Using a repertory grid to evaluate psychological change: A review of the evidence and application of the tool to evaluate a brief Cognitive Analytic Therapy-informed intervention for adolescents who self-injure

A thesis submitted to the University of Manchester for the degree of Doctor of Clinical Psychology in the Faculty of Biology, Medicine & Health

2022

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Word Count

Excluding title pages, references and appendices

Paper 1: 8,435

Paper 2: 6,914

Paper 3: 5888

Total: 21,041 + 311 (thesis abstract)

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Thesis Abstract

The thesis investigated how repertory grids (RGs) have been applied to evaluate psychological change following therapy and whether the method is a feasible and acceptable tool to evaluate a pilot, brief Cognitive Analytic Therapy (CAT) informed intervention for adolescence who engage in non-suicidal self-injury (NSSI). The thesis is presented as three papers: (1) a systematic review of the literature; (2) an empirical study using a RG to evaluate a brief CAT-informed intervention; and (3) a critical appraisal of the overall research process.

Paper one is a systematic review exploring the use of RG's to evaluate therapy. The systematic search strategy identified 23 relevant papers. The review highlighted that the current evidence base is poor quality. Most of the included studies reflected small-scale practice-based evidence, rather than gold standard randomised control trials. Common ways of implementing the RG included providing elements and eliciting constructs, and analysing the data by comparing element distances or complexity of construing. There is some evidence of significant change on RG metrics, which also mirrors changes on self-report measures. However, further rigorous research is required.

Paper two is an empirical paper investigating the feasibility and acceptability of using a RG to evaluate a brief CAT-informed intervention for adolescent who engage in NSSI. Eleven adolescents completed the 5-session CAT-informed intervention; nine participants completed pre and post-therapy RGs. Results suggested RGs are an acceptable methodology to administer to adolescents who self-injure. Following the brief CAT-informed intervention, participants' RGs indicated some change in construing. For example, changes in distance between self and ideal self were observed, which may indicate improvements in participants' self-esteem. Larger scale research is required.

Paper three is a critical reflection of the research process as a whole. Paper one and two are presented separately, highlighting areas of strength and weakness, and implications for future research. Personal reflections on the experience of completing the thesis are also included.

Declaration

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Acknowledgements

Firstly, I would like to express my gratitude to the young people who participated in the project; I appreciated you giving your time to meet with me and talk openly about your difficulties. I will always be grateful for what I have learnt from each of you.

Dr Peter Taylor and Dr Samantha Harley, you have been brilliant supervisors. I am extremely grateful for your guidance, and reliable support throughout the three years. You have taught me so much in terms of clinical and research skills, which I will continue to use throughout my career. Additionally, thanks to Clive Turpin for your invaluable supervision; and to Callie Swindells-Macleod for your support with the independent review process.

I would like to say thank you to my peers, particularly the people who have sat in the basement computer room and listened to me vocalising the ups and downs of writing this thesis. Rebecca Haw, I feel lucky to have been able to work with you as a team member. The project would not have been possible without you.

Alissa Miners, we have been joined at the hip since the first day of undergraduate. It has been such a privilege to complete doctoral training together. You have been there every step of the way, and I can't imagine what it would have been like without you.

Finally thanks to my family, and also to Emeka for their continuous encouragement, and kindness – you made my life a lot easier through this stressful period. Importantly, I would like to thank my mum without your support I would not be where I am today, something I will never forget and always be grateful for.

Paper 1:

Using a Repertory Grid to Evaluate Psychological Change: A Systematic Review

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Word count: 8,435 (entire text); 247 (abstract); 5,968
(main text excluding tables, figures and references).

This paper will be submitted for publishing to the Psychology & Psychotherapy: Theory Research and Practice (word count 6,000). Author guidelines can be found in Appendix A (not all appendices included in this thesis will be submitted for publishing but are included for context).

ABSTRACT

Purpose:

The repertory grid (RG) is an assessment method developed from personal construct theory (PCT). The idiographic and person-centred methodology has previously been used to measure psychological change. There is limited understanding of how RGs are commonly implemented and what metrics are used to measure change. The current paper is the first to provide a systematic literature review and quality appraisal of studies using RGs to evaluate psychological therapy.

Method:

The papers protocol was pre-registered (CRD42021239525). From the earliest available date to February 2021, an electronic search was carried out of PsychINFO, EMBASE, CINAHL Plus, MEDLINE and Web of Science databases. Twenty-three eligible papers were identified and independently assessed for risk of bias. A narrative synthesis was undertaken to investigate how RG's have been implemented and used to measure psychological change following therapy.

Results:

The majority of studies were small-scale practice-base evidence and, rated as weak quality on the risk of bias. Generally, participants were provided with elements from which constructs were elicited. The common metrics used to measure psychological change were the distances between elements, correlations, and exploring changes in overall grid complexity. There was evidence of some statistical change using these metrics, which also mirrored changes on self-report measures.

Conclusion:

RGs can be flexibly implemented and analysed using a broad array of metrics, with some suggestion they are sensitive to measuring psychological change. Methodological issues limit interpretations and larger more rigorously designed trials are needed to understand the feasibility of using RGs to evaluate change.

Key words: Systematic, Review, Repertory Grid, Personal Construct Theory, Psychological Therapy, Evaluation.

Practitioner points:

- Preliminary evidence may suggest some RG metrics are sensitive to evaluating therapeutic change.
- The current evidence base has weak methodological quality.
- Most of the research reflects practice base research; therefore, larger robust studies are required.

