	<input type="checkbox"/>

Please tick any questions from i-ROC that you did not completely understand

Mental health	<input type="checkbox"/>	Life Skills	<input type="checkbox"/>	Safety & Comfort	<input type="checkbox"/>	Physical health	<input type="checkbox"/>
Exercise & Activity	<input type="checkbox"/>	Employment	<input type="checkbox"/>	Personal network	<input type="checkbox"/>	Social network	<input type="checkbox"/>
Valuing myself	<input type="checkbox"/>	Participation & Control	<input type="checkbox"/>	Self-management	<input type="checkbox"/>	Hope for the future	<input type="checkbox"/>

Appendices

BASIS-32 and RAS Feedback

In this section, you will be asked about your experiences of filling in the other two questionnaires: RAS and BASIS-32. Please answer yes or no to each of the following questions, for both questionnaires.

Were there questions on RAS or BASIS-32 that you had difficulty understanding?

RAS	YES	NO	BASIS-32	YES	NO
------------	------------	-----------	-----------------	------------	-----------

Did RAS and/or BASIS-32 help you think about your recovery?

RAS	YES	NO	BASIS-32	YES	NO
------------	------------	-----------	-----------------	------------	-----------

Do you feel that the questions on RAS and/or BASIS-32 are important for thinking about recovery?

RAS	YES	NO	BASIS-32	YES	NO
------------	------------	-----------	-----------------	------------	-----------

Did you feel that the RAS and BASIS-32 questionnaires were the right length?

RAS	YES	NO	BASIS-32	YES	NO
------------	------------	-----------	-----------------	------------	-----------

Were there questions on either the RAS or BASIS-32 that I didn't wish to answer?

RAS YES NO **BASIS-32** YES NO

Would be happy to fill out RAS and/or BASIS-32 again?

RAS YES NO **BASIS-32** YES NO

Do you feel that the results of RAS and/or BASIS-32 will be helpful for staff?

RAS YES NO **BASIS-32** YES NO

Thank you for taking the time to complete this questionnaire. The feedback that you have given will be extremely useful for our results.

vi. Debrief

Participant Debrief

i-ROC: independent Recovery Outcomes Counter

Validation study

Thank you very much for participating in the i-ROC validation study today. This has helped us to gather the information we need to ensure that i-ROC is the right tool for you.

Today you were asked to fill in three questionnaires (i-ROC, RAS and BASIS-32) which all aim to measure your well being and your progress towards personal recovery. We have not asked specifically about symptoms of mental illness, because we feel that personal recovery refers to your ability to lead a fulfilling, well rounded life with or without symptoms of mental illness.

The answers that you have provided for the three questionnaires will be analysed to see how similar the questions on each of the questionnaires are to each other. This will allow us to see whether i-ROC is truly measuring recovery as accurately as other measures. We hope to find that i-ROC asks similar questions to BASIS-32 and RAS. This will tell us whether the questions we have chosen are valid.

We also asked for your feedback on your experiences of filling in these three questionnaires. This information will be analysed to learn which of the three questionnaires people prefer, and why. This will tell us whether i-ROC truly is the best measure of recovery to be using at Penumbra.

Once again, thank you for taking part today. Your participation has helped us get closer to answering these questions. If you have any questions, or feel that there is anything further you would like to discuss after leaving today, please get in touch with the support worker who ran these tests with you, or call me directly on the number listed below. The results of this study will be reported through Penumbra over the coming months. Your support worker should be able to inform you of progress. If you are interested in finding out more, please contact me.

Many thanks,

Bridey Monger, Head Researcher

Contact Details *(as per participant information sheet)*

vii. Thank you letter



October 2011

Dear Participant,

Penumbra and Abertay University would like to take this opportunity to thank you for participating in this current research. We have been working together throughout the year to ensure that i-ROC is as effective and user – friendly as it can be. It is therefore important that we get the views of as many people as possible as part of the process.

We fully appreciate that this has involved you giving up your time and we wish to let you know that we are very grateful that you have decided to assist us.

As a small token of our appreciation we have enclosed a gift voucher.

Thank you once again.

From Penumbra and Abertay University.

Penumbra is a charity (SC 010387) and a company limited by guarantee (SC 091542) registered in Scotland.

Registered Office: Norton Park, 57 Albion Road, Edinburgh, EH7 5QY

Penumbra envisages a society where people with mental health problems expect recovery and are accepted, supported and have the resources to fulfil their potential.

17.b. Study 2

i. Participant Information Sheet

Participant Information Sheet, Version 1.0 Created: 02/02/12

i-ROC: independent Recovery Outcomes Counter

Validation study

You are invited to participate in a research project. The following information is to help you decide if you want to take part. You can discuss this with people outwith the project if you want. You do not have to decide straight away.

Background to the study

Penumbra, a Scottish mental health charity, has developed a tool to help understand how their service users are, and how they have been feeling. It is a short questionnaire that asks about areas of life believed to be important to mental health, well-being and recovery. Recovery means living the life that you want to lead, being supported to achieve your goals, and being hopeful for the future, whether or not you currently experience symptoms of mental illness.

In order to check that the questionnaire works effectively and reliably, it is necessary to test it. These tests will tell us how it compares to other measures of recovery, how it performs over time, and whether the questions it asks are the right ones. To do this, it is not necessary for participants to have a history of mental health problems. Your recruitment in this study therefore has nothing to do with your mental health. More details about the study are available on request once participation in the study is over.

What you will be asked to do

You will be asked to complete i-ROC and 4 other questionnaires. This session should take between half an hour and one hour. Please feel free to take a break at any point if needed.

The Questionnaires

The questionnaires that you will be asked to complete are the individual Recovery Outcomes Counter, the Community Living Skills Survey, the Herth Hope Index and the International Physical Activity Questionnaire. You will also be asked to fill in a brief General Health Questionnaire. Questions relate to aspects of your physical and mental health, quality of life and your overall wellbeing. All questions are short and are answered by circling a number on a scale.

After the questionnaires

Appendices

Once you have completed these questionnaires, you will be asked a few questions about your experiences of filling them in. Please note that you are under no obligations to answer any of the questions.

What will happen to the information collected in the study?

The information collected in the study will be used to help develop i-ROC as a tool to measure personal recovery outcomes in mental health services. It will also be used as part of my Research Degree at the University of Abertay, looking at recovery measurement and the validation of i-ROC. The information collected will be stored securely by the Head Researcher, Bridey Monger. Data will be allocated a code so that information will be anonymised. Any identifying information will be stored separately. It will not be possible to identify any individual who takes part in this research as only the pooled responses of all participants will be reported or published. All data will be stored securely at Abertay University for 5 years and then destroyed.

Participation is voluntary

Participation in this study is entirely voluntary and you are free to withdraw from the study at any time, during or after taking part, without giving a reason.

What happens now?

If you agree to take part you will be asked to complete a consent form.

This research has been approved by the Research Ethics Committee of the School of Social and Health Sciences, University of Abertay, Dundee

Contacts

If you have any questions or would like to discuss this research further please contact me directly (Bridey Monger, 0131 475 2585). Alternatively, please feel free to contact my research supervisors, Robin Ion & Dr Scott Hardie. Contact details can be found overleaf.

Thank you very much for taking the time to read this information sheet.

Yours Sincerely,

Bridey Monger, Head Researcher

ii. Demographics questionnaire

Age:	
-------------	--

Sex:	Male	Female	
-------------	------	--------	--

Year of study:

Programme of study:

History of Mental Health Issues?

If yes, please describe:

17.c. Study 3
i. Participant Information Sheet, Consent and Demographics

I.ROC Test-retest

Participant Information

I.ROC, the Individual Recovery Outcomes Counter has been in use within Penumbra now for a few years. Since 2011, a research group within Penumbra has been working in collaboration with the University of Abertay Dundee to test the reliability and validity of I.ROC.

We have been working with Scott Hardie & Robin Ion in the School of Social & Health Sciences, UAD, to examining the validity and reliability of I.ROC since 2011.

Studies to test I.ROC with people with mental health problems are on-going, however you are asked to participate as part of a control group of people who do not necessarily have mental health problems, to compare results from the populations. In order to check that the questionnaire works effectively and reliably, it is necessary to test it.

To do this we need your help!

What you will be asked to do

You will be asked to complete I.ROC and 1 other questionnaire. This session should take no more than half an hour. Please feel free to take a break at any point if needed. You will also be asked to log back in and complete these questionnaires again within 5-14 days after completion of the first session. You will be asked to provide an email address when you complete the survey, so that we can remind you of when you are due to complete them again.

The Questionnaires

The questionnaires that you will be asked to complete are the Individual Recovery Outcomes Counter (I.ROC), and the General Health Questionnaire. Questions relate to aspects of your physical and mental health, quality of life and your overall wellbeing. All questions are short and are answered by clicking an answer from a multiple choice list.

DATA

Your responses are anonymous, but we will need to have an email address to use in order to match up the two versions. Once matched, we will DELETE the email and we will not use it for any other purpose.

* 1. By clicking YES, I am agreeing that I am 17 and over and that my data can be used for this study, although I have the right to withdraw at any point until I submit the data (after which it will be anonymous)

- YES, I agree to take part
 NO, I do not wish to take part

2. What is your age?

3. What is your gender?

- Male
 Female

Other (please specify)

17.d. Study six

Study six involved analysis of routinely collected I.ROC data from Penumbra's database; no data was collected directly from participants.

17.e. Study 5

Study 5 involved secondary analysis of data collected during a wider study entitled 'Group Compassion Focused Therapy vs Group Psychoeducation for Adult Survivors of CPTSD, led by researchers at Edinburgh Napier University. No data was collected directly for use within the current study.

17.f. Study 6

i. Participant Information Sheet

Participant Information Sheet

Title of Project:

Is the I.ROC measure of recovery a 'good' measure of mental well-being?

Purpose of the study

The purpose of this study is to assess whether the I.ROC (Individual Recovery Outcomes Counter) measure of recovery can effectively measure participants' mental health, by testing it against another previously supported measure of well-being.

What will I be asked to do?

You will be asked to complete 3 questionnaires. All answers will be kept confidential and anonymous so as to ensure your privacy, and you may choose not to answer any questions you do not feel comfortable answering.

Time Commitment

During this study you will be required to participate in one session which should take roughly 10 minutes of your time.

Must I take part?

No, participation is entirely voluntary. You may decide to stop being a part of the research study at any time without explanation.

Are there any risks?

There are no known risks for you in this experiment, although as it is examining a rather sensitive topic in regard to mental health there is a risk that you could feel slightly uncomfortable providing answers based on your personal experiences. However, as outlined above you may choose to omit any questions that you do not want to answer. If you feel any distress after the study then please feel free to contact the researcher or her supervisor and they will put you in contact with someone qualified to help. Additionally, you could contact your local GP for further assistance, or if you are a student your local university counselling services (Abertay counselling services can be reached through Email: counselling@abertay.ac.uk, or Telephone: 01382 308051, or by going in person to the Student Services Reception on Level 2 of the Library).

Confidentiality/Anonymity

The personal information about you that will be collected in our data is your age, gender, past and present mental health (if you wish to disclose this information), student status and subsequent degree programme. You as a participant will not be identifiable once your answers have been submitted; all information that you provide will be logged under a participant number to maintain your anonymity and can therefore not be traced back to you in any way.

Further information about this project:

If you require further information about this study you can contact the researcher (Scott Hardie, at S.Hardie@abertay.ac.uk).

ii. Consent & Demographics

Informed Consent

1. **By clicking the box below you are indicating that you have read and understood the Participant Information Sheet and that you are willing to take part in this research study. ***

I understand that during this study I will be asked to complete a series of well-being questionnaires. I understand that my participation is voluntary and that I may decide to stop being part of the research study at any time during the testing phase without explanation. I understand that I may decide to skip over any questions that I do not want to answer. I understand that the data collected will be treated confidentially. I understand that I will be entitled to contact the researchers with any questions I have about the study. I have read the participant information sheet and I am willing to take part in this study. I am over the age of 17.
Mark only one oval.

Yes, I consent to take part

Demographics

2. **AGE**

(Please type in your age)

3. **What is your Gender**

Please pick the category you deem most appropriate

Mark only one oval.

- Transgender
 Do not wish to answer
 Female
 Male

4. **Are you a student?**

Mark only one oval.

- Yes
 No

5. **If Yes - what is your main area of study
(School, Subject area or programme)**

Mental Health History

In order to be able to compare scores on these measures, it would be useful to be able to compare scores between those with experience of a mental health issue, and those who have not.

The data will be completely confidential, and you will not be identifiable from it, and it will only be used for the purposes of this study.

Of course, you are free to not answer any of these questions, and this is perfectly fine.

6. 1. Have you experienced a mental health issue in the past?

Mark only one oval.

- Yes
 No
 Rather not say

7. Type(s) of mental health issue?

Please indicate those which HAVE applied to you in the past. You can indicate more than one, if appropriate

Mark only one oval per row.

	Self-diagnosis	Clinical
1.Schizophrenia	<input type="radio"/>	<input type="radio"/>
2.Depression	<input type="radio"/>	<input type="radio"/>
3.Anxiety Disorder	<input type="radio"/>	<input type="radio"/>
4.Bi-Polar Disorder	<input type="radio"/>	<input type="radio"/>
5.Eating Disorder	<input type="radio"/>	<input type="radio"/>
6.Brain Damage	<input type="radio"/>	<input type="radio"/>
7.Self-harm	<input type="radio"/>	<input type="radio"/>
8.Personality Disorder	<input type="radio"/>	<input type="radio"/>
9.Addiction	<input type="radio"/>	<input type="radio"/>
10. Other	<input type="radio"/>	<input type="radio"/>

8. If 'other' please give a brief description

9. 2. Are you currently experiencing a mental health issue?

Mark only one oval.

- Yes
 No
 Rather not say

Appendices

10. Type(s) of mental health issue currently experienced ?

Please indicate those which you CURRENTLY have. You may indicate more than one, if appropriate

Mark only one oval per row.

	Self-diagnosis	Clinical
1.Schizophrenia	<input type="radio"/>	<input type="radio"/>
2.Depression	<input type="radio"/>	<input type="radio"/>
3.Anxiety Disorder	<input type="radio"/>	<input type="radio"/>
4.Bi-Polar Disorder	<input type="radio"/>	<input type="radio"/>
5.Eating Disorder	<input type="radio"/>	<input type="radio"/>
6.Brain Damage	<input type="radio"/>	<input type="radio"/>
7.Self-harm	<input type="radio"/>	<input type="radio"/>
8.Personality Disorder	<input type="radio"/>	<input type="radio"/>
9.Addiction	<input type="radio"/>	<input type="radio"/>
10. Other	<input type="radio"/>	<input type="radio"/>

11. If 'other' please give a brief description

iii. Debrief

Debrief Form

I would firstly like to thank you for taking part in my study. As outlined at the beginning of the research this study set out to examine the I.ROC measure of recovery against another measure of mental health (Recovery Star) to further examine the reliability and validity of the I.ROC

If you require any further information about this study, or feel any distress at all and would like some help, please feel free to contact me: Scott Hardie, at S.Hardie@abertay.ac.uk.

17.g. Project 1

Project 1 was completed as part of psychology student Nuala Mitchell's dissertation. All details of testing materials can be found within this document.

17.h. Project 2

i. Participant Information Sheet

Participant Information Sheet, Version 1.0 Created: 10/2/14

Meaningful AND Measurable: Meaningful Recording

You are invited to participate in a research project. The following information is to help you decide if you want to take part. You can discuss this with people outwith the project if you want. You do not have to decide straight away.

Background to the study

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This work is to be undertaken as part of two larger studies: the PhD of researcher Bridey Rudd, which is entitled 'Investigating the validity and reliability of the Individual Recovery Outcomes Counter'; and a project entitled 'Meaningful AND Measurable', a 1 year ESRC funded Knowledge Exchange project at Edinburgh University looking at how different organisations are currently talking about, and measuring personal outcomes.

Within many organisations in Scotland, personal outcomes are being measured using a variety of different methods. In Penumbra, the measurement tool is the Individual Recovery Outcomes Counter (I.ROC). Angus Council use the Wellbeing Web as their measure of personal outcomes, largely for their work with children, young people and families.

This project seeks to find out to what extent the use of these tools is promoting a personal-outcomes focus within conversations with service users. The research is also exploring the experiences of staff in having these conversations and in using the tools to record outcomes.

We therefore wish to invite you to consider taking part in a relatively short (around 45 minutes) interview about your experiences of using one of these measures. As you have been using one of these measures with your service users, we would like to be able to learn from this experience, and so we are asking for your help.

What you will be asked to do

You will be asked to complete an interview with a researcher from either Penumbra or Angus Council. The researcher will not be working for the same organisation as you, and is as such independent from your work. They will be collecting this data anonymously and purely for research purposes. The format will be a relatively brief (around 45 minutes) confidential interview, where the researcher will come to your place of work and discuss the measure used in your organisation (either I.ROC or the Wellbeing Web) with you, using a semi-structured interview (i.e. some specific questions, but also the opportunity for you to comment about the measures, covering the topics you want to talk about). The interview questions can be found at the end of this document. You will be asked to bring to the interview an anonymised example/case study of a time you have used I.ROC or the Wellbeing Web. The researchers within your organisation will help you prepare this. Your managers have agreed that staff may take part in this process, but other than allowing this to happen they will not be directly involved in accessing the data, until it has been aggregated and anonymised.

The research will involve the recording of these interviews, but purely for the purpose of transcription. Individuals will be only referred to by means of an anonymised code (e.g. staff member A, etc.), which will appear on the transcripts. The research team will be the only people with access to the recordings (for reliability measures), and will

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not let anyone else access them. Once accurate transcription is completed, the recordings will be deleted. Until then, they will be securely stored in a locked cabinet, and password protected computer file.

What will happen to the information collected in the study?

The anonymised (transcribed) information collected in the study will be used to help examine the current usefulness and potential for future development of I.ROC and the Wellbeing Web. The information will then be used to help develop and design existing and new training within Penumbra and Angus Council. Data will also be used as part of one of the researcher's (Bridey Rudd) PhD at the University of Abertay, looking at recovery measurement and the validation of I.ROC. Finally, it will be used as part of the ESRC funded Meaningful and Measurable project.

In all cases, the information we collect will not be directly connected to your personal data and will be stored as anonymous and confidential data. It will only be used by the research team as a way of examining the measures, and will be securely stored by all members of the team. Data will be allocated a code so that information will be anonymised. Any identifying information will be stored separately on a secured computer only accessed by the research team. It will not be possible to identify any individual who takes part in this research as only the pooled responses of all participants will be reported or published. All data will be stored securely at Abertay University for 5 years and then destroyed.

Participation is voluntary

Participation in this study is entirely voluntary and you are free to refuse to take part or to withdraw from the study at any time, during or after taking part, without giving a reason. This will in no way affect your job, or your relationship with any other staff. If you choose to withdraw from the study, you can contact the research team as detailed below. You can also tell your line manager and they will contact the research team for you. Once you have contacted the team, your data will be immediately removed from the study and will not be used in any part of the research.

What happens now?

If you agree to take part you will be asked to complete a consent form.

This research has been approved by the Research Ethics Committee of the School of Social and Health Sciences, University of Abertay, Dundee

Contacts

If you have any questions or would like to discuss this research further, please contact one of the research team on the details provided on the next page.

Thank you for taking time to read this Information Sheet

The Research Team

ii. Interview Schedule (One to One Interviews)

Basic questions will be as follows, with prompts and further exploratory questions where necessary.

Please remember that this is not a test, it is purely to explore with you your views and experiences.

How often have you used the Wellbeing Web/I.ROC?
How comfortable to you feel using the tool?
What do you feel the purpose of the Wellbeing Web /I.ROC is?
How do you find the process of recording results from the Wellbeing Web /I.ROC?
What do you feel are the barriers to using the tool?
What do you think is good about the tool?

Please bring with you to the interview one anonymised copy of a Wellbeing Web or I.ROC that you have completed with a service user.

You were asked to bring with you today an example of a Wellbeing Web /I.ROC that you have completed with a service user. Can we take a look at that now?
Can you talk me through how you initiated using the tool?
Could you talk me through how you asked the questions?
How did you record this Wellbeing Web /I.ROC?
What was the impact of using the tool for the service user?
What happened after you finished the questionnaire?
Do you have any further questions or comments?

Thank you for taking the time to read through the interview questions. These are purely for your information, you are not expected to prepare answers to the questions prior to the interview. However, please do remember to bring with you an example of a completed I.ROC or Wellbeing web.

17.i. Project 3

i. Participant Information Sheet

Participant Information Sheet, Version 1.0 Created: 9/12/2014

Telling the I.ROC story: key stakeholder interviews

You are invited to participate in a research project. The following information is to help you decide if you want to take part. You can discuss this with people outwith the project if you want. You do not have to decide straight away.

Background to the study

Over the past three years, Penumbra and Abertay University have been working together to investigate the validity and reliability of I.ROC (the individual recovery outcomes counter). I.ROC has undergone psychometric testing, carried out by the current research group, which supports the validity and reliability of the tool (Monger et al, 2013; Ion et al, 2013)³⁶.

Little has yet been done however to capture the story of the tool's development and implementation. This is an important next step, to make sure that the voices of the practitioners are not lost in telling the story of I.ROC. To add balance to the story, it is important to hear of the intentions for its use, its purpose and its practical applications.

The current project aims to target this through investigations of key stakeholder's accounts of the I.ROC story. It will investigate the process of development and embedding I.ROC by collecting the narratives of individuals involved in all areas of this process within Penumbra.

As a member of the original working group that came together to design I.ROC, you are invited to participate in a one to one interview with the lead researcher, Bridey Rudd. You will be asked to recall what you can of the development process, and will be asked some follow up questions about how you feel the process worked, and what didn't work so well.

³⁶ Ion R, Monger B, Hardie S, Henderson N, Cumming J (2013). A tool to measure progress and outcome in recovery. *British Journal of Mental Health Nursing*, 2(4), 56-60

Monger B, Hardie S, Ion R, Cumming J, Henderson N (2013). The Individual Recovery Outcomes Counter: Preliminary validation of a personal recovery measure. *The Psychiatrist*, 37, 221-227

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Interviews will be recorded using a Dictaphone, to allow accurate recording of your answers. Recordings will be transcribed and anonymised before they are analysed.

Data will be stored in password protected files on a password protected, encrypted computer in a locked office in Penumbra for five years and will then be destroyed.

Data collected from the interviews will be used as part of the lead researcher's PhD, and will be shared through academic and trade journals. All data will be aggregated and anonymised before it is used.

Participation is voluntary

Participation in this study is entirely voluntary and you are free to refuse to take part or to withdraw from the study at any time, during or after taking part, without giving a reason.

What happens now?

If you agree to take part you will be asked to complete a consent form. We will then agree a date for an interview to occur.

This research has been approved by the Research Ethics Committee of the School of Social and Health Sciences, University of Abertay, Dundee

Contacts

If you have any questions or would like to discuss this research further please contact me directly (Bridey Rudd, 0131 475 2577). Alternatively, please feel free to contact my research supervisors, Robin Ion & Dr Scott Hardie. Contact details can be found overleaf.

Thank you very much for taking the time to read this information sheet.

Yours Sincerely,

Bridey Rudd, Head Researcher

ii. Questions for semi-structured interview

Could you tell me what you remember about the early development of I.ROC?

Where did the idea come from?

Who was involved in the early development?

What research did the group do?

What happened next?

Looking back, is there anything about the development of I.ROC that you would do differently? Could you tell me about that?

What do you think has worked well/not worked well?

Can you tell me about how I.ROC was rolled out?

Looking back, is there anything about the rolling-out of I.ROC that you would do differently? Could you tell me about that?

Who else do you think would be useful for me to talk to about any part of the I.ROC journey?

iii. Follow-up Survey

Link to survey:

https://docs.google.com/forms/d/e/1FAIpQLSfCAojde42U5kQ0tbZz6YvwjnJcLbO_QRQI5anal0vh_6qPOg/viewform?usp=sf_link

QUESTIONS	RESPONSES	5
<p>Please take a moment to look at the first two drafts of PROWD (I.ROC precursor) that were sent out with the covering email. Having looked at the first two drafts of PROWD, can you tell me anything about:</p>		
<p>How the wording for the descriptive statements that go alongside the indicator titles was developed?</p>		
<p>Long-answer text</p>		
<p>Anything about the inclusion of the 'best hope' comments box, and why this was later dropped?</p>		
<p>Long-answer text</p>		
<p>When and why the questionnaire was renamed?</p>		
<p>Long-answer text</p>		
<p>Since completing the interview with me focusing on the development of I.ROC (I appreciate this was quite a while ago), is there anything further that you have remembered about the process, or is there anything you feel would be useful for me to know?</p>		
<p>Long-answer text</p>		
<p>Please describe what you feel to be the original purpose of I.ROC</p>		
<p>Long-answer text</p>		

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Has this changed at all when you think of the current purpose of the measure?

Long-answer text

At the time of I.ROC original development (2007-8), had you ever undertaken any training on research methods?

- Yes
- No
- Prefer not to answer

Any comments

Long-answer text

These questions follow on from the first part of the survey, Telling the I.ROC story - follow up questions: Part One. These questions have been separated out to allow them to be answered completely anonymously. Please remember that you are under no obligation to answer any questions that you do not feel comfortable with. Any answers you do give will be aggregated and any identifying information will be removed before being reported.

Have you personally experienced mental health issues?

- Yes
- No
- Prefer not to answer

Have you any personal experience as a person supported by mental health services?

- Yes
- No
- Prefer not to answer

Any comments?

Your answer

17.j. Project 4

i. Participant Information Sheet

Participant Information Sheet, Version 1.0 Created: 10/12/13

What makes a difference to me? Investigating the experiences of people using Penumbra's services

You are invited to participate in a research project. The following information is to help you decide if you want to take part. You can discuss this with people outwith the project if you want. You do not have to decide straight away.

Background to the study

This project seeks to find out what makes a difference to people that we support. Penumbra works with thousands of people across Scotland, and our aim is to offer hope and practical steps towards recovery for everyone we work with. This research will allow us to better understand what parts of our work are helping most, and what barriers to personal progress/recovery still exist both within and out with Penumbra's services. We want to find out what recovery means to people in Scotland, and what role services play in people's lives. We also want to find out what impact our current method of working (the HOPE framework), in particular the outcomes measure I.ROC is having on people and the support they receive. We hope that by asking these questions, we can improve the design of our services to better meet each individual's desired outcomes.

A more detailed explanation of this study will be given after each participant has completed their involvement in the study.

What you will be asked to do

You will be asked to complete an interview with a support worker, who will be there to ask you some questions about your experiences of what has made a difference to you in your support. You are welcome to have someone else with you during all parts of the project, for example a support worker, a family member or friend. This session will take approximately one hour. Please note that you are under no obligations to answer any questions that you find difficult or distressing. Our data will not be compromised in any way by you leaving out questions.

The interview will be recorded on a Dictaphone. This allows the researchers to analyse the answers. This will not be to make any judgements, purely to find out what sort of things people mention when they think about what makes a difference to them. All interview data will be collated before it is analysed or reported. No one but the researchers will listen to the interview recording.

What will happen to the information collected in the study?

The information collected in the study will be used to help develop and design existing and new services within Penumbra. It will also be used to look in some detail at how well I.ROC maps recovery as experienced by people using our services. It will also be used as part of my Research Degree at the University of Abertay, looking at recovery measurement and the validation of I.ROC. The information collected will be stored securely by the Head Researcher, Bridey Rudd. Data will be allocated a code so that information will be anonymised. Any identifying information will be stored separately. It will not be possible to identify any individual who takes part in this research as only the pooled responses of all participants will be reported. All data will be stored securely at Abertay University for 5 years and then destroyed.

Participation is voluntary

Participation in this study is entirely voluntary and you are free to refuse to take part or to withdraw from the study at any time, during or after taking part, without giving a reason. This will in no way affect your future support or your relationship with any support workers or other Penumbra staff. If you choose to withdraw from the study, you can contact Bridey Rudd or Jane Cumming on the contact details below. You can also tell your support worker and they will contact the research team for you. Once you have contacted the team, your data will be immediately removed from the study and will not be used in any part of the research.

What happens now?

If you agree to take part you will be asked to complete a consent form. If you decide not to take part, this will have no bearing on your future care or support.

This research has been approved by the Research Ethics Committee of the School of Social and Health Sciences, University of Abertay, Dundee

Contacts

If you have any questions or would like to discuss this research further, please contact me directly (Bridey Rudd, 0131 475 2577). Alternatively, please feel free to contact my research supervisor, Dr Scott Hardie. If you would like to speak to someone else involved in the research at Penumbra, please contact Jane Cumming. Contact details can be found below.

Thank you very much for taking the time to read this information sheet.

Yours Sincerely,

Bridey Rudd, Head Researcher

ii. Interview Schedule

Questions	Prompts/follow up questions
Tell me your story	Could you tell me a bit about yourself?
How did you come to be supported by Penumbra?	Do you remember being referred? What was that like? What was life like for you before you came to Penumbra?
How long have you been with/were you with Penumbra?	(If previously supported elsewhere) are there any differences between how you are/were supported by Penumbra and how you were supported previously?
How often did/do you receive support?	
What did/do you do on your support sessions?	What resources have you used? What do you think about them?
What has been your best experience?	What about this experience made it good/bad?
What has been your worst experience?	
Do you have any other experiences of your support that you would like to tell me about?	
What do you feel has worked in your support?	What qualities/attributes do you think are important for a worker to have?
What do you feel hasn't worked in your support?	Or could have been better? How could that have been different?
What things have stood in the way of you moving on?	Barriers/difficulties/challenges
What has made a difference to you?	
What difference has the support made?	If I were to ask you to think about a time at which your support relationship has been good: could you tell me what that was like? What made it good then? What was the worker like?
So what has changed for you?	
What have you achieved?	Things/goals/outcomes
What's next for you/what do you feel you are working towards now?	

Appendix 18. Qualitative Analysis

18.a. KTP Focus groups & surveys analysis

i. Focus groups information

I.ROC (formerly i-ROC) has been in use within Penumbra since 2007, but became the subject of academic scrutiny in 2011, as part of a Knowledge Transfer Partnership between Abertay University and Penumbra. BR was hired to project manage the evaluation of I.ROC, and these investigations resulted in the redesign of I.ROC. Although some of the early KTP work was completed prior to the official start of the current PhD, the results of these investigations were analysed as part of the PhD with consent from Penumbra. Moreover, the findings from this early work informed the redesign of I.ROC for the development of the version used now throughout the organisation and within all subsequent studies. The methods and results of these investigations will therefore be described.

Method

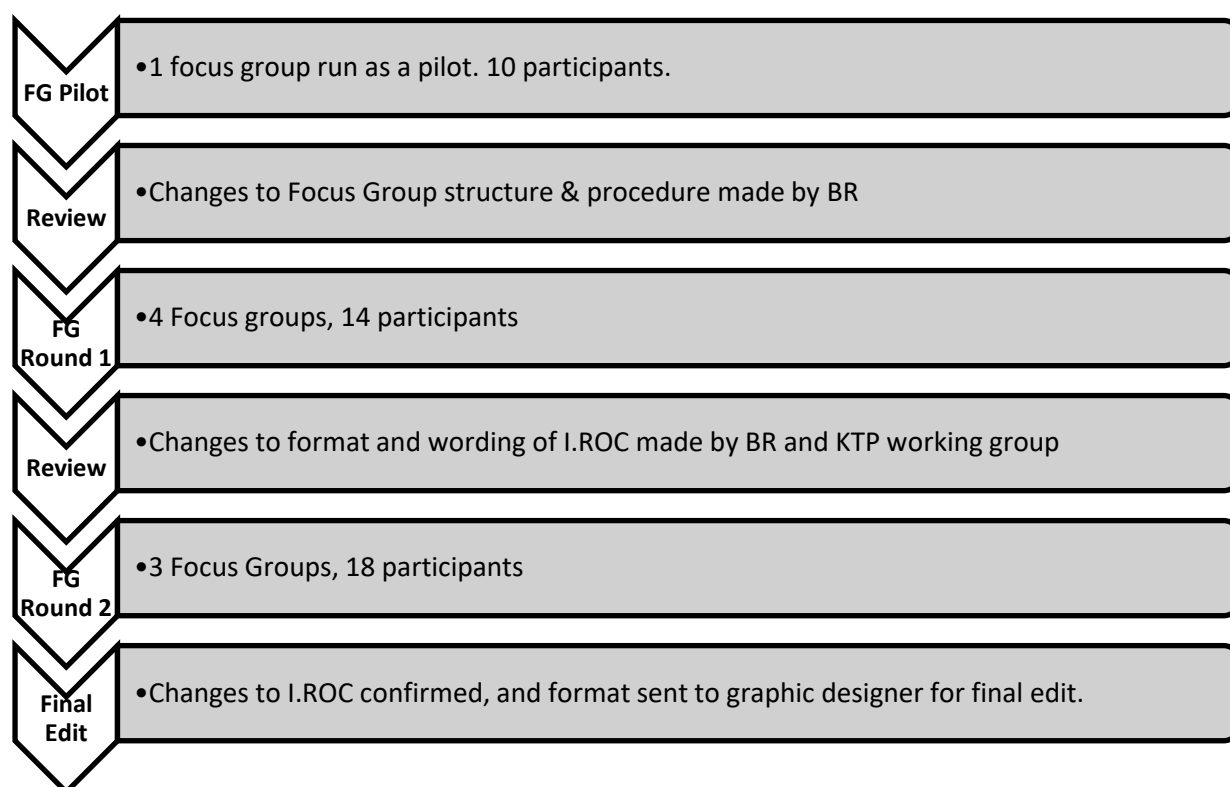
Between May and October 2011, the views of staff and people using Penumbra services were sought in focus groups, interviews and questionnaires. These studies aimed to explore current attitudes and understanding of recovery and outcome measurement. They more specifically investigate experiences and opinions of I.ROC, in order to answer the following questions:

- How do people using I.ROC define recovery, and does this match the definition of recovery inherent in I.ROC?
- Do people using I.ROC understand the questions, and feel they are appropriately worded?
- Do people – staff and those using services – like and see the purpose of I.ROC?

Procedure

A series of semi-structured focus groups was held across Scotland between July and October 2011, attended by Penumbra staff and people using services. Focus Groups were held in three stages, with reviews to both the interview format and to I.ROC in response to the feedback from each round of focus groups, as depicted in the diagram below. All focus groups were conducted by BR, and following the initial focus group, were also attended by JC, to support the facilitation and recording of the interviews.

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Process map of Focus Groups and I.ROC redesign

Open-ended questions were asked by the facilitators, to stimulate conversation. The groups were asked about:

- Previous I.ROC use
- Any general feedback or comments people had regarding I.ROC
- Any suggestions for changes to question wording
- Proposed additions to or removal of questions

The I.ROC questions were then read out one by one and participants were asked for:

- Comments about the questions,
- Proposed changes to question wording
- Views on question importance

Participants were finally asked about their views on recovery, and given the opportunity to make comments or ask questions. Focus groups lasted approximately two hours, with a fifteen minute break. One facilitator asked questions, whilst the other took notes. The focus groups were also recorded (after receiving consent from all attendees) using a Dictaphone.

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Analysis

Analysis of the focus groups included thematic analysis of transcripts, and assessment of the comments written by the focus group facilitators.

Recruitment

An email invitation was sent to all Penumbra managers, who then invited members of staff within their team, and the team workers explained the study to the people they were supporting.

Participants

A total of 33 people using services and 55 workers participated in this study, with focus groups attended by between two and twelve people. To capture a representative sample of views, focus groups were held within Penumbra services across Scotland, in Dundee, Aberdeen, Glasgow, Edinburgh and Galashiels. No demographic information was collected for this study.

ii. Focus group details

ROUND	PLACE	DURATION	SU'S	WORKERS
PILOT 1	Dundee	2:00:24	6	4
	Dunfermline	1:31:07	2	0
	Falkirk	1:52:00	4	1
	Galashiels	2:09:23	3	3
	Glasgow	1:25:39	2	1
2	Aberdeen 1	1:03:46	7	6
	Aberdeen 2	1:36:11	3	4
	Edinburgh	0:47:52	1	1

iii. Focus Groups interview schedule

All service users should have a copy of i-ROC

Make sure you are comfortably set up and prepared to write notes etc.

Start by introducing us, explaining why we are there. Mention the Dictaphone and double check that everyone is OK with being recorded. Set some ground rules regarding not speaking all at once, and letting everyone have a turn.

Turn Dictaphone on

1. Has everyone been using i-ROC? How have you been using it?
2. What do you think about i-ROC?

Work through i-ROC questions 1-6.

Break

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3. What do you like about i-ROC? Why?
4. Are there any other things that you would change to make i-ROC better for you?

Work through i-ROC questions 7-12

5. Do you have any other concerns or worries about i-ROC?
6. Do you have any other questions or comments about i-ROC?

End

Thank everyone for coming. I would suggest that we write up the focus group and send a summary to the support workers for all service users to see. This will help keep them feeling informed, and will offer the opportunity for them to add to or amend anything.

iv. Focus Groups Themes

Interviewer Quote (Context)	Full Quote (Context: participant)	Relevant Quote	T1	T2
And how about the survey in general, is it the right length	Yeah it is not too long.	Not too long	Right length	Length
How did you feel about the length of it, about the number of questions.	Just ample. More or less true, everything that you wanted to discuss, went through everything that was needed.	everything that you wanted to discuss, went through everything that was needed.	Right length	Length
Do you know what it is we are meant to be meeting about today	Well I call it the circle of life, I don't know what they call it...because it is like a big circle and it is my life, so that's what I call it anyway	Well I call it the circle of life, I don't know what they call it...because it is like a big circle and it is my life, so that's what I call it anyway	Participant understands I.ROC as a big circle about her life	Understanding of I.ROC
Do you think there are any questions that we have missed out	No I don't think so, I think we have covered everything. I think you have managed to ask everything relevant to us. There is nothing that stands out that you have missed.	I think you have managed to ask everything relevant to us. There is nothing that stands out that you have missed.	Questions haven't missed anything	Content
And the tools specifically, do you like I Rock	Yeah it is quite easy to fill in, yeah just circle a number.	Yeah it is quite easy to fill in, yeah just circle a number	Likes I.ROC. Easy to fill in	Ease of use
Do you like it as well Kevin	Yeah it is a good idea. It helps me out a lot too, this I Rock and that. It's helped me to get where I can get my goals and know how to get much better to get more succeeds and that but I've only got some sixes at the moment, not a lot, but I need to work on the rest of my I Rock to get it better. That's where I want to get a wee bit better. My exercise is not good and things like that but I will try and work on it as much as possible. Maybe go back down to the gym again.	Yeah it is a good idea. It helps me out a lot too, this I Rock and that.	Thinks I.ROC is a good idea, finds it helpful	Helpful

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Do you like it as well Kevin	Yeah it is a good idea. It helps me out a lot too, this I Rock and that. It's helped me to get where I can get my goals and know how to get much better to get more succeeds and that but I've only got some sixes at the moment, not a lot, but I need to work on the rest of my I Rock to get it better. That's where I want to get a wee bit better. My exercise is not good and things like that but I will try and work on it as much as possible. Maybe go back down to the gym again.	It's helped me to get where I can get my goals and know how to get much better to get more succeeds	I.ROC helps achieve goals & know how to improve	Helpful
What do you find helpful about it.	Just some of the ideas the set up of it.	(Finds helpful) the ideas the set up of it.	Finds the questions helpful	Helpful
how have you found it when you have been asked the questions.	At first you know I had to sit and think what you were actually asking me. It would take me a minute or two until it came to me what you were asking me. Once our session was over it helped me quite a bit. Being here it helped me quite a lot.	Once our session was over it helped me quite a bit.	Felt the I.ROC session helped	Helpful
How did you find that it helped you.	Well it put things in more perspective. What I should actually be doing and what I shouldn't be doing. Keep myself on the right path, I found that helpful.	Well it put things in more perspective. What I should actually be doing and what I shouldn't be doing. Keep myself on the right path, I found that helpful.	Helped participant gain perspective on life and identify areas to work on	Helpful
Maureen, what do you think	I can't really remember anything, to be honest. I feel a lot better, it has helped me.	I feel a lot better, it has helped me.	I.ROC has helped participant feel better	Helpful
So that's all the questions in the toolkit. How did you feel about them as a whole, did you feel that the questions were ok.	Very helpful, truthful	Very helpful, truthful	I.ROC is helpful, and gives a truthful representation	Helpful
And that it is helpful	Yep very helpful	very helpful	I.ROC helpful	Helpful
What do you find helpful about it.	It is putting things across to us, how we feel and how we don't. And to try and understand the thing that you are going to do everyday sort of thing. Sometimes maybe I forgot to do this where when we were having this discussion oh I thought oh I never done that today. I should have done that. Yes it has been helpful.	It is putting things across to us, how we feel and how we don't.	I.ROC helps clarify participant's feelings	Helpful
What do you find helpful about it.	It is putting things across to us, how we feel and how we don't. And to try and understand the thing that you are going to do everyday sort of thing. Sometimes maybe I forgot to do this where when we were having this discussion oh I thought oh I never done that today. I should have done that. Yes it has been helpful.	to try and understand the thing that you are going to do everyday sort of thing	I.ROC helps clarify day to day activities	Helpful
If I can just ask to start with, you said you are familiar with it, what do you think of it. do you have any thoughts about it to start off with.	I would say that a measurement tool it is valuable	I would say that a measurement tool it is valuable	Tool is valuable	Helpful
There is nothing in it, I mean it doesn't sound like it from what you are saying, that you would find upsetting to be asked.	No I think every question that has been put forward, it is not upsetting at all, it has been helpful.	I think every question that has been put forward, it is not upsetting at all, it has been helpful.	Questions aren't upsetting, they are helpful	Helpful

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how have you found it when you have been asked the questions.	At first you know I had to sit and think what you were actually asking me. It would take me a minute or two until it came to me what you were asking me. Once our session was over it helped me quite a bit. Being here it helped me quite a lot.	At first you know I had to sit and think what you were actually asking me.	Had to think what the questions were asking	Q Comp
	Yeah but it took me a wee while to go through them and say what do they mean and what are they asking me.	it took me a wee while to go through them and say what do they mean and what are they asking me.	Took time to understand the questions	Q Comp
Can you say a little bit about why it is helpful	Because it is connecting to how you are feeling	it is connecting to how you are feeling	I.ROC asks relevant questions	Content
I think for us we are trying to get at something slightly different which is trying to live your life as well as can be whether you have a mental illness or not. Would that seem slightly more doable, would that be something you can strive for rather than being without a mental illness.	Well everyone tries to get on life as best as they can.	Well everyone tries to get on life as best as they can.	Everyone wants to lead a full life	Recovery
do you find it of interest or of any use like to look at your current scores compared to what they might have been in the past and that sort of thing to see if there has been any change or indication that things have maybe been tougher for you in one aspect of i-Roc and perhaps easier in others.	That might be interesting.	That might be interesting (to compare scores over time).	Interested in mapping journey	I.ROC aims
Do you think that the questions cover the areas that are relevant, if you think about health and wellbeing and things like that. Do you think that the questions that are in here cover the areas that are important. Or are there areas that are missing.	I think it covers important areas but there isn't from the perspective of someone who may have dealt with people with mental health difficulties, but doesn't really understand what it is like to be mentally ill.	I think it covers important areas but there isn't from the perspective of someone who may have dealt with people with mental health difficulties	Covers important areas, but perspective not right	Content

v. KTP Feedback Survey

I am currently working on a briefing paper summarising i-ROC. In this paper, I will describe other outcome measures to inform all concerned of what other tools are being utilised, and how they compare to i-ROC. I am also aiming to identify key issues, questions and beliefs about the tool. I hope that this information will help us highlight any misunderstandings and potential problems with developing i-ROC, to allow us to work together efficiently in producing the best possible tool for Penumbra.

Appendices

I have put together a quick questionnaire to investigate your personal view of i-ROC, its uses and its development. This will help me understand how i-ROC is currently seen by Penumbra staff, and gain a better understanding of its importance and potential. If you could please fill in the questionnaire and return it to me whenever you get the chance (no later than the 20th June) that would be a great help. Any questions that you are unsure of or feel that you can't answer, please feel free to leave. If you would rather speak to me in person than fill in the questionnaire, I am happy to organise that instead.

The information will be presented in the briefing paper, and all comments or views will be presented anonymously. If you have any questions, please don't hesitate to ask.

Many thanks,

Bridey Monger, Research Associate

1.	How much do you feel that you know about i-ROC?
2.	What do you think about i-ROC?
3.	What do you think is the most important feature of i-ROC, and why?
4.	Do you feel that i-ROC is a unique tool? What is it about i-ROC that makes it unique?
5.	How do you think i-ROC could be changed to make it better?
6.	Are there any parts of i-ROC that you feel could still do with being developed?
7.	What differences could i-ROC make (or already has made) to Penumbra?
8.	How may i-ROC affect your job or sector?
9.	Do you have any concerns about i-ROC?
10.	What would you say are the main threats to or problems with i-ROC?
11.	How do you see i-ROC's future (in Penumbra and more broadly)?
12.	Do you have any other questions or comments about i-ROC?

Each question accompanied by an open text box for answers.

18.b. Example coded interview transcript (full transcripts available on request)

Narrative Interview 2; I= Interviewer (Kate), P = Participant

252 P: Well it was originally the Ross Clinic before Comhill...the new Comhill was built. So it
 253 was...erm...I got some ECT treatment. The pills didn't really seem to be doing anything for
 254 me.

255 I: And what kind of...what was exactly happening to you...what was not working when it comes
 256 to your mental health?

257 P: Err...it's just like all my past...was gone. I was just wondering what the future was going to be
 258 like. Whether I was going to get better or worse. But I've eventually got better.

259 I: So at the hospital, were you diagnosed with something?

260 P: They didn't really know exactly at first. But err...they seemed to think it was schizophrenia
 261 and depression.

262 I: OK and in your opinion what was it?

263 P: Well I wasn't hearing voices or anything like that

264 I: OK but what kind of problems were you experiencing?

265 P: Err...erm...well I started pacing a lot. I couldn't sit still. I was pacing nearly all day in the
 266 hospital. I would sometimes pace here in the flat as well. Sometimes in the morning, but I've
 267 got PRN for that.

268 I: OK so you were pacing...right.

269 P: I used to get seizures as well...when I'm on my bed, and that can get pretty traumatic.

270 I: And what about your mood at that time?

271 P: Mood?

272 I: Yeah mood. What was it like?

273 P: I was just agitated cos I couldn't settle down.

274 I: OK and how old were you when you first went to the hospital?

275 P: Err...29 years old.

276 I: 29 years old. OK. Right. So I'm just wandering P how did you come to be supported by
 277 Penumbra?

278 P: Err... I think it was...was it Dr N that thought of it. Doctor N up at Comhill. Think she first
 279 mentioned it.

280 I: And when was it when she mentioned it?

281 P: Well I'm almost here 2 years now. So it was over 2 years ago.

282 I: So OK – where were you before you came to Penumbra?

283 P: I was with SAMH at [previous accommodation CS].

284 I: And how was it like?

285 P: I was there for 8 years like. I was getting a bit institutionalised there.

286 I: OK can I ask you to erm...what do you mean when you say you felt a little bit institutionalised
 287 in there?

288 P: Aye. Well I'd been there for 8 years and taken my pills. I wasn't really having much on an
 289 outdoor life. It was indoors most of the time. And it was no job.

290 I: So kind of like you felt like there was no purpose and direction?

291 P: Aye...yeah...started...I...err...

292 I: So you didn't go out much? Did you like aWhat about community...Did you take part in
 293 community life back at [previous accommodation CS]?

294 P: What with other people outside?

Commented [B17]: Hospital
 Drugs don't work
 ECT

Commented [B18]: Recovery

Commented [B19]: MHP: Schizophrenia; depression

Commented [B20]: Symptoms

Commented [B21]: Symptoms, physical health

Commented [B22]: Other support services
 Institutionalised
 No employment

Commented [B23]: Using language of I/ROC

Appendices

18.c. Full list of themes

<i>Theme</i>	<i>Parent</i>	<i>Grandparent</i>	<i>Description</i>	<i>Total codes</i>
<i>Method of completion</i>			How do people describe using I.ROC in practice?	118
<i>Reviews</i>	Method of completion		When is I.ROC reviewed?	9
<i>Recording I.ROC</i>	Method of completion		How are I.ROC results recorded?	49
<i>Data storage</i>	Recording I.ROC	Method of completion	How and where is I.ROC data stored? (And any issues relating to this)	27
<i>Who records?</i>	Recording I.ROC	Method of completion	Does the staff member or the service user record scores and notes?	4
<i>When are notes recorded?</i>	Recording I.ROC	Method of completion	Are notes recorded during or after the I.ROC conversation?	2
<i>The Approach</i>	Method of completion		What is the approach taken to completing I.ROC?	17
<i>Participatory</i>	The Approach	Method of completion	Identifying I.ROC as a collaborative or participatory exercise	15
<i>Personal</i>	The Approach	Method of completion	Identifying I.ROC as a personal or person centred exercise	27
<i>Conversation</i>	The Approach	Method of completion	Descriptions of I.ROC completion as a conversation or discussion	31
<i>Challenging service users' answers</i>	Method of completion		How staff go about challenging answers that they feel are not representative	20
<i>Staff support</i>	Method of completion		What support do staff provide to service users during I.ROC completion?	27
<i>Service User differences in completion method</i>	Method of completion		Differences in the ways in which staff observe people reacting to I.ROC	42
<i>Baseline I.ROCs</i>	Method of completion		At what point are baseline I.ROCs completed?	29
<i>Introducing I.ROC</i>	Baseline I.ROCs	Method of completion	Do staff promote and encourage SUs to use I.ROC?	14
<i>Reporting I.ROC</i>	Method of completion		Individual or aggregate reporting of I.ROC results	24
<i>Who?</i>	Process		Who uses I.ROC?	15
<i>Not for everyone</i>	Who?	Process	Differences in uptake and service user responses to the invitation to complete I.ROC	11
<i>Where</i>	Process		Where is I.ROC completed?	9
<i>When</i>	Process		How often is I.ROC used?	23

Appendices

Theme	Parent	Grandparent	Description	Total codes
<i>Baselines</i>	When	Process	At what point are baseline I.ROCs completed?	13
<i>Reviews</i>	When	Process	When is I.ROC reviewed?	9
<i>Staff Use</i>	When	Process	How often do staff use I.ROC?	9
<i>Duration</i>	Process		How long does it take to complete I.ROC?	15
<i>Sessions</i>	Duration	Process	Is I.ROC completed in one session or more?	5
<i>Barriers & Challenges</i>			What are the barriers and challenges to using I.ROC?	29
<i>Accuracy & Consistency</i>	Barriers & Challenges		Issues around accuracy of answers, consistency of use of I.ROC or how this has changed	16
<i>Consistency of use</i>	Accuracy & Consistency	Barriers & Challenges	Staff impact or differences in approach and the affect on question responses	27
<i>Impact of current mood</i>	Accuracy & Consistency	Barriers & Challenges	Are I.ROC scores influenced by the service user's current situation/ state of mind?	15
<i>Fear of implications</i>	Accuracy & Consistency	Barriers & Challenges	Adjustments made to scores by service users in response to their concerns regarding service provision, benefits, etc.	11
<i>Confidentiality</i>	Barriers & Challenges		Conerns relating to confidentiality particularly in relation to completing I.ROC or storing data	7
<i>Lack of Engagement</i>	Barriers & Challenges		Variation in the level of engagement service users show with I.ROC; lack of service user engagement as a barrier to use	46
<i>Acceptance/ Honesty</i>	Lack of engagement	Barriers & Challenges	Descriptions of how using I.ROC properly necessitates honesty and openness from service user	14
<i>Feel forced</i>	Lack of engagement	Barriers & Challenges	Service users who do not engage with I.ROC and/or support because the feel forced into it.	4
<i>Resistance to paperwork</i>	Lack of engagement	Barriers & Challenges	Lack of engagement because of a general resistance to completing any paperwork	3
<i>Not relevant</i>	Lack of engagement	Barriers & Challenges	I.ROC not seen as interesting or relevant by some service users	3
<i>Disempowered SU's</i>	Lack of engagement	Barriers & Challenges	People who feel that I.ROC is 'done to them'	4
<i>How to deal with lack of engagement</i>	Lack of engagement	Barriers & Challenges	Staff descriptions of how they tackle non-engagement	9
<i>Lack of resources</i>	Service level barriers	Barriers & Challenges	Funding, time, etc. and how these impact on staff ability to complete I.ROC to the best of their ability	36
<i>Other Paperwork/ Measures</i>	Service level barriers	Barriers & Challenges	Competing demands placed on staff for completion of paperwork, outcomes measures etc.	7
<i>Limitations of Service type</i>	Service level barriers	Barriers & Challenges	Challenges of service type, population, etc.	11
<i>Database</i>	Service level barriers	Barriers & Challenges	Challenges of using I.ROC directly related to storing of data	2

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<i>Theme</i>	<i>Parent</i>	<i>Grandparent</i>	<i>Description</i>	<i>Total codes</i>
<i>Staff attitudes</i>	Service level barriers	Barriers & Challenges	Attitudes to I.ROC appear to be changing, but negative staff attitudes and resistance to use can cause problems	28
<i>Performance monitoring</i>	Service level Monitoring	Barriers & Challenges	Staff concerns that I.ROC results may be used to monitor and appraise their performance/service performance	4
<i>Culture</i>			What role does I.ROC play within the culture of Penumbra? What is the 'I.ROC/HOPE' culture within Penumbra?	65
<i>Supporting good practice</i>	Culture		What supports good I.ROC use?	42
<i>Links to toolkit</i>	Supporting good practice	Culture	How is I.ROC used alongside the HOPE toolkit?	34
<i>Training and support</i>	Supporting good practice	Culture	What training and support is needed/ provided for staff?	33
<i>Scoring</i>	I.ROC features		Discussion of the I.ROC 1-6 scale	17
<i>Note taking</i>	I.ROC features		References made to the comment boxes provided for free-form text within I.ROC answer sheets	11
<i>Spidergram</i>	I.ROC features		References to the radar chart produced either through the database, Excel or by hand	33
<i>Question wording</i>	I.ROC features		Discussions of how the I.ROC questions are worded	33
<i>Prompt words</i>	I.ROC features		Quotes relating to the prompt words that accompany each I.ROC indicator	16
<i>Colour</i>	I.ROC features		The impact of colour images within I.ROC materials	4
<i>Indicators</i>	I.ROC features		Discussion of the 12 I.ROC indicators	14
<i>Length</i>	I.ROC features		Is I.ROC the right length at 12 questions?	11
<i>HOPE</i>	I.ROC features		References to the inclusion of the HOPE framework within I.ROC	8
<i>Holistic tool</i>	I.ROC features		The areas that I.ROC covers, and how indicators interact	14
<i>Guidance</i>	I.ROC features		Discussion of the guidance book accompanying I.ROC	6
<i>I.ROC Feedback</i>			Feedback and feelings towards I.ROC	33
<i>Suggested changes</i>	I.ROC Feedback		Are there any suggested further changes to I.ROC?	22
<i>Positive I.ROC feedback</i>	I.ROC Feedback		What do people like about I.ROC?	147
<i>Visual tool</i>	Positive I.ROC feedback	I.ROC Feedback	Descriptions of I.ROC as a visual tool	38
<i>Hope for the future</i>	Positive I.ROC feedback	I.ROC Feedback	I.ROC described as helping develop service users' hope for the future	7
<i>I.ROC Criticism</i>	I.ROC Feedback		What do people not like about I.ROC?	54

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<i>Theme</i>	<i>Parent</i>	<i>Grandparent</i>	<i>Description</i>	<i>Total codes</i>
<i>Ambivalent towards I.ROC</i>	I.ROC Feedback		People who do not feel strongly one way or another	5
<i>Ease of use</i>	I.ROC Feedback		How easy do people find I.ROC to use?	22
<i>Previous changes to I.ROC</i>	I.ROC Feedback		References made to changes in I.ROC and how their effect on how the tool is received	38
<i>Understanding</i>	I.ROC Feedback		How well is I.ROC understood by people completing it?	16
<i>Case studies</i>	I.ROC Feedback		Longer descriptions of people using I.ROC and how it has or hasn't helped	21
<i>How does using I.ROC make you feel?</i>	I.ROC Feedback		Staff and service user experiences of how using I.ROC can impact their emotions	
<i>Staff feelings</i>	How does using I.ROC make you feel?	I.ROC Feedback	Staff feelings during or after completing an I.ROC	14
<i>Staff confidence</i>	I.ROC Feedback		How much confidence do staff have in using I.ROC?	10
<i>Benefits and purpose</i>			What things are identified as the main benefits and purpose of using I.ROC?	14
<i>Recovery</i>	Benefits and purpose; Service user feelings; Positive mental health	How does using I.ROC make you feel?	I.ROC described as facilitating/helping people think about recovery	31
<i>Reviewing</i>	Benefits and purpose		Reviewing the current situation, where they are headed, and what changes have occurred	6
<i>Track changes/compare scores</i>	Reviewing	Benefits and purpose	I.ROC helps compare where people were to where they are now	52
<i>Where they're at</i>	Reviewing	Benefits and purpose	Using I.ROC to learn about/establish where the service user is at	12
<i>Reflection</i>	Benefits and purpose; Service user feelings		Reflecting on where they have come from, what has happened, where they are, what they want to achieve, what scores mean, etc.	27
<i>Therapeutic relationship</i>	Benefits and purpose		I.ROC described as helping build or establish a therapeutic relationship	12
<i>Insight/Learning</i>	Therapeutic relationship	Benefits and purpose	Insight or learning about the person	7
<i>Opening up a conversation</i>	Therapeutic relationship	Benefits and purpose	I.ROC described as helping to facilitate a conversation between the worker and respondent	13
<i>Boundaries</i>	Therapeutic relationship	Benefits and purpose	How staff-service user boundaries impact I.ROC use, and how I.ROC can affect boundaries	7
<i>Support planning</i>	Benefits and purpose		I.ROC helps to develop goals and personal plans and plan future support	43

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<i>Theme</i>	<i>Parent</i>	<i>Grandparent</i>	<i>Description</i>	<i>Total codes</i>
<i>Identify outcomes & priorities</i>	Support planning	Benefits and purpose; Service user feelings	I.ROC helps to identify personal outcomes and priorities for support planning etc.	45
<i>Intentionality</i>	Benefits and purpose		I.ROC helps to create focus, purpose or intention for workers and Sus	17
<i>Motivates change</i>	Intentionality	Benefits and purpose	I.ROC helps service users feel motivated to make changes	12
<i>Provides structure and focus</i>	Intentionality	Benefits and purpose	I.ROC provides structure and focus for the service user and to the therapeutic relationship	11
<i>Role as Positive affirmation</i>	Positive mental health	Benefits and purpose	The role I.ROC plays as positive affirmation of progress	24
<i>Positive thinking</i>	Positive mental health	Benefits and purpose	I.ROC can help promote positive thinking strategies	2
<i>Evidencing Outcomes</i>	Benefits and purpose		I.ROC can help provide evidence of outcomes for service level/organisational impact reports	19
<i>Service level Monitoring</i>	Benefits and purpose		Monitoring progress/ success of support	8
<i>Aggregate Outcomes</i>	Evidencing Outcomes	Benefits and purpose	Benefits specifically of aggregated I.ROC results for reporting outcomes	5
<i>Individual Outcomes</i>	Evidencing Outcomes	Benefits and purpose	Benefits of individual I.ROC results for evidencing outcomes	4
<i>Purpose of I.ROC: Managers</i>	Benefits and purpose		What do senior managers see as the purpose of I.ROC?	106
<i>Original purpose</i>	Purpose of I.ROC: Managers	Benefits and purpose	What do staff see as the original purpose that I.ROC was created to fulfil?	22
<i>Current purpose</i>	Purpose of I.ROC: Managers	Benefits and purpose	What do staff see as the current purpose of I.ROC?	41
<i>Purpose during rollout</i>	Purpose of I.ROC: Managers	Benefits and purpose	What are the listed purposes of using I.ROC at the time at which it was rolled out across Penumbra?	13
<i>The approach</i>	Benefits and purpose		Implementing the approach to personalisation, self management, outcomes etc	43
<i>Use outside Penumbra</i>			Descriptions of use of or interest in I.ROC in other organisations	13
<i>I.ROC role in support work (staff)</i>			What role does I.ROC play within wider support work?	95
<i>Service user feelings</i>			How do service users feel before/during or after completing an I.ROC?	62
<i>Positive mental health</i>	Benefits and purpose; Service user feelings		Links between I.ROC use and positive mental health for service users	2
<i>Difficult or negative feelings</i>	Service user feelings; Barriers & Challenges		Reports of I.ROC causing negative emotions	26
<i>Adapting I.ROC</i>			Between staff and between service user variation in I.ROC use; how to adapt the process to different situations	79

Appendices

Theme	Parent	Grandparent	Description	Total codes
<i>Reading the questions out</i>	Adapting I.ROC		Whether or not staff read the questions out loud to the supported person	11
<i>Recording</i>	Adapting I.ROC		Variation in recording style for different situations	14
<i>Discussion</i>	Adapting I.ROC		Level of discussion and how the staff member opens up a conversation	9
<i>Question phrasing</i>	Adapting I.ROC		How staff adapt the wording of the I.ROC questions for different people they support	14
<i>Reviewing results</i>	Adapting I.ROC		Descriptions of the process through which staff and service users will review the results	2
<i>Question order</i>	Adapting I.ROC		Staff discussed whether or not they change the order in which they ask the I.ROC questions	1
<i>Support approach</i>	Adapting I.ROC		Descriptions of how staff vary their support approach for the different people they work with	11
<i>Non-person centred practice</i>	Barriers & Challenges		Examples of non-person centred practice	1
<i>Total number of Codes</i>				2604
<i>Total number of Quirks</i>				114

App_Table 15: Codes, parent and grandparent themes across all qualitative projects

18.d. Aims & research questions for the two overarching thematic categories: Development, & Current Use

Aim: to explore and evaluate the development, implementation and current use of I.ROC within Penumbra		
Superordinate thematic category	I.ROC development & implementation	I.ROC use in current practice
Aim	To provide a narrative account of the development of the Individual Recovery Outcomes Counter	To explore I.ROC use in practice from the perspective of service users and staff
Research questions	<ol style="list-style-type: none"> 1. Who was involved in the creation of I.ROC? 2. What were the factors that led to the development of this measure? 3. How was I.ROC first created, and how has it been revised? 4. How does the development process compare to other similar measures? 5. In what ways has the development process affected the validity/reliability of the resulting measure? 	<ol style="list-style-type: none"> 1. How is I.ROC used in practice? 2. What are the barriers and challenges to its use? 3. What supports good I.ROC use? 4. How do stakeholders think of/feel about I.ROC? 5. What do people see as the purpose or benefits of using it? 6. What role does I.ROC play within the support people receive? 7. What role does I.ROC play within the culture of Penumbra?
Contributing Analyses	<ul style="list-style-type: none"> • Project 3: I.ROC story analysis • Synthesised analysis P1-4 	<ul style="list-style-type: none"> • Synthesised analysis P1-4 • Project 4 analysis

Appendices

18.e. Example coding process

Example quote	Relevant text	Theme	Parent	Grandparent	Overarching
[So a care plan for instance would this influence/inform?] “It could help us inform/ identify areas for further exploration. Like in that example there just because someone scores low doesn’t mean they are not happy with that. So identifies areas for further exploration in saying is this an area you are happy with do you want to change anything that area. What could we do to change is there something you want to do?”	It could help us inform/ identify areas for further exploration.	Identify Priorities	Support Planning	Benefits & Purpose	Current I.ROC Use
“That first version that we had, which was called PROWD, which was something like Penumbra Recovery Outcomes something Database...Well-wellness...I can’t remember what it stood for actually. Anyway, it was called PROWD with a W! [Ok] “And, um, yeah it was a – it had the twelve indicators – I don’t think those 12 indicators and the points on the scale have changed at all. So six – 12 indicators, and we have the six – but not the scale that we have, it was a step scale where we had six for every indicator.	“That first version that we had, which was called PROWD, which was something like Penumbra Recovery Outcomes something Database...Well-wellness...I can’t remember what it stood for actually”	PROWD	Versions	Development	Development & Implementation

App_Table 16: Example of coding process

18.f. Major themes within 'Development' and 'Current Use'

Development & Implementation		Use in current practice	
Who was involved?		How is I.ROC used in practice?	
Contextual factors		Process	
	Recovery		Who
	Personalisation		Where
	Outcomes		When
	Competitive tendering		Duration
	Data storage		How
I.ROC purpose		Benefits/ Purpose	
	Original purpose		Facilitated self-assessment
	Purpose changes		Conversation
Creating I.ROC			Therapeutic relationship
	Indicators		Support planning
	Scale		Review progress
	Items		Reporting
Testing – phase 1			Personal recovery
	Pilot	Barriers & challenges	
	Feedback	Person	Emotional impact
	Redesign 1		Lack of engagement
Implementation			Acceptance/Honesty
	Initial Rollout	Service	Staff attitudes
	KTP developments		Service models
	Final roll-out		Resource restrictions

I.ROC Usability: Supported People

18.g. Project 4 Full findings.

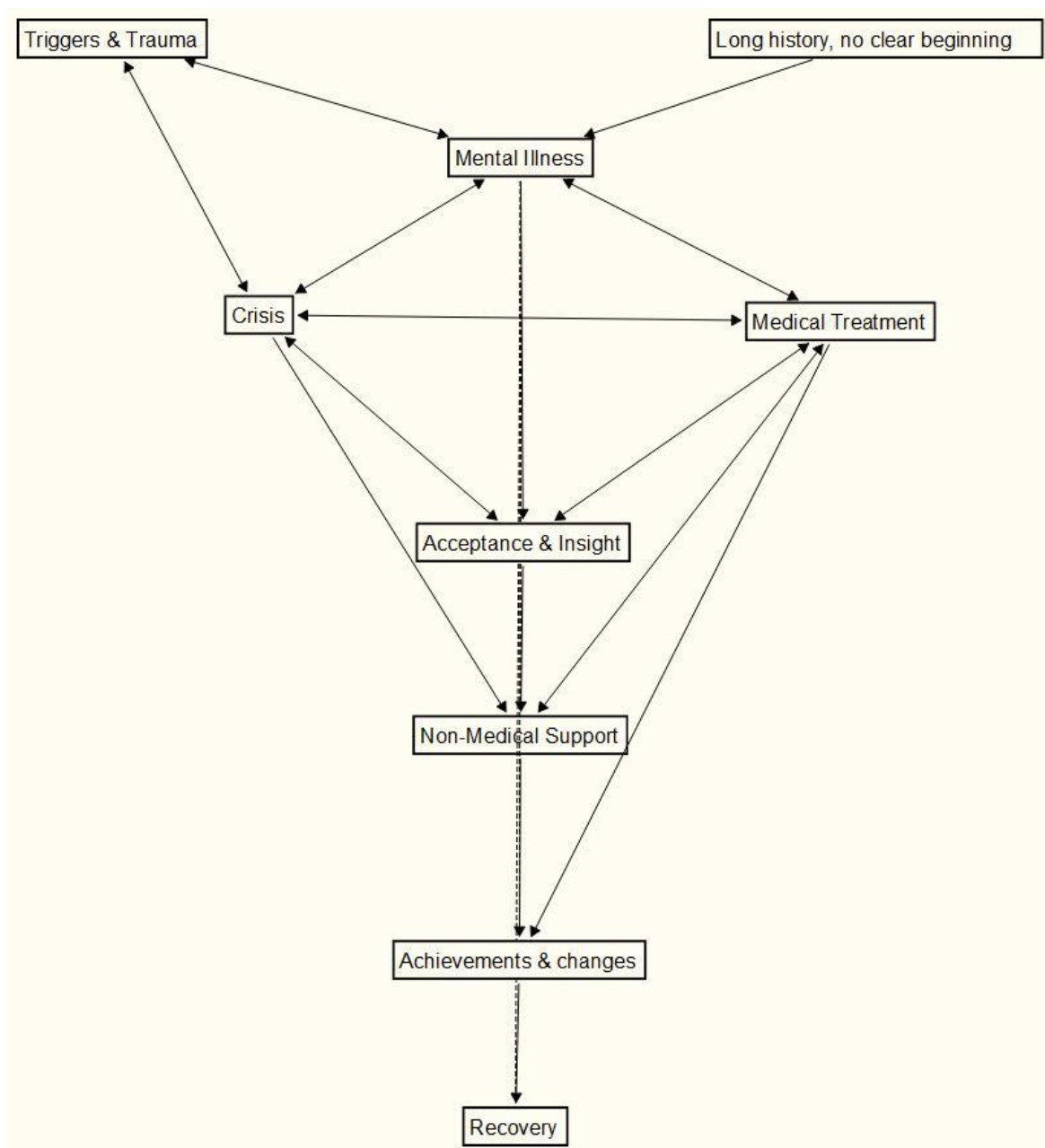
Interview themes

Interviews were multifaceted, and included discussion of a wide variety of topics. Themes are separated into three superordinate categories: stages, processes and components. Stage themes follow the narrative storyline inherent within most interviews, from a time at which the participant was experiencing mental ill health unsupported and struggling to cope, through medical and non-medical support, towards personal recovery, implied within most interviews through discussion of achievements, goals and personal outcomes.

The second superordinate category comprises themes centering on the processes within support and treatment – both those identified as helpful and those felt to be a hindrance or barrier to recovery. Themes are largely separated into medical and non-medical support, with the exception of support relationships, which describes the essential attributes for a worker to possess to help build a successful relationship with the person they are supporting. Key themes within medical treatment were hospital and medication. Non medical support themes focus largely on the different types of support provided: practical; social; mental health & wellbeing; and skills & personal development. Tools & techniques used within non medical support, and Penumbra's approach complete the support processes themes.