INTRODUCTION

Within standard clinical practice and psychological research the effectiveness of therapies is most commonly evaluated using behavioural and psychiatric self-report measures (Mason, 2008). This nomothetic approach focuses on assessing traits or symptoms associated with a group of people or diagnosis (Beltz et al., 2016), and adopt a prescriptive way of administrating and scoring outcomes. However, these measures have been criticised for not always capturing personal meaningful change, as they are restricted on what they measure, and regularly focus on symptom reduction. Consequently, individuals can feel 'not listened to' by services (Hare et al, 2011). Given these limitations, alternative approaches have been proposed to help understand the idiosyncratic change. The Repertory Grid (RG) methodology is a structured interview technique, which helps to identify the way a person interprets or creates meaning from their relationships and experiences (Kelly, 1955). RGs were developed from Personal Construct Theory (PCT) and have been used internationally within research and clinical practice (Fransella et al., 2004). The RG has continued to evolve and is now used within a non-PCT framework as a versatile form of idiographic assessment (Randal et al., 2016), as well as in studies adopting a PCT perspective (Winter et al., 2018).

RGs provide a framework to identify the ways that an individual construes (e.g. interprets or gives meaning to) their experiences and the world (Fransella et al., 2004; Jankowicz, 2005). Elements are typically objects, things or people and are usually presented across the top of the grid. The researcher can either provide elements or occasionally, they are elicited from the participant by stating 'role titles' (e.g. 'a friend') and asking them to identify individuals in their lives that may fill these roles (Jankowicz, 2005). At times, to ensure both positive and negative constructs are elicited, contrasting pairs are included, such as 'a person I like' and 'a person I do not like' (Houston, 1998). Elements can also represent hypothetical individuals or self-states, such as 'ideal self' (e.g. the person they would like to be), or 'myself when not coping'. Through the use of such elements RGs can be used to explore individuals' self-perception in an idiographic tailored way.

Constructs are the way people distinguish between elements; they are usually bipolar in nature (e.g. mean – kind; Winter, 1992). There are different ways to generate constructs; dyadic comparison, triadic comparison and laddering are commonly used methods. These approaches involve asking participants to compare varying sets of elements, and the constructs are the terms they use to differentiate these elements (Fransella et al., 2004). For

example, a participant may indicate that their best friend is more caring than they are, thus helping to generate a new construct along which elements differ (e.g. caring – hurtful). Constructs are usually presented along the sides of the RG. Generally a similar numbers of elements and constructs are used, approximately between 10 and 15 are recommended (Faccio et al., 2012). Participants are then required to rate, on a scale, where each element sits in respect to each construct, thus producing the final grid. For example, 'how would you rate your friend on the construct 'Caring – Hurtful' using a 0 to 7 scale, where 0 equals caring and 7 equals hurtful?'

RGs have been widely used to evaluate therapies (McNair et al., 2016; Randal et al, 2016; Winter et al., 2018). They are complex tools that can be implemented in different ways and, because of this, a range of metrics can be extracted from them. If using RG's from a pure PCT perspective, Kelly (1955) states that a client would go through a process of reconstruction during therapy. Therefore, if the therapy is effective and reconstruction has occurred, there will have been modification within their RG scores, such as changes in the structure and content of the individual construct system. From a non-PCT stance RGs can be used to track changes in self-perception, cognitions about self or other, or cognitive complexity.

Winter (2003) summarised the RG metrics that are commonly used to evaluate therapies. One of the most frequently used metric was examining the structure and complexity of grids using principal component analysis (PCA). Individual grids with high variance accounted for by the first component, are believed to have "tighter", simpler, or a more unidimensional construct system. The distance between elements is also regularly measured: the higher the distance between a particular pair of elements, the greater the dissimilarity in terms of how those elements are rated across the constructs. It was noted that the distances between self and ideal-self were widely evaluated, stating the larger the distance between the elements, the poorer the individual's self-esteem (e.g. the way they see themselves now is very dissimilar to how they would like to be; Winter et al., 2007). It is also possible to estimate a correlation between constructs. A high inter-correlation has been used to suggest a tighter or less complex construct system, which in turn has been interpreted as someone being more inflexible or fixed in thinking.

Despite the usefulness of Winter's (2003) review, it is not systematic in nature and is now outdated. To date, no research has systematically summarised how the RG most commonly evaluates therapies, therefore it is unclear in what way the methodology is

being used to measure psychological change. For instance understanding how current RGs are implemented and which outcome metrics are regularly measured. It is also important to review whether RG metrics correspond with the results of self-report outcome measures. If RGs are an effective way of evaluating therapy we may expect the results within these studies to be consistent with other outcomes.

The aims of this review are (1) to investigate commonalities and differences in how RG's are administrated in regards to evaluating therapies; (2) to understand what RG metrics are used and whether they are sensitive to measuring change; (3) to evaluate whether change on self-report measures is associated with patterns of change on RG assessments; (4) critically appraise the quality of the studies identified using a standardised quality assessment tool. These findings will provide an understanding of how the RGs are implemented and how further research, using this methodology, should measure psychological change.

METHOD

Design

This review was conducted in accordance to Preferred Reporting Items of Systematic Reviews and Meta-Analyses (PRISMA) guidelines (Moher et al., 2009). A protocol was pre-registered with the International Prospective Register of Systematic Reviews (PROSPERO; CRD42021239525; Appendix B). There were two deviations from the protocol: amendments to the exclusion criteria (parenting programs and case studies were excluded) and a change in quality appraisal tool (see Appendix C for further information).

Search procedure

Five electronic databases were systemically searched from the earliest data available to February 2021 (PsychINFO, CINAHL Plus, EMBASE, MEDLINE, & Web of Science). Databases were selected due to their inclusion of published research focusing on psychological therapies and PCT. The following search terms were to be present in the title or abstract, combined with Boolean operators: ("Repertory Grid*") OR ("Rep grid*"). Broad search terms ensured comprehensive searching of the literature. Medical Subject Headings (MeSH) terms were also used to include subject headings that mapped onto relevant keywords (Table 1)

Table 1. *Search terms for each electronic database*

Database	Keyword	Medical Subject Heading
PsychINFO	("Repertory grid*") or ("Rep grid*")	Bannister Repertory grid
Medline	("Repertory grid*") or ("Rep grid*")	Bannister Repertory grid
EMBASE	("Repertory grid*") or ("Rep grid*")	Bannister Repertory grid
CINAHL plus	("Repertory grid*") or ("Rep grid*")	N/A
Web of Science	("Repertory grid*") or ("Rep grid*")	N/A

Inclusion and exclusion criteria

For inclusion in this review, studies needed to incorporate: (1) use of RG methodology; (2) administration of the RG across two time points (e.g. pre and post-therapy); (3) evaluation of change following a psychological therapy; defined as the use of verbal and non-verbal techniques to bring about change in psychological processes, for example, counselling, behavioural, relational, and cognitive approaches; (4) the studies to be written in or translated into English.

Papers were excluded if they were: (1) not reporting original data (e.g. review or editorials); (2) case studies that included less than four participants (where studies focused on couples, a couple was counted as one participant); (3) parenting programmes, due to the target of therapy not only being the participant in the study, but indirectly working with the child.

Study selection, data extraction and analysis plan

After studies had been identified they were added to a reference management software system (Endnote; Clarivate Analytics UK LTD [Version 20], 2020) and duplicates were removed. Screening of all titles and abstracts were conducted independently by MM and CSM, any discrepancies were discussed. Both reviewers then independently completed a full text screening of the remaining studies. Disagreements regarding whether a study should be included or excluded were resolved through discussion with PJT. MM reviewed the reference lists of included studies for eligible studies (backwards tracking). Forward tracking was also conducted where MM screened studies that cited included papers. MM

contacted authors of included papers to query whether they knew of any eligible (un)published studies.

MM independently extracted the study characteristics using a spreadsheet. The authors of any papers where missing data had been identified were then contacted. Following completion of data extraction, a coherent textual narrative was synthesized to identify how RGs evaluate therapy (Popay et al., 2006). A meta-analysis was not conducted due to the high degree of variation in the included study design, sample sizes, therapies, outcome measures, RG metrics and statistics reported (Haidich, 2010**).**

Quality Appraisal

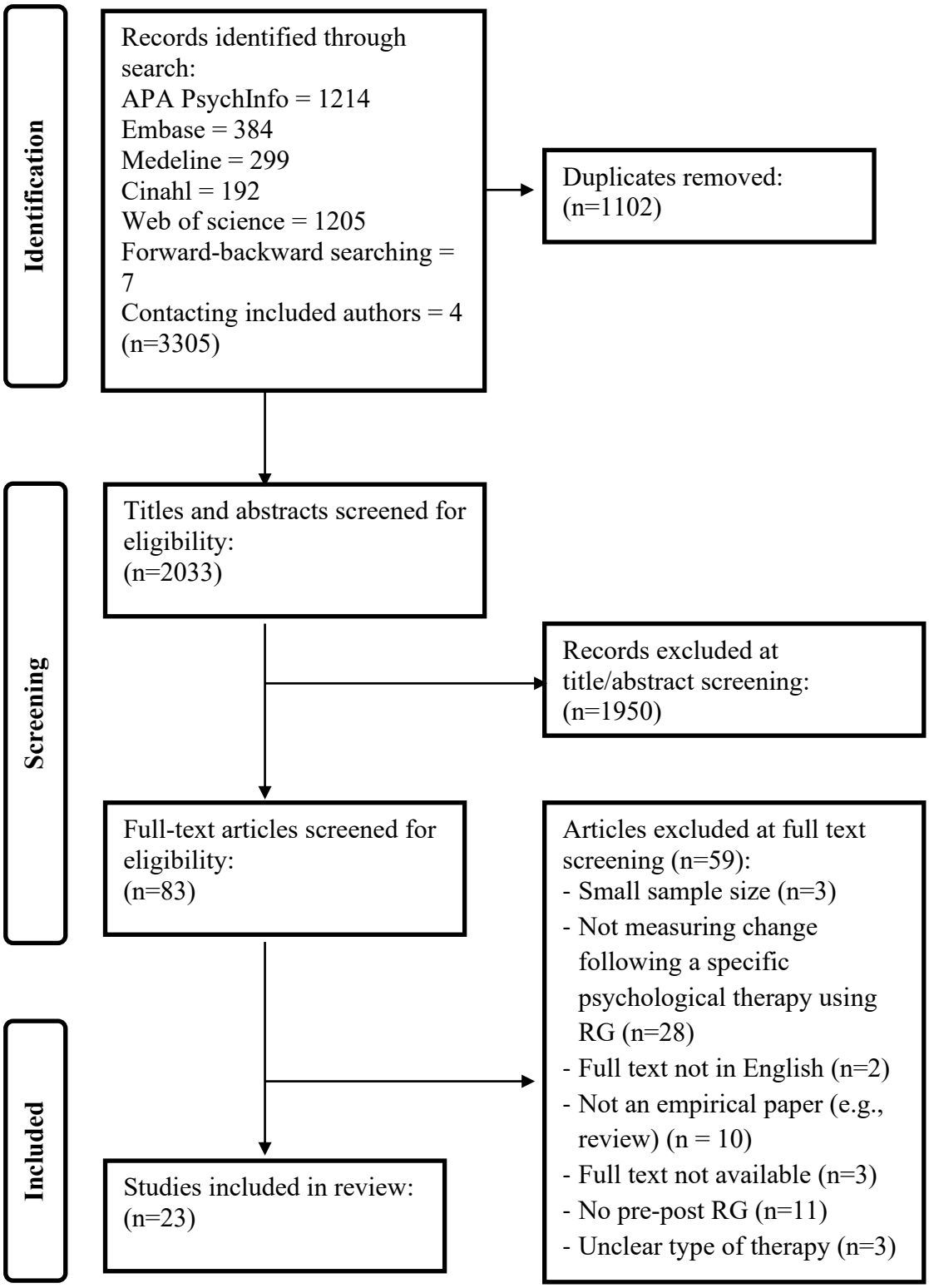
In order to critically appraise the methodological quality of the identified studies the Quality Assessment Tool for Quantitative Studies (EPHPP; Thomas et al., 2004) was used, as it has good content and construct validity (Jackson & Waters, 2005). This tool has been devised to evaluate intervention study designs such as randomised control trials (RCT) and cohort pre-post studies (Deeks et al., 2003). The EPHPP assesses six domains: (1) selection bias (external validity), (2) allocation bias, (3) confounding, (4) blinding (detection bias), (5) data collection methods, and (6) withdrawals and dropouts (attrition bias). Scoring of the studies involves rating each section either, strong (3 points), moderate (2 points) or weak (1 point). The domain scores are then averaged to provide the total score. MM rated all papers and CSM independently rated 35% of studies. The dual-rated papers had an agreement rating of 87.5% for the total scores, and between 62.5% and 100% for individual domains (M=85.4%). Both reviewers received the same guidance documents and training on the use of each tool.