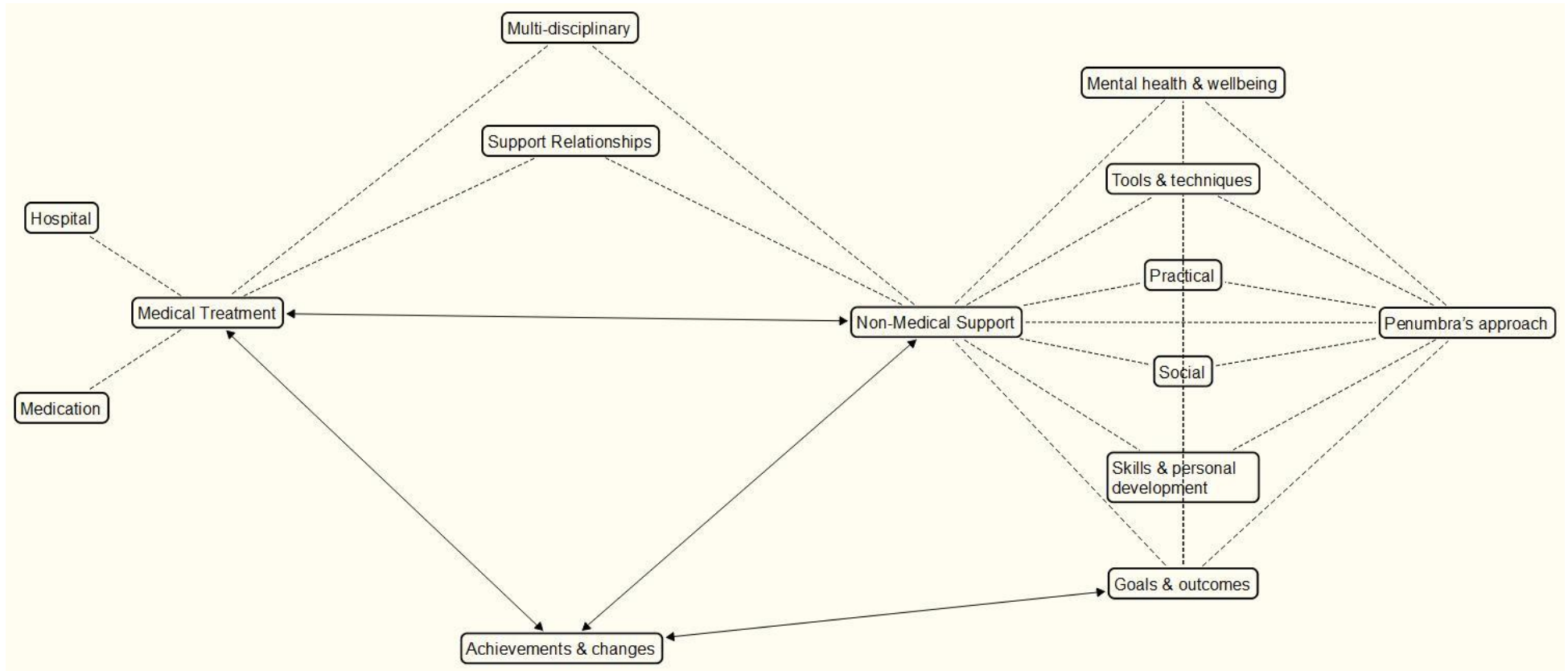
The final category covers 10 key elements within the interviews crucial to the move towards recovery. These elements are present throughout each stage of the journey, and are identified both by their presence during the later stages (e.g. increased self confidence as a result of social support) and their absence during the early stages of the journey (e.g. lack of empowerment experienced during medical treatment). These themes are labelled as: 'mental health'; 'hope'; 'independence & empowerment'; 'confidence & self-worth'; 'identity'; 'relationships'; 'meaningful activity'; 'self management'; 'life skills' and 'home'. Components are all inter-connected, with changes to one influencing many other areas. This is reflected in the map below (figure x). Mental health and hope are placed at the center of the map to reflect the central importance of these two themes. Mental health both impacted and was influenced by all other components; hopes for the future and a sense of hope again drew from positive achievements and goal setting in all other areas.

As far as possible, the next section presents each theme individually within the superordinate categories. There are however areas of overlap, for example, medical treatment and community support are both a stage and a process. Although medical treatment was a clear theme within most interviews, it featured more heavily within people's narrative timeline than within discussions of helpful processes of support

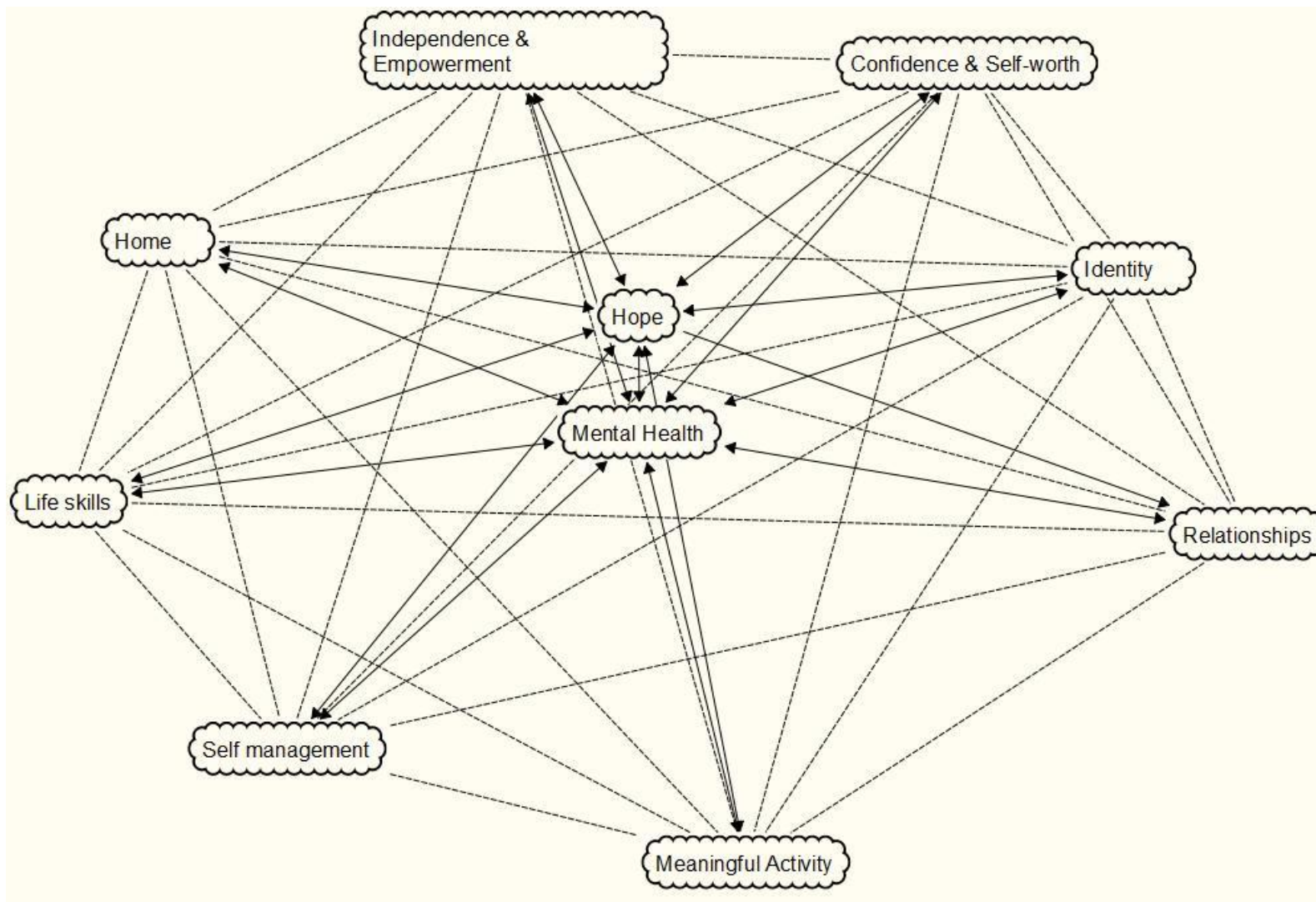


Mapping the stages of the journey

I.ROC Usability: Supported People



Processes of support



Components of personal recovery

I.ROC Usability: Supported People

Discussion of themes

Stage Themes

The first question of the interviews was left very broad, to see what participants highlighted within what they saw as their story. Ten participants were able to answer this question unprompted and with no follow-up questions asked. For the remaining four, one person had comprehension difficulties throughout their interview and required a lot of prompting from the interviewer. Others sought clarification of the question, and were given prompts as to where to focus, for example,

I: So I, if you could perhaps tell me a bit about your story, a bit about yourself

N8_P: Ok, in the story where shall we start? Start at the early years?

I: I'm thinking a bit – just before you came to Penumbra, because we'll go on to something else."

Mental illness: The start of the story

When asked to tell their story, the majority (10/14) began by recounting their experiences of mental illness and the reasons why they had come to be supported by Penumbra, and accounts most often began with why or how the person felt that their mental health had deteriorated,

N9_P: "I had an accident about 5 years ago that left me housebound, no confidence, wouldn't even go out, and just sat in my house for 5 years until one day somebody mentioned Penumbra".

People described struggles with a range of health and wellbeing issues including depression, anxiety, schizophrenia, addiction, and homelessness. A few interviewees described a history of mental health issues stretching back to childhood or adolescence with no clear trigger or starting point,

N11_P1: "I've kinda struggled since I was young as far as I can remember. Uh, quite a stable sort of upbringing."

Many others however gave explanations of their mental illness which described a trauma or trigger resulting in a crisis point. Frequently mentioned in this context was loss, most commonly of loved ones, whether through bereavement or separation.

N11_P2: "Now my brother, when he passed away in 2008, that was a big, big impact, 'cause he was like all I had, and we were really close and my behaviour's a bit understandable what was going on and uh, my other three kids had been taken away at that point and I always think it's kinda like a nervous breakdown".

People also described loss of work, bullying and abuse, and struggles with physical illness (self or others),

N10_P: "I struggled with depression myself over a number of years, but it's always sort of been in the background. In the main though, I met my wife back in 1998, and unfortunately she was diagnosed with multiple sclerosis in 1999."

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The route to treatment

A minority of participants began their story with the time at which they began receiving treatment, for example hospitalisation,

N5_P: "I went for an eye operation on the Tuesday, and I ended up in the Royal Ed on the Thursday, and that was almost 20 years ago."

Routes to receiving treatment for mental health issues took many courses: some participants, such as the one above describe reaching a crisis point, at which time treatment was imposed upon them; a time at which personal control over and participation in treatment and life decisions was minimised. Others discuss a slow realisation that they could no longer cope, at which point they sought help. In contrast to those who started their stories with compulsory treatment, descriptions of active help seeking frequently involved a strong first person narrative, highlighting the role of the individual in the process; the willpower, motivation and determination it took to access support made clear the inner-reserves of participants.

Finally, for those who could not identify a beginning to their mental health issues, the route into treatment was often uncertain, stretching in many cases back to childhood or adolescence.

Particularly for those who initially received help or treatment involuntarily or through the actions of family, these early stages in the journey tended to last a long time (in some cases many years), often involving a cyclical process of illness, crisis and treatment, broken by an external change such as a new professional or a referral to a different type of service, or an internal change such as gaining new insight into their illness.

Acceptance and Insight

Whilst the narratives of almost all participants used this dark beginning of mental health crises and associated events, the discussion of triggers, causes and consequences of ill health reflected a larger exploration of the meaning of illness and recovery, showing in most cases high levels of understanding and insight.

One theme which emerged strongly at this point within people's stories was the importance of coming to terms with, acknowledging or accepting the situation. For some, gaining insight into their illness or inability to cope provided the trigger for reaching out for help,

N1_P: "I was honest. I was honest with myself and I was honest with everybody else and I – I did tell them I had a problem with alcohol, and that's when they referred me".

For others, insight provided a way forward; a way of breaking the cycle of illness, crises, and ineffective treatment. These participants recognised their lack of awareness as a barrier to their recovery,

N1_P: "The biggest barrier for myself was being honest. This – that was being honest with myself – it's admitting that I did have a problem. That's – I think that's a big barrier for a lot of people."

Medical Treatment

Acknowledgement of an issue for many signalled a starting point, however the next stage, usually seeking help and accessing services, did not signal a clear road to recovery. Instead, some found themselves stuck in a seemingly endless rotation of hospital wards and medication.

N7_P: Things became too much for me to handle myself. Didn't get help from social security on anything, for anything, and was finding it hard to cook, and finding it hard to wash my clothes, and still without any support. I live by myself in a one bedroom flat, and I have two children [pause] and recently unemployed...Well. I went along to the GP. And the GP I was with, erm, was just giving me tablets and tablets and nothing was getting better. So I gave up, I changed my surgery and went for the Whitfield Surgery and erm, within 4 weeks, I was referred to social prescribing

I.ROC Usability: Supported People

N6_P: "So then I ended up going into hospital - in and out of different hospitals and different wards and that for about 20 years - just in and out, and um, I just hated it - it was the worst thing ever."

For more discussion of this theme, see section 4.2.1.

Multi-disciplinary & Non-Medical Support

Support for most participants was a multi-disciplinary, cross-sector affair, with involvement from a range of professionals including psychiatrists, psychologists, social workers, occupational therapists and support staff based within a number of different types of public, private and third sector services.

Routes into community based services varied widely between the interview participants, with people citing medical professionals (psychiatrists, psychologists, CPN's, GP's), social workers, family members and even the job centre as their referrer for accessing support in the community. Of note within these referrals were references made by two participants to Social Prescribing.

N11_P1: "I just lost direction kind of not really knowing how on earth to kind of reconstruct and sort of version of a meaningful life so, or just unable to kind of interpret what I was getting out of kind of appointments and stuff from therapy and stuff with them in to kind of real life so I kind of, a referral was made to learn some kind of practical living skills um, and become less isolated and more kind of involved in the community."

Many participants also spent time in other voluntary sector organisations before being referred on to Penumbra, and a number were at the time of interview still receiving services from a variety of different sources. Despite some bad experiences, it was clear that for most people, a multi-service approach was currently in place, and working well.

N1_P: "Everybody has helped me – all the other organisations that I've been with as well have been very supportive."

Achievement & Changes

During the interviews, participants talked about the outcomes of support, both in terms of future goals and what they felt they had accomplished so far. Although asked explicitly about achievements and goals as separate questions, outcomes formed the basis of many overlapping discussions through the interviews, both prompted and unprompted.

I: And what have you achieved? Things, goals, outcomes?

N7_P: I've achieved going out alone, and, erm, I'm hoping to go and do voluntary work, managing anger, erm, just on the whole managing to cope with life."

Other positive examples of the outcomes of support were provided unprompted,

N8_P: "I went back into town later on, and I did have a panic attack but I was able to go outside, use the exercises and breathing that you had shown me and everything, composed myself and go back in, and I was getting a birthday present, and I was actually in Soles (?) having a panic attack - I was still able to get in and get it done, so that in itself was a massive achievement."

The general tone of the interviews remained positive throughout; hope for the future was demonstrated by the amount of achievements and goals identified, as well as through direct reference to hope,

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N11_P1: *“My best experiences are just feeling like I can just be quite honest about what's going on for me, and not feeling a complete write off, um, really, and kind of having some hope there.”*

Component themes, as outlined in section 5.3, were particularly apparent within discussions of achieved and intended outcomes.

Recovery

N1_P: *“People can do it – you can recover. It is possible... And, never give up your dreams.”*

Recovery was a common term throughout the interviews, both in the language used by interviewers and participants. Participants appeared comfortable with the language of recovery; they recognised the term, were happy to use it and many were able to apply the concept to their own experiences. Most talked directly about their experience of recovery or ‘getting better’.

N1_P: *“Got referred again to Penumbra, and just well haven't looked back since in my recovery. It just – has been the best thing that's happened to me.”*

Definitions of recovery apparent within the interviews varied widely, incorporating elements of clinical, social, personal and addiction models of recovery. People's hopes for recovery ranged from maintaining where they currently were to ‘getting back to normal’ or being able to live a ‘normal life’, to moving beyond where they had been previously.

N8_P: *“I just want to be able to interact, go to weddings and birthdays etc. and just have like what I would call a normal life. That's truly what I did - that's my goal. But obviously my real goal is to get rid of anxiety and then I would be able to do all of these things, but I understand that it's gonnae be harder to get rid of this than to... But I'm certainly getting there anyway”*

One participant described recovery as a process of reconstruction following a storm. He used the analogy of the rebuilding of the Tay Bridge to emphasise how recovery is not simply about replacing what was lost, but about making improvements to become stronger and more storm-resistant.

N12_P: *“The Tay Bridge was built for a purpose - to get a train from one side to the other side...But it wasn't strong enough to get - and one night, it collapsed. So I've got to do much the same - rebuild myself to get to the same means...And the new bridge was built stronger, better - so it's much the same way that I've got to be able to, uh, be stronger and better - to cope with whatever this - is thrown at me. The old bridge was a literally for going through the storm - the bridge went through a storm, it collapsed. I more or less collapsed, and that's what I've got to do with myself.”*

Participants' views of where they were along the recovery journey again varied greatly. Most identified as having made progress, but spoke of hopes for the future which included further steps towards recovery,

N9_P: *“I can actually go to a place where, where I meet people and I enjoy going, and the people are worse-off than me, that I felt at the time that I was the worst one there but that's not the case, the case is there's plenty more people like myself but they do so why can't I...I'm working towards getting back into the community, getting a job, erm, getting back to normal, being a normal person again.”*

I.ROC Usability: Supported People

Other participants, particularly those living in supported accommodation portrayed a level of contentment with where they currently found themselves,

N6_P: "I got out of a locked ward and then I was in a - um, a normal ward - ward 6 it was called, and then I got put to a rehab ward, which I was put in, um, a year ago - which I came out a year ago, I was in there for 8 years and I came out of there a year ago, and I moved to here, to [project name] with Penumbra. I moved in there last April, and it was brilliant! I'm so happy since then and everything has gone really well, and everyone's really kind here, and, yeah I'm fine."

For one participant, there was a sense of the recovery journey nearing completion,

N1_P: "My life's just turned around. I just enjoy every day now. I - I know - I now realise what life's all about."

However, another participant expressed his sense of frustration at his perceived lack of progress, which he linked to continuing symptoms of mental illness and side-effects of medication.

"N13_P: my progress is so slow, it's been awful slow, just things are going so slowly, I think, yeah, I'm better at times, I'm better and then I go down again - and then I go down

I: What do you think stands in the way of you moving on? What is holding you back?

N13_P: You know I see things, being unfit, I see things and - I don't mean like outside the window, I can see like i can see a road and - I'm not talking about that kind of seeing things, I can see things like broken bones - I see, like, even just now like I've got a picture of broken bones."

Symptoms of mental illness featured within people's experiences of recovery, as both a barrier to progress (3) and an area that has seen change (7), but clinical recovery was incorporated within a wider frame of personal recovery.

N10_P: "Depression-wise, it's definitely on the right track, there's no two ways about it. I've - I've learned the areas that need tackled, I have tackled those areas, I have used the toolkit and I'm determined to get rid of the depression as far as possible, and I just know within myself that we're moving in the right direction so the things that we've had to tackle - it's - it's working, that's the best way of describing it."

Clear within all the interviews was an appreciation for the work of Penumbra in supporting their journey of recovery.

N10_P: "My support worker has very much tailored the support towards myself, I mean, I know that there are guidelines and whatnot underneath that help tailor that support, but it doesn't feel like I'm being forced down a route in order to get my recovery on - the way it feels, it feels very, very personal...The way that my recovery's being - being managed, that would definitely be the good side of it."

Process Themes

Appendices

Themes falling into this second overarching category describe the processes of support and treatment that participants experienced during their journey. Processes were not described as successful for all participants, and different people found different themes within this section helpful. The majority of interviewees had experience of both medical and non-medical support, and accessed a number of different types of services, supported by a multi-disciplinary range of professionals. One theme within this section did span the divide between medical and non-medical support, and that was the central importance of the relationship with the professional. Successful relationships were those which fostered a sense of equality, openness and positivity.

Medical Treatment & Support

The majority of participants had experienced medical treatments or interventions, whether accessed through choice, or imposed. For many, referrals into community services came via GP's or psychiatric services. A number of participants highlighted the important role of social prescribing in this process, and this was discussed as one of the most positive experiences of medical services.

N10_P: "GP was the first point of contact, and fortunately with the medical centre that I'm with, they have a social prescribing service, so a very, very nice lady up there sat down with me and went down a number of options. She went down with the Dundee Carers centre, which, I had a dalliance with them for a while. It didn't work, to be brutally honest, I wasn't impressed. Went back to the social prescribing woman, and we discussed a number of other options, sort of irons in the fire, helping my daughter, helping L, but the big thing, the big - actually the big hope that she pinned on, she spoke very highly of this Penumbra. I'd never heard of it, but she said that she'd referred people to it in the past, and it was absolutely fantastic."

Most also recounted negative experiences either with medication, other treatments (e.g. ECT) or with medical professionals and services, of which time spent on psychiatric wards was the most common.

Hospital

Half of participants described how their mental illness had led to a (in some cases lengthy) stay in hospital. Life in hospital was not generally regarded positively, with time on psychiatric wards described instead as scary, inflexible and restrictive.

N10_P: "Hospital - it was a nightmare. It was, and this sounds really horrible, because some people were really ill there, but there were some people really scary there, and some really rough people. And it was horrible, I hated that. I had - I didn't get on well with some of the staff"

It was still apparent however that for some, hospital played an important role particularly at times of crisis, and the intensive support provided within a hospital environment was acknowledged,

N5_P: "When you're in hospital, they come around to your bed...once an hour... to you talk to all the patients about once every hour or something. But, that's...intensive support - they have to keep an eye on you so you don't top yourself or and all that - it might be a bit irritating if you had that all the time."

Medication

Medication or medical treatment was a normal part of daily life for the majority of participants,

I.ROC Usability: Supported People

"I: I would say that you go out on a daily basis. You go out every day.

N2_P: Oh aye. 2 hours...I have to do my chores. Get medication, food supplies."

Some acknowledged the importance of their current medication in maintaining good mental health,

N2_P: "I started putting the tablets in the bin. For quite a few months. I just wanted to get back onto the tablets again. My body was going a bit out of control. Movements and agitation and pacing, not sleeping. I don't know...I don't want to go through that again."

Others described concerns over possible negative side effects

N13_P: "I'm not saying that it's necessarily an effect of the drugs that I take - the medication, I'm not saying it's that, but it could be. I'm not sure if it is the medication that makes me hallucinate."

However, whether or not a good treatment plan had been identified, most participants recalled a time at which the drugs didn't work,

N1_P: "Anti-depressants wasnae working. I was put onto other anti-depressants and they werenae working. They kept changing my anti-depressants, of course it wasnae – it was 'cause of – well I was still taking alcohol. And that's when I had a – eh – an accidental OD eh – and ended up in hospital."

Support Relationships

Positive experiences with services, whether medical or non-medical, were most commonly discussed in terms of individual relationships with social workers, GP's, occupational therapists, support workers and other professionals. A common theme within the interviews was the identification of a particular person, usually a professional, as the turning point in their recovery journey:

N9_P: "I went through a phase when I changed support workers and I've had 2 before X, and I, I just think that X was the one that made me motivate myself"

N8_P: "I then met T who actually chased me down 'cause I was far too scared in the first place to meet her...She was able to help me start getting back on the road to recovery as far as actually integrating with people in general"

Participants were asked during the interviews to identify what qualities or attributes were important in a worker, in order to facilitate a good support relationship. Alongside the fairly standard support skill set of someone they could talk to who would listen attentively, non-judgementally and in confidence, people wanted someone they actually got on with. Someone they could laugh with, was positive, friendly and who they had common interests with.

N11_P1: "Yeah, aye, it's better having a laugh, like, it really is (laughs)."

N11_P2: "That's right, no but you do, your do because there's days or you went to see AM and I was feeling pretty - know what I mean, but when you see her, you just smile, and just the things she says, you know, she cheered me up."

Types of support described in interviews

Practical support

Money management/bill paying
Housework
Shopping
Housing support
Appointment attendance / advocacy
Medication support

Social support

Group support
Gardening
Photography
Exercise groups
Trips & outings
Powwows

Skills & personal development

Employment support
Language/communication support
Goal/outcomes planning
Volunteering opportunities

Mental health & wellbeing support

Talking
Therapeutic techniques
Anger management
Breathing skills
Coping skills
Using tools e.g. I.ROC
Coaching
Peer support

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The importance of equality and mutuality, trust and respect in good support relationships was spoken of clearly. People appreciated working alongside support staff, being on the same level, and working with staff who allowed themselves to be seen as human.

N11_P1: "I think it's quite refreshing to you know, to have somebody that's you know, quite open about you know, the imperfections of being a human being and, um, rather than you know, she would never proclaim to know all the answers, around you know, but would help you, encourage you to find your own way rather than a prescription or theory based, book based kinda sort of models. Um, yeah, flexibility is a big thing."

This was compared in some cases to the attitudes of 'professionals' such as psychologists, psychiatrists and therapists, whose approach was described as inflexible, hierarchical and depersonalised. The ideal support staff appeared to be those who could listen, were flexible in their time and their methods, and were able to treat the person as an individual, *N10_P: "the fact that it's tailored towards my personal needs"*. Support needed to be person-centred manner; enabling and empowering, as one interviewee said, *N9_P: "it doesn't have to be all about your support worker, you have to do most of it yourself to get to that level you need to have motivation."*

Many interviewees were able to use draw on attributes from their current support relationships to create this picture,

N8_P: "I mean he would talk to you on a level that he knew obviously you had problems and I - and I was very forthcoming with the anxiety and everything like that. He told me some of the hardships that he's had in his life, and so I made a small connection there."

Others drew on memories of previous negative experiences with workers and identified what didn't work, for example,

N5_P: "M used to sit there and say, she - she wasn't interactive or anything, she just says, 'you're doing well, you're doing well', and that's all she says. You could be dead and she'd tell you you were doing well. You know, you could be deceased, and she would tell you you were doing well. (Laughs) she wasn't, um, she wasn't - she never gave me any advice or anything, no advice or anything like that, there was nothing, there was nothing there - M just tells you you are doing well no matter what you tell her... 'cause some of the things I've told her for years, she moans about going through it."

Non-Medical Support Approaches

There were descriptions of negative experiences with services, both voluntary and statutory, given throughout the interviews.

N11_P2: "Well, at one point, social work prevented me from moving on ... these meetings, just the way they speak to you, and just the way they think about you...and just because you've...got...mental health issues, like, I got judged a lot...I'm human like everybody else, d'you know what I mean? I felt sometimes like I wasn't...Well, do you know what? It was hard to be open and honest [in support], because I think like everything I do, it goes back to social work, know what I mean? They find out everything and they hold that against you."

Common within these accounts was a feeling of disempowerment, lack of control or involvement in their own treatment.

I.ROC Usability: Supported People

N5_P: "The doctor, I tell you, if he'll take your, he will take your depot, you'll come off your CTO [community treatment order], and if you don't take your depot, you're on a CTO, so you're on your depot no matter what you do (laughs). You don't win. The patients don't win."

People also described feeling that the support they were given from some other services was depersonalised, one size fits all and did not focus on what was important to them. As one man explained,

N10_P: "I suppose the experience that I've had with the Penumbra carers support is it's been very much tailored to me, whereas with the negative experiences at other places, it was almost like, that they had a square peg and they were trying to bang it into a round hole. They were trying to support me as a carer in the other places, but not bearing in mind that I had my own issues going on in the background, so they were looking at the, how is the physical care going, how is it with x, y and z? All to do with the carer role, but not bearing in mind that that carer role was leaking into the life role as well, and making that increasingly more difficult."

The descriptions of dictated treatment plans and depersonalised contact were often accompanied by an overarching sense of regained empowerment however. As participants described their negative experiences, they frequently finished the story by talking about what they did to change the situation.

N7_P: "I went along to the GP. And the GP I was with, erm, was just giving me tablets and tablets and nothing was getting better. So I gave up, I changed my surgery and went for the Whitfield Surgery and erm, within 4 weeks, I was referred to social prescribing"

Although most people described at least one bad support experience, all of the interviewees also gave details of positive support, whether at Penumbra or elsewhere. For example, when asked, 'what kind of support worked for you?' One participant responded,

N13_P: "Makes me think - makes me feel - people support me - makes me feel valued...And it makes me feel, even though I'm not working and um, I haven't got a full time job or anything, people support me, make me feel valued, they make me feel like a - like a better man with the community. I don't mean in the Penumbra community, I mean you know, everywhere, the community."

Penumbra's Approach

Generally, the consensus was that Penumbra offered support that was more personalised than support experienced elsewhere, particularly (although not solely) within public services.

N11_P1: "I've had all sorts of different therapies and stuff through my life, but in comparison to the kind of support I get, um, with NHS, it's much more practical, it's much more honest and realistic. It's much more kind of integrated with real life and realities, like um, things are more, like things are kind of discussed, like that wouldn't necessarily be discussed in like with the CPN or psychologist, um so there's less of a kind of rigidity about um, like whether it fits into a framework or not, so yeah, more flexibility in what you can actually speak about, which is good 'cause we're all individuals."

Penumbra's approach was identified by some participants as being different from that offered by other services.

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N10_P: "Uh, the fact that things are tackled in a more unique way, I would say that I've accessed a number of services, and they all seem to tackle things in a very, very similar way, almost like there's been a guidebook patched round all these places, and this is the way we deal with people that are carers. Penumbra don't seem to have that, they've got their own methods of dealing with things."

In particular, participants mentioned the tools and techniques used by Penumbra workers (see previous section), and the personal qualities of the staff (section 4.3.2.1). Participants talked about the breadth of social groups and activities on offer, and for many the chance to not just attend but to fully get involved within these (e.g. POWOW delivery; interview panels, etc.) was an important factor.

"N11_P2: Well, when we done the loss and attachment [POWOW] - that was a good experience, 'cause I helped, well, prepare that with a couple of other people and delivered the group

I: So what did you actually get out of that, sort of being involved in that?

N11_P2: Well, to know about loss and attachment, because I only think that was like losing somebody, know what I mean? Like bereavement, but there's lots of things to do with, know what I mean? that covers loss and attachment, like losing your house, your job, there's lots of things. But I always thought, know what I mean? So I know a bit more about it now."

Flexibility was another highly regarded practice within the support offered, both in the provision and planning of support.

N10_P: "Flexibility as well, I have found that my support worker has not - has understood fully that I'm a carer and that sometimes, I have to cancel at very, very short notice because of either my own health or L's health taking a decline, or appointments appearing and whatnot, and I've never been made to feel small for - for having to change times and whatnot, and it's been very, very easy to do that, so that's certainly been - been a good experience."

In line with Penumbra's approach to risk management (right), enabling independence featured strongly within the interviews. People talked about being given more freedom within the services than in others they had experienced. Participants identified how they were being supported to take more responsibility for their decisions, their day to day activities and their homes. This was a particularly important issue for around a quarter of interviewees living in supported accommodation, all of whom had previous experience of long terms stays in hospital.

N6_P: "I can go out on my own when I want and I don't have - I can go out on the bus when I want and, when you're in hospital, you're not allowed to go out or until you've got a member of staff with you and you're not even allowed to go out in the grounds half the time and that"

Penumbra's personalisation policy

Personalisation of services means that rather than presuming that a "one size fits all", it is essential to enable people to have care and support built around their personal needs, choices and aspirations. Ensuring that people move from being (passive) recipients of pre-determined services to being active participants in shaping the support that meets their needs, aspirations and chosen lifestyle. For some people personalisation will be about having effective, reliable and consistent 'off the shelf services'. For others it will be the opportunity to utilise informal support networks more effectively with the knowledge that expert back-up support will be available during times of crisis or difficulty. And for others it will be the availability of knowledge, information and skills training that will enable self-management of their personal situation.

Penumbra's policy on risk

"The fundamental priority for all Penumbra services is to provide support which is safe, while promoting recovery, social inclusion and citizenship for people with mental health problems. Penumbra will encourage and support people to make choices which will enhance their independence, their social relationships, their inclusion in their community, and their general quality of life. Penumbra staff will assist people supported by the organisation in anticipating the likely consequences of their choices, including any foreseeable risk of harm to their own well-being and the wellbeing of others."

I.ROC Usability: Supported People

Interviewees described the approach as solution focused, with people supported to think about and work towards their outcomes, goals and hopes for the future.

N8_P: "Penumbra seems to be more getting to the root of your problem, in the sense that, uh, 'let's look at your problems, let's go into detail how you got to be like this, how it came to this, how we can look for solutions'...with Penumbra, it's more like let's get into the nitty gritty so to speak, and let's address this properly, and we'll see how we can see where you are now and let's see what we can get to in the future"

Not all interviewees were as positive however, with criticisms of the training of staff leading them to say inappropriate things

N5_P: "Sometimes I think A can be a bit funny but I do like A, I like A. But I don't think it's A I think it's the training - I think it could be A's training... I can't remember it's just sometimes she says things um, a little bit shocking."

Support Activities

Interviewees were asked to describe what they did during their support, and to evaluate what worked for them. Support activities described fell into a four broad themes: practical support, social support, mental health support, and personal development, as described below. It was clear though that whilst the activities could be categorised, often they would overlap, and the effects of a particularly could impact a wide variety of areas for people

Practical Support

This theme was most prevalent within the interviews with people from supported accommodation or supported living projects. Support described included day to day chores such as shopping, cleaning and paying the bills,

N3_P: "Well I heard the door, and I had letters and bills, and I says 'I don't know if I can pay this bill, I think its overdue', and she says 'oh we'll see to it' so I gave her the letter and she says 'I'll take this down and we'll see you later on' and they just help with the paying the money"

People also received support with medication and attending appointments including healthcare and social work meetings.

N6_P: "Every four weeks, you get your, um (pause) bloods taken, someone comes up the hospital, 'cause I don't like going to the hospital by myself, so someone comes up the hospital with me to get my bloods taken, and we can go out for something to eat or some food, and then um, for my ECT someone comes up and takes me up for it, makes sure I get someone that I want take me down to it."

Also included within this category were more involved support activities such as housing support; a number of participants were hoping to move into their own tenancies, and staff were described as helping them to work towards in ways such as financial planning, development of life skills and self-management, as well as support to attend appointments and complete paperwork.

Social Support

The majority of participants identified support they received to integrate into society and participate in community events as a particularly important factor. In some cases this helped people move from a place of high social anxiety, unable to leave their house, to a place in which they were able to take public transport, relax in social places, attend groups and make friends.

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N9_P: "I met with somebody from Penumbra and that continued for about a year, I was just going for a coffee, and that was it, I didn't participate in anything else. And then I met X from Penumbra and I started going to groups and X has been a role model for me because she said "you don't have to go to them but you can give it a try" and I've always stood by that and now my life's much better because I'm going to groups, I'm meeting people and I feel like I can do loads of things that I wasn't able to do 5 years ago."

Participants were supported on an individual basis to get out into their local community, but also received support to attend social events and regular groups. Group activities included those in the general community such as exercise classes, as well as peer-attended, peer-led groups within Penumbra (e.g. POWOWs) and other organisations (e.g. gardening and photography projects).

N7_P: "We just had our first group meeting which I felt was quite essential because to meet other people and to hear other people's problems and to feel that you're not all alone."

N12_P: "And being able to support most important is being able to talk, and that just feel as though I clammed up, that's the main thing um, being relaxed and able to talk. To be able to sit down as a group with other people, and be able to put your input and listen to what they're saying, new experience for me. Same as what new experience - that helps a lot, you know, doing that. Uh, that's a real help is where Penumbra has its strengths, being able to bring an individual into a group."

Penumbra workshops on wellbeing (POWOWs) were mentioned by some participants, who spoke not only of the positive experiences of attending these workshops, but also of the opportunities they had presented to develop and facilitate their own workshops.

N11_P2: "You get to socialise as well with other people, ken, and you get to meet other people who've had similar like experiences or - and you can share them, know what I mean? That's why I like the groups, so I've actually done the - well, with AM and a couple of other people, one on loss and attachment. I found that pretty - well, interesting, it gave me a wee bit of a boost as well, because I helped uh, like, prepare the group and that was good. We had groups to help each other, like social groups and then I'd like to help you get out and about and like stuff like that, which is a good way of getting to meet other people as well."

Whilst many felt that they had made particular progress in this area, others continued to struggle in group situations, and tackling this remained an important factor in ongoing support.

N11_P1: "I felt there was a few like, big kind of group things that it kind of depends on how I'm feeling, sometimes I find it can be a big trigger, and - it's all kind of learning. Um, I have difficulty with, kind of, boundaries and stuff, um, so like, yeah, that's been a bit difficult, but that's been an alright experience as well, like I've had support in kind of working through that and dealing with it in a better way so it's not so triggering."

Mental Health & Wellbeing Support

Much of the discussion of mental health and wellbeing support took the form of specific tools and techniques used within sessional work (see section 4.3.3.1 for more detailed discussion of these), for example breathing techniques.

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N8_P: "I could say it was a bit of anxiety, but once you've got my breathing exercises and knowing that - that as you say, they're only thoughts, you just need to understand they're only thoughts and they can't harm you, you used to say to me, they're only thoughts, they can't physically harm you or otherwise."

Alongside specific activities, people described the benefits of support sessions during which they sat and talked to their worker;

I: So you're sort of saying there's been some maybe different types of support, different types of input as you've needed them at different times?

N12_P: As I've need it, uh, it's being - being able to talk to Penumbra (?) without any, uh, how can I put it? Stress or anxiety, I suppose. But being able to relax and being able to talk, uh, at times and being listened to, I suppose. It's I would say the main core

Talking was also an activity that often took place alongside practical support or other activities such as playing games, going for a walk or a coffee.

N4_P: "Well, sometimes do the dishes, sit and have a cup of tea and a natter...."

Peer support was a specific type of mental health & wellbeing support mentioned within the interviews. Whether individual or group support, people talked about the value of shared experiences, and being able to relate to someone on an equal level

N8_P: "He's a nice enough chap, he, he was very good at his job, he's a - I mean he would talk to you on a level that he knew obviously you had problems and I - and I was very forthcoming with the anxiety and everything like that. He told me some of the hardships that he's had in his life, and so I made a small connection there."

Skills & Personal Development

Participants described the areas in which they felt they had made improvements in personal skills through the support they received. Of importance to many of the participants was the progress made in developing skills linked to daily living, self-management, social networking and employment.

N7_P: "What do I think has worked? My, my anger. And, coping mechanism. With. Erm. Doing daily normal things, socialising with people."

Early stages in narrative accounts often featured a lapse in skills, or an inability to cope; for some, support was accessed as a result of this inability to cope with daily living,

N7_P: "Things became too much for me to handle myself. Didn't get help from social security on anything, for anything, and was finding it hard to cook, and finding it hard to wash my clothes, and still without any support."

Participants who had struggled to cope with daily living, and those who had never really had a chance to live independently particularly highlighted the importance of gains made in being able to manage general living skills such as housework by themselves.

"I: What kind of goals, things, outcomes, since you've got to [current accommodation PMG]. What would you say you have achieved?

N3_P: mmm, I think, well I do big heavy work like on a Saturday I do the Hoovering...and so I make it look good around the house even in my room,

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when it's all looking clean I take out and wipe a lot of the enamels and if the cooker needs it I make sure it's all clean

I: so you take care of the flat on your own

N3_P: yeah I take care of the flat on my own"

Skills featured most heavily if associated with independent living. Alongside daily living skills therefore, participants relished improvements in their ability to cope, in their resilience and ability to self-manage,

N11_P1: "I would say that my - I'm a bit more resilient now, and that I'm much more likely to not freak out at the last minute and kind of - or get overwhelmed to the point where I need to kind of leave."

Five participants specifically described the importance of support to improve their communication skills, and changes they had made in this area. These interviewees felt better able to talk to people, to participate in social situations and feel understood,

N11_P1: "I found it really helpful um, when it comes to, like, meeting up with somebody or that kind of communications kind of side of things that I find really difficult, like I don't really do phoning or - and , like, it takes me like a day to write a simple email, like, so having someone there to kind of simplify it for me, um, is hugely helpful because that is - that is what really destroys me a lot of times."

Support received to improved work-based and educational skills was discussed in many of the interviews. Staff played an important role in the development of these skills, both directly and indirectly. One participant described how staff had acted as role models for getting and maintaining a job,

N3_P: "If I don't wanna go to work they say 'we go to work, so so will you' (laughs) I says ' well I'll think about a new job"

Support was sometimes directed specifically at employment, for example one participant was working with an employment worker,

N11_P2: "The reason how I'm working with J is to try and get towards employment, because I've actually started doing a psychology course so I'm hoping that works out so if a job and he's helping me to go forward, know what I mean, to help to work towards that"

For other participants, the opportunities provided through other support activities such as group workshops sparked an interest in employment opportunities

N1_P: "[I] really got involved and I actually was helping doing a POWOW, kind of the positive thinking POWOW and really enjoyed that. And – well enjoyed it that much I asked if I could become a volunteer"

I.ROC Usability: Supported People

Tools & techniques

People described using a variety of tools and techniques to help them manage their mental health. Some such as WRAP were widely used, evidence based methods or instruments, whilst others had been developed or adapted by the person themselves,

N1_P: "I've got my, my little – well I say my little book, I've got my - my book that I carry with me, ah – my positive book, and it's – I've got a lot of positive quotes in it, and that's what I do a lot in the mornings when I – first thing when I get up – I sometimes go to the computer and just look up some more positive quotes and quotes that get me motivated, and – just all positive so I've got a lot of – lot of them written down in a book and I like to share some of them as well."

Tools	#
WRAP	3
CBT	1
MDCT (Mindful Behaviour Cognitive Therapy)	1
Mindfulness	1
Speech/language based/NLP	1
I.ROC	7
Plans	1
Sleep Diary	1
Chronic Pain Diary	1
Week Plan Diary (Support Plan)	1
Money Planner	1
Sleeping Well	1
Eating Well	1
SMART Tools	1
Positive thinking book	1
Timetables	1
Goal setting tools	1
Assertiveness	1
Anger management	3

The most frequently referenced tools and techniques are described in turn.

WRAP

Feedback on WRAP was mixed. People had tried using WRAP both in a group and an individual setting. One woman compared the two formats, and concluded that completing an individual WRAP had been a more constructive process:

N11_P1: "Um, well when I first started seeing [worker] AM, I had just done a - a WRAP with the NHS, I did with a course, but it was a group course. And then, but I did a just an individual one with AM, and um and that was so much better than the group one that I'd done, because it was much more kind of individual, and it was the first time that I had actually really started thinking about things that actually help me, rather than what I think should help me, so -'cause there's a lot of things I was like trying to do, that were actually making me feel worse, you know what I mean? Like um, like things I think I should do like rather than kind of like so helping me kind of try and learn to kind of accept and be ok with myself as I am rather than who I think I should be, um, because I've always, I kind of I construct myself based on other people's kind of things and reactions when I was growing up, so um, that's been really helpful to kind of explore my own identity."

Another interviewee highlighted the fact that whilst WRAP can be useful, it is not something he likes to rely on, as he associates using the tool with feeling unwell.

N12_P: "Yeah well I've tried to - now it's um - we're talking about it, and we're putting it out and I've been sort of trying to not look at it because that's like saying I'm needing more help... Uh but it's not like uh, I would be taking a step back, but it is there if I need it. But I don't want to keep sort of - sort of like look at the answers to the questions which is (incoherent)...keep going, it's a bit - keep going – 'til I'm trying to remember what's happened to me - uh, some of that stuff goes - talking about myself, isn't it? It might trigger something off, so I don't want to try and do that, but I know it's there, but if I need it."

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Diaries & Plans

A number of diaries and plans for example sleep diaries, eating diaries and support plans are included within the HOPE Toolkit, and these were referred to by a number of participants, the majority of whom felt them to be helpful tools for recording, and monitoring their behaviour and making future plans. Diaries were particularly helpful for one man who described how he has not only used the pre-designed tools to help take control of his fairly chaotic life, but has been able to adapt those tools to for other areas of his life, such as chronic pain.

N10_P: "Ah, it's all been the diaries that have been the big benefit to me, because it's been a case of that I can be quite haphazard in my life and just almost take things as they appear very intuitive to somebody, but to me in the past it was a case of that I was relying on intuition, and just tackling whatever was in front of me, and things at the back of me were - were falling apart because I wasn't attacking them in a structured way, whereas these diaries have been very, very good at adding structure to the things that need dealt with. In fact, expanding the diaries out - I suffer from chronic pain and fatigue - with my physical condition - I've managed to expand those diaries out into casing for them, so even though they weren't given to me by Penumbra, it's been adapting what Penumbra have given me, the tools, into other aspects of my life, and ultimately, when I went to the pain clinic and told them that that was what I was doing, the guy almost sat back and gave me a round of applause, and said that that is exactly the way that we would say to tackle your - your chronic pain as well, so yeah, it's just helped me a lot in other walks of life, even though they weren't in the toolkit, it's given me the building blocks to build other tools, to help myself"

Not all participants were so decisively positive in their review of the instruments on offer. Another participant described how although the planning tools were helpful, particularly in increasing his self-management and preparing him to live independently, he could find the approach too structured, and "claustrophobic".

N13_P: "We did a - was it a money plan? That's one of the things - talking about the money - these plans, that's one of the reasons I don't like the - I don't like the - I get a bit negative with the - with the and I get sick of it all, because it's ongoing, it goes on and on, and the planners go - a planner for this, a planner for that and then I feel like tearing them up and chucking them out the window."

Others have again used the plans and diaries in the toolkit as a starting point to develop their own methods.

N11_P1: "Well I've tried lots of different things um, definitely things like timetables and goal setting and how to kind of like, actually get there, so kind of breaking things down into steps - I don't know what the sheets were but, um, and it's kind of encouraged me to make up my own version of it as well, so even like, use some of the sheets and things as a kind of a basis and if I want to kind of make up my own, she's kind of really encouraged me to kind of just do that, which has been quite nice. Um, which I have done, and it has been really helpful, so um, yeah."

I.ROC & the HOPE Toolkit

Tools developed by Penumbra such as the HOPE toolkit at I.ROC were mentioned in almost all of the interviews, and feedback about these techniques was resoundingly positive.

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N10_P: "I would say it's not just the support worker, who's very, very good, it is the fact that the tools that Penumbra have given to the support worker are also very, very good. I would imagine, so I've never experience other workers, I would imagine they're all very, very good with this toolkit in the background as well."

Particularly affirming was the link in some interviews between using tools and techniques, and increased self-management. The best example came from one man who described his battle with depression. He highlighted the fear of recurrence of symptoms as the biggest barrier in his recovery. His main concern was that the symptoms of depression may return after he moves on from services, leaving him unable to cope and without support.

N10_P: "To me moving on, 'cause even just the worry of that happening is a barrier in itself"

I: "I mean, with that in mind then, do you think there are any sort of tools or things that you've learnt through your support here with Penumbra that you feel you could take with you down the line when you do move on that would hopefully prevent that sort of relapse?"

N10_P: "Yeah; that would be my first port of call is that now that I know the stuff from the toolkit and stuff from I.ROC, I would lean on them first, I wouldn't really have to come back and see a support worker to ask what they are again, because I have built them into my daily life."

Half of the participants discussed I.ROC during the interviews – some were asked about it directly by their interviewer, whilst others brought it up without any prompting. Whether asked about I.ROC directly or not, those who discussed it described the tool as a helpful review of your whole life, a useful method of visualising progress and identifying areas to work on.

People talked about the reflective process involved in the completion of an I.ROC,

N3_P: "I think I.ROC is helpful in ways... if I'm a point 4 or something, I'll say 'why am I point 4?' maybe I need myself to be healthier or eat healthy foods or things like that."

For some, the tool helped to broaden their thinking, by paying equal attention to a wide array of elements of wellbeing.

N11_P1: "I've done the I.ROC twice, so yeah, that's a good kind of overview of where things are at, it's interesting, and looking at every aspect of life as well, so it kind of encompasses everything...I think it's definitely very important that...support...encompasses everything, considering that mental illness kind of just encompasses everything."

Others described the visual element of I.ROC, the spider-gram and how that helped them to think about changes in their wellbeing.

N12_P: "I find that useful because the first time round, I was really down, and it was a sort of weird shape and it gets inside of people - the isolation, it wasn't - not wanting to express yourself a bit more and after that first time, it actually when I did it again with A, and there was more rounded."

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It was clear in a number of the interviews that I.ROC was a helpful instrument for goal setting, through the identification of areas of relative strength and weakness, and the discussion with workers regarding what the priorities are.

N10_P: "What I would also mention is within the I.ROC section, that's given me - rather than just trying to tackle depression, and that all these things are wrong, and let's just hit depression in general - it's given me almost powers to have a go at and say right, these are the things that are - are worse in my life than maybe others that are - that are doing ok at the moment, so I can have a look at tackling those areas, and I've found that with regards to goal setting, that's been very, very good, and I've almost shifted my mind-set towards - I'm a very, very goal orientated person, with having massive sales experience in the past, and having just that - the goal setting in front of you, and being able to set short-term goals and attack them has, it's been great with regards to battering this depression away."

In fact for some participants, I.ROC seemed to have proven such a successful goal planning tool that it formed the structure for discussing goals and hopes for the future during the interviews. For example, when asked about their goals for the future, one participant responded,

N10_P: "my goals would be, there's still a couple of areas of the I.ROC that are lower than I would like so, but at least we've identified them, and we can tackle them positively and already between myself and my support worker, we're looking at ways of 'right, this is how we can tentatively step in that direction and keep everything else working, and tackle them as well, so, yeah."

It was also referred to when people were asked about their achievements,

N13_P: "I felt the - the social - you know the part in the I.ROC - I think the - I think it's the Social Network...I think that's improved a lot... Not a lot, but it's slowly - slowly improving. I'm pleased with that, I'm pleased with that; pleased I'm making progress with people."

In some cases, 'I.ROC' seemed to be used as a general catchall for the tools used within support. For example two participants in one of the interviews described how I.ROC made them think more positively about themselves.

N11_P1: "Cause before when I done that where I need to write things, like positive things about myself, I really, I couldn't think of nothing. But now I can do it, but I mean, so that's good, so that's a step forward. Or try to get in a good way of looking at the negative or be more positive."

Whilst in theory, this could fit with the exercise of completing an I.ROC, it could also be a reference to some of Penumbra's other tools such as the Positive Words sheet within the HOPE Toolkit. Terminology of HOPE and I.ROC indicators do appear to become confused in places:

N13_P: "It's probably just I've said it all already- the People part's always the best bit - the People part of the I.ROC... It's not the I.ROC, it could be the HOPE - People stands for - I mean P stands for People in HOPE, HOPE, yeah. I think it's - the People part's the best one, aye."

Component Themes

Themes included within this subsection are the elements highlighted within the interviews particularly in relation to changes participants felt they had made, and the outcomes they hope to achieve.

I.ROC Usability: Supported People

Component themes were most clearly apparent therefore during the latter stages of interviewee narratives, including discussions of recovery, and are thus described as recovery components. In earlier stages of the interviews, these themes were described more negatively: more symptoms of mental illness; isolation; self-stigma; unemployment, etc. Where change had occurred, discussion of these elements moved from a negative to a positive state, as stated clearly within many of the quotes used below.

Overcoming symptoms

Symptoms of mental illness remained a priority area for a large proportion of interviewees, and many participants were able to describe ways in which their mental health had improved.

N11_P2: "I'm able to concentrate, because see before there was too much 'uhuh' going round in my head, and I just didn't even try to well to sit down and concentrate and try to do things, even like before I couldn't sit and watch a whole film or a whole programme because my head would just speed up, know what I mean? Just like going so quick, and like sleeping at night and everything, and my mind was just racing. So what difference? A lot more - I know strategies to put in now, and coping things when I get like that, know what I mean?"

There was quite a lot of variation in the way that people saw their achievements in this area, and their stated mental health goals, which linked to the different meanings of recovery apparent within the interviews. For example, some interviewees described clinical recovery, and the transformative effects on their life in general,

N1_P: "For me, since I've, definitely now, got to be positive. It really has changed my life, turned my life around."

Other participants' views of their achievements were more tempered, and accepted a version of recovery in which mental health may always play a part.

N8_P: "My goal is obviously to be rid of anxiety but I understand that there's a possibility that I might never get rid of anxiety fully, it's just one of these things."

Independence & Empowerment

A sense of freedom and independence was clear in many interviews, and most participants felt that they were being supported to live by themselves.

N9_P: "I realised that I can do things on my own and I think that's the best achievement for me, is being able to do things on my own."

In this sense, the theme also incorporates a sub-theme of empowerment. Although not frequently discussed explicitly, people talked throughout the interviews about the necessity of choice. Interviewees spoke of decisions they had made and the actions they had taken.

N7_P: "I'm working with DPC, who, erm, hasn't been helpful to me at all, who, erm, cause I'm actually on a methadone prescription and I have been for almost two years now, and I've done a detox before, and obviously they know that it is in me to do a detox and they don't seem to be supportive because 6 months along the line I'm actually asking X at Penumbra for some support to start cutting myself down."

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Interviews also included discussions relating to the importance of supported people being given space to learn how to do things for themselves, and choosing to engage in support was acknowledged as a crucial element by many participants

N1_P: "It's up to the individual. Just like the old saying, you can take a horse – lead a horse to water but you can't make it drink"

Particularly when asked about barriers to recovery, the importance of playing an active role in the process of support was identified,

N9_P: "The thing that doesn't work in my support is myself. I have got to be mind-over-matter, I have got to try things, I can easily say no all the time and not achieve anything, but what works well-what doesn't work well in my support if I don't engage in support, with the support worker, and I don't engage with anything, I just cut myself back."

Empowerment therefore formed a clear and important aspect of support for some participants.

N9_P: "I think that if I was to do it on my own I would have never done it because it would always be "oh I'll do it next week, I'll do it next week" but I think with the Penumbra worker that I have just now I think that X gives you, she gives you support, but she also makes sure that you're confident in doing that, and I think that's very important, and I think that I've achieved it all by myself as well cause it's my motivation."

For some, independence came as a result of the social support that they received; being encouraged to leave their house and to get out into the community enabled the participants to maintain their daily routine without the help of others. One participant described how the support had enabled them to take control back over their lives, do activities on their own, rekindle friendships, and establish less stifling relationships with their family,

N6_P: "I can do a lot of things on my own, that I don't need support sessions for. I'm always going out on my own on the bus, I'm always going shopping and (laughs). I'm going to the gym now, I'm going swimming now, I'm being - going out with friends... I can actually go out of the house without my family following me"

People described the support they received as flexible – there when they needed it, and not when they didn't. For some participants, this enabled them to continue to live independently and access the support around a chaotic schedule;

N10_P: "I have found that my support worker has not - has understood fully that I'm a carer and that sometimes, I have to cancel at very, very short notice because of either my own health or L's health taking a decline, or appointments appearing and whatnot, and I've never been made to feel small for - for having to change times and whatnot, and it's been very, very easy to do that, so that's certainly been - been a good experience."

For others, it has provided the sense of security to try doing things on their own, and achieving this resulted in a sense of pride and confidence in their own abilities.

N6_P: "There's no set limit to the support you get, if you need more support you can get it, but I don't need as much support as some people. Do you know what I mean?"

I.ROC Usability: Supported People

For a few of the participants, independence was in turn dependent on support being available,

N13_P: "Sometimes I look back and say, well, you know 'I did that well', you know. And that's because I got - that's because I was supported with it. That's why I will need support, I will need your support, because I know if I was left on my own, I wouldn't be able to do it."

Some of the participants had recently moved from residential support to their own tenancies, and this was spoken of very highly.

N3_P: "I'm more independent here, and erm I've been told that [you learn] to do your own lot of things, live independently and show that you're independent...I prefer it this way, it's much better for me...you're more or less on your own. You can always go down to R or M and have a cup of coffee but its nicer here cos it's a flat of your own and you've got your own flat...your own flat to mess up! (laughs)"

People described the new residencies in ways that elicited a number of positive outcomes including comfort, pride and ownership,

N6_P: "Being able to do my room up the way I want it - I painted my room, got new furniture."

Privacy and space were also important attributes of living in an individual flat, and this had the added positive outcome of improving relationships between service users.

N13_P: I didn't like the sharing, looking back at it now, being - living on my own now, like I do for 2 years now, I can look back and say I didn't like sharing. Didn't enjoy sharing at all. We got on each other's nerves all of us, three of the other men I shared with are living here, and we still get on each other's nerves at times, aye. I think it's 'cause we all feel better now because we all know we're - got our independence and compared to [previous project], we don't see - we're not all sharing. This is not in [previous project], that's why I think we get on.

Choice, stability and responsibility were also themes that emerged as people described their experiences of living in their own flats. For many, this change had been so positive that their goal or hope for the future had become moving into a fully independent residence.

N13_P: "I'm really happy with having my own flat, but I'll be even happier when I go into the - into - totally independent."

Confidence & Self worth

Related to the theme of independence and empowerment was the feeling expressed by many that their sense of confidence in themselves and their own abilities had improved. This was mentioned in 8 of the interviews.

N7_P: "What's changed? Hm. Feeling confident within myself. A lot more confident with myself."

Some participants highlighted the role that the POWOWs had had in this process. The POWOWs had increased the confidence of interviewees whether attending or facilitating the workshops. Attending the events provided a safe environment in which to socialise with and learn with peers, whilst facilitating them gave new opportunities to develop materials, work alongside others and take on a leadership role.

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N1_P: “[facilitating a POWOW] It gives you a lot of confidence and – which proves to yourself that you can do it”

People described how support had reduced their levels of anxiety, particularly social anxiety, and consequently raised their confidence in social situations.

“N12_P: I feel a wee bit more confident in myself, compared to what I was, you know and the guy that I see when I sign on, for my unemployment benefit, he’s noticed a difference in me…”

I: And how do you gain confidence? How do you feel like we’re helping you to gain confidence? Penumbra is helping you to gain confidence.

N12_P: Taking - going out to a football match for example and helping me with - asking me if I’d like to go for a coffee in a cafe or maybe I’ll take the initiative and say ‘do you fancy going for a cup of coffee?’”

For others, improvements in confidence had a more internal focus; interviewees discussed how they had come to value their own thoughts and opinions, and how in turn their confidence in voicing these had increased.

N11_P1: “It’s been in the last two or so years that I’ve actually started to kind of value what I think, really. Because I’ve always kind of felt well, I don’t really know, they know best, know what I mean?”

Relationships

Relationships with others - with friends, family and the community as whole, was a common theme throughout the interviews; isolation was one of the most frequently reported reasons for accessing support, and subsequently formed the basis of many of the support goals and achievements.

N12_P: “Before, I felt isolated, because I was - more and more isolated when I was working, and that didn’t help. Uh, I was being physically abused, ignored, didn’t get the training I should have been getting ... But when I started coming to Penumbra, I felt less isolated, calm, back where I should be. It’s more a case of trying to move on bit by bit.”

Social support

For many participants, this meant being able to socialise. Social anxiety was a common mental health issue for this group of participants, and loneliness and isolation were frequently mentioned issues that had been successfully overcome.

N12_P: “Socially, I’m less isolated - I’m able to cope. Trying to string words together which I wasn’t able to do properly - I’d try to express myself a bit more”

A number of the interviewees were accessing services specifically designed to focus on social integration (Nova services), and for this group in particular, great gains had been made.

N8_P: “I’m able to interact with people in a daily basis - on a - for longer periods of time, so I’ve achieved more in the initial period of time I’ve been seeing you - 5/6 months I think it is, I’ve achieved a lot I mean, I’ve come so much more forward than I ever thought possible.”

Exercise & activity

No matter the type of support accessed, participating in social activities was a crucial element of support for most participants, and a clear sub-theme within the positive social activities mentioned

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was exercise. Many participants made reference to the physical activities that they participated in, predominantly in discussing the changes and achievements they had made,

N6_P: "I'm going to the gym now, I'm going swimming now... Well, we go once a week to badminton"

The opportunities provided by many such activities for developing social skills and networks was of particular importance,

N9_P: "The best experience I've had is going to the seated exercises myself and meeting other people and going there without X to be there beside me"

Classes also offered a chance to take control and begin doing activities independently, a highly cherished accomplishment

N9_P: "X asked me to join an exercise group, a seated exercise group and I was very anxie-very full of anxiety and I wouldn't do it and I used to make excuses up for not going but I tried it once and I really enjoyed it, then I, I didn't go for about 3 or 4 weeks, maybe 5, then I went myself and now I go all by myself and it's given me a leaf of life that I can do that without any support from X."

Family & friends

One participant described taking control of a difficult relationship with her mother,

N5_P: "Anything changed though? I'm thinking my mother - my mother... me and M have always spoken but I'm not talking to M now - so that might be a big change, a big change. But I hope that M has to stand on her own 2 feet, 'cause I can't do it anymore."

Others described rekindled relationships with their children and other close family members

N1_P: "Another achievement is – I'm now getting my family back in my life – I've got my daughter back in my life, and my granddaughter. Eh, I still haven't got my son, which – he knows what I'm doing and that is an achievement."

For yet others, improving relationships with family and friends remained a hope for the future,

N8_P: "My goal is to hopefully get the anxiety down to a level - it's come down certainly since I've met you - it's come down by at least 30% no problem, but I want to get it down to at least 10% so I can actually interact all the time with friends - pop to my friends, pop up to my big brother G's with his wife and his daughter, and just have a good laugh."

Peers

For those living in supported accommodation in particular, the relationships with other supported people also featured,

N5_P: "I can tolerate K a wee bit more. That's patience"

A challenge of supported accommodation is the lack of control over the people that you live with. Although most participants in this situation were positive about the relationships that they had with other residents at present, they were also able to see improvements and to relate times at which relationships had not been so good. A link was apparent in supported accommodation environments between the amount of privacy and individual space, and the quality of relationships with other residents.

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N6_P: *“Sometimes just getting on with other patients, like scares me sometimes...But that's the thing that's changed, I can trust everyone in this flat.”*

Peers were also discussed as important by participants receiving other types of support. For participants who usually received one to one support, group settings provided an opportunity to share experiences and feel better understood

N7_P: *“We just had our first group meeting which I felt was quite essential because to meet other people and to hear other people's problems and to feel that you're not all alone.”*

Self Management

Asked about their achievements, many participants described changes in the ways they were able to cope with and manage situations for themselves.

N11_P2: *“Now I've been working with AM, I'm a lot better. In my communication, and my coping as well. Coping strategies put into place, so like if things happen to me, I put things in place, to stop, like, something happening if that makes sense...That's what I feel really, my co-my coping mechanisms and then my communication, that's what I think's, well, a big difference.”*

Some mentioned anger management in particular and how they felt they were now able to deal with situations assertively rather than angrily,

N7_P: *“My anger which was a big thing, erm [pause] and being able to speak to people without being snappy with them... just on the whole managing to cope with life.”*

One interviewee described how improved self management strategies had made them feel more resilient,

N11_P1: *“I would say that my - I'm a bit more resilient now, and that I'm much more likely to not freak out at the last minute and kind of - or get overwhelmed to the point where I need to kind of leave.”*

For another person, self management of medication was particularly important, and remained a solid goal for the future,

N2_P: *“I would like to manage my own tablets”*

Life Skills

As described in the process themes (4.2.4.4), improvements in skills associated with independent living, particularly those affecting self-management, daily living and social relationships, were an important feature in many interviews.

Communication

People talked about the improvements they had made in their ability to communicate both in their support and in social situations.

N11_P2: *“Well the communication's a lot better, because before it was like I was speaking and wasn't getting my point across, d'you know what I mean?”*

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This had the outcome of improving the support relationship through a better shared understanding, and of reducing social isolation through improved ability to converse with others.

N5_P: "I might write differently, I might, because what the boys used to do is they train you to talk - not to talk not a case of talking better, but because of - training you to talk differently so that the staff understand you, because at first where I lived, nobody understood me... I think people listen to me more, I think they do listen to me more."

Daily living skills

Other participants described achievements in developing other skills necessary for daily living, such as budgeting and money management. This linked directly to future goals of living independently

"I: What kind of goals and outcomes have you achieved since you came here?"

N2_P: Well...I manage my money well. I'm saving up for my flat."

Symptoms of ongoing mental illness still had a negative impact on the ability to cope for some however, acting as a barrier to achieving independent living,

N13_P: "Voices can make me confused. They usually win over - one that alters - I just get an altering in my brain, and I'll think - I'm fine to begin with, I'm going out - an example is, I'm going out shopping. I'm going to go to Sainsbury's, the big supermarket, I'm going to go there, I'm going to get the - I'm going to get a lot of nice stuff I'm going to eat at Sains- the nice - but then, I'm travelling there on the bus, and then - then say just not long after the bus has taken off and its, its, around a third of the way there, then I'll think 'I'm not going' (Laughs) and just change you know, alter - I just change, and I'm not going and it can't be changed again - I can't change my mind again."

Coping skills

Some had managed through developing new skills to cope with or manage their symptoms however, and for some routine was identified as the key to staying well,

N2_P: "I've got my own routine. That keeps me on an even keel."

Coping skills took many guises, and covered topics such as increased resiliency, anger management, symptom management, wellbeing skills and crisis aversion.

N12_P: "Mainly communicating, understanding, of what was happening around me, being able to cope and things when things start to go wrong"

For some, coping with their illness meant changes on a fundamental level,

N11_P1: "I am more able to kind of like, be alright about myself withdrawing if I need to in situations, whereas before, I would really kind of lay into myself for not, kind of, being as I thought I should be. Um, um, yeah I'm much more just generally more stable"

Identity

The journey of recovery for many included the discovery or re-discovery of a sense of self.

N12_P: "To find that group would imagine be a lot of help and shall we say relax and try and figure out who I was before, as it were and that's the main thing trying to be who you are, not just before, but who you are now."

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For some, this was a process of self-acceptance, and overcoming self-stigma,

N11_P1: "I mean that's such a huge part of being ill is judging yourself and stigma and stuff, so, like to kind of...Like to actually feel like you can make changes, or like because, like, judging yourself just really kind of - kind of paralyses a lot of your ability to make change so just being, feeling like you are actually somebody, that you're worthwhile, and, like, you're part of something, uh, and you're not completely lost and alone in your own head is, like, just kind of allows you to keep going really"

It also included incorporating their illness into their sense of identity; coming to terms with what had happened, learning about their mental illness and what wellness

N12_P: "And try to understand what happened to me, trying to put myself back together I suppose"

For some, developing a sense of self that did not hinge on mental illness included taking on new roles, and meaningful activity played a particularly important part in this process.

"N11_P2: All the psychology, I'm actually priding myself on, because I've not studied si-well probably since I was at school, huh

N11_P1: Yeah, that's huge actually

N11_P2: But I mean the, and it's actually taking it in, and it's actually, know what I mean, very, very interesting. That's an achievement for me. To go and do, do you know what I mean? Like I'm 34 and I have had jobs in the past - well I've not studied since I was about 15."

Purpose & Direction

Participation in meaningful activities was an important factor for many of the interview participants. Although the range of activities discussed varied greatly between interviewees, employment was a common subtheme.

Employment

Interviews often began with descriptions of stress, bullying and pressure at work; many participants had experienced loss of employment and this had multiple impacts on their wellbeing, including financially, socially and emotionally. However, when it came to discussion of current achievements and future hopes, employment remained a clear and positive theme within many of the interviews.

N11_P2: I'm working towards getting a well-paid job and have lots of money coming in... That's what I would like eventually is to get a good, well paid job and do something with my life.

Employment for some was about reducing isolation, having financial freedom, or simply having a way to pass the time,

N2_P: "If I had some sort of a job, it would break up the week a bit."

For others, it represented a return to normal life – recovering the life they once led, or the life they had always hoped to lead.

N9_P: "I'm working towards getting back into the community, getting a job, erm, getting back to normal, being a normal person again and be able to go places without having them anxiety and panic attacks and just being able to

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meet people again, and I think that's the key focus for me, I want to achieve to go to as many groups as I can, and, and do things that I didn't think I could do before."

The importance of employment also laid for some in being able to feel like a valuable and contributing member of society.

N12_P: "Well the big thing for me, it would be get a job - some kind of job that I can settle in to... For the longer term, and sort of get to retirement age as it were without what I have gone through the last time... Feel valued, feel able to cope with every- with everything that sort of comes my way."

Other Meaningful Activity

Although paid employment was a clear sub-theme, this did not in itself cover the full range of meaningful activity related accomplishments or future hopes for participants, who also discussed the value of studying, volunteering, and participating in workshops and group activities.

N1_P: "One of the achievements I'm now – eh – at Aberdeen College studying health and social care...Volunteering with Adaction, volunteering with Penumbra, doing a POWOW with Penumbra...Did a bit of volunteering with Momentum Skills as well, helping do a – run a energiser course. Eh, I was, at eh Turning Points Scotland as well. Rose's Coffee working there as well. Eh, oh and I was just doing a bit of volunteering with Drugs Action, eh we've just finished making a – a short film about recovery – just in the process of getting it edited, so hopefully that should be on the big screen soon."

Some participants pursued hobbies that held a lot of meaning for them, for example one man talked in detail about the photography group he had joined, and how important that was in maintaining social contact and providing distractions as a coping mechanism.

N12_P: "I've been in touch with, I have an interest in photography that's kept me going as well...I'm on my own now, because my mum died about 10 years ago from breast cancer, I lost my father in law a few months before that and then I lost my own uncle 6 months later, but there was times when it's a nice quiet and I sort of sat down, start thinking about things and start dwelling on them, and that's when things like my Photoshopping"

These activities played roles within people's lives that were every bit as important as a paid job. Indeed, one woman was in the process of turning her hobby into her career,

N11_P1: "I'm doing more of my own kind of like stuff, like I make stuff out of clay, um, kind of ceramics. Not started selling any or anything yet, but I've kind of - working towards that."