RESULTS

Search Results

In accordance with PRISMA guidelines (Moher et al., 2009), a flowchart highlighting the selection process of studies was produced (Figure 1). Database searching produced 3305 records, of which 1,102 duplicated records were removed. Twenty-three studies met the full inclusion criteria and were included in the final review.

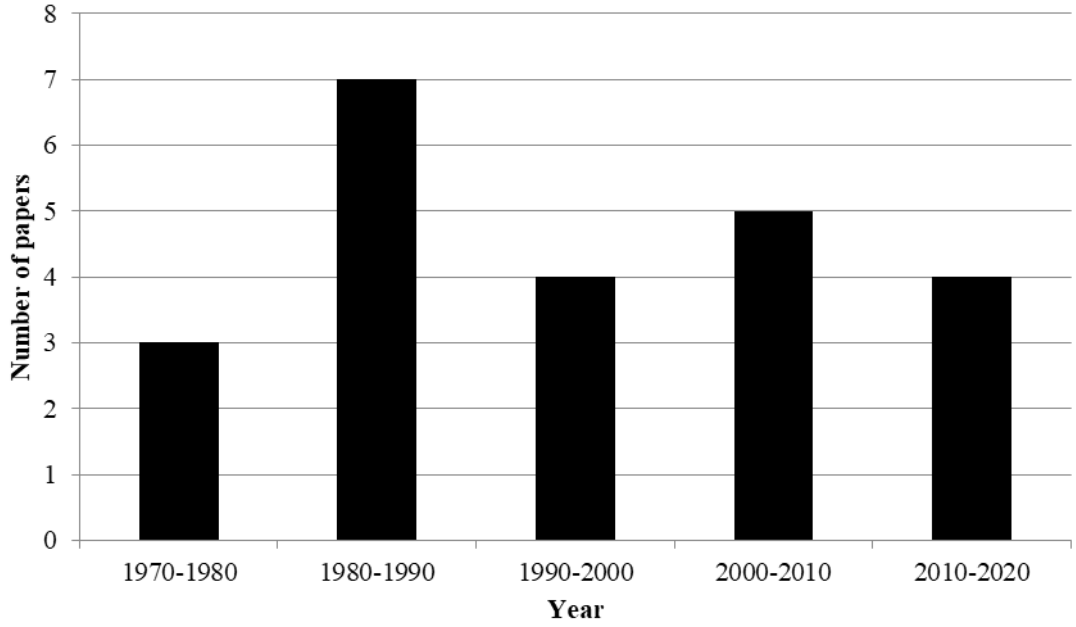
Figure 1. PRISMA flow diagram of data identification and screening process



Study Characteristics

Table 2 summarises the characteristics of extracted studies. RGs have been used as a methodology for a considerable amount of time, with studies being published from 1970s and the majority before 2000 (*k*=14; Figure 2). The methodology has been used consistently and does not appear to have grown in popularity within published research, in contrast to the usual trend of research.

Figure 2. Number of identified papers per decades from the earliest date



Studies originated mainly from the United Kingdom (UK; *k*=16), with a minority from Australia (*k*=2), Canada (*k*=2), Spain (*k*=1), New Zealand (*k*=1) and one paper was unclear (Feinberg-Moss & Oatley, 1990). The majority of studies utilised the single arm repeated measure design (*k*=10) or non-randomised controlled trials (*k*=10), followed by a randomised control trial (*k*=3; RCT). Most studies used an AB design with no follow up (*k*=14). One paper was a doctoral thesis (Thomson, 2000).

A total of 976 participants were included across the 23 papers, ranging from sample sizes of 4 to 197 participants (*M*=44.4; *SD*=53.7), all of whom experienced mental health difficulties such as depression and psychosis. Most studies involved adult participants (*k*=21); followed by adolescence (*k*=1; Truneckova, & Viney, 2007), and O'Connor et al (1993) did not report participant demographic information. The studies evaluated a range of psychological therapies such as Cognitive Behavioural Therapy (CBT), Cognitive Analytic Therapy (CAT) and psychotherapy, and were delivered in group format (*k*=11), individually (*k*=10), or a combination (*k*=1).

Table 2. *Summary of Study Characteristics*

Author (Years)	**Country**	**Design**	**Participants characteristics (n)**	**Therapy**	**Delivery**	**Follow up assessment**
Clarke & Llewelyn (1994)	UK	Repeated measures	Women sexual abuse survivors (n=7)	CAT	Individual	Post therapy, 3-month
Clarke & Pearson (2000)	UK	Repeated measures	Male sexual abuse survivor (n=4)	CAT	Individual	Post therapy
Feinberg-Moss, & Oatley (1990)	NR	Non-RCT	Mild/moderate distress (n=23)	Psychodynamic therapy with imagery, non-imagery psychodynamic therapy, or minimal contact control group	Individual	Post therapy, 8-9-month
Fielding (1975)	Australia	Repeated measures	Personality disorder (n=8)	Psychoanalytic	Group	Post therapy
Fransella, & Joyston-Bechal (1971)	UK	Repeated measures	Interpersonal difficulties (n=8)	Psychoanalytic	Group	Post therapy
Hemmings (1997)	UK	RCT	Range of mental health problems in primary care (n=188)	Counselling or GP mental health advice	Individual	Post therapy
Koch (1983)	UK	Non-RCT	Neurotic disorders (n=27)	Psychotherapy	Group	Post therapy
Large (1985)	New Zealand	Repeated measures	Chronic pain (n=5)	Pain management	NR	Post therapy
Morris (1987)	UK	Repeated measures	Post-natal depression (n=12)	Supportive therapy	Group	Post therapy
O'Connor et al (1993)	Canada	Non-RCT	Chronic tics (n=12)	BT or CT	Group	1-month post therapy

Paz et al (2019)	Spain	RCT	Depression (n=197)	CBT + individual DFT or CBT	Group + individual	Post therapy, 3-month
Randal et al (2016) UK	UK	Repeated measures	Psychosis (n=21)	MBCT	Group	Post therapy
Ryle (1980) UK	UK	Repeated measures	Range of mental health problems (n=16)	Focused integrated active therapy	Individual	Post therapy, range from no follow-up to 44-weeks
Sheehan (1985) UK	UK	Repeated measures	Depression (n=12)	Psychotherapy	Individual	Post therapy
Taylor & Marshall (1977)	Canada	Non-RCT	Depression (n=28)	CT, BT, CT + BT, or WL	Individual	Post therapy, 5-weeks
Thomson (2000)	UK	Non-RCT	Anger difficulties (n=16)	Anger management, CBT psychoeducation	Group	Post therapy
Truneckova, & Viney (2007)	Australia	Non-RCT	Interpersonal difficulties (n=76)	PCP or behavioural management	Group	Post therapy
Vitali et al (2020)	UK	Repeated measures	Mild/moderate depression or anxiety (n=57)	EE	Individual	Post therapy
Winter (1983)	UK	Non-RCT	Neurotic (n=64)	Psychotherapy or BT	Group	Post therapy
Winter, & Gournay, (1987)	UK	Non-RCT	Agoraphobia diagnosis (n=35)	GE	Individual	Post therapy, 3-month
Winter et al (2006)	UK	Non-RCT	Panic & agoraphobia (n=85)	GE + plus PCP or supportive therapy	Group	Post therapy, 6-month and 18-month
Winter et al (2018)	UK	RCT	Depression (n=23)	Body psychotherapy	Group	Post therapy
Winter et al (2007)	UK	Non-RCT	Self-harm (n=64)	PCP	Individual	Post therapy, 6 months to 3 years

Table Abbreviations: UK = United Kingdom; not reported or unclear reporting (NR); Non-RCT = non-randomised control trial; RCT = randomised control trial; CBT = Cognitive behavioural therapy**;** CT = cognitive therapy**;** BT = behavioural therapy**;** GE = Graded exposure**;** PCP = Personal construct psychotherapy; DFT = dilemma-focus therapy**;** EE = Existential experimentation**;** WL = waiting list control; CAT = Cognitive Analytic Therapy; MBCT = mindfulness based cognitive therapy group

Quality Appraisal

The majority of studies included within this review were of poor quality. The EPHPP quality appraisal tool (Thomas et al., 2004), rated 19 out of the 23 studies as weak, four as moderate, and none as strong. Table 3 presents a summary of each domain rating and overall quality rating. Three of the four studies rated as moderate were the only RCT included within the review. Selection bias was rated weak for over 50% of studies (k=12) due to limited information provided on the recruitment process, or weak recruitment procedures chosen e.g. self-referral. For the design domain, no papers were rated as weak. The EPHPP rates non-randomised controlled trials or single arm repeated measure studies as moderate quality. However, it is worth noting that these designs cannot confidently attribute change to the intervention due to the lack of a comparator or randomisation, as any improvement might be due to other factors. 74% (k=17) of studies were rated weak for confounds. Generally, authors reported limited information on whether confounds were controlled in the design or analysis. For blinding, 83% (k=19) of studies were rated weak as participants were likely to have been aware of the research question and no blinding process was described. Many studies did not use valid or reliable data collection tools (39%; k=9). A large number of studies scored weak for withdrawal or drop out (43%; k=10), often due to lack of reporting.

The majority of studies used inappropriate data analysis or provided insufficient methodological details such as justification for statistical test selection and power calculations. Thirteen studies had samples below 25 participants, with some samples as small as four and seven participants. A proportion of studies with small samples used inferential statistics, without conducting appropriate power calculations (e.g. Fielding, 1975; Fransella & Joyston-Bechal, 1971; Large, 1985; O'Connor et al., 1993; Taylor & Marshall, 1977). For example, Sheehan (1985) examined pre and post-therapy statistical change, which was not suitable for a sample size of 12 and used the Page's L test, which was not a test of linear trends. 11 studies that evaluated group therapy, did not take into consideration non-independence of the sample e.g. participants in the same therapy group would have correlated scores, rather than have independent data points which the analysis required. This can increase type-1 error. Paz et al (2019) was the only study that considered the nesting of data. A proportion of studies used 1-tailed inferential tests, where 2-tailed tests would have been more appropriate given the potential for effects in either direction (e.g. Winter et al., 2018). Alternatively, a number of studies did not report whether it was 1-tailed or 2-tailed (e.g. Fielding, 1975; Koch, 1983). Other limitations included studies conducting a large number of statistical tests across multiple outcome

variables, which led to an inflated chance of type I error and introduced uncertainty around which outcomes were salient (e.g. Randal et al., 2016; Winter et al., 2018). It is worth noting, three studies examined participants data in an idiographic way, e.g. person by person, which is arguably a more appropriate way to use data from a small sample, though subjective interpretations are a possible issue (Clarke & Llewelyn, 1994; Clarke & Pearson, 2000; Thomson, 2000).