Giving back

N1_P: "My big goal is to work and help people in recovery – that's my big goal. That's what I'm going to college, getting my qualifications in this kinda line. I want to be able to – I want to help people in recovery, help them in their recovery. Because a lot of people helped me in my recovery, so I want to give something back. That's what I will be doing."

A sense of wanting to give something back, to help others in their recovery journey was apparent for some participants. Whether though paid or voluntary work, or through participation in peer support and educational activities.

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N11_P1: "I've been kind of getting involved with different kind of, um, like an advocacy project through in Edinburgh and stuff, and that's to do with eating disorders, um, that's involved for like creating a resource pack for GPs, kind of informing more about eating disorders, because that's a huge thing, there's a lot of people getting dismissed and a lot of people end up getting sectioned because they're not getting the treatment."

For some, this aim related to a sense of injustice and isolation that they had experienced during their own journey.

I: What's the dream in terms of the job? What kind of thing do you fancy?

N11_P2: Psychologist or a - a psychologist or like for you know like young children who've got mental health issues or that have got something like that - or maybe kids that have been abused or - 'cause I've been through it, know what I mean? So it would be to help them to think that it's not the end of the road, know what I mean? Because some people when they're abused, their life's over, d'you know what I mean? It's true.

Discussion

Fourteen people receiving support from mental health charity Penumbra participated in a series of one to one semi-structured interviews to explore what makes a difference to people with a history of mental health issues, in the support that they receive during their recovery journey. Beyond capturing the stories of support, the aim was to identify what recovery meant to people accessing services in Scotland, and to identify the extent to which Penumbra's recovery approach had been successfully integrated into the culture of the organisation. Further, the interviews explored the role of the HOPE framework and I.ROC within support. Thematic analysis of the interviews highlighted a number of themes within the narratives, which were categories into recovery stages, recovery-supporting processes and recovery component themes.

Recovery stages

Narratives followed a temporal path from illness to wellness, as described within the stage themes, with support playing a key role in the transition for most. Recovery looked very different across the range of people participating in the interviews, from an expectation of a continued high level of support through to a 'normal' life with no support.

Whilst it was not the aim of this study to develop a model of recovery, the stages, processes and components identified within these narratives, resemble those defined within a number of recovery frameworks. As in the current study, Andresen et al also developed a model of recovery with both processes and stages (Andresen, Oades, & Caputi, 2003), of which the establishment and pursuit of personal roles plays a key part, "hope is the perceived ability to reach identified goals, identity and meaning are linked to one's valued roles and goals in life, and responsibility involved autonomy in the pursuit of them."

The stages identified within the current narrative interviews share many features with other stage models such as those developed by Baxter and Diehl (Baxter & Diehl, 1998), and by Yarborough et al (Yarborough, Yarborough, Janoff, & Green, 2015). Both Baxter & Diehl and Yarborough and colleagues outline three-stage models, starting from a pre-recovery place of crisis and survival, similar to the illness, trauma and crises described by participants in this study. A middle phase is then described, defined by seeking and accepting help, goal setting, learning and hope; this resembles the awareness of illness, help seeking, and finding effective support within current narratives. The final stage begins to move away from dependence on support towards independence or interdependence, and highlights meaning, relationships and identity. In the current study, independence, autonomy and a life beyond support was clearly desired by many, and within reach of some.

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Appendix 19. Quantitative Results Tables

19.a. Demographics

i. Mental health issues

	Study 1	Study 2	Study 6	Study 3	Study six	Study 5
Addiction	15.2%	0.4%	8.6%	N/A	N/A	N/A
Anxiety Disorder	40.4%	11.0%	46.9%			
Bi-Polar Disorder	10.5%	0.8%	7.4%			
Brain Damage	8.2%	0.0%	1.2%			
Dementia	1.2%	20.3%	63.0%			
Depression	53.8%	20.3%	16.0%			
Eating Disorder	7.6%	2.1%	0.0%			
Other	9.9%	6.3%	6.2%			
Personality Disorder	8.2%	0.4%	6.2%			
Schizophrenia	25.1%	0.0%	29.6%			

App_Table 17: Proportion of each sample reporting specific mental illness diagnoses

ii. Referral Source & Service Type

Referral source	Study six	Service Type	Study six
Self - Private	11.9%	Peer support	3.7%
Social Work	17.0%	SL	39.1%
NHS	15.3%	Nova	25.9%
Community/Independent Service	7.3%	YP	17.3%
Other	9.8%	Inpatient	0.2%
Education Authority	7.8%	Self harm	8.7%
Housing	13.0%	ARBD	2.3%
GP	3.7%	Homelessness	1.0%
Self - SDS	0.2%	SA	1.3%
		Carers	0.4%
		Respite	0.0%

App_Table 18: Sources of referrals to Penumbra for Study six sample

iii. Area of Study

Student?	Study 2	Study 6
Yes	0.0%	46.9%
No	0.0%	53.1%
Philosophy	0.0%	1.2%
Business	1.3%	2.5%
Computing/Computer Games/Arts/Informatics/Hacking	0.0%	11.1%
psychology/social science	0.0%	14.8%
Accounting and Finance	0.0%	1.2%
Food & Drink Innovation	88.2%	1.2%
Sport	0.0%	2.5%
Mental health nursing/counselling/OT	0.0%	8.6%
Criminology/Forensics	0.0%	4.9%

Engineering 0.0% 2.5%
 App_Table 19: Area of study for samples in Study 2, 6

iv. Additional Demographics Study 5

	M (SD)
Education (t=-.74, p=.5)	
Basic Education	68.2
Higher Education	31.8
Employment (F=1.34, p=.3)	
Full time	17.1
Part time	13.3
Unemployed	67.6
Retired	2.0
Marital Status (F=.17, p=.9)	
Single	58.7
Married/civil-partnership	9.6
Co-habiting	10.6
Divorced/separated	15.4
Other (e.g.)	5.7
Living Arrangements (F=.29, p=.8)	
Living alone	35.5
Living with partner	17.8
Living with family members and/or others (e.g. flat sharing)	46.7

App_Table 20: Sample demographics information (n=107) and I.ROC univariate statistics, Study 5

v. Age ANOVA-Scheffe's Post-hoc comparison

Multiple Comparisons

Dependent Variable: Age

	(I) Study	(J) Study	Mean Difference		Sig.	95% Confidence Interval		
			(I-J)	Std. Error		Lower Bound	Upper Bound	
Scheffe	1	2	18.220*	1.627	.000	12.80	23.64	
		3	10.888*	1.612	.000	5.52	16.26	
		4	11.292*	1.260	.000	7.10	15.48	
		5	7.741*	2.025	.012	1.00	14.48	
		6	10.704*	2.238	.000	3.26	18.15	
		2	1	-18.220*	1.627	.000	-23.64	-12.80
	2	3	-7.332*	1.478	.000	-12.25	-2.41	
		4	-6.928*	1.082	.000	-10.53	-3.33	
		5	-10.480*	1.920	.000	-16.87	-4.09	
		6	-7.516*	2.143	.031	-14.65	-.38	
		3	1	-10.888*	1.612	.000	-16.26	-5.52
		2	7.332*	1.478	.000	2.41	12.25	
	3	4	.404	1.059	1.000	-3.12	3.93	
		5	-3.147	1.907	.743	-9.50	3.20	
		6	-.184	2.131	1.000	-7.28	6.91	

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4	1	-11.292*	1.260	.000	-15.48	-7.10
	2	6.928*	1.082	.000	3.33	10.53
	3	-.404	1.059	1.000	-3.93	3.12
	5	-3.552	1.620	.440	-8.94	1.84
	6	-.589	1.878	1.000	-6.84	5.66
5	1	-7.741*	2.025	.012	-14.48	-1.00
	2	10.480*	1.920	.000	4.09	16.87
	3	3.147	1.907	.743	-3.20	9.50
	4	3.552	1.620	.440	-1.84	8.94
	6	2.963	2.458	.918	-5.22	11.15
6	1	-10.704*	2.238	.000	-18.15	-3.26
	2	7.516*	2.143	.031	.38	14.65
	3	.184	2.131	1.000	-6.91	7.28
	4	.589	1.878	1.000	-5.66	6.84
	5	-2.963	2.458	.918	-11.15	5.22

*. The mean difference is significant at the 0.05 level.

App_Table 21: Age ANOVA post-hoc comparisons

vi. Study six additional demographics

Age		Gender	
Mean	48.5	Male	7
Min	33	Female	8
Max	62	Education level	
Disclosed Mental Illness		Other (City & Guilds)	1
anxiety disorder	7	Standard grades/GCSEs	3
depression	6	Degree/Higher degree	4
schizophrenia	5	None	2
addiction	3	Highers/A levels	1
other (psychotic illness; aspergers; PTSD)	3	Undisclosed	4
bi-polar disorder	2	Service attended (type)	
personality disorder	2	carers	1
eating disorder	1	social inclusion	7
brain damage	0	supported living	5
dementia	0	supported accommodation	2
none	0	Duration of Penumbra support	
Number of diagnosed mental illnesses		Min (months)	6
1	8	Max (years)	14
2	2	Mean (years)	4.4
3	4	Number of I.ROCs completed	
5	1	N/A	4
Duration of mental illness (years)		Number of I.ROCs completed	
Min	5	0	1
Max	40	1	0
Mean	24	2 to 5	7
Employment status		6 to 9	4
Student	1	10 to 19	0
Volunteer	1	20 +	3
Unemployed	11	range	25
Undisclosed	2		

App_Table 22: Study six demographics

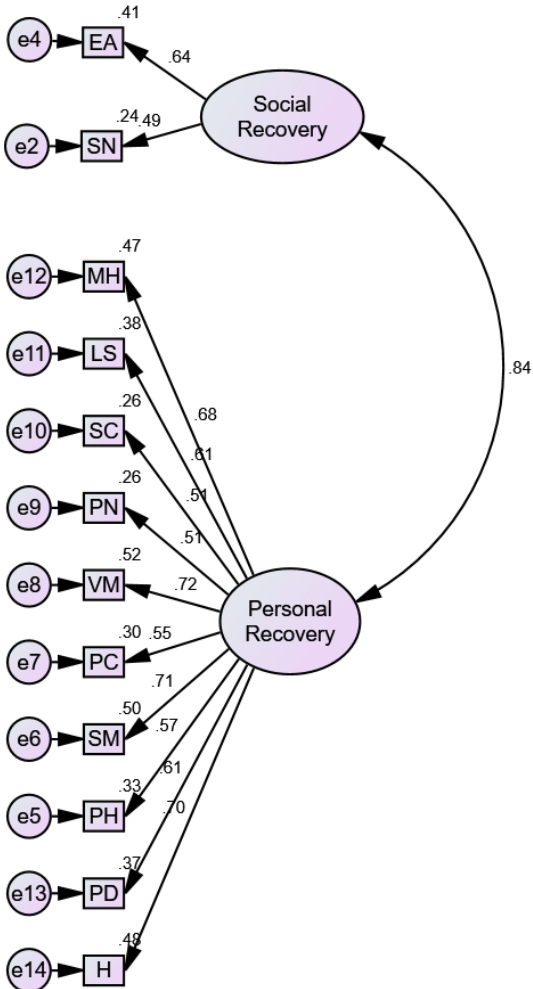
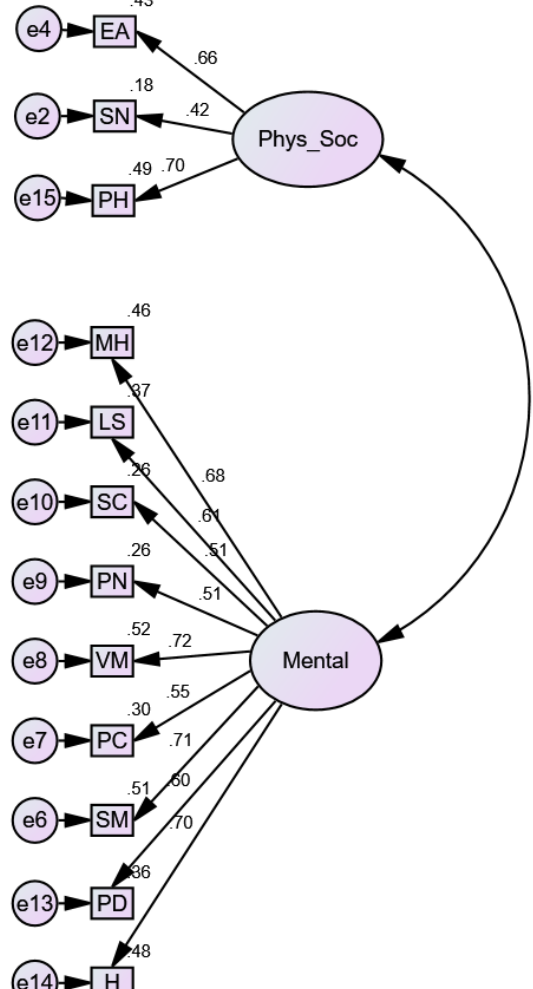
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19.b. CFA Models

Model 1	Model 2
HOPE Framework	Interpersonal / Intrapersonal
4 factors	2 Factors
Home (3); Opportunity (3); People (3); Empowerment (3)	Interpersonal (4); Intrapersonal (8)
Working Age Sample	
Standardised estimates: 0.41-0.72	Standardised estimates: 0.45-0.72
χ^2/df : 9.462; RMSEA: 0.069; CFI: 0.935; NFI: 0.928; TLI: 0.91	χ^2/df : 10.481; RMSEA: 0.073; CFI: 0.916; NFI: 0.908; TLI: 0.899
HOM: α =.63; OPP: α =.63; PEO: α =.55; EMP: α =.70	Inter: α =.67; Intra: α =.81
Rank: 9	Rank: 12
Under 18's Sample	
Standardised estimates: 0.3-0.72	Standardised estimates: 0.33-0.71
χ^2/df : 3.295; RMSEA: 0.072; CFI: 0.907; NFI: 0.873; TLI: 0.872	χ^2/df : 3.576; RMSEA: 0.076; CFI: 0.88; NFI: 0.843; TLI: 0.856
Rank: 10.5	Rank: 13.5

Model 3	Model 4
Unidimensional	EFA-Derived; Modified Inter/Intra
1 factor	2 factors
Recovery (12)	Interpersonal (4); Intrapersonal (8)
Working Age Sample	
Unstandardized estimates: 0.6-1	Unstandardized estimates: 0.6-1
χ^2/df : 10.481; RMSEA: 0.075; CFI: 0.913; NFI:0.905; TLI: 0.894	χ^2/df : 8.648; RMSEA: 0.066; CFI: 0.932; NFI:0.924; TLI: 0.919
α =.86 (no redundant items)	
Rank: 13	Rank: 5
Under 18's Sample	
Unstandardized estimates: 0.49-1	Unstandardized estimates: 0.49-1
χ^2/df : 3.657; RMSEA: 0.077; CFI: 0.879; NFI: 0.842; TLI: 0.852	χ^2/df : 2.583; RMSEA: 0.06; CFI: 0.926; NFI:0.886; TLI: 0.912
Rank: 15	3

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Model 5	Model 6
Studies 2 & 6	Study 3
2 Factors	2 factors
Social Recovery (2); Personal Recovery (10)	Physical & Social Wellbeing (3); Mental Wellbeing (9)
 <p>Model 5 Path Diagram: Social Recovery (Latent) is measured by EA (loading .64, error .41) and SN (loading .24, error .49). Personal Recovery (Latent) is measured by MH (.47, e12), LS (.38, e11), SC (.26, e10), PN (.26, e9), VM (.52, e8), PC (.30, e7), SM (.50, e6), PH (.33, e5), PD (.37, e13), and H (.48, e14). Correlation between Social and Personal Recovery is .84.</p>	 <p>Model 6 Path Diagram: Phys_Soc (Latent) is measured by EA (loading .66, error .43) and SN (loading .42, error .18). Mental (Latent) is measured by PH (loading .49, error .70), MH (.46, e12), LS (.37, e11), SC (.26, e10), PN (.26, e9), VM (.52, e8), PC (.30, e7), SM (.51, e6), PD (.36, e13), and H (.48, e14). Correlation between Phys_Soc and Mental is .78.</p>
Working Age Sample	
Standardised estimates: 0.49-0.72	Standardised estimates: 0.42-0.72
χ ² /df: 10.937; RMSEA: 0.075; CFI: 0.912; NFI: 0.904; TLI: 0.894	χ ² /df: 8.763; RMSEA: 0.066; CFI: 0.931; NFI: 0.923; TLI: 0.918
Personal: α=.85; Social: α=.41	Phys_Soc: α=.59; Mental: .84
Rank: 14	Rank: 7.5
Under 18's Sample	
Standardised estimates: 0.4-0.69	Standardised estimates: 0.4-0.72
χ ² /df: 3.116; RMSEA: 0.069; CFI: 0.902; NFI: 0.863; TLI: 0.882	χ ² /df: 2.696; RMSEA: 0.062; CFI: 0.921; NFI: 0.881; TLI: 0.905
Rank: 10.5	Rank: 5

Model 7	Model 8
Study six.1 (Under 18's)	Study six.2 (Working age adults)
3 Factors	2 factors
General Wellbeing (5); Managing Life (4); Physical & Social Wellbeing (3)	Healthy & active (3); Personal Recovery (9)
Working Age Sample	
Standardised estimates: 0.42-0.73	Standardised estimates: 0.48-0.72
χ^2/df : 8.531; RMSEA: 0.065; CFI: 0.938; NFI: 0.931; TLI: 0.920	χ^2/df : 9.381; RMSEA: 0.069; CFI: 0.936; NFI: 0.919; TLI: 0.922
General Wellbeing: α =.75; Managing Life: α =.72; Phys_Soc: α =.59	Health_Active: α =.67; Personal: α =.83
Rank: 4	Rank: 7.5
Under 18's Sample	
Standardised estimates: 0.43-0.72	Standardised estimates: 0.4-0.7
χ^2/df : 2.543; RMSEA: 0.059; CFI: 0.934; NFI: 0.896; TLI: 0.914	χ^2/df : 2.845; RMSEA: 0.064; CFI: 0.926; NFI: 0.864; TLI: 0.869
Rank: 2	Rank: 4

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Model 9	Model 10
Study six.3 (Older Adults)	Study 5 (2 nd order Recovery factor)
3 Factors	4 factors (and one 2 nd order factor)
General Wellbeing (6); Daily Living (4); Meaningful Activity (2)	[Recovery]; General Wellbeing (5); Daily Living (3); Meaningful Activity (3); Participation & Control (1)
<p>Model 9 Path Diagram: Three latent factors (General Wellbeing, Daily Living, Meaningful Activity) are measured by observed variables. Standardized factor loadings are: General Wellbeing (LS: .61, PD: .60, VM: .71, PC: .54, SM: .71, H: .69); Daily Living (MH: .69, SC: .51, PH: .58, PN: .51); Meaningful Activity (EA: .55, SN: .46). Correlations: General Wellbeing-Daily Living (.88), General Wellbeing-Meaningful Activity (.96), Daily Living-Meaningful Activity (.90).</p>	<p>Model 10 Path Diagram: Four latent factors (Recovery, General Wellbeing, Daily Living, Meaningful Activity) are measured by observed variables. Recovery is a second-order factor influencing the other three. Standardized factor loadings: Recovery to General Wellbeing (.93), Recovery to Daily Living (.98), Recovery to Meaningful Activity (.84); General Wellbeing (MH: .69, PH: .56, VM: .73, H: .71, PN: .51); Daily Living (LS: .63, SC: .52, SM: .74); Meaningful Activity (EA: .56, PD: .70, SN: .48); PC (.12).</p>
Working Age Sample	
Standardised estimates: 0.42-0.73	Standardised estimates: 0.48-0.74
χ^2/df : 11.343; RMSEA: 0.077; CFI: 0.915; NFI: 0.908; TLI: 0.890	χ^2/df : 9.194; RMSEA: 0.068; CFI: 0.933; NFI: 0.925; TLI: 0.913
General Wb: α =.81; DailyLiving: α =.64; Activity: α =.41	General Wb: α =.76; Daily Living: α =.65; Meaningful Activity: α =.59; P&C [N/A]
Rank: 15	Rank: 6
Under 18's Sample	
Standardised estimates: 0.4-0.7	Standardised estimates: 0.44-0.71
χ^2/df : 3.343; RMSEA: 0.073; CFI: 0.899; NFI: 0.864; TLI: 0.869	χ^2/df : 3.035; RMSEA: 0.068; CFI: 0.912; NFI: 0.876; TLI: 0.887
Rank: 12	Rank: 7

Model 11	Model 12
Study 5 (reduced items)	Modified Model 11 v1
3 Factors	3 factors
General Wellbeing (6); Daily Living (4); Meaningful Activity (2)	General wellbeing (5); Daily Living (3); Meaningful Activity (4)
Working Age Sample	
Standardised estimates: 0.48-0.73	Standardised estimates: 0.44-0.74
χ^2/df : 8.240; RMSEA: 0.064; CFI: 0.947; NFI: 0.94; TLI: 0.929	χ^2/df : 10.364; RMSEA: 0.073; CFI: 0.923; NFI: 0.916; TLI: 0.901
General Wb: α =.76; Daily Living: α =.65; Meaningful Activity: α =.59	General Wb: α =.76; Daily Living: α =.65; Meaningful Activity: α =.62
Rank: 2	Rank: 11
Under 18's Sample	
Standardised estimates: 0.4-0.72	Standardised estimates: 0.41-0.71
χ^2/df : 2.989; RMSEA: 0.068; CFI: 0.921; NFI: 0.888; TLI: 0.895	χ^2/df : 3.602; RMSEA: 0.076; CFI: 0.888; NFI: 0.876; TLI: 0.855
Rank: 6	Rank: 13.5

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Model 13	Model 14
Modified Model 11v2	Modified Model 11 v3
3 Factors	3 factors
General Wellbeing (5); Daily Living (4); Meaningful Activity (3)	General wellbeing (6); Daily Living (3); Meaningful Activity (3)
Working Age Sample	
Standardised estimates: 0.48-0.77	Standardised estimates: 0.48-0.74
χ^2/df : 8.2; RMSEA: 0.064; CFI: 0.941;	χ^2/df : 9.802; RMSEA: 0.071; CFI: 0.928;
NFI: 0.933; TLI: 0.924	NFI: 0.92; TLI: 0.907
General Wb: α =.76; Daily Living: α =.71;	General Wb: α =.77; Daily Living: α =.65;
Meaningful Activity: α =.59	Meaningful Activity: α =.59
Rank: 3	Rank: 10
Under 18's Sample	
Standardised estimates: 0.42-0.71	Standardised estimates: 0.4-0.71
χ^2/df : 3.049; RMSEA: 0.068; CFI: 0.912;	χ^2/df : 3.123; RMSEA: 0.069; CFI: 0.908;
NFI: 0.876; TLI: 0.886	NFI: 0.873; TLI: 0.886
Rank: 8	Rank: 9

Model 15
Modified Model 13
3 factors
General Wellbeing (4); Daily Living (4); Meaningful Activity (4)
Working Age Sample
Standardised estimates: 0.49-0.78
χ^2/df : 7.241; RMSEA: 0.06; CFI: 0.949; NFI: 0.941; TLI: 0.934
Personal & Mental Wb: α =.74; Daily Living: α =.71; Meaningful Activity & PH: α =.67
Rank: 1
Under 18's Sample
Standardised estimates: 0.3-0.72
χ^2/df : 2.408; RMSEA: 0.056; CFI: 0.946; NFI: 0.913; TLI: 0.922
Rank: 1

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19.c. Questions with a lower than 95% response rate

Study	Measure	Question	Total N	N	Response rate
S1	BASIS-32	IN THE PAST WEEK, how much difficulty have you been having in the area of: School	170	125	73.5%
		Work	170	161	94.7%
		Sexual activity or preoccupation	170	160	94.1%
S2	CLSS	I control my alcohol/drug problems	59	22	37.3
		I take my medications (if any) as prescribed		28	47.5
		I get along with the people I live with.		53	89.8
		My relationship with my child(ren) interferes with my life.		19	32.2
		My relationship with my spouse interferes with my life.		43	72.9
		I behave in an acceptable manner.		51	86.4
		My relationship with my parent(s) interferes with my life.		47	79.7
	MDES	You can't fight city hall	138	124	89.9
	Wellbeing	If you don't have your own place to live, is it because...	138	26	18.8
		If you have a child or children, do/does he/she/they live...		41	29.7
		If you have a child or children, how satisfied are you with he/she/their living situation?		40	29.0
		How often do you feel that mental health professionals (people like psych-techs, nurses, doctors, counsellors) listen to you and consider what you have to say to be valid or important?		111	80.4
		How often, if ever, have you been told that you were resistant or rebellious if you disagreed with the opinions or advice of mental health professionals?		111	80.4
		If you do recognize a sign, symptom, or feelings that indicate you may be having psychological or emotional problems, how often can you take care of the problem before it becomes severe?		124	89.9
		How important is it to you to have free choice in picking your own therapist?		117	84.8
	How often have you been able to get the type of treatment you wanted for a psychological or emotional problem?		103	74.6	
S3	None				
S4	None				
S5	None				
S6	None				

App_Table 23: Questions with a lower than 95% response rate across the 6 quantitative studies

19.d. Distribution of I.ROC indicator scores in each study

		STUDY								STUDY						
		1	2	3	4	5	6			1	2	3	4	5	6	
SCORE	Mental Health	1	8	2	0	0	27	2	Personal Network	1	5	0	2	0	15	0
		2	19	11	14	0	42	10		2	17	5	6	0	21	7
		3	71	35	39	0	32	23		3	48	30	30	0	32	19
		4	24	44	53	0	4	13		4	22	29	28	0	14	20
		5	27	127	112	0	1	30		5	37	65	51	0	13	12
		6	20	13	18	0	0	3		6	41	106	119	0	11	23
	Life Skills	1	3	1	0	0	12	2	Social Network	1	45	12	16	0	47	6
		2	7	0	7	0	20	2		2	22	32	41	0	29	30
		3	45	16	19	0	41	20		3	37	65	54	0	17	24
		4	31	22	26	0	18	10		4	33	64	64	0	8	13
		5	58	92	64	0	10	31		5	23	45	42	0	4	7
		6	25	105	120	0	5	16		6	9	19	19	0	2	1
	Safety & Comfort	1	4	1	2	0	8	1	Valuing Myself	1	16	4	6	0	32	2
		2	9	4	7	0	22	2		2	27	13	19	0	29	11
		3	34	17	11	0	28	12		3	52	48	44	0	38	25
		4	20	17	23	0	20	13		4	19	52	35	0	5	14
		5	47	87	62	0	19	27		5	22	79	77	0	2	22
		6	56	109	131	0	7	26		6	29	40	55	0	0	7
	Physical Health	1	9	6	5	0	25	5	Participatn & Control	1	6	4	1	0	11	0
		2	26	10	19	0	34	8		2	11	4	8	0	18	4
		3	55	43	55	0	31	16		3	52	24	30	0	37	17
		4	30	58	37	0	11	17		4	30	43	28	0	16	16
		5	33	99	91	0	3	30		5	45	92	76	0	16	29
		6	17	20	29	0	1	5		6	25	69	93	0	8	15
Exercise & Activity	1	21	3	4	0	29	1	Self Management	1	1	2	2	0	8	1	
	2	21	25	39	0	19	7		2	17	6	12	0	27	12	
	3	50	83	66	0	23	32		3	55	24	28	0	46	18	
	4	32	62	48	0	11	20		4	35	47	27	0	18	13	
	5	25	41	47	0	19	15		5	34	93	86	0	7	33	
	6	20	23	32	0	6	5		6	27	63	81	0	0	4	
Purpose & Direction	1	32	1	6	0	15	1	Hope for the future	1	15	0	4	0	18	2	
	2	32	12	8	0	23	3		2	23	11	16	0	31	9	
	3	35	25	40	0	40	18		3	42	21	33	0	39	26	
	4	34	44	43	0	13	26		4	29	49	35	0	15	9	
	5	27	86	77	0	9	24		5	31	96	87	0	3	25	
	6	9	68	62	0	7	9		6	27	57	61	0	0	10	

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19.e. Descriptive statistics for each Study six dataset

	<i>Full sample</i>	<i>All baseline</i>	<i>Under 18's</i>	<i>Working age</i>	<i>Older adults</i>
<i>N (no missing data)</i>	17047	4544	890	3521	104
<i>Mean Total</i>	43.53	39.81	46.23	38.16	40.52
<i>Std Error</i>	.088	.16	.315	.176	1.168
<i>Median</i>	43	39	46	37	40.50
<i>Std. Dev</i>	11.43	10.791	9.40	10.45	11.907
<i>Min Score</i>	7	12	20	12	12
<i>Max Score</i>	72	72	70	72	67
<i>Skew</i>	.021	.171	-.145	.308	-.207
<i>Kurtosis</i>	-.413	-.36	-.215	-.156	-.108
<i>Shapiro-Wilk</i>	.034**	.995**	.995**	.992**	.985**

App_Table 24: Descriptive statistics Study six

19.f. Inter-item correlation matrices

Study 1	PH	EA	PD	SN	MH	LS	SC	PN	VM	PC	SM	H
Physical Health		.38	.27	.26	.39	.34	.31	.33	.51	.34	.35	.52
Exercise & Activity	.38		.40	.28	.16	.28	.07	.16	.29	.24	.10	.38
Purpose & Direction	.27	.40		.38	.31	.19	.28	.27	.34	.26	.23	.48
Social Network	.26	.28	.38		.24	.11	.11	.40	.31	.18	.12	.31
Mental Health	.39	.16	.31	.24		.32	.29	.37	.55	.24	.37	.55
Life Skills	.34	.28	.19	.11	.32		.37	.28	.42	.37	.50	.31
Safety & Comfort	.31	.07	.28	.11	.29	.37		.43	.36	.37	.40	.29
Personal Network	.33	.16	.27	.40	.37	.28	.43		.50	.41	.42	.45
Valuing Myself	.51	.29	.34	.31	.55	.42	.36	.50		.47	.59	.68
Participation & Control	.34	.24	.26	.18	.24	.37	.37	.41	.47		.49	.38
Self Management	.35	.10	.23	.12	.37	.50	.40	.42	.59	.49		.42
Hope for the Future	.52	.38	.48	.31	.55	.31	.29	.45	.68	.38	.42	
Correlations <0.3	2	8	6	7	4	4	5	3	1	4	3	1

Study 2	PH	EA	PD	SN	MH	LS	SC	PN	VM	PC	SM	H
Mental Health		.33	.39	.31	.47	.48	.30	.32	.49	.33	.55	.45
Life Skills	.33		.26	.31	.12	.12	.08	.19	.20	.11	.21	.24
Safety & Comfort	.39	.26		.32	.42	.45	.34	.36	.37	.34	.47	.44
Physical Health	.31	.31	.32		.30	.21	.14	.39	.25	.23	.34	.32
Exercise & Activity	.47	.12	.42	.30		.45	.46	.43	.57	.44	.58	.59
Purpose & Direction	.48	.12	.45	.21	.45		.38	.28	.46	.36	.54	.43
Personal Network	.30	.08	.34	.14	.46	.38		.38	.40	.40	.41	.44
Social Network	.32	.19	.36	.39	.43	.28	.38		.44	.36	.47	.45
Valuing Myself	.49	.20	.37	.25	.57	.46	.40	.44		.48	.58	.64
Participation & Control	.33	.11	.34	.23	.44	.36	.40	.36	.48		.63	.49
Self Management	.55	.21	.47	.34	.58	.54	.41	.47	.58	.63		.58
Hope for the Future	.45	.24	.44	.32	.59	.43	.44	.45	.64	.49	.58	
Correlations <0.3	0	9	1	5	2	3	2	2	2	2	1	1

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Study 3	PH	EA	PD	SN	M H	LS	SC	PN	V M	PC	S M	H
Mental Health		.54	.54	.40	.59	.52	.42	.34	.61	.47	.58	.59
Life Skills	.54		.45	.49	.38	.41	.26	.26	.45	.31	.33	.40
Safety & Comfort	.54	.45		.52	.53	.58	.44	.45	.57	.55	.61	.61
Physical Health	.40	.49	.52		.28	.32	.18	.24	.41	.31	.34	.35
Exercise & Activity	.59	.38	.53	.28		.55	.46	.48	.63	.55	.61	.65
Purpose & Direction	.52	.41	.58	.32	.55		.51	.46	.61	.65	.72	.59
Personal Network	.42	.26	.44	.18	.46	.51		.56	.56	.51	.56	.45
Social Network	.34	.26	.45	.24	.48	.46	.56		.53	.48	.57	.52
Valuing Myself	.61	.45	.57	.41	.63	.61	.56	.53		.57	.64	.67
Participation & Control	.47	.31	.55	.31	.55	.65	.51	.48	.57		.79	.64
Self Management	.58	.33	.61	.34	.61	.72	.56	.57	.64	.79		.72
Hope for the Future	.59	.40	.61	.35	.65	.59	.45	.52	.67	.64	.72	
Correlations <0.3	0	2	0	3	1	0	2	2	0	0	0	0

Study six	PH	EA	PD	SN	M H	LS	SC	PN	V M	PC	S M	H
Mental Health		.49	.37	.27	.44	.37	.27	.30	.41	.28	.38	.38
Life Skills	.49		.42	.33	.31	.36	.20	.26	.30	.26	.32	.33
Safety & Comfort	.37	.42		.37	.38	.39	.27	.31	.39	.32	.41	.43
Physical Health	.27	.33	.37		.26	.21	.18	.25	.27	.22	.27	.31
Exercise & Activity	.44	.31	.38	.26		.38	.37	.35	.52	.33	.47	.49
Purpose & Direction	.37	.36	.39	.21	.38		.32	.30	.37	.33	.46	.37
Personal Network	.27	.20	.27	.18	.37	.32		.30	.32	.34	.35	.31
Social Network	.30	.26	.31	.25	.35	.30	.30		.37	.35	.36	.37
Valuing Myself	.41	.30	.39	.27	.52	.37	.32	.37		.37	.50	.53
Participation & Control	.28	.26	.32	.22	.33	.33	.34	.35	.37		.50	.39
Self Management	.38	.32	.41	.27	.47	.46	.35	.36	.50	.50		.49
Hope for the Future	.38	.33	.43	.31	.49	.37	.31	.37	.53	.39	.49	
Correlations <0.3	4	4	1	8	1	2	5	5	2	3	1	0

Appendices

Study 5	PH	EA	PD	SN	MH	LS	SC	PN	VM	PC	SM	H
Mental Health		.13	.15	.18	.38	.15	.07	.20	.36	.10	.20	.35
Life Skills	.13		.33	.21	.29	.17	-.05	.10	.31	.21	.15	.16
Safety & Comfort	.15	.33		.17	.24	.23	.17	.01	.14	.17	.19	.17
Physical Health	.18	.21	.17		.06	-.05	.00	.16	.12	.25	.05	.07
Exercise & Activity	.38	.29	.24	.06		.45	.26	.31	.59	.12	.43	.43
Purpose & Direction	.15	.17	.23	-.05	.45		.27	.07	.24	.27	.49	.18
Personal Network	.07	-.05	.17	.00	.26	.27		.24	.24	.24	.16	.21
Social Network	.20	.10	.01	.16	.31	.07	.24		.20	.17	.15	.36
Valuing Myself	.36	.31	.14	.12	.59	.24	.24	.20		.22	.37	.50
Participation & Control	.10	.21	.17	.25	.12	.27	.24	.17	.22		.37	.19
Self Management	.20	.15	.19	.05	.43	.49	.16	.15	.37	.37		.28
Hope for the Future	.35	.16	.17	.07	.43	.18	.21	.36	.50	.19	.28	
Correlations <0.3	8	9	10	11	5	9	11	9	6	10	7	7

Study 6	PH	EA	PD	SN	MH	LS	SC	PN	VM	PC	SM	H
Mental Health		.24	.53	.19	.56	.60	.55	.45	.65	.47	.69	.51
Life Skills	.24		.34	.36	.22	.16	.15	.39	.29	.09	.23	.34
Safety & Comfort	.53	.34		.30	.57	.57	.45	.39	.71	.42	.60	.63
Physical Health	.19	.36	.30		.36	.17	.03	.17	.35	.25	.25	.37
Exercise & Activity	.56	.22	.57	.36		.65	.60	.51	.70	.49	.74	.73
Purpose & Direction	.60	.16	.57	.17	.65		.66	.39	.65	.46	.70	.63
Personal Network	.55	.15	.45	.03	.60	.66		.53	.55	.54	.70	.52
Social Network	.45	.39	.39	.17	.51	.39	.53		.52	.43	.57	.49
Valuing Myself	.65	.29	.71	.35	.70	.65	.55	.52		.58	.78	.77
Participation & Control	.47	.09	.42	.25	.49	.46	.54	.43	.58		.70	.66
Self Management	.69	.23	.60	.25	.74	.70	.70	.57	.78	.70		.72
Hope for the Future	.51	.34	.63	.37	.73	.63	.52	.49	.77	.66	.72	
Correlations <0.3	2	7	0	6	1	2	2	1	1	2	2	0

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19.g. Breakdown of TRT data by sample

		N	Total	Subscales			
				Somatic	Social Dysfunction	Anxiety	Severe Depression
GHQ-28	MHO	104	.826**	.622**	.594**	.773**	.803**
I.ROC	University	70	0.899**				
	MHO	104	0.894**				
	Total	174	0.902**				

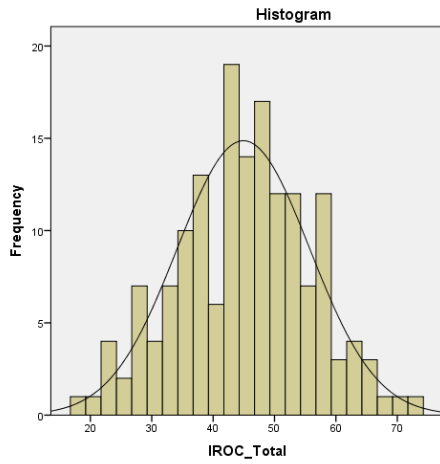
App_Table 25: Study 2: Pearson's Correlation coefficients for both I.ROC and GHQ-28 total scores and subscales between time 1 and time 2.

		N	Total	Subscales			
				Somatic	Social Dysfunction	Anxiety	Severe Depression
GHQ-28	MHO	104	.741**	.624**	.556**	.748**	.656**
I.ROC	University	70	0.880**				
	MHO	104	0.867**				
	Total	174	0.880**				

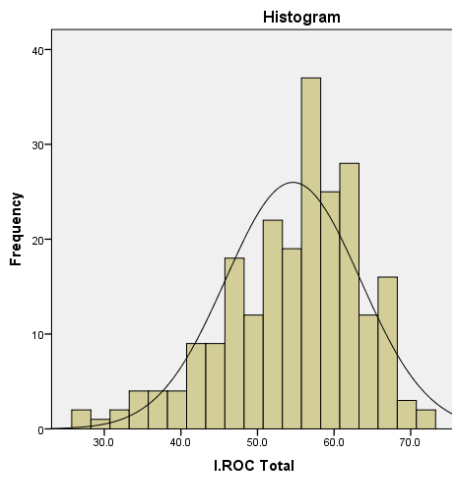
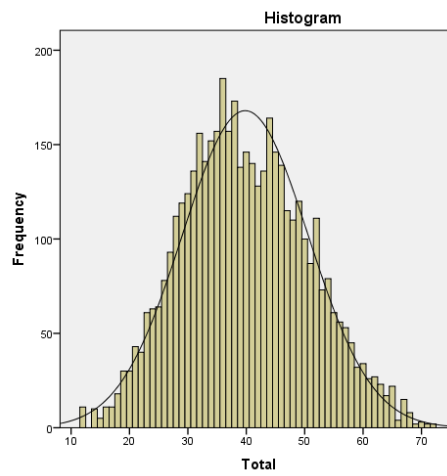
App_Table 26: Study 2: Spearman's rho coefficients for both I.ROC and GHQ-28 total scores and subscales between time 1 and time 2.

19.h. I.ROC Total Histograms, all studies

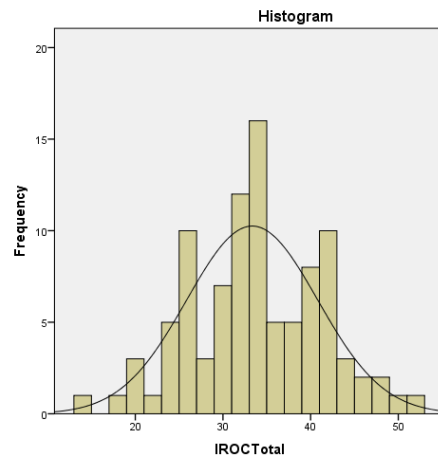
Study 1: Penumbra support services



Study six: Penumbra support services, baseline

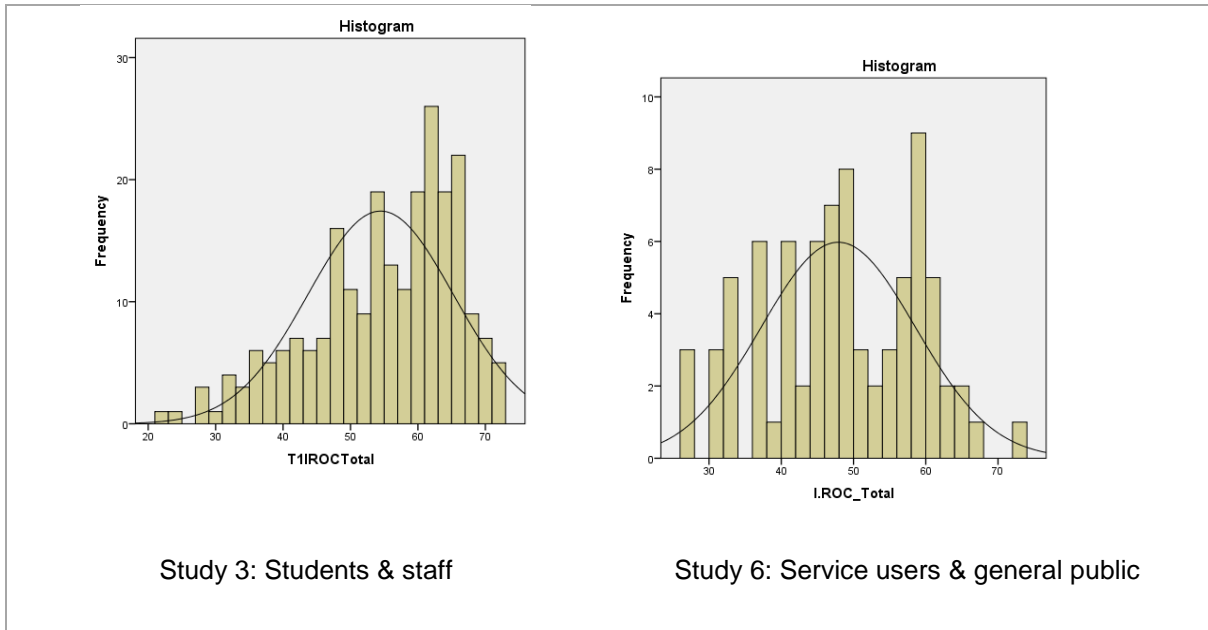


Study 2: Students



Study 5: Trauma support services

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19.i. Additional bivariate correlations

i. Study 1

		RAS						
		A	B	C	D	E	Total	I.ROC
BASIS-32	A	-.467**	-.238*	-.353**	-.298**	-.368**	-.402**	-.552**
	B	-.474**	-0.165	-.443**	-.220*	-.418**	-.492**	-.524**
	C	-.463**	-.233*	-.439**	-0.160	-.438**	-.472**	-.529**
	D	-.464**	-0.091	-.316**	-0.201	-.374**	-.418**	-.360**
	E	-.337**	-0.116	-0.174	-0.117	-.326**	-.291**	-.237*
	Total	-.537**	-.231*	-.450**	-.254*	-.472**	-.520**	-.558**
BASIS-29	A	-.519**	-.347**	-.413**	-.337**	-.439**	-.494**	-.591**
	B	-.524**	-.314**	-.468**	-.241**	-.520**	-.532**	-.553**
	C	-.535**	-.301**	-.513**	-.306**	-.510**	-.544**	-.587**
	D	-.538**	-.268**	-.384**	-.345**	-.482**	-.507**	-.399**
	E	-.378**	-.194*	-.250**	-0.138	-.385**	-.376**	-.283**
	Total	-.598**	-.360**	-.508**	-.335**	-.560**	-.600**	-.613**
I.ROC		.762**	.484**	.698**	.603**	.662**	.786**	

App_Table 27: Spearman's rho correlations between measure totals and subscales in study 1

		RAS						
		A	B	C	D	E	Total	I.ROC
BASIS-32	A	-.485**	-0.186	-.367**	-.291**	-.371**	-.385**	-.515**
	B	-.425**	-0.076	-.393**	-0.165	-.360**	-.386**	-.435**
	C	-.478**	-0.166	-.447**	-0.168	-.464**	-.435**	-.478**
	D	-.401**	-0.046	-.262*	-0.199	-.282**	-.349**	-.252**
	E	-.290**	-0.055	-0.118	-0.061	-.289**	-.232*	-.141
	Total	-.512**	-0.139	-.411**	-.225*	-.433**	-.441**	-.468**
BASIS-29	A	-.557**	-.298**	-.426**	-.338**	-.452**	-.488**	-.583**
	B	-.544**	-.235**	-.463**	-.232**	-.541**	-.500**	-.518**
	C	-.529**	-.184*	-.478**	-.264**	-.485**	-.492**	-.554**
	D	-.521**	-.260**	-.323**	-.298**	-.388**	-.465**	-.328**
	E	-.377**	-.211*	-.220*	-0.088	-.353**	-.336**	-.216**
	Total	-.609**	-.282**	-.477**	-.308**	-.535**	-.550**	-.562**

App_Table 28: Pearson's r correlations between additional measures in Study 1

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ii. Study 2

	I.ROC	IPAQ	CLSS A	CLSS B	CLSS C	CLSS D	CLSS Total	GHQ A	GHQ B	GHQ C	GHQ D	GHQ Total	MDES-28	MDES-27	Wellbeing	RSES
Hope	.683**	.009	.436**	.534**	.575**	.456**	.628**	-.467**	-.436**	-.367**	-.355**	-.491**				
IPAQ	.102		-.291	-.184	-.034	-.254	-.282	.154	.351**	.167	.326**	.261*				
CLSS A	.549**							-.253	-.290*	-.213	-.270	-.273				
CLSS B	.622**							-.419**	-.588**	-.341*	-.525**	-.525**				
CLSS C	.552**							-.226	-.266	-.106	-.232	-.250				
CLSS D	.640**							-.399**	-.533**	-.299*	-.502**	-.487**				
CLSS Total	.723**							-.447**	-.571**	-.379**	-.528**	-.541**				
GHQ A	-.435**												-.160	-.216*	-.153	-.380**
GHQ B	-.535**												-.209*	-.246**	-.323**	-.429**
GHQ C	-.368**												-.214*	-.268**	-.229*	-.339**
GHQ D	-.491**												-.166	-.227*	-.330**	-.472**
GHQ Total	-.572**												-.213*	-.272**	-.309**	-.490**
MDES-28	.433**													.987	.335**	.570**
MDES-27	.469**														.401**	.611**
Wellbeing	.499**															.386**
RSES	.579**															

App_Table 29: Spearman's rho correlations between measure totals and subscales in study 2

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	IPAQ	CLSS A	CLSS B	CLSS C	CLSS D	CLSS Total	GHQ A	GHQ B	GHQ C	GHQ D	GHQ Total	MDES-27	Wellbeing	RSES
Hope	-0.018	.545**	.622**	.592**	.471**	.678**	-.499**	-.460**	-.356**	-.500**	-.543**			
IPAQ		-0.193	-0.204	0.085	-0.230	-0.200	0.213	.351**	.247*	.356**	.356**			
CLSS A							-.366**	-.450**	-.259*	-.380**	-.425**			
CLSS B							-.511**	-.694**	-.401**	-.626**	-.655**			
CLSS C							-.330*	-.361**	-0.132	-.328*	-.341**			
CLSS D							-.419**	-.506**	-.325*	-.494**	-.509**			
CLSS Total							-.493**	-.616**	-.346**	-.553**	-.588**			
GHQ A												-.210*	-0.139	-.351**
GHQ B												-.289**	-.236**	-.466**
GHQ C												-.287**	-.233**	-.367**
GHQ D												-.264**	-.286**	-.455**
GHQ Total												-.328**	-.280**	-.514**
MDES-27													.429**	.467**
Wellbeing														.487**

App_Table 30: Study 2 Other measure Pearson's correlations

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	MH	LS	S&C	PH	E&A	P&D	PN	SN	VM	P&C	SM	H	I.ROC TOTAL	F1	F2	F3
WALKING	0.167	0.042	0.084	0.210	0.149	0.100	-0.049	0.032	0.085	-0.105	-0.004	0.015	0.102	0.066	0.005	0.173
MODERATE ACTIVITY	-0.172	-0.039	-0.011	-0.036	0.045	0.151	-0.047	0.047	-0.105	-0.146	-0.093	-0.047	-0.050	-0.118	-0.095	0.081
VIGOROUS ACTIVITY	-0.165	-0.056	-.310**	0.200	.491**	0.078	-0.001	0.075	-0.070	-0.222	0.015	-0.045	0.018	-0.086	-0.194	.295*
TOTAL ACTIVITY	-0.007	-0.006	-0.063	0.211	.308**	0.155	-0.052	0.068	-0.004	-0.211	-0.031	-0.024	0.061	-0.029	-0.105	.263*

App_Table 31: Pearson's correlations for IPAQ/I.ROC items

iii. Studies 3-6

		I.ROC			
		Total	F1	F2	F3
Study 3	GHQ	-.744**	-.746**	-.654**	-.593**
	A	-.593**	-.554**	-.522**	-.494**
	B	-.617**	-.644**	-.558**	-.467**
	C	-.553**	-.555**	-.453**	-.469**
	D	-.723**	-.751**	-.676**	-.521**
Study 6	Recovery Star	.774**	.755**	.727**	.545**

App_Table 33: Spearman's rho correlations between measure totals and subscales in Studies 3 and 6

	Anxiety	Depression	HADS Total
WSAS	.255**	.556**	.505**
RSES	-.330**	-.499**	-.508**

App_Table 32: Pearson's r correlations for additional measures in Study 5

	WSAS	RSES	Anxiety	Depression	HADS Total	I.ROC	I.ROC1	I.ROC2	I.ROC3
WSAS		-.250*	.553**	.272**	.531**	-.452**	-.295**	-.428**	-.256*
RSES	-.250*		-.422**	-.280**	-.433**	.493**	.488**	.332**	.302**
Anxiety	.553**	-.422**		.329**	.758**	-.371**	-.353**	-.435**	-0.152
Depression	.272**	-.280**	.329**		.848**	-.611**	-.516**	-.415**	-.490**
HADS Total	.531**	-.433**	.758**	.848**		-.607**	-.540**	-.509**	-.398**

App_Table 34: Spearman's rho correlations between measure totals and subscales in study 5

19.j. Non-adjusted totals correlations benchmarking measures

Measure	n	I.ROC		95% CI	
		Pearson's r	p	LL	UL
BASIS-32	104	-.468	<.001	-0.605	-0.303
Relation to self/ others	104	-.515**	<.001	-0.643	-0.358
Daily living/ role functioning	104	-.435**	<.001	-0.579	-0.265
Depression/ anxiety	104	-.478**	<.001	-0.614	-0.315
Impulsive/ addictive behaviour	104	-.252**	.01	-0.424	-0.063
Psychosis	104	-.141	.15	-0.324	0.053
MDES-28	119	.461**	.305	0.593	.461**
CLSS	59	.617**	<.001	0.429	0.753
Wellbeing Scale	138	.337**	<.001	0.181	0.477

App_ Table 35: Pearson's r correlations for non-adjusted measure totals and subscales

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Appendix 20. Excerpts from Penumbra reports 20.a. 2017-18 Training Feedback Report: I.ROC Page

I.ROC

# People providing feedback	Of Value	Learned	Apply at Work	Interest	Delivery	Needs Met	Recommend	Length	Average total
122	3.79	3.75	3.57	3.75	3.86	3.78	3.77	2.01	28.03

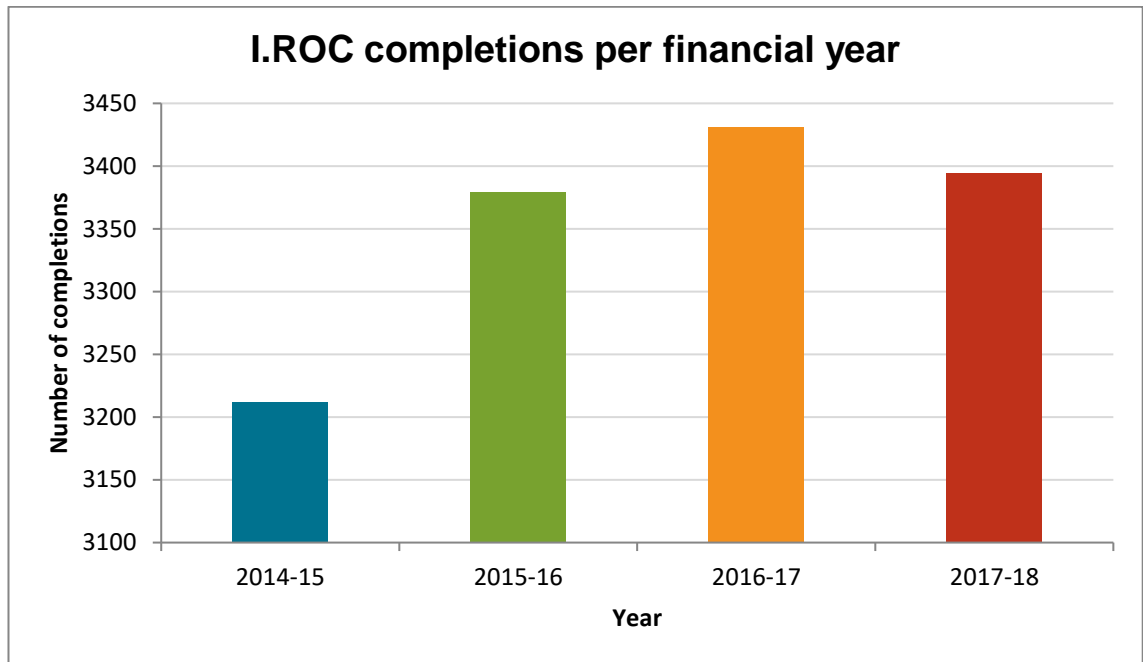
	Of Value	Style & content	Future training needs	Most useful	Least useful	Not Learned	Other/general Comments
Top scored feedback	How to put I.ROC into practice, and how to get the most out of it	Very relaxed but engaging. Very approachable	As a team we will need to get online training on our specific, tailored online version	The practice/practical aspect		nothing	thank you
Bottom scored feedback			Not immediately relevant to my role. Other training would be more useful but that's nto penumbras problem				



20.b. I.ROC Report 2017-18 (Excerpt)
Headline Figures

3394 I.ROCs completed in 2017-18

This is down slightly on the previous year (n=3431)



All I.ROCs to date

- 12,219 people on Carista
- Total I.ROCs completed: 23,464
- People with at least one I.ROC: 7,131 (58% of all people on Carista)
- People with two or more I.ROCs: 4303 (60% of all people with an I.ROC)

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20.c. Recognised for Excellence submission 2016: I.ROC completions target graph, p. 33

Table 48: Total number of I.ROC'S completed each year within Penumbra



We use I.ROC to measure the impact of our services to ensure that they achieve the strategic aim of Recovery for people. Results show we have achieved our target for the level of I.ROC completions and that our approach is therefore embedded in the organisation. (Reference 1a, 1b, 2a, 2b, 3a, 3b, 4a, 5a, 5b, 5e)

20.d. I.ROC Training Session Guide

Sessions	Learning Outcomes	Resources Required
All courses	Introduction & Icebreaker	None
Session 1 Recovery	<ul style="list-style-type: none"> • Understanding of Recovery • Factors relevant to Wellbeing and links to Recovery. • Understanding of HOPE Framework and link to wellbeing and recovery • Understanding of how I.ROC measures recovery. 	PC & Powerpoint slides
Session 2 Validation	<ul style="list-style-type: none"> • Understanding of Validation Process • Knowledge that I.ROC is a validated measure of recovery. • Confidence in the tool as an accurate measure. • Confidence that data, when I.ROC is used as intended and data analysed correctly that reliable conclusions can be drawn 	PC & Powerpoint slides
Session 3 Reporting	<ul style="list-style-type: none"> • Understanding of How I.ROC data can be used to report personal recovery at an individual level; • Understanding of how I.ROC scores for a group of people can be aggregated to provide results at a service or organisational level. 	Sample Reports
Session 4 I.ROC in Practice	<ul style="list-style-type: none"> • Understanding of design, and use of all the I.ROC materials. • Introducing I.ROC • The I.ROC conversation in practice • Understanding that I.ROC should be used to provide structure and focus to a conversation • Understanding of listening and conversation skills that underpin I.ROC. 	Per person:I.ROC questionnaire I.ROC guidance I.ROC answersheet
Session 5 Personal outcomes	<ul style="list-style-type: none"> • Understanding of what is an outcome and why outcomes based approaches deliver what is meaningful to people. • Understanding of how I.ROC can be used to help identify outcomes for people. • Importance of visual representation of recovery 	Exercise Picture Me Handout Coloured Pens

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<p>Session 6</p> <p>Personal Planning</p> <p>GROW model</p>	<ul style="list-style-type: none"> • Personal Planning • Understanding of personal planning process and how to create a plan that is based on personally identified outcomes. • Understanding of Coaching skills and style and how this supports the process. • Exercise of applying GROW to create an outcomes focused plan for someone. 	<p>GROW worksheet</p>
<p>Session 7</p> <p>HOPE Toolkit</p>	<ul style="list-style-type: none"> • Hope Toolkit • Understanding of How Toolkit is structured and how it can be used. • Understanding of how to link Toolkit to I.ROC • Understanding of plans and tools in the toolkit can be used to promote self-management and recovery strategies. 	<p>HOPE Toolkits 1 per 2 people.</p>
<p>Session 8</p> <p>I.ROC Wellbeing</p>	<ul style="list-style-type: none"> • Web demo of I.ROC wellbeing from practitioner view. • How to add a client & input record details • How to input I.ROC data • Reports 	<p>PC & wifi</p>

Appendix 21. Recommendations & Future Research

21.a. Development of Y.ROC

Introduction

Recovery, “a way of living a satisfying, hopeful, and contributing life even with limitations caused by illness” (Anthony, 1993) has become deeply embedded within Scottish adult mental health policy and practice, and organisations in Scotland are under increasing pressure to evidence the outcomes of support that they provide. “Information is vital and we need to be able to show what difference is being made and to be able to measure ‘like with like’ in order that we can learn from and share success across the country” (Delivering for Mental Health; Scottish Executive, 2006a). I.ROC provides one such approach to measuring personal recovery outcomes, that is now endorsed by the Scottish Government, “Integration Authorities and Local Authorities will therefore wish to mainstream a recovery-oriented and rights-based approach throughout clinical services, through workforce development and use of tools like I.ROC (Individual Recovery Outcomes Counter)” (Scottish Mental Health Strategy 2017-2027.)

Mental health difficulties do not only affect adults however, and whilst recovery is well-embedded within adult mental health services in Scotland, it is still a fairly novel concept within young people’s services, at a time at which more young people are speaking up about mental health difficulties than ever before. Ten percent of children start school with social, emotional or behavioural difficulties, whilst over one third of all young people (40%, See Me) struggle with their mental health. Half (50%) of mental health problems begin before the age of 14 and 75 per cent before 24. The new Scottish ten year strategy for mental health outlines a series of outcomes for children and young people, including the provision of ‘evidence-based interventions to address behavioural and emotional issues in children and young people should be available across Scotland’ (Scottish Government, 2017).

The new focus on children and young people’s mental health highlights the importance of developing validated recovery tools, including measures, which can be used with a large proportion of the population. Validated measures of recovery allow practitioners to work in a personalised, outcomes focused manner whilst remaining confident of the rigor and robustness of their methods. The time is right therefore for a focus on recovery and outcome measurement within child and adolescent mental health. To respond to this demand, a new measure is being developed based on the adult version of I.ROC to be used by young people, families and practitioners to measure and work towards personal recovery.

Originally developed for adults with mental health issues, I.ROC is a facilitated self-assessment which uses twelve questions to assess and measure personal

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recovery on a three-monthly basis. Research has supported the validity and reliability of the measure (Monger et al, 2013; Dickens et al, 2017), and good usability has also been reported (Ion et al, 2013).

Adapted from the adult version, Y.ROC is being developed in partnership with young people with a lived experience of a mental health problem and recovery, and mental health practitioners who work in CAMHs services. Initial testing suggests that face and construct validity of Y.ROC are high, however further work is needed to evaluate the validity, reliability and feasibility of using this tool within practice settings in Scotland.

This project aims to further develop Y.ROC for use within child and adolescent mental health services in Scotland using an iterative qualitative design. Feedback from young people, practitioners and carers will be gathered through focus groups (young people) and surveys (practitioners; carers) and used to make changes to the questionnaire draft. Changes will then be tested through further focus groups and surveys, until no further changes are suggested.

Methodology

A draft measure has been adapted from the adult version of I.ROC, based on the views of over 100 children collected informally during a series of wellbeing workshops held in secondary schools in the Borders and Lothians earlier this year, and on feedback collected through a scoping survey sent to practitioners with expertise in child and adolescent mental health.

In order to further develop Y.ROC and evaluate the face and content validity of the measure, this project aims to run an iterative series of focus groups with children and young people receiving support through participating third sector organisations (see recruitment). Focus groups will seek to capture the views of as wide a cross-section of children and young people as possible. Parents/carers and practitioners of young people attending these services will also be asked to complete the survey seeking their views on the measure.

Iterative process

Following redesign of Y.ROC informed by the focus groups and survey responses, a second round of focus groups and surveys will be conducted and analysed (following the same procedures), to evaluate the changes. This process will be repeated until no further suggestions for developments are forthcoming.

Materials

- Information sheet (YP, Parent, Worker, Organisations versions)
- Consent form (YP, Parent, Worker, Organisations versions)
- Demographics (Completed by carer/worker for those under **16**)
 - All participants will be asked to complete the following:

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- Age, gender
 - Young people (or person completing survey for young person)
 - Living circumstances (with parent(s)/relatives/adopted parents/foster carers/on own/with friends/other)
 - Organisation attended
 - For parents/carers:
 - Organisation attended by child and length of time attending
 - Age of child
 - Relationship with child (parent/carer/other)
 - How many children cared for in this way
 - Any additional experience supporting young people
 - For practitioners
 - Job title
 - Organisation
 - Age group they have the most experience working with
 - Greatest issues faced by this group
 - Description of current job
 - Any additional experience of working with children & young people
- Y.ROC draft
- Survey (Carer, Worker versions): The survey will consist of a copy of the draft Y.ROC questionnaire followed by a brief survey consisting of a combination of closed and open-ended questions. The survey will start with an explanation of the project, a consent form and a demographics questionnaire. It will end with a debrief statement, and contact details for the researchers. Copies of the survey will be given out in a pre-stamped, addressed envelope to enable easy return of the completed survey. A second envelope will be included in the pack for separate return of consent forms, to ensure anonymity.
- Focus group semi-structured interview schedules (ages 10-12, 12-14, 14-16, 16-18, 18+); Researchers will use a semi-structured interview schedule to guide the questions for each focus group. The proposed content of these groups has been adapted for each age group, and a full copy of each schedule can be found in the attachments.
- Poster-making materials (Paper, coloured pens, emoji sheets)
- Vignettes (for use with younger children)
- Recovery video (What is Recovery? SRN: <https://www.scottishrecovery.net/>)

Procedure

Surveys

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Copies of the survey will be circulated to all practitioners within each participating organisation, and will be given to all parents and carers during recruitment for the focus groups.

Focus groups

Researchers will use a semi-structured interview schedule to guide the questions for each focus group. The proposed content of these groups has been adapted for each age group, and a full copy of each schedule can be found in the attachments.

All focus groups will start with a short video about recovery, before opening up to discussion about what recovery and wellbeing means to the young people, and what their thoughts and opinions are about the 12 I.ROC questions. For older participants, this will be asked through a series of semi-structured questions about the content and format of the questionnaire, whilst younger children will be supported to create posters about the I.ROC indicators, using a combination of writing, emojis and pictures, depicting what the indicators mean to the young people creating them. Short vignettes have also been developed to help explain the indicators to children to help them understand the questions.

Facilitators

Focus groups will be run by researchers BR and AH from Penumbra, both of whom are experienced at facilitating groups and running focus groups. AH is a qualified mental health nurse, whilst BR is completing her PhD investigating the development of I.ROC at Abertay.

Practitioners within each participating organisation will be identified to oversee the recruitment and facilitation of this research within their service. Their role will be to provide information to young people and their carers, and to answer any questions. They will then take informed consent and oversee the set up of the focus groups for their organisation. Practitioners will receive one to one consultation with BR to guide them through how to run the recruitment, and their role in the focus groups (see focus group set up).

Recruitment

Third sector partners have been identified from their participation in the CCPS Committee on Care and Support For Children and Young People. A preliminary scoping exercise run by Penumbra at the CCPS Committee showed a high level of interest from a wide variety of organisations that provide support for a range of mental health and wellbeing-related issues faced by children and young people in Scotland. The CCPS committee invited Penumbra to present on Y.ROC at the beginning of November. At this event, the researchers (BR & AH) presented the Y.ROC project, answered questions, and provided all organisations with the details of participation, which includes the requirements on the part of the organisation to: provide a qualified youth worker to attend

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each focus group, provide any required follow-up support to participants, and ensure child protection policies are in place. A statement of interest in participating in this project was signed by six CCPS organisations at the end of the presentation.

Participants will be children and young people aged between 10 and 22 accessing services through participating organisations. Participants must have a good comprehension of spoken English, and be able to give informed consent (parental/carer consent will also be sought for under 16's). There are no other inclusion criteria. Practitioners within each participating organisation will provide the project information to all children/young people fitting these criteria, reading the participation information sheet and answering questions as necessary.

Focus group set up

Focus groups will be run within a setting familiar to the young people within the organisation that they attend. Each group will run with a minimum of two and a maximum of six participants. Focus groups will be stratified by age (10-12; 12-14; 14-16; 16-18; 18+), to focus the content of each group to an appropriate comprehension level.

There will be two adults present during each focus group. A trained researcher (either BR or AH) will facilitate the session, take notes, and record each session using a Dictaphone. A qualified practitioner from the host organisation will also be present at each focus group to oversee the group. This practitioner will not take an active role within the focus group either as facilitator or participant, but will stay in the room to provide a comfortable and familiar presence to the young people, and to oversee their wellbeing during the group (e.g. recommending when breaks need to be taken; keeping an eye on the emotional and general wellbeing of participants during the group).

Each focus group would be expected to last no longer than two hours, with a refreshment break in the middle, and more breaks taken as and when they are needed.

Participants will be reminded at the beginning of the session that taking part in the focus groups is voluntary, and that they are free to leave at any time. Any participant choosing to leave will be accompanied out by the overseeing practitioner from their organisation, who will ensure their support with another practitioner before re-joining the group.

Analysis

Recordings and notes will be written up (recording will be transcribed verbatim) by the researcher, with all identifying information removed (ID codes will be used instead). Recordings and any identifying notes will then be destroyed.

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Closed-questions on the survey will be transferred to Excel, and descriptive statistics (mode, percentage etc.) will be calculated. Open-ended responses will be analysed alongside focus group transcripts and supporting materials using thematic analysis, to identify the key themes.

Data will then be used to inform the development of Y.ROC.

Ethical issues

The following points have been considered as potential ethical issues.

Specific ethical considerations for working with under 18's

The research team (BR & AH) have both worked extensively with this age group in the past, including within roles that may elicit disclosures of abuse (e.g. for local charity 18andUnder). Both researchers will be closely adhering to Penumbra's policies regarding working with children (protection of children and young people; protection of children and young people; both included in the appendix). Additionally, all potential participating have specific and extensive knowledge of supporting children and young people, and adhere to their own policies in this regard (as outlined within the organisational consent form). There will always be at least two trained adults (1 researcher, 1 from the host organisation) in the room to ensure that the wellbeing of the young people is closely attended to throughout each session. Should any child/young person show signs of becoming upset or needing a break, this will be immediately responded to by the practitioner present at the time, who will take the child/young person to a private, comfortable space away from the group to provide support in their role as a trained youth worker. The focus group will be stopped until the practitioner (and the young person should they wish to come back) is able to return.

Informed consent

All participants will be given adequate information about the project before giving their consent. This will be presented in a number of formats (e.g. read and spoken) so that the information is fully understood. Participants will be given the opportunity to ask questions before consenting. Participants will be allowed to bring someone with them to help with the understanding of all information, and to assist them to make an informed decision if necessary. In the case of under 16's, consent will also be sought from a parent or guardian.

Participants will be informed that they are under no obligations to answer any questions that they find difficult or distressing. Following the focus groups, participants will be fully debriefed, again with a third party present if necessary to ensure full understanding.

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Participants will be asked if they are happy to continue with the study whilst it is underway. They will be reminded throughout their involvement that participation is voluntary and that they are free to withdraw at any point.