Table 3. *Component and Global Quality Ratings using the EPHPP*

Study	Selection bias	Study design	Confounds	Blinding	Data Collection method	Withdraw and Dropouts	Global Rating
Clarke & Pearson (2000)	M	M	W	W	W	S	**W**
Clarke & Llewelyn (1994)	W	M	W	W	W	S	**W**
Feinberg-Moss & Oatley (1990)	M	S	S	W	W	S	**W**
Fielding (1975)	W	M	W	W	S	M	**W**
Fransella, & Joyston-Bechal (1971)	W	M	W	W	W	W	**W**
Hemmings (1997)	W	S	M	M	S	M	**M**
Koch (1983)	W	S	W	W	S	W	**W**
Large (1985)	W	M	W	W	W	S	**W**
Morris (1987)	W	M	W	W	W	W	**W**
O'Connor et al (1993)	W	S	W	W	N/A	W	**W**
Paz et al (2019)	S	S	S	M	S	W	**M**
Randal et al (2016)	M	M	W	W	S	M	**W**
Ryle (1980)	W	M	W	W	S	S	**W**
Sheehan (1985)	M	M	W	W	S	W	**W**

Taylor & Marshall (1977)	W	S	W	W	S	W	**W**
Thomson (2000)	M	S	W	W	S	S	**W**
Truneckov, & Viney, (2007)	M	S	W	W	W	S	**W**
Vitali et al (2020)	M	M	W	W	S	W	**W**
Winter (1983)	W	S	W	W	W	S	**W**
Winter & Gournay, (1987)	W	S	W	W	W	S	**W**
Winter et al (2006)	M	S	S	M	S	W	**M**
Winter et al (2018)	M	M	S	M	S	S	**M**
Winter et al (2007)	M	S	M	W	S	W	**W**

Table Abbreviations: Effective Public Health Practice Project (EPHPP) Quality Assessment Tool for Quantitative Studies (Thomas, 2003); S = Strong; M = Moderate; W = Weak

Summary of RG employed

Most commonly the studies were based on the traditional RG, first coined by Kelly (1955) as the Role Construct Repertory Grid (*k*=19). This grid includes elements that focus on self and others (e.g. Self, Ideal self, Parent, Someone I like). Two studies used a rank order grid, which is a modification of the traditional grid, where the individual categorises the elements based on their importance with relevance to a construct as opposed to using a ranking scale (Bannister, 1965). Two studies administrated the Dyad grid, developed by Ryle and Lunghi (1970). Within this grid, the elements are not individuals (e.g. Sarah and Simon); but instead, the elements are the relationships between pairs (e.g. Sarah in relation to Simon, Pam in relation to Andrew, and so on). This grid is linked to the development of CAT, where there is a focus on patterns of relating, but is arguably more challenging to interpret compared to the traditional RG.

Administration of Repertory Grid

Five studies reported that some participants were unable to complete the RG because they were resistant to supplying elements/constructs or they found it too distressing, while some papers did not report a reason (Winter et al., 2018; Winter el al., 1987; Feinberg-Moss, & Oatley, 1990; Thomson, 2000; Clarke & Pearson, 2000). This suggests RGs may not be accessible or acceptable to all participants. It is unclear whether other studies experienced similar difficulties, as this is not commented on.

RG administration varied in the number of elements and constructs from six to 16. The majority of studies (*k*=16) provided participants with predefined elements (e.g. Clarke & Pearson, 2000). Four studies combined supplying predefined elements and eliciting the remaining elements from participants (e.g. Taylor & Marshall, 1977). Generally all studies, which reported data on the topic of commonly used elements, focused on aspects of self; ideal self and self (e.g. Randal et al., 2016). Important others (e.g. mother and father) were regularly included as elements (e.g. Truneckova & Viney, 2007). Two studies included participants from the therapy group as elements, meaning that the RG focused on how participants construed themselves relative to others in the therapy group (Fielding, 1975; Koch et al., 1983). One study used situations rather than people as elements, focusing on circumstances that were rated as high, medium or low risk of tics occurring (O'Connor et al., 1993). The majority (*k*=17) of studies elicited at least some of their constructs from participants using triad or dyad methods, (e.g. Vitali et al., 2020).

Thirteen studies administrated the RG at pre and post-therapy only. Ten studies additionally administrated the grid during therapy, and/or follow up assessments (e.g. Koch, 1983). Seven studies reported they used the same elements at baseline and with follow up grids; having the same elements allows for changes in metrics such as distances to be monitored. Ten studies provided at least one of the constructs. Eight studies either used the same constructs or a mixture of new and original constructs at follow up (e.g. Fransella & Joyston-Bechal, 1971).

Common RG metrics for evaluating psychological change

Table 4 displays the RG metrics used to evaluate change and appendix D provides further explanation on these analyses. The findings highlight the diverse ways RGs can measure therapeutic change, and the most common will be discussed.