Effects of the project on mental health of service users

It is not considered likely that the following project will have particular adverse effects on participants' mental health, however it is noted that this is always a possibility when asking about mental wellbeing. Participants will be informed that they may decline answering any questions that they feel uncomfortable answering, without giving an explanation, and that this will not jeopardise the study. Questions will be asked in a sensitive manner, and will not be asked if they are felt to be too much. The focus group structure should help children/young people to choose not to answer a question if they do not wish to do so. As a semi-structured interview, testers will be free to adapt the questions to the individual and their wellbeing. Testers will check at regular intervals that the participants are happy to continue. The practitioner present will be sensitive to any signs of distress from the participant, and will attend to any issues as needed (see disclosures, below) will be looking closely to see whether any of the participants look as if they may have something they don't feel comfortable sharing with the group. All participants will be given the opportunity following the focus group to discuss the issues raised in the focus group with the researcher or practitioner in private (see disclosures, below).

Participants will be given the opportunity during and following participation to discuss any affects of the questions on their mental health with the researcher and practitioner. If additional support is required, a youth worker from the host organisation will follow up immediately. Any effects on mental health will be fully reported to principal researchers by practitioners.

Contact details of the researchers and an external Penumbra contact should be given to all participants, in case of any problems, or in the case of any questions. The contact details will be of: Bridey Rudd, Scott Hardie and Jane Cumming (line manager at Penumbra).

Participants will be recruited through each host organisation. Staff will receive an in depth brief during their training to highlight the importance of voluntary participation. Trainers will be reminded that individuals participate freely, and that they are not to make any service user feel obligated or coerced into doing so.

All participants will be given the opportunity for additional support from their host organisation or Penumbra if wanted following participation. Participants will be reminded that their participation is confidential, and that no information collected will be shared or identifiable. This will be carefully explained during recruitment and consent. Staff training will highlight the importance of anonymity.

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Anonymity

Participants will be informed in both the participant information sheet and the consent form that their participation is to be anonymous. Consent forms will be stored separately from all other information, and no identifying information will be released. Data will be identifiable only by a participant ID number. All names and other identifying information will be removed from transcripts. The list of names & ID numbers will be stored separately in a locked filing cabinet, and will not be known to anyone other than the principal investigator. Participants will also be informed that the data from the study will be used in Penumbra's on-going support and as part of the researcher's PhD. Participants will be informed that they have the right to refuse the use of their data in either of these ways. Participants will be informed that if they choose to withdraw at any time, their data will be destroyed, and will not be used in any way.

Data Storage

Participants will be informed that data will be stored securely in a locked filing cabinet and on a password protected computer in the office of the principle researcher. They will also be informed that all identifying information will be stored separately & securely.

Benefits to clients

While the researcher will make it clear to clients that there may not be any direct individual benefit to participation, involvement in the project may improve the services offered by each organisation in the future.

If a disclosure is made

The child/young person will be taken to a private, comfortable space by the practitioner present. The staff member will continue to hear the disclosure and to discuss it with the young person in their role as a trained youth practitioner, and will subsequently treat the disclosure in the same way as a disclosure made at any other time (as per the policies and procedures of their organisation). The focus group will be terminated, and will not be included in the research, and the recording will be immediately destroyed. The remaining children/young people will then be given the chance to discuss the incident with another practitioner from the organisation, with whom they are familiar. This will enable the organisations to adhere fully to their policies and ensure the wellbeing of all young people in the instance of a disclosure.

To clarify, any disclosures of abuse will be dealt with within the host organisation, adhering to local and Penumbra policies. Penumbra policy is summarised as follows:

What child protection protocol is in place? Penumbra Child Protection Policy and local child protection guidelines are followed by the research team

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When is disclosure made and to whom? Disclosure of abuse is always reported. Disclosure is reported as per attached guidelines, i.e. as soon as possible, and always within 24 hours – to either the police and social work or social work only, depending on the level of risk to the child.

Are parents allowed to access data about their child? Parents are not allowed to access data about their child unless written permission has been granted by the child OR where workers believe that the child is at considerable risk and judge that it is in their best interests for their parents to be made aware of certain information to reduce risk.

What are the confidentiality aspects of this? Young people are offered confidentiality except where workers judge that the young person or another individual is at serious risk of harm.

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21.b. International I.ROC Research

Area	Organisation	Overview
Spain	Malaga University.	Translation of questionnaire to Spanish & validation of I.ROC.
NLDS	GGZ, Parnassia Group, ProPersona	Main goal is to (1) investigate the psychometric properties of the Dutch version of the I.ROC and (2) evaluate the use of the Dutch version of I.ROC in every day practice. Study groups include a) general mental health b) serious mental illness (SMI), c) people with hearing impairment, d) people with addictions.
NLDS	Trimbos	PhD project: To investigate the effectiveness, cost-effectiveness, meaning and implementation-process of combining usual Flexible Assertive Community Treatment (FACT) care with Resource Groups (RG) for patients with SMI. (RG = 'a new structure to systematically engage patients' personal network into treatment, to improve communication within different support systems and to encourage patients to take responsibility and ownership in their path to recovery')
Aus	University of Queensland	To evaluate the Social Identity Model of Cessation Maintenance in a community mental health sample.
Aus	University of Queensland	I.ROC and several other questionnaires will be used to evaluate some new service initiatives for supporting recovery among service users with complex mental health needs by independent peer evaluators. This will be used to test the experience and quality of care (integration, coordination, communication, respect, involvement in decisions, etc.)
China	Second Affiliated Hospital, Xinxiang Medical University, China	The study aim is to test the validity and reliability of I. ROC in Chinese setting. Study group includes people with a diagnosis of schizophrenia, bipolar disorder or schizoaffective diagnosis, that are recruited from outpatient population male or female, between 18 years and 65 years. The researchers hypothesise that "patients" receiving psychosocial rehabilitation training would gain better recovery than those taking pharmacotherapy only, or pharmacotherapy with usual care and treatment.
Finland	Hospital District of South Ostrobothnia	To translate and validate I.ROC for use in Finland
Czech Republic	Fokus Praha	The aim is to translate I.ROC into Czech. Validation testing will be across three centres in the Czech Republic.
UK	Rivers Centre, Edinburgh	Assessing the effectiveness of psychological interventions for complex trauma.
UK	University of Stirling	The aim of this project is to quantitatively and qualitatively investigate the perceived physical and psychological wellbeing on social work students over the course of their placements.

21.c. Development of I.ROC-Digital

How does the digitalisation of I.ROC affect the experience and outcomes of using the tool?

There is a burgeoning focus on e-health and technologically aided therapy within mental health (Center for Substance Abuse Treatment, 2015); the development and use of new health based apps both for personal and clinical use is expanding rapidly. Internet based therapy and support groups are another development that has seen massive growth in recent years. However, the focus to date has been on the use of technology, for example skype therapy sessions, and digital self-help to supplement or replace face to face meetings. Mental health related apps are being used to inform, monitor and support people outside of their support sessions, and whilst collected data can then be brought to therapy sessions and discussed, this still relies on completion of outcome measures as an individual activity.

There is also however a move towards the use of interactive technology to enhance face to face support, with the greatest advances coming from child and adolescent mental health treatment. Novel interventions aim to improve engagement through alternative communication and learning styles; from emoticons to computer games (Coyle et al, 2012). Computer games in particular demonstrate the vast potential for cooperative use of technology as a key tool within support.

Mental health charity Penumbra has recently been developing an App based version of its personal recovery outcomes measure, I.ROC (Monger et al, 2013). I.ROC was originally designed as a paper-based tool, which is used as a facilitated self-assessment questionnaire to measure progress towards personal recovery (Monger et al, 2012). Conversation between supported person and practitioner is central to the intended use of this tool; through discussion, the responder and facilitator explore factors that have impacted upon the supported person's wellbeing over the past three months. Together, they then work to identify priorities which provide the basis for the support plan (Ion et al, 2013).

Penumbra has focused on redesigning I.ROC as an app based tool for a number of reasons; firstly, staff struggle to find time to copy I.ROC scores and accompanying notes from paper onto the online database used by the organisation. Equipping staff with tablets and the I.ROC app should avoid the need for duplication of efforts, and reduce the need for travel to and from office bases. Secondly, I.ROC has been the focus of a growing level of international interest in the past few years. Penumbra is seeking new ways to respond efficiently to this increase in demand.

There are however challenges in making this shift, central amongst which is the need to validate the new format: "When tasks are moved from pen and paper to the computer, equivalence is often assumed, but this is not necessarily the case. For example, even if the paper version has been shown to be valid and reliable, the computer version may not exhibit similar characteristics. If

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equivalence is required, then this needs to be established” (Noyes & Garland, 2008).

Aims

This project seeks to investigate the impact of a digitalised format on the completion of I.ROC, looking at key elements of the process of completing an I.ROC, including:

- Scoring
- Impact on respondents
- Conversation/relationship
- Recording of the conversation

How does the format in which I.ROC is presented affect scores?

Students at Abertay will be asked to complete I.ROC twice, once as a paper-based exercise and once on a tablet/computer, with a short distractor task in between to reduce memory effects. Format will be counterbalanced to minimise order effects.

Following completion, participants will then be asked to complete a feedback questionnaire about the experience, and any preference they may have.

How does the format in which I.ROC is presented affect people using tool and the I.ROC conversation?

The I.ROC app will be piloted within a small number of services at Penumbra, and within pilot sites in London based mental health charity, Jami. The digital version will be used by staff and service users with a range of previous experience of using the paper-based version. All parties completing the new version will be asked to fill in a questionnaire about their experiences using the tool before participating in the study. Digital I.ROC will then be used following the guidelines and training to stimulate an outcomes focused conversation, as outlined by Penumbra. Following completion, all participants will be asked to complete a feedback questionnaire.

Participants will also be invited to participate in a focus group to explore use of the two versions in greater detail. Focus groups with service users and staff will follow the semi-structured interview schedule (attached), and will focus on experiences of use of the two formats, the ways in which formats affect the process, and how use of each version impact upon the mood and experience of staff and service users.

Informed consent

All participants will be given a participant information sheet and contact details for Bridey Rudd and her supervisor Dr. Scott Hardie. They will be given time to discuss details of the study with colleagues/ the staff supporting them and to contact the research team, before signing a consent form. Participants will be informed that they are free to withdraw from the study at any time with no

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consequences, and that their data will be removed from further analysis. Participants will also be informed that data will be analysed and reported in an anonymous, aggregated format, and that data will be stored securely onsite at Penumbra for a period of 5 years and then destroyed.

Supported people

People supported by Penumbra or Jami who participate in this study will do so in the presence of a trained member of support staff. I.ROC is used as a routine part of support within both organisations, and the majority of participants will already be familiar with it. This study does not add any additional strain on supported people, and can be considered to be within the realms of routine practice.

Lone working

I.ROC is used in a private location agreed upon by the worker and supported person. All staff are in regular contact with their team, and have mobile phones provided. All staff follow lone working policies set out by their organisation.

21.d. Optimal Health Wheel Development

Validation of the Optimal Health Wheel: Pathway towards a more sensitive assessment of life satisfaction

Summary

This proposed research will capitalise on the extensive research committed to the development of the Optimal Health Program over the last 15 years. The validation of the Optimal Health Wheel (OHWL) will mean a simple, expedient and visual self-assessment tool will support the ongoing research that is being conducted with OHP. It will support the application of OHWL to assess other psycho-social interventions within St Vincent's Hospital as well as internationally.

Project Title

Validation of the Optimal Health Wheel towards a more sensitive assessment of life satisfaction

Principal Investigator; Dr Gaye Moore

Background

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The Optimal Health Program (OHP) is an evidenced-based psycho-social educational program that has been available in community mental health services in Australia since 2008 (Gilbert et al, 2012). OHP continues to build on the proven mode of integrated care and collaborative therapy (Castle & Gilbert, 2006). In 2014, additional government funding was received to explore OHP in the area of chronic disease expanding and integrating mental health into a broader domain of health and wellbeing. The program offers accredited training and the opportunity for Masters/PhD students to explore a range of approaches in theories underpinning recovery models, self-management in disease specific areas, literacy, teaching frameworks, and engagement initiatives such as e-health.

The explicit purpose of the OHP is to enhance self-efficacy by mapping vulnerabilities and strengths at an individual patient level, and building the individual's skill set such that they can effectively negotiate the 'healthcare system' and keep themselves well, in terms of their mental and physical health. The overarching aim of the OHP is to improve the mental and physical health, social connectedness and health service utilisation of our community.

Within OHP there is a number of key concepts and tools which support an individual to explore their wellbeing over a number of weeks. This project will focus on the validation of the Optimal Health Wheel (OHWL) which is used as a self-assessment tool to identify a person's satisfaction under six domains of health: emotional, physical, social, intellectual, spiritual (values) and occupational (engagement). The OHWL has an advantage over other outcome measures in that it is significantly less language dependent, solving issues of participant literacy and translation. The OHWL is visual-based tool that circumvents this issue and enable a comprehensive assessment of six life domains across the duration of an intervention. This has proven to be a useful and valuable tool in the OHP and potentially other intervention programs however this would require a validation of OHWL against other published measures. The OHWL is also valuable for both the practitioner and participant exploring and developing strategies to improve wellbeing.

Aim

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The aim of this project is to facilitate the expanded use of OHWL by validating it against published measures relating to each domain.

Hypothesis

Ratings on the six OHWL domains will be related to corresponding domains on six published measures.

Methodology

This project will employ an online survey method to collect participant ratings of the OHWL and the related published domain rating tools such as the IROC recovery outcome measure and BBC Wellbeing Scale. The survey will be hosted on the Opinio survey system in collaboration with Swinburne University. We will be recruiting participants from the general population 18 and over. Based on previous work in our group and a power analysis, we estimate that we will be able to recruit 400 participants, which will be sufficient for our proposed analyses.

Outcomes anticipated

- 1) Validation of OWP to support further research of Optimal Health Program
- 2) Further application in broader research assessing wellbeing and quality of life
- 3) Development of OHWL digitally.

Statistical Analysis

Pearson's correlations will be used to examine ratings on the OHWL domains in relation to the corresponding published measure to test for construct validity. A global score for each domain will be calculated for this analysis. We anticipate sufficient participants numbers to also conduct these same analyses within different age groups (e.g. 18-30, 31-45) to further stratify the expected associations.

Initial psychometric testing of psychosocial measures usually focuses on the validity and reliability of the instrument. Reliability and validity are two of the eight crucial psychometric attributes of any measurement tool designed for use within a clinical setting (Lohr, 2002), and are related but separate concepts.

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Whilst the validity of an instrument is dependent upon the degree to which it measures the constructs it is designed to, the reliability of a questionnaire is assessed through examination of the consistency of the results. The elements of validity and reliability used within the current analysis are outlined below

Internal consistency

Internal consistency compares scores on scale items that purport to measure the same construct (either all items within a measure, or all items within a subscale), assessing how well they correlate with each other, thus determining the level of homogeneity of the tool or subscale (Henson, 2001). Cronbach's alpha is the most commonly used internal consistency analysis; it is a technique that produces the average of every possible split-half reliability calculation for the scale, thus removing the item selection error inherent within a single split-half analysis. For Likert-type scales, Cronbach's alpha coefficient is calculated for the total summed score, and for any subscales, but cannot be used to provide reliability estimates for individual items (Gliem, Gliem 2003).

Content validity

Content validity, the extent to which an instrument appears to be measuring the concepts that it is intended to measure, usually involves analysis of the theoretical underpinnings of a tool, for example through literature review. The opinions of stakeholders and/or professionals as to the extent to which the instrument covers all aspects of relevance to the concept are also commonly collected, often through surveys or focus groups. Here, survey questions are included within the online questionnaire to evaluate the face validity of the measure. These will be analysed using descriptive statistics.

Convergent validity (Hypothesis testing)

Convergent validity is used to test the construct validity of a measure, through the assessment of the extent to which the scale behaves as predicted in its relationship to other measures. This element of validity relies on the a-priori development and subsequent communication of clearly defined, testable hypotheses. Such hypotheses should set out the underlying constructs and how the measures used within the testing relate to it. Hypotheses must also define how the two measures are expected to relate to one another, for example, a

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positive or negative correlation, and the predicted magnitude of this effect. Convergent validity is commonly analysed by calculating the bivariate correlation coefficient between scores on two questionnaires (completed by the same participant at the same point in time), and is routinely tested using either Pearson's correlations (parametric), or Spearman's rho (nonparametric).

Factor Analysis (Structural validity)

Factor analysis refers to the identification of latent or unobserved variables (factors) within a wider set of observed (or manifest) variables through the analysis of the correlations between the observed variables. There are two overarching methods of factor analysis, the selection of which is determined by the aims of the researchers; those who are seeking to explore patterns within their data and develop hypotheses use exploratory factor analysis (EFA). Following the development of a model, theory or hypothesis, confirmatory factor analysis (CFA) is used to evaluate the efficacy of this proposal. For this analysis, EFA methods would be most appropriate. The precise technique chosen requires selection of several variables (e.g. extraction method; rotation; interpretation). Within social science research, and particularly within the development of recovery measures, the most commonly applied technique is Principal Components Analysis (PCA). PCA has been widely criticised however for providing less accurate results than other forms of factor analysis particularly when factor loadings and the factor/component ratios are low (Gaskin, Happell 2014a). Other common methods include Maximum Likelihood (ML; Costello & Osborne 2005) and Principal Axis Rotation (PAR), which are shown to be more accurate than PCA. The precise techniques chosen will be dependent upon the characteristics of the dataset, for example size (power), normality and homogeneity of the data.

Clinical Relevance

Quality of project and value to Hospital including its relevance to development of clinical services

Frameworks for Health is a department within St Vincent's Mental Health and is developing further coordination and partnership with St Vincent's Hospital Sydney. This will involve use of the OHWL as a key measure. Validation of the

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OHWL in this project will be a key productivity outcome for St Vincent's Mental Health and improve the profile of the hospital as a whole towards more holistic approaches to clinical services.

We have a number of validated tools we currently use to assess benefit of our psycho-educational wellbeing program, eg self-efficacy, AQOL. However, we have identified a gap in the research where there is not a validated self-assessment tool which not only has a pre/post testing component but the ability for the individual to track and gain insight around their wellbeing throughout the program. The validation of the OHW will mean that the instrument can support other research to identify benefits and support the delivery of psycho-educational programs. The OHW also has an important visual capacity to engage participants and be easily transferred into a digital representation on an App for an Iphone or Ipad.

The OHWP facilitates discussion with participants to explore their wellbeing and develop appropriate strategies to manage their health and wellbeing. This will support the therapeutic relationship and will be able to track the trajectory of a patient's journey and recovery.

Frameworks for Health (FFH), Mental Health has an established research team and student base which includes an established training program and research portfolio with the capacity to translate the learnings into key program materials to engage health professionals and community in improving health and wellbeing. Currently FFH has trained over 60 psychology honour students and a broad cross-section of hospital staff in the delivery of OHP. Hospital staff who move on from this gain a capacity for wellbeing assessment which is translatable to their clinical responsibilities in their employment.

The validation of the OHWL will facilitate:

- 1) expanded use across a range of other intervention program and research studies in the field
- 2) the validity of the suite of measures (including the OHWL) currently employed in OHP.

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This research project will broaden the appeal of the OHWL for use in research projects (current and future) between hospital departments and affiliated campus institutes, universities and other health organisations such as: Neami National, Outdoors Inc, Boroondara Stroke Support Group, Latrobe Regional Hospital, Swinburne University, Australian Catholic University, and University of Melbourne.

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Appendix 22. Paper Manuscripts

Manuscripts of papers submitted or ready for submission at time of thesis submission.

22.a. Personally meaningful recovery in people with psychological trauma: Initial validity and reliability of the Individual Recovery Outcomes Counter (I.ROC)

Background: There is limited work on personal recovery following psychological trauma. Developed and tested as a measure of personal recovery, the Individual Recovery Outcomes Counter (I.ROC) is a brief tool of personal recovery designed for collaborative use within support. **Aims:** This study aimed to investigate the psychometric properties of a self-report version of the I.ROC within a trauma population. **Method:** A total of 107 adults attending trauma interventions in an NHS service in Scotland completed I.ROC alongside measures of self-esteem, mental illness symptoms and functional impairment. Scores on each measure were compared to evaluate the convergent validity of I.ROC. Internal consistency and factor analytical techniques were also used to assess the structural validity and reliability of the measure. **Results:** Previously proposed models were a poor fit for the current sample; principal components analysis suggested a three-factor structure with acceptable internal consistency, comprising ten of the original twelve items (I.ROC-10). Correlations with all measures reached significance for the original and modified I.ROC and its subscales. **Conclusions:** I.ROC appears to be a valid and reliable tool for use in measuring recovery within a trauma population, but further research is needed to examine the structural validity of I.ROC.

Declaration of interest: The lead author is employed by Penumbra, I.ROC developers.

Keywords: recovery, mental health, trauma, outcomes, measurement, psychometrics

Introduction

The concept of personal recovery, “*a way of living a satisfying, hopeful, and contributing life even with limitations caused by illness*” (Anthony, 1993), has been almost exclusively applied within the context of mental illness. There is growing recognition however that it applies much more broadly (Perkins & Repper, 2015), relevant to anyone who has experienced devastating and life-altering events; as such it is inextricably linked to the concept of trauma.

Trauma is understood to be both a cause and a consequence of mental ill health. Studies have reported that between 40% and 90% of people with mental illness are survivors of abuse (Costanzo, 2016; Mueser et al., 1998), although the majority of abuse survivors do not experience mental illness (Herman, 2015). For many people, recovery encompasses recovering from the trauma of mental illness (Costanzo, 2016), and may include the impact of stigma, poverty, inequality and abuse experienced as a result of a mental illness diagnosis (Deegan, 1996).

Similarities between personal and trauma recovery are clear within models of recovery proposed within the two paradigms. Whilst personal recovery is acknowledged to be a subjective experience, key themes have been identified, summarised by Leamy and colleagues (2011) as Connectedness, Hope, Identity, Meaning and Empowerment. Themes identified within trauma models of recovery mirror these components, for example Herman describes recovery as “based upon the empowerment of the survivor and the creation of new connections” (Herman, 2015, p134), and proposes a three-stage model in which survivors move beyond the devastating impact of trauma to reconnect with ordinary life. Herman describes the final recovery stage as including the development or redevelopment of positive inter and intrapersonal relationships, self-management techniques and hopes for the future.

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During the third stage, survivors learn to face danger through positive risk-taking, and uncover a new sense of purpose and meaning.

Services are under increasing pressure to produce evidence of outcomes; routine outcome measurement (ROM), now mandatory across several countries (Trauer, 2010), can provide useful data on the needs of people using services, the impact of the service and change over time (Slade, 2002). In a research setting, standardised measures assessing personal outcomes are crucial to the accurate and meaningful evaluation of evidence-based practices (Drake et al., 2001). Recovery measures provide an approach to measurement that focuses on the person, their experiences and hopes for the future.

The conceptual overlap between models of recovery proposed within these two fields of research suggests that tools developed as measures of personal recovery may also be applied within a trauma population. Although personal recovery measures have been psychometrically examined within samples that include people with a diagnosis of PTSD (Pelletier et al., 2015), and alongside measures related to post-traumatic growth (Moran et al., 2012), no research has yet evaluated the validity of personal recovery measures exclusively within a population of people with experience of trauma. This paper therefore seeks to evaluate the psychometric properties of one such recovery measure, the Individual Recovery Outcomes Counter (I.ROC), in a trauma population.

I.ROC is a brief personal recovery outcomes measure developed in Scotland by practitioners and people with lived experience of mental health issues, for use as a facilitated self-assessment (Monger et al., 2013) within support settings. The measure is situated within a ‘wellbeing framework’ called HOPE (Home, Opportunity, People and Empowerment), which provides an overarching structure for conceptualising recovery focused practice (figure 1). I.ROC was named in the Scottish Mental Health Policy 2017-2027 as a tool to facilitate a

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“recovery-oriented and rights-based approach” (Scottish Government, 2017, p.35), and is used in a growing number of practice and research settings across health and social care services in the UK and internationally (Pincus et al., 2016). Initial psychometric testing of the measure within samples of adults accessing community mental health services in Scotland support the reliability and validity of the measure (Dickens et al., 2017; Monger et al., 2013), however the psychometric properties of I.ROC have yet to be assessed within other populations.

Insert Figure 1

1.1. Aim

The objective of this study was therefore to extend previous research into I.ROC by evaluating preliminary evidence for the validity and reliability of the instrument within a trauma population. Internal consistency, structural and convergent validity with measures of self-esteem, anxiety and depression, and work and social adjustment were assessed.

1.2. Hypotheses

Internal consistency was expected to be ‘acceptable’ ($>.7$) or higher (George & Mallery, 2003), and measures were predicted to show ‘moderate’ ($>.5$) to ‘good’ ($>.8$) convergent validity (Cohen, 1988; Gaskin & Happell, 2014) with I.ROC. Based on the scoring format of each questionnaire, negative correlations were predicted between I.ROC and measures of clinical symptoms and work and social adjustment; a positive correlation was expected with self-esteem. Finally, it was expected that the underlying structure of I.ROC would be similar to other mental health populations (e.g. Monger et al, 2013; Dickens et al, 2017).

Materials and Method

Participants and procedure

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This study was conducted as a secondary analysis of data from a wider study investigating therapeutic interventions for adult survivors of complex psychological trauma. Participants (n= 107) were referred by general practitioners, psychiatrists, or psychologists for psychological therapy at a National Health Service trauma centre in Scotland. All participants during the recruitment period were sent a covering letter and invited to complete a set of standardised measures. Participation was voluntary and anonymous. This study received ethical approval from Abertay University research ethics committee, and clinical governance approval from NHS Lothian.

Measures

Participants completed a questionnaire on demographics including gender, age, ethnicity, employment, marital and living arrangements, and the following self-report measures.

Individual Recovery Outcome Counter (I.ROC; Monger et al. 2013): I.ROC is a 12 - item measure of personal recovery. The tool aims to establish and subsequently track an individual's level of personal recovery across four domains (Hope, Opportunity, People, and Empowerment), each comprising three items describing an issue important in personal recovery (see Figure 1). Questions are asked on a 6-point frequency scale ranging from 1 'Never' to 6 'All the Time', with higher scores representing greater progress towards personal recovery. In a sample of 171 adults accessing community mental health services in Scotland, I.ROC demonstrated good internal consistency and convergent validity with measures of recovery and clinical outcomes (Monger et al., 2013).

Rosenberg Self-Esteem Scale (RSES; Rosenberg, 1965): RSES consists of 10 Likert-type scale items designated to assess positive and negative evaluations of self. Respondents indicate their level of agreement ranging from 1 (strongly disagree) to 4 (strongly agree). Scores range from 10 to 40, with higher scores reflecting more positive evaluations of self.

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The RSES has demonstrated good psychometric properties among clinical samples (Schmitt & Allik, 2005).

Hospital Anxiety and Depression Scale (HADS; Zigmond & Snaith 1983): HADS is a 14 item self-report measure that assesses the presence and frequency of common mental illness symptoms using a four-point (0-3) scale. Scores are summed within two 7-item subscales measuring anxiety and depressive symptoms, with higher scores reflecting a greater presence and/or frequency of the symptom being addressed. The HADS has demonstrated good psychometric properties among clinical samples (Bjelland et al., 2002).

Work and Social Adjustment Scale (WSAS; Mundt et al., 2002): WSAS is a 5-item self-report scale that assesses perceived functional impairment in five domains; work, home management, social leisure activities, private leisure activities and relationships with others. Each domain is assessed using a single item with responses given on a scale ranging from 'Not at all' (0) to 'Very severely' (8). The WSAS has been found to provide reliable and valid scores and be a useful indicator of global dysfunction (Ghodsi et al., 2012; Jansson-Fröjmark, 2014).

Data Analysis

As the percentage of missing data was small (maximum per item: 4.6 %); the expectation-maximization (EM) method was used to address missing data (Little & Rubin, 2002). Data were analysed using the Statistical Package for Social Sciences (SPSS) version 23 and AMOS v22. Means (SDs) were calculated for continuous variables and frequencies (%) for categorical variables (table 4). Summed total scores fell within the range assumed for normal distribution (George & Mallery, 2003); convergent validity was therefore calculated using Pearson's *r*; effect sizes are reported alongside 95% confidence intervals (CI); the critical level of significance was set at 5%. Reliability analysis used Cronbach's alpha.

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A two-stage analysis of I.ROC's latent structure was conducted. Confirmatory Factor Analysis (CFA) was used to evaluate the goodness of fit of previously proposed structural models: the four-factor HOPE framework (Dickens et al., 2017), two-factor models separating recovery into inter and intrapersonal dimensions (Dickens et al., 2017; Monger et al., 2013), and a unidimensional model (Dickens et al., 2017). Goodness of fit for each model was examined using 1) chi-squared statistic (CMIN), 2) comparative fit index (CFI), the incremental fit index (IFI), 3) standardised root-mean-square residual (SRMR) and the root mean square error of approximation (RMSEA). A non-significant model chi-square and values greater than .95 for CFI and IFI are considered good model fit (Hu & Bentler, 1999). A χ^2/df ratios less than 3 indicates good fit (Byrne, 2001). Values of the SRMR below .08 and of the RMSEA below .05 show excellent fit although values between .05 and .08 indicate acceptable fit (Hu & Bentler, 1999).

Secondly, the latent structure of I.ROC was explored using Principal Component Analysis (PCA) with oblique direct oblimin rotation. Factor loadings below .3 were suppressed, and items loading on more than one factor were assigned to the factor with the highest factor loading.

Results

Demographics

Participants (n= 107, 92.5% female) ranged in age from 18 to 78 years (M=38.8 SD= 10.8) were primarily Scottish (N=79, 73.8%) and single (n=61, 57.0%). Approximately one-third of the participants were living alone (35.5%) and two-thirds were living with others (e.g. a partner or with family; 64.5%). Over half of the cohort attended further or higher education (n=63, 58.9%). Socio-demographic characteristics of the sample are summarised in Table 1.

Insert Table 1

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Descriptive Statistics

Exploratory data analysis was conducted to test the normality of data. Results from the Shapiro–Wilk’s test and Kolmogorov–Smirnov’s test along with visual inspection of histograms showed that the data were normally distributed. I.ROC scores ranged from 14 to 52 (max possible range: 12-72), with a mean of 33.3 (SD=7.8). Item means were fairly low, ranging from 2.08 for ‘Social Network’, to 3.34 for ‘Participation & Control’.

Internal consistency for total scores of each measure was acceptable to good, ranging from .73 (RSES) to .82 (HADS), as reported alongside means (SD) and correlation coefficients in Table 5.

Confirmatory Factor Analysis

Results of confirmatory factor analysis testing are presented in Table 2. Of the four models proposed in previous publications (Dickens et al., 2017; Monger et al., 2013), the two-factor model identified by Dickens and colleagues (model 3) produced the best fit, however no model met acceptable limits for a good fit. Although the χ^2/df ratio and was within the accepted range for all models and SRMR was acceptable with the exception of model 1 (SRMR=.09), CFI and IFI statistics fell outside the acceptable range (<.8) in all cases. RMSEA values were only just acceptable (.08) for the unidimensional and 2-factor solutions offered by Dickens et al (2017), and were outside the accepted range for all other models. Chi square statistics were highly significant ($p<.001$) in all cases. A new analysis using exploratory methods was therefore conducted.

Insert Table 2

Principal Components Analysis

The 12 I.ROC items were subjected to principal components analysis (PCA) using SPSS v22. Prior to performing PCA, the suitability of data for factor analysis was assessed. Inspection of

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the correlation matrix revealed the presence of many coefficients of .3 and above. The KMO value was .77 exceeding the recommended value of .6 (Kaiser 1974) and the Bartlett's test of sphericity ($\chi^2 = 310.56$, $p < .001$) reached statistical significance, supporting the factorability of the correlation matrix. An initial PCA with direct oblimin rotation revealed the presence of four components with eigenvalues exceeding 1, (eigenvalues 3.5, 1.4, 1.2, and 1.1) accounting for 62.14 % of the variance, however the factor structure was problematic. Four items loaded strongly on factor one and three items loaded strongly on factor four, but two items (PN; LS) showed significant cross-loadings. These items were assigned to the factor with the highest loading. Factor three comprised two items, but these items loaded on the factor in opposite directions (SN .768; LS -.506). Personal network (PN) loaded strongly with two negative items (PD, EA) in Factor 3. The correlation matrix revealed there were non-significant correlations between SN and six items (MH, LS, SC, PN, VY, and SM). Similarly, there were six non-significant associations between PN and six items (LS, PH, EA, PD, SN, and VY). Further analysis was performed to check whether the internal consistency of the scale would increase with the exclusion of SN first followed by the exclusion of SN and PN items. For 11 item scale, the Cronbach's α was .76 (the same findings as 12 item scale) and a 10 item scale revealed an increase of internal consistency ($\alpha = .77$).

A further PCA with direct oblimin rotation was therefore conducted excluding the two problematic items (SN and PN). This generated three components with eigenvalues exceeding 1 (3.61, 1.23 and 1.07), accounting for 59.1% of the variance. As shown in Table 3, all 10 items loaded strongly on three components (item loadings ranging from .62 to .85) with four items loading on component 1, four items on component 2 and two items on component 3 (see Table 3). There was no cross loading of factor items following rotation. Internal consistency was 'good' for the first component, but low for two and three

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(Cronbach's α values: .77, .62, .53). Pearson's correlation between the original 12 items I.ROC and the reduced 10-item version showed good concurrent validity ($r=.97$, $p<.01$).

Insert Table 3

Convergent validity

Total scores of all four measures correlated significantly in the predicted directions, as reported in Table 4. I.ROC correlated positively with self-esteem ($r=.51$, $p<.001$, 95% CI [.35, .65]), and negatively with anxiety and depression (HADS total: $r=-.61$, $p<.001$, 95% CI [-.65, -.35]), such that people with fewer self-identified symptoms of depression and anxiety had higher levels of recovery, whilst those with higher self-esteem reported greater personal recovery. Scores on the Work and Social Adjustment Scale were likewise inversely correlated to I.ROC ($r=-.39$, $p<.001$, 95% CI [-.56, -.19]); although the effect size was smaller, people showing greater levels of impairment in work and social adjustment scored higher on I.ROC.

As shown in Table 4, I.ROC components identified using PCA correlated significantly with total and subscale scores for these three measures, with the exception of the relationship between Component 3 (Meaningful Activity) and the Anxiety subscale of HADS ($r=.15$, $p=.06$, 95% CI [-.04, -.33]).

Insert Table 4

Discussion

The primary aim of this paper was to evaluate for the very first time the validity and reliability of a self – report version of the recovery outcome measure I.ROC (Monger et al., 2013) in a sample of adults accessing trauma-related services in Scotland. Participants completed a battery of outcome measures, and results were used to assess the internal

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consistency, convergent and structural validity of I.ROC. Results support the validity and reliability of I.ROC as a self-report recovery measure for use by trauma survivors.

Confirmatory factor analysis showed that four previously proposed models (Dickens et al., 2017; Monger et al., 2013) did not produce a good fit. Subsequent exploratory analysis suggested an alternative three-factor structure explaining 59% of the variance. The three components within the retained model were labelled as Psychological Wellbeing & Health; Decision-making & Life Skills; and Meaningful Activity.

The model excluded two items, Personal Network and Social Network, suggesting further revisions to I.ROC may be necessary. These items are not yet recommended for removal from the questionnaire however for several reasons. Brevity was a key issue for I.ROC developers, and consequently each question was designed to measure a different aspect of recovery. Personal and social connections together are commonly identified as one of several key elements of personal recovery (Leamy et al., 2011). Positive supportive relationships are equally central to models of recovery following trauma (Herman, 2015); Personal and Social Network are the only items within I.ROC exploring this fundamental recovery component. Lloyd and colleagues propose a multi-dimensional model of recovery, in which social and personal recovery are conceived as distinct dimensions alongside clinical and functional recovery (Lloyd et al., 2008), and it may be that such a conceptualisation aligns more closely with the experiences of trauma survivors. Fitzpatrick and colleagues point out however that excessive reliance on exploratory factor analysis can result in situations where experiences of importance to respondents are found to be statistically unrelated and therefore omitted from a measure (Fitzpatrick et al., 1998). Nevertheless, poor fit of items measuring social aspects of recovery is a concern which merits further exploration. I.ROC was designed to be used not only as a measure, but as a therapeutic instrument, promoting recovery-related conversation and exploration of key areas of

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importance to service users. It is therefore important that revisions to the items within I.ROC are reflective of service user's perspectives on what is important to their recovery, as well as what items produce the best statistical fit.

Principal Components Analysis is a data reduction methodology, with the goal of reducing the data set into the minimum number of components, and this may produce, in some cases, misleading results (Preacher & MacCallum, 2003). It has also been argued that it actually produces structures that are similar to EFA methods (Fava & Velicer, 1992; Henson & Roberts, 2006). The sample size used within this study was also relatively small, particularly as is usually recommended for factor analysis (Preacher & MacCallum, 2003) (Gaskin & Happell, 2014). Research with a larger dataset is therefore recommended to further explore the structural validity of I.ROC in a trauma population.

Significant correlations with measures of self-esteem, work and social adjustment and common mental health issues provide support for the convergent validity of I.ROC. It is interesting to note that the strongest correlation was found between I.ROC and HADS, a measure of symptoms of mental illness. Similarly strong correlations with measures of clinical symptoms have been reported in psychometric evaluations of several recovery measures (Beck et al., 2012; Drapalski et al., 2016; McNaught et al., 2007). This supports the argument presented within a growing body of research (Resnick et al., 2004) that personal and clinical recovery are related, not necessarily opposing, concepts.

Overall, the psychometric properties of I.ROC are largely supported within this study, providing backing for the growing body of evidence for I.ROC as a valid measure of recovery. This study extends previous findings by testing the instrument within a new population of adults accessing trauma-related support, and by evaluating the tool in a new self-assessment format.

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Conclusion

The current focus on recovery within mental health policy (Slade, 2010) encourages services to adopt a recovery-orientation, and services are under increasing pressure to evidence the extent to which their work is recovery-oriented (Williams et al., 2012). Recovery measures provide an effective means of evaluating recovery orientation, assessing outcomes that are both personally meaningful and useful at a service level, fundamental properties of any routine outcomes measure (Happell, 2008; Trauer, 2010). Clinically, measures can be used within support to reflect on the recovery journey and identify recovery outcomes to work towards, as well as to measure progress (Burgess et al., 2010).

This study provides initial support for the validity and reliability of I.ROC as a measure of self-reported recovery for people with trauma-related diagnoses. More research is needed in larger samples to confirm these findings and to further evaluate the structure of this measure.

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Declaration of Interest Statement

In accordance with Taylor & Francis policy and my ethical obligation as a researcher, I am reporting that I am employed by (and therefore have financial interests in) a company (Penumbra) that may be affected by the research reported in the enclosed paper. I have disclosed those interests fully to Taylor & Francis, and I have in place an approved plan for managing any potential conflicts arising from [that involvement].

This research did not receive any specific grant from funding agencies in the public, commercial, or not-for-profit sectors

Declaration of Ethical Approval

This project involved a secondary-analysis of anonymised routinely collected data from the wider study 'Group Compassion Focused Therapy vs Group Psychoeducation for Adult Survivors of CPTSD, which was reviewed and approved by the South East Scotland Research Ethics Service (NR/1502AB7). All participants provided signed consent for their data to be used during this wider study. Clinical governance approval for use of anonymised data from the wider study was granted by NHS Lothian (email communication with Andrew Watson, NHS Lothian, 17/5/2017), and individual consent for use of the data in the current analysis was therefore not needed. Ethical approval was further granted for this study by the School of Social and Health Sciences' ethics committee at Abertay University (study reference number 855).

References

For references, see bibliography

Tables and figures available on request

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22.b. Examining the reliability and validity of the Individual Recovery Outcomes Counter (I.ROC)

Abstract

Objective

The Individual Recovery Outcomes Counter (I.ROC) is an individual level measure of personal recovery. Initial findings have demonstrated good validity (Monger et al, 2013), and usability (Ion et al, 2013), however psychometric properties have yet to be fully investigated.

Methods

486 individuals participated in two studies assessing the convergent validity and test-retest reliability of I.ROC. In study one, participants completed I.ROC alongside seven measures of recovery-related components. In study two, participants completed I.ROC at two time points approximately one week apart.

Results

I.ROC total scores correlated significantly with six measures of recovery-related concepts including hope, empowerment, and self-esteem. Study two demonstrated good test-retest reliability as I.ROC scores were significantly and strongly positively correlated over a short period of time (mean time 8 days).

Conclusions and Implications for Practice

These studies provide further support for the use of I.ROC as a valid and reliable measure of recovery.

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Background

Personal recovery has become a well-established aspect of mental health research, practice and policy particularly within the English speaking world (Slade et al, 2012). Internationally many government policies now make direct reference to recovery, and commitments to recovery have been made by most allied health professions including nursing (Rights, Relationships & Recovery; Scottish Executive, 2006), social work (Australian Association of Social Workers, 2012) and psychology (American Psychological Association (APA) Resolution, 2009). Recovery assessment questionnaires are increasingly popular in the appraisal of personal-level recovery outcomes and evaluation of mental health services and interventions (Rosenberg, Svedberg & Schon, 2015), highlighting the need for reliable and valid recovery measures (Sklar et al, 2013). Whilst many such tools now exist, reviews have identified only a small number that so far meet rigorous psychometric standards (Sklar et al, 2013; Williams et al, 2012). Even fewer perform well in psychometric testing, while also proving acceptable to consumers (Burgess et al, 2010).

The Individual Recovery Outcomes Counter (I.ROC) is a personal recovery measure developed within Penumbra, a third-sector mental health organisation (MHO) in Scotland, by practitioners and people with lived experience of mental health issues and service use. The questionnaire comprises 12 questions, each focusing on a different aspect ('indicator') of recovery (mental health (MH); life skills (LS); safety & comfort (S&C); physical health (PH); exercise & activity (E&A); purpose & direction (P&D); personal network (PN); social network (SN); valuing myself (VM); participation & control (P&C); self-management (SM); hope for the future (H)). Questions are phrased to evaluate how the supported person has felt in relation to each indicator over the previous three months, and are scored on a 6 point scale ranging from 'Never' to 'All the Time'. I.ROC was designed for use within community based adult mental health settings. The instrument forms the basis of a conversation between the supported person answering the questions and their assigned worker, which usually lasts approximately one hour. A person's score(s) can be mapped onto a 'spidergram' following the assessment, to give a visual representation of their recovery (see Figure 1). Scores can also be aggregated across a population, for purposes of reporting at a service or organisational level. The tool also forms part of a wider recovery focused approach (HOPE Framework) developed by the charity (Monger et al, 2012).

Whilst previous research (Monger et al, 2013, Dickens et al, 2017) has explored elements of the instrument's reliability and validity, including structural validity (Dickens et al, 2017), internal consistency and concurrent validity of I.ROC with other measures of recovery and clinical outcomes

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(Monger et al, 2013), key elements of the tool's validity as a measure of personal recovery outcomes remain untested.

Objectives

The current paper aims to extend the previously published findings, presenting two studies which further assess the validity and reliability of I.ROC.

Study One assessed the convergent validity of I.ROC with seven measures of recovery-related constructs

Study Two evaluated the test-retest reliability of I.ROC

Methods

Participants

Both studies used convenience samples of students and/or staff from a university and a third sector mental health organisation (MHO) in Scotland. Ethical approval was given by the University Research Ethics Committee, and the research protocol conforms to the Declaration of Helsinki. All participants gave their informed consent prior to participation, and were fully debriefed at the conclusion.

Study One

Participants were recruited through classes at the university. Students were provided with participant information sheets during their classes and if they consented they were given an opportunity to complete the testing at the completion of the class.

Study Two

Participants were recruited through the university and the MHO. Participant information was provided in an email sent by the lead researcher to all MHO staff. It was also posted on the university notice board. Potential participants were then asked to 'opt in' by clicking on a link to anonymous online versions of the instruments.

Materials

Study One Only

The literature was searched in 2011. Sixty five measures representing components of recovery, and showing significant overlap with I.ROC were identified and examined by all five members of the research group. As I.ROC was designed for use with all people with experience of mental health problems, all

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diagnosis-specific measures (e.g. the Schizophrenia Quality of Life Scale (Wilkinson et al, 2000)) were removed from the mapping exercise. All items in the shortlisted measures were then mapped against I.ROC individually by each research group member. The lead researcher then compared the results, identifying the measures which most consistently mapped against I.ROC, and which between them most succinctly covered all twelve I.ROC items (for details of mapping exercise, see supplementary material). These were then presented back to the whole research group, and upon their agreement, were selected for inclusion in the study.

Community Living Skills Scale

The Community Living Skills Scale (CLSS; Smith & Ford, 1990) is a 46 item tool covering four main areas: personal care (19 items), socialization/relationships (16), activities/leisure skills (5) and vocational skills (6). CLSS was tested with a group of 50 service users and demonstrated 'good' internal consistency (subscales: Cronbach's alpha (α) = .74 – .84). The Personal Care subscale correlated significantly ($r = .41$, $p = .002$) with the Global Assessment of Functioning Scale (GAS; Endicott et al, 1976). Despite this initial validation, it has not been used extensively since (O'Malia et al, 2002). The measure does however cover the I.ROC indicator 'Life Skills' in considerable detail (see Table 2). Questions are answered on a 4 point Likert scale ranging from 0 'hardly ever' to 3 'almost always', and analysis uses summed total and subscale scores. 35 questions are positively worded (e.g. 'I am thorough when I work'), whilst the remaining 11 items are negatively worded, and were reverse-scored before analysis, so that for all items, higher scores are reflective of better community living skills. Data screening showed seven questions on this measure (Q17;18;23;28;31;32;34) to have unacceptably high levels of missing data (response rate below 90%). As low response rates appeared to be linked to the relevance of the question to participants, for example "My relationship with my spouse interferes with my life" was answered by only 27% of participants, modal replacement (replacing missing values with the most common answer) was not an option. To retain the full demographic sample, it was therefore agreed to remove questions with low response rates from further analysis, thus reducing the final questionnaire to 39 items (possible score range 0-117).

Herth Hope Index

The Herth Hope Index (Herth, 1992) is one of the most commonly used tools measuring hope/hopelessness (Schranck et al, 2008). Its validation has been extensive, including published studies from a range of countries (China: Chan et al, 2011; Netherlands: Herth et al, 2010) and populations (e.g.

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carers: Duggleby et al, 2013; terminally ill adults: Buckley & Herth, 2004). Internal consistency is high, with estimates ranging from .78 (Phillips-Salimi et al., 2007) to .97 (Herth, 1992), and test-retest reliability is good ($r=.79$, van Gestel-Timmermans et al., 2010; ICC=.86, Chan et al, 2011) The questionnaire is brief at only 12 questions measured on a 4 point Likert scale ranging from 1 'strongly disagree' to 4 'strongly agree', higher scores are reflective of greater levels of hope; two items are reverse scored. Scores are summed to give a single total score ranging from 12 to 48.

Making Decisions Empowerment Scale

Rogers' Making Decisions Empowerment Scale (MDES; Rogers et al, 1997) is a 28 item questionnaire designed in conjunction with mental health consumers. The questionnaire has a five factor structure, with between 4 and 9 items in each of the domains: 1) self-efficacy-self-esteem; 2) power-powerlessness; 3) community activism; 4) righteous anger; and 5) optimism-control over the future.; all are measured on a 1 to 4 scale ranging from 'strongly agree' to 'strongly disagree'. Analysis uses a single summed total score, for which negatively worded questions ($n=19$) are reverse-scored to give a possible score range of 28-112. Internal consistency of the measure is good ($n = 1827, \alpha = .82$), and factor analysis confirmed the five-factor structure (Rogers et al, 2010). MDES was used as a benchmarking measure in the validation of the QPR (Neil et al, 2012), and shows convergent validity with the Community Living Skills Scale (Smith & Ford, 1990) and the Mental Health Recovery Measure (Rogers et al, 1997). Data screening revealed one item with a low response rate (<90%), the wording of which is culturally not relatable to the Scottish context "you can't fight city hall". This item was removed from analysis, leaving a 27 item measure, with a total score range of 1-108.

Rosenberg Self Esteem Scale

The Rosenberg Self Esteem Scale (Rosenberg, 1965) is a 10 item questionnaire with questions answered on a four point Likert scale ranging from 0-3. Equal numbers of questions are positively and negatively worded; negatively worded questions were reverse-scored before analysis, to give a single summed total ranging from 0 to 30. The tool has been used in studies internationally including a 53-country study of universal and culture-specific features of self-esteem (Schmitt & Allik, 2005). The authors reported generally good internal consistency of the scale, with an average Cronbach's alpha of .81, and an average Tucker's congruence coefficient of .987, supporting a one-dimensional factor structure. The measure has also been used in previous validations of recovery measures (Corrigan et al, 1999).

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Well-Being Scale

The Well-Being Scale (Campbell & Schreiber, 1989a) is a 151 item questionnaire formed mostly of 5-point Likert scale questions. Designed by a working group of people with lived experience of mental ill-health, the questionnaire forms the basis of the Wellbeing Project (Campbell & Schreiber, 1989b). The Wellbeing Scale appears in the original Compendium of Recovery Measures (Ralph et al., 2000), although no conclusions were made as to the efficacy of the measure. Given the length of this questionnaire, a sub-set of 39 questions was chosen to cover the I.ROC ‘Safety & Comfort’ question for which a dedicated, validated tool could not be found. Questions were identified by the lead researcher and their relevance confirmed by the other four members of the research group. Initial selection was based on the format of the questions, with items requiring a text-based answer then removed. Questions were further screened for brevity, and subsequently for comprehension and relevance to the I.ROC indicators, reducing the number of items to 33. Examples of selected questions from the Wellbeing Scale included ‘How much do you like living where you are?’ And ‘How insecure do you feel about having or continuing to have adequate food, clothing, shelter, or income?’ Similar to CLSS, data screening identified a further five questions with low response rates (<90%); again responses were low for questions that could be deemed irrelevant for some participants, for example, “If you have a child or children, how satisfied are you with he/she/their living situation?”, and these items were removed from further analysis, leaving a final subset of 27 questions. Questions use either a 1-4 (9 items) or a 1-5 Likert scale; seven items were positively worded, and the rest were negatively worded. Negatively worded items were reverse-scored for analysis, giving a summed total score range of 27-128.

International Physical Activity Questionnaire

The International Physical Activity Questionnaire (IPAQ; Booth, M.L. (2000) exists in 4 forms (short/long; self-administered/telephone), and has been reproduced in 22 languages. Reliability and validity has been established (Craig et al, 2003), and the questionnaire has been used extensively. The tool was chosen for benchmarking of I.ROC as it maps consistently on to the Exercise & Activity question, largely not covered by the other questionnaires. The brief 7 item version was chosen so as not to over-burden participants. Scoring for the IPAQ followed the 2005 Guidelines (www.ipaq.ki.se/scoring.htm); as recommended, participants answering “don’t know” to questions regarding walking, moderate or vigorous activity were removed from analysis, and the remaining data was converted into MET (minutes/week) scores.

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Both studies

I.ROC

The Individual Recovery Outcomes Counter (I.ROC) is a twelve-item individual level measure (Monger et al, 2012). Questions are asked on a 1-6 scale ranging from 'Never' to 'All of the time', with higher scores representing greater progress towards personal recovery. For analysis, a single score is calculated as the summed total of the twelve items. Initial validation findings (Monger et al, 2013) show the tool has good internal consistency ($\alpha = .86$) and concurrent validity with measures of recovery (Recovery Assessment Scale: Giffort et al, 1995) ($r = .723$, $p < .01$) and clinical outcomes (BASIS-32: Eisen et al, 1996) ($r = -.602$, $p < 0.01$). I.ROC has adequate readability, with a Flesch Kincaid score of 6.2 for the questions and scoring scale (unpublished data).

General Health Questionnaire-28

The General Health Questionnaire (GHQ; Goldberg, 1978) was used in both studies as a measure of participants' current mental and physical health. GHQ is a screening tool for present minor psychiatric issues in non-clinical populations. Several forms of the measure have been developed ranging in length from 12 items to 60. For the purposes of these studies, the 28-item measure was used (GHQ-28; Goldberg & Williams, 1988). GHQ-28 is composed of four subscales (7 items each): somatic symptoms, anxiety and insomnia, social dysfunction and severe depression. Psychometric properties of the tool have been widely reported (Goldberg et al, 1997), and include high validity coefficients (GHQ-28 α ranges from .82 to .94 with a mean total of .88). For the purposes of this study, a 0-3 Likert scale was used in line with recommendations (Goldberg et al, 1997), such that the higher the score, the more severe the condition. Summed scores were used for each of the four subscales and the overall total.

Procedure

All participants received project information sheets before consenting, and were fully debriefed.

Study 1

Participants were randomly allocated a testing pack containing I.ROC and the GHQ-28 along with a subset of half of the benchmarking battery, in a counter-balanced order (this was done in order to prevent testing fatigue). Testing pack A contained the Hope, CLSS and IPAQ measures, whilst Testing pack B

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contained the Wellbeing, Self-esteem, and Empowerment questionnaires. At the end of testing, participants filled in a feedback questionnaire.

Study Two

Participants were asked to complete I.ROC, GHQ-28 and a brief demographic questionnaire as part of an online questionnaire. At the end of the online study, participants were asked to provide their email address if they wished to participate in the second stage. Each participant was then contacted by email with the link to the second part of the study 1-4 days after completing the first phase. In the second phase, participants were again asked to complete I.ROC (and the GHQ-28: MHO sample only). Participants who did not complete the second phase were sent two reminders. If they did not complete the second phase, their results were removed from analysis for test-retest, but included in the correlational analysis of the two measures.

Data Analysis

Results were analysed using SPSS 22 for Windows.

Following the removal of items with low response rates for the CLSS and Wellbeing Scale, the percentage of complete cases ranged from 86% (Empowerment Scale, study 1) to 98% (I.ROC, both studies). There were no discernible patterns to missing data based on demographic variables. For each analysis, cases with any missing data within the scales under observation were removed using listwise deletions in SPSS.

Descriptive statistics for the total scores and subscales were calculated for each of the measures (table x), to assess the measures for normality and homogeneity of variance. Normality was assessed using the Shapiro-Wilk test, and by reviewing the histograms, skew and kurtosis statistics. Scores distributions were assumed to be non-normal only if the Shapiro-Wilk test was significant and skew/kurtosis were outside the acceptable range ($> \pm 2$; George, 2011; Gravetter & Wallnau, 2016). Homogeneity of variance was tested using Levene's statistic. Post-hoc power analyses were conducted in G*Star Power 3.1.9.2 (Faul et al., 2007; Faul et al., 2009) and evaluated against the current convention within social research of .80 (Cohen, 1992a).

Both parametric and non-parametric tests returned similar results in all instances. Only parametric statistics are reported however as non-parametric statistics have less power (Ghasemi & Zahediasl, 2012),

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and parametric statistics have been found to be robust to violations of many underlying assumptions including normality, (Norman, 2010; Havlicek & Peterson, 1976).

The relationships between total and subscale scores on I.ROC and each measure in both studies were analysed following conventional linear regression analysis methodology using Pearson's correlations.

Study One

I.ROC totals were calculated by summing the scores from 1-6 on each of the 12 items, giving a single score out of 72 for each participant. Totals for each other measure were calculated in accordance with author guidelines, as described above. I.ROC and the GHQ were completed by all participants. The whole sample was therefore used for this correlational analysis. For all other measures, only the I.ROC scores coming from participants who completed the particular measure were used.

Study Two

Data was analysed for all scores at time one and all scores at time two, providing a between-participants analysis. A second analysis was completed for the subset of participants who completed testing at both time one and time two, providing a within-participants analysis.

Intraclass Correlation Coefficients (ICCs) were used to assess test-retest reliability using a one-way random, single measure model (equates to model 3,1 described by (Shrout & Fleiss, 1979). A recommended method (Mokkink et al., 2012) commonly used within psychometric evaluations, ICC's provide a better estimate of reliability than Pearson's r which fails to detect systematic error (Yen & Lo, 2002). It was predicted that, as I.ROC is used to measure long-term (quarterly) change, no significant difference would be seen between scores at time one and time two. The GHQ is a measure of current psychiatric state, covering a period of one week. More variation in scores was therefore expected for this measure.

Correlational analysis of GHQ and I.ROC scores at time 1 again used Pearson's r .

Combined Studies

Where comparable datasets were available from both studies, for example I.ROC scores, data were analysed separately and then combined. Results of both analyses are presented. In addition, threshold values of GHQ and their relationship to I.ROC total scores were explored.

GHQ Threshold values

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GHQ is used to identify minor psychiatric issues through the total scores for the questionnaire. In a large, multi-site World Health Organisation study, Goldberg and colleagues (Goldberg et al, 1997) compared previously published threshold values, and identified the values for all 15 countries participating in the research. Threshold values represent the point at which an individual is first described as currently experiencing any psychiatric ailments. Based on their analysis of past and current threshold scores, Goldberg et al recommend that a total GHQ-28 score of 23-24 should represent the cut-off value. 60% of the current sample scored 22 or less when using the 0-3 scoring method, therefore the lower cut off value of 23 was used.

Results

Study One

Demographics

Participants were 198 females, 33 males, 1 transgender, and five participants who did not state their gender. Participants ranged in age from 16 to 63, (mean = 27.65, standard deviation (SD) = 10.37). Sixty-seven (28%) participants disclosed a history of (clinical or self-diagnosed) mental ill-health. Of those who recorded mental health problems, the majority listed depression (48) and (16) / or (10) anxiety. Ninety-eight diagnoses were recorded in total.

Independent samples t-tests showed no significant differences between scores on any measure based on gender (I.ROC: $t=-.24$, $p=.81$). I.ROC scores did not correlate significantly with the age of the participant ($r=.03$, $p=.67$), but there were small significant positive correlations between age and self-esteem ($r=.27$, $p<.01$), empowerment ($r=.26$, $p<.01$) and wellbeing ($r=.18$, $p<.01$).

History of mental health problems

Results of one-way ANOVA showed that I.ROC total scores differed significantly depending on their disclosure of mental health problems ($F = 10.03$, $p < .01$). Post-hoc analysis using Tukey's HSD showed that participants with no history of mental health problems scored significantly higher (mean difference = 5.94, $p < 0.01$) than those with no history of mental health problems (mean = 50.5). Participants not disclosing their history had an average I.ROC score that fell in between those with and those without a history of mental health issues.

Descriptive Statistics

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All participants (n=237) completed I.ROC and the General Health Questionnaire (GHQ). Of the participants, 99 completed testing pack A, and 138 completed testing pack B. One participant completed only the I.ROC and GHQ. Using the Shapiro-Wilk test, only two of the eight questionnaires were statistically normally distributed ($p < .05$), however skew and kurtosis statistics largely remained well within accepted the limits of ± 2 . Post-hoc power analyses exceeded 0.8 in all instances with the exception of the IPAQ/ I.ROC correlation (Power=.31).

Convergent Validity

Table 4 shows that I.ROC scores ranged from 27 to 72 (possible score range 12-72), with a mean of 54.45. Internal consistency of the measure was good at .82 (George & Mallery, 2003). With the exception of IPAQ, correlations between the total scores of all measures reached significance of at least $p < .05$ (Table 5). IPAQ total scores failed to reach a significant level of correlation with three of the measures, including I.ROC ($r = .11$, $p = .11$). IPAQ scores did correlate strongly with the Exercise & Activity indicator however ($r = .26$ (moderate); $.51$ (vigorous); $.32$ (total activity), $p < .01$). Correlations between I.ROC and all other measure totals and subscales are shown in Table 6.

Study Two

Demographics

MHO: Participants were 29 men and 104 women. The mean age was 43, with a range of 59 years (min: 21, max: 80, SD: 11.75). Of the 133, 104 completed testing at both time points.

University Students: Participants were 24 male and 91 female students and staff. The mean age was 27.4, with a range of 47 years (min: 18, max: 65, SD: 11.28). 70 participants completed testing at both time points.

Kruskal-Wallis and Mann Whitney U^{37} tests were used to check for differences in scores based on demographic information. At both time points, I.ROC scores and GHQ-28 scores did not differ significantly based on gender of the participant ($U = .061$ (GHQ T1); $.846$ (I.ROC T1)). Kruskal-Wallis tests revealed significant differences between age groups for both I.ROC and GHQ. Pairwise comparisons

³⁷ Mann Whitney U denoted as U

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using Dunn's test³⁸ revealed where the differences lie; at time one, participants in the oldest age bracket (60+) scored significantly higher on I.ROC than the youngest two age ranges (0-19: $z = -101.897$, $p < .01$; and 20-29 $z = -86.963$, $p < .01$). At time two, participants in the oldest age bracket again scored higher, with scores differing significantly from those aged 0-19 ($z = -66.653$, $p < .05$), and 30-39 ($z = -53.488$, $p < .05$). GHQ scores were significantly higher for participants aged under 20 than for those aged 60 or over ($z = 28.65$, $p < .01$), although scores at time 2 did not vary significantly between any of the age groups ($H = 4.03$, $p = n/s$).

Descriptive Statistics

The two questionnaires totals and GHQ subscales were tested for skew and kurtosis prior to analysis; normality testing using the Shapiro-Wilk test showed both measures fail to meet assumptions of normality. For the N=70 university sample, the mean I.ROC scores at time 1 (51.8) were similar to those at time 2 (52.21), a difference of only .41. For the N=103 MHO sample, mean score at time 1 (57.5) was marginally lower at time 2 (57.21), representing a difference of -.28. The combined scores actually showed identical means across the two testing sessions (55.19). Neither questionnaire met the assumptions for a normal distribution, therefore non-parametric tests were used to analyse the results. I.ROC demonstrated excellent internal consistency at both time 1 ($\alpha = .911$) and time 2 ($\alpha = .931$). Coefficients for the GHQ-28 were good at time one ($\alpha = .833$) and time two ($\alpha = .866$; MHO sample).

Test-retest Reliability

Time between the two completions ranged from 1-27 days at the MHO, with a mean completion time of 8 days, and from 7 to 16 days within the University sample, with a mean completion time of 12.3 days. Correlations between scores for each measure at time 1 and time 2 were calculated using Pearson's r (Table 7).

I.ROC

I.ROC total and subscale scores at t1 and t2 showed a very high level of agreement, with mean values varying by a maximum of 0.1. The ICC coefficient was 'Excellent' for the total scale (I.ROC Total: ICC=0.909, $p < 0.05$), and 'Good' for subscales (Koo & Li, 2016), indicating a very good level of

³⁸ Dunn's test reported as z scores

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reliability for the measure over repeated testing sessions. Agreement between scores on individual I.ROC questions was approximately 90% (range: 89-92%) for all items, and Weighted Kappa's showed a 'moderate' to 'good' level of agreement

GHQ-28

Results of a Wilcoxon signed rank test showed no significant difference between the mean values at t1 and t2 ($W=-1.886$, $p=0.059$), and total scores were highly correlated ($r_s=0.787$, $p<0.001$).

Concurrent Validity

Pearson's r correlations (2-tailed) were calculated for the total scores on the two measures and for the subscales of GHQ with I.ROC total scores at time 1. For the MHO, University, and combined sample ($N=193$), significant negative correlations were found between I.ROC and GHQ-28 ($r=-.566$ for the total correlation, $p<.01$). Significant negative correlations were also found between all GHQ subscales with the I.ROC total (significant correlations ranged from $\rho = -.345$ to $-.539$, $p<.01$ for the combined sample).

Combined Study Results

GHQ-28 and I.ROC scores for participants who completed both I.ROC and GHQ with no missing values, from both studies (for study 2, data were taken from testing time 1), were combined to explore threshold values for minor psychiatric ailments.

I.ROC

I.ROC scores for the combined sample ($n = 455$) were again non-normally distributed, with a significant negative skew. Mean scores per indicator ranged from 3.6 for Social Network to 5.2 for Safety & Comfort, with an overall average per question of 4.5. Total I.ROC scores ranged from 22 to the maximum total of 72, with a mean of 54.6 ($SD = 9.8$). I.ROC again demonstrated excellent internal consistency ($\alpha = .904$).

GHQ Threshold Scores

The recommended 60-20-20 method (Goldberg et al, 1997) was used to identify the threshold for the current population. Sixty percent of the population scored 22 or less on the GHQ-28. This was in keeping with Goldberg et al's figure of 23. Analysis used both the recommended cut off of 23 (63% of the current sample) and the threshold apparent using the 60-20-20 analysis of 22 (Table 8). As similar results were found using both cut-off values, results are only reported for the cut-off value of 22, maintaining the 60-20-20 proportions recommended. Results of an independent-samples Kruskal-Wallis test showed that

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I.ROC scores were significantly higher for people scoring below the GHQ-28 threshold (mean = 59) than above it (mean = 47.7) ($H = 159.9$, $p < .001$). Pairwise comparisons (Dunn's test) showed that I.ROC scores were also significantly lower for those scoring in the top 20% (and therefore meeting criteria for 'high psychiatric ailment; mean = 43.2) for GHQ than for those in the middle group (moderate psychiatric ailment; mean = 51.95) ($z = 83.8$, $p < .01$) and those in the bottom 60% (no psychiatric ailment; $z = 192.84$, $p < .001$).

Conclusions

Recent reviews have highlighted the need for more 'substantial and robust' evaluation of the psychometric properties of tools designed to measure recovery (Shanks et al., 2013). The current paper aimed to address this for one such measure, I.ROC. In two studies of a total of 455 participants, I.ROC was shown to be a valid and reliable measure of recovery. I.ROC demonstrated 'good' internal consistency (George & Mallery, 2003) (study 1: Cronbach's alpha (α) = .82; study 2: $\alpha = .931$; combined: $\alpha = .89$), surpassing Nunnally's benchmark for 'basic research tools' (Nunnally et al., 1967). Tools developed to measure recovery should comprehensively reflect all underlying 'dimensions of recovery' (Ralph, 2000), rather than focus on one particular aspect (Sklar et al., 2013). To evaluate the extent to which I.ROC reflects the multifaceted nature of recovery, concurrent validity of the scale was assessed. I.ROC correlated significantly with measures of key aspects of recovery, including measures of hope, empowerment, self-esteem, wellbeing, general health and community living skills (Jose et al., 2015; Leamy et al., 2011; Young & Ensing, 1999). The two relevant I.ROC indicators, Physical Health and Exercise & Activity, also correlated significantly with a measure of physical activity (IPAQ).

Part two compared I.ROC scores across two testing sessions in a dual-site study. Results showed that I.ROC is a reliable tool, providing a consistent measurement of individual recovery over a short period of time (average 8-12 days). The results suggest that I.ROC is not as sensitive to minor changes as the GHQ. I.ROC scores showed no significant change over a period of approximately 8 days, whilst the smaller sample that completed the GHQ at both time points showed a slight reduction in scores at time two. This suggests that, in line with developers' recommendations, I.ROC measures change over a longer period of time but cannot reliably highlight smaller changes on a short time frame. More testing is needed to evaluate sensitivity to change of the measure

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Analysis of the combined results of study 1 and study 2 for GHQ and I.ROC showed a significant inverse correlation between the measures, supporting the existence of a negative relationship between symptoms of mental illness and personal recovery (Law et al., 2014). Macpherson and colleagues (Macpherson et al., 2015) reported that for participants in the REFOCUS trial (Slade et al., 2015), personal recovery gains mirrored those made in clinical recovery. The findings of this study are thus supportive of current theories regarding the relationship between clinical and personal recovery.

I.ROC scores also differ significantly based on whether the participant's GHQ score falls above or below the threshold for current minor psychiatric ailment as defined by Goldberg et al, (1997). This suggests that I.ROC is sensitive to current minor psychiatric issues, and supports the position of Neil and colleagues, who suggest that personal recovery may in fact be dependent on overcoming symptoms or 'achieving general psychological wellbeing'. Although the use of symptom-related measures is not uncommon in the validation of recovery measures (Chiba et al., 2010; Law et al., 2014; Neil et al., 2009), the effectiveness of recovery measures in identifying current psychiatric issues has not yet been widely examined. Larger studies are now needed to investigate this potential use for recovery measures.

Implications for Practice

I.ROC could be a useful tool for monitoring outcomes in mental health and social care settings.

Concurrent validity with measures included in study one supports the validity of I.ROC as a measure of recovery. The reliability of I.ROC supports routine use of the tool, evidencing the ability of the measure to detect actual changes in recovery, rather than random variation or small fluctuation of scores.

Inclusion within I.ROC of indicators focusing on physical health and activity suggest a use for I.ROC within wider evaluations, for example of physical activity interventions. Whilst physical activity is often left out of definitions of personal recovery (Onken et al., 2007), evidence of its impact on mental health and wellbeing is strong (Firth et al., 2016); and with an increasing number of schemes existing to promote physical activity in this population (Maier & Jette, 2016) some researchers have now begun to make the link with personal recovery (Cullen & McCann, 2015; Rosenbaum et al., 2015).

Some now propose that recovery is situated within a wider framework of wellbeing, arguing that recovery is the "journey through which people experience wellbeing" (Papadopoulous et al, 2013). Concurrent validity with the GHQ-28 and a measure of general wellbeing support this view, and suggests that I.ROC

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could prove useful within wider health and social care settings, for example to help apply the recovery model in physical healthcare and rehabilitation.

The focus of I.ROC on conversation and personal outcomes supports its use within supportive relationships in general. Indeed, researchers have long argued that recovery measures should not be used in a 'sterile manner' (Neil et al., 2009), but rather be used as aides to goal setting; information given during measure-driven discussions should not sit in isolation but be acted upon (Macpherson et al., 2015).

Limitations & Future Research

A convenience sample of staff and students was used in this study. To increase generalizability of the findings, a population with diagnosed mental health conditions should be used. As previously suggested, I.ROC is also a potentially useful tool outwith mental health,; as a measure of wider wellbeing, it could be used for example within older adults services, and should subsequently be tested for use within more diverse populations, to evaluate the limits of this hypothesis. The test-retest reliability was assessed over a short period of time, over which no change in scores was expected. Future testing should investigate change in I.ROC scores over a longer period of time. For a more robust assessment of test-retest reliability a future study could use a variety of tools designed to measure change across different time scales.

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For references, see bibliography

Tables & Figures

Tables and figures available on request.

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