11 studies measured the distances (Euclidian distances) between elements and how these changed following therapy. A greater distance between a pair of elements indicates greater construed dissimilarity (Winter, 2003). The popularity of this metric may be due to the ease of calculation and straightforward interpretation, as changes in these distances can be directly understood in terms of modifications in perceptions of self and others, which is a focus of many different therapeutic approaches. Five of the 11 studies that calculated change in element distance reported significant changes in at least one of the measured distances that were consistent with hypothesised effects of therapy (Fielding, 1975; Sheehan, 1985; Winter et al., 2007; Morris, 1987; Winter & Gournay, 1987). 9 out of the 11 studies measuring element distances examined the self and ideal self relationship; a reduction in this distance is often interpreted as increased positive self-esteem or self-concept (Hemmings, 1997; Koch, 1983; Morris, 1987; Randal et al., 2016; Sheehan, 1985; Winter & Gournay, 1987; Winter et al., 2006; Winter et al., 2018; Winter et al., 2007). Four studies found a significant reduction in this distance (Morris, 1987; Sheehan, 1985; Winter & Gournay, 1987; Winter et al., 2007). For example, Winter et al (2007) found significant change in distance between elements, such as self and ideal self, following personal construct psychotherapy for individuals who self-harmed (p<.001), compared to the control group. This change was mirrored in participants' significant reduction in suicidal ideation and depression identified on Beck Scale for Suicide Ideation (BSSI; Beck et al., 1988, p<.001) and Beck Hopelessness Scale (BHS; Beck & Steer, 1988, p<.001) post-therapy, compared to controls. Similarly, Sheehan (1985) reported significant change in element distances following therapy (p<.001), which mirrored the significant decrease in symptoms indicated on the Beck Depression Inventory (BDI; Beck et al., 1978; p<.001,

two-tailed) and Hamilton Depression Scale (HDS; Hamilton, 1960; p<.001, two-tailed). However, this was a single-arm design study, with a small sample size, making it difficult to interpret the findings due to lack of a comparator, thus limiting the study's generalisability and creditability.

Structural change in construing during therapy was commonly evaluated using PCA (k=9). Seven studies used PCA to interpret complexity of construing. This analysis is generally interpreted in that a high proportion of variance explained by the first components means that the individual rates the majority of constructs similarly. This may indicate minimal differentiation, less cognitive complexity or dichotomous construing. Four studies found significant change on this measure (O'Connor et al., 1993; Randal et al., 2016; Winter & Gournay, 1987; Winter et al., 2006). For example, O'Connor et al (1993) showed significant change in participants RGs following cognitive restructuring (p<.02); a decrease in the total variation of ratings across constructs, indicated a tightening in sensitivities of situations associated with the risk of developing tics. However, a Wilcoxon statistical test was used to analyse the RG outcomes of 12 participants, which would have lacked power and not considered non-independence of the sample. With the exception of the RG, this study did not complete any additional measures; therefore, it was unclear whether the significant findings mirrored other outcome measures. It is worth noting; Winter and Goumay (1987) suggested agoraphobic participants showed a looser construct system following behavioural therapy. However, the lack of information regarding pre-post tests meant the magnitude of observed change was not clear, nor did the study provide information of the statistics or effect size. Similarly, the study describes how RG changes reflect other psychometric outcome measures, but statistics were not provided.

Two studies used PCA analysis to visualise the data on participants construing (Feinberg-Moss & Oatley, 1990; Large, 1985). PCA can be used in this way to map the RG data onto a two-dimensional plot, allowing visual inspection. Large (1985) used PCA to visualise the data of a consensus grid, and explored the results using a more qualitative approach. This type of grid averages data from all participants and combined it into one grid. The study reported there was a shift in participants' attitudes following therapy. Notably, by combining all grids, the findings will have removed idiosyncratic differences in participants' outcomes. This study also conducted inferential tests of change in distance, but given the sample size (n=5) these are not meaningful. Feinberg-Moss and Oatley (1990) found no significant difference on this metric.

Two studies examined the intensity metric (Fransella & Joyston-Bechal, 1971; Sheehan, 1985), which provides an alternative measure of tightness of construing to PCA, by summing the squares of correlations between the client's constructs. The higher the score derived, the more unidimensional and rigid is the client's construing. No studies found significant meaningful change on this measure.

Nine studies examined the correlations between constructs, indicating the degree of similarity in their meaning. Low correlations between constructs are associated with loosely organised construct systems, and are believed to suggest a complex way of construing or perceiving the world (Kelly, 1955). Correlations between specific sets of constructs have been used to capture specific concepts. Clarke and Pearson (2000) case series demonstrated that for two out of four participants a significant correlation between adult-self and ideal self increased following CAT therapy (participant 1, r= .62, p<.02, one-tailed; participant 2, r=.78, p<.005, one-tailed). Similarly, Clarke and Llewelyn (1994) found for two out of four participants, who completed pre and post-RGs, there was a significant correlation between self and ideal self elements, indicating improvements in self-esteem (participant 1, r=.93, p<.05; participant 2, r=.70; p<.05).

A number of studies also demonstrated an association between changes in correlations and psychometric outcomes. Paz et al (2019) correlations indicated resolution of conflict is associated with recovery on other measures of depression and distress. Vitali et al (2020) correlations demonstrated a decline in number of Implicative Dilemmas (IDs), which mirrored an apparent decline in depression and anxiety scores. However, it is worth noting the change for IDs was not significant. Winter et al (2006) found some correlations between changes on RG measures and other self-report outcome measures (e.g. Fear Questionnaire Agoraphobia Scale, p<.02). However, these tests were one-tailed, instead of two-tailed.

Four studies examined the content of constructs, and three reported change. Sheehan (1985) developed a measure of negativity, defined as the average number of times the self element was rated as negative on the construct scale, and then presented as a percentage. As predicted, there was a reduction in participants' negative construing following therapy. Morris (1987) indicated participants used more positive constructs to describe themselves after therapy. This change reflects the BDI (Beck et al., 1978) scores, which dropped significantly following therapy (p< .05). Vitali et al (2020) conducted a content analysis based on Feixas et al (2002) coding methodology for systematically classifying constructs.

No difference was found in congruent construct, which is when the difference in scores between the self and the ideal self is smaller than two. However, discrepant constructs, which were defined as constructs where the elements self and ideal self were rated substantively differently, showed a change towards a predominance of personal and relational content. This change was interpreted as indicating individuals developing better self-awareness. Truneckoy and Viney's (2007) content analysis was not clearly described, and magnitude of change was hard to interpret. It is worth noting how examining content of constructs is potentially ambiguous as it is based on interpretations. Thus, if this approach is adopted, it is necessary for researchers to make very specific hypotheses in proposals about expected change prior to conducting the study, and to consider the reliability of judgements being made.

Two studies explored the measure of conflict, or logical inconsistency in construing on the RG (Winter et al., 2018; Winter, 1983). This is an approach where cases are identified when a participant's ratings of elements in the RG are logically inconsistent or in conflict (e.g. the construct pole "intelligent" is perceived in both a positive and negative light in terms of its association with other constructs and elements). This approach has been suggested to provide an understanding of participants 'dilemmas, traps and snags' as discussed in CAT (Ryle, 1990). Winter et al (2018) compared pre and post-therapy scores on conflict measures; no significant change was indicated. Despite the study suggesting participants improved on self-report measures, such as The Manchester Short Assessment of Quality of Life (MANSA; Priebe et al., 1999) measure. Winter's (1983) study found no significant changes in conflict scores.

Table 4. *Narrative synthesis results*

Author (Date)	**Type of gird**	**No. Elements X constructs**	**Elements**	**Construct**	**Frequency of administration**	**Re-administration**	**Repertory Grid Measures**	**Other measures administrated**
Clarke & Llewelyn (1994)	Dyad Grid (Ryle, 1979) *Topic*: Relationship with others	7xNR	Provided	Half constructs provided	Pre and post	NR	Correlations	General Severity Index (GSI) of SCL-90R BDI RSE
Clarke & Pearson (2000)	Traditional grid (Kelly, 1955) *Topic:* self and others	8x 6	Provided	Elicited	Pre and post	NR	Correlations	Jehu Belief Inventory BDI RSES SCL90-R
Feinberg-Moss & Oatley (1990)	Traditional grid (Kelly, 1955) *Topic*: Self and important others	16x16	Elicited and provided	8 provided by author and rest elicited	Pre, during, post treatment and follow up	NR	PCA to visualise the data - Clinicians rated whether the grids suggested improvement or not. Distance between construct and elements (e.g. element "self" and the construct "feels acceptable")	GHQ
Fielding (1975)	Traditional grid (Kelly, 1955) *Topic:* Self, therapist, people in the group, and	11x20	Provided and elicited	Elicited	Pre, during, post	NR	Element distances (e.g. self – others, self – others in therapy group) Rating scores (self-rated change and rating of significant others score)	SCL

	important people to the participant. Therapist also completed a grid							
Fransella & Joyston-Bechal (1971)	Rank order form grid (Fransella & Adams, 1965) *Topic:* self and participants in group	8x20	Provided	Provided	Pre, during and post	Repeated	Intensity Consistency Concordance of person perception (NR)	SDS
Hemmings 1997)	Traditional grid (Kelly, 1955) *Topic*: self and significant others	NR	NR	Elicited	Pre, post treatment, follow up	NR	Element distances (e.g. self—ideal self)	EPQ SI IIP-31
Koch (1983)	Traditional grid (Kelly, 1955) *Topic:* Grid A: Self, group members and therapist Grid B: self and significant others	Grid A: NR x 14 Grid B: 12x14	Provided	Grid A: 2 provided and 12 elicited Grid B: 2 12 elicited and 2 provided	Pre, during and post	Repeated	Element distances (e.g. self - others; self-therapist) Correlation (‘like me in character’ and ‘like I would like to be’)	MMPI POI
Large (1985)	Traditional grid (Kelly, 1955) *Topic:* Aspects of self	6x8	Provided	Provided	Pre and post	Repeated	PCA – visualise the data on participants construing by combining the averages of all participants onto one grid.	STAI BDI EPI IBQ

Morris (1987)	Rank-order Kelly repertory grid (Fransella & Bannister, 1977) *Topic:* Aspects of self and family relationships	NR	NR	NR	Pre and post	NR	Content analysis of constructs e.g. describe self as positive or negative; describe self and mother Element distances (e.g. self - ideal self)	BDI
O'Connor et al (1993)	Traditional grid (Kelly, 1955) *Topic*: High, medium or low risk of incurring a tic	9x elicited till exhausted	Provided	Elicited and one provide	Pre and post	Repeated	PCA – complexity of construing NR	NR
Paz et al (2019)	Traditional grid (Kelly, 1955) *Topic*: self and interpersonal factors	NR	Provided and elicited	NR	Pre and post	Repeated	Correlation	BDI
Randal et al (2016)	Traditional grid (Kelly, 1955) *Topic*: self and others	10x10	Provided	Elicited	Pre and post	NR	PCA – complexity of construing Element distances (e.g. self – self not coping, ideal self – self as recovered from psychosis, self – ideal self) Correlation Salience	CORE-OM FFMQ PSYRATS BAVQ-R BCSS QPR
Ryle (1980)	Dyad Grid (Ryle, 1979) *Topic:* Relationships	6x12	NR	NR	Pre and post	NR	Correlations based on the distance in the grid data between element and various constructs to measure 'Self attitudes'	GHQ
Sheehan (1985)	Traditional grid (Kelly, 1955)	12x10	Provided	Elicited	Pre, during and post	Repeated elements, but	PCA – complexity of construing Element distances (e.g. self—ideal	BDI

	Grid A: Self and others Grid B: Multiple perceptions of the self					new constructs elicited. The end therapy grid repeated constructs used in first grid	self; self – others) Intensity Imbalance Content analysis of constructs	HDS
Taylor & Marshall (1977)	Traditional grid (Kelly, 1955) *Topic:* Self	11x13	Elicited and provided	9 elicited plus 2 provided about self	Pre and post, plus follow up	NR	NR	BDI Items from MMPI VAS
Thomson (2000)	Traditional grid (Kelly, 1955) *Topic:* Self and fixed roles	12x12	Provided	Elicited	Pre and post	Repeated	PCA – complexity of construing Element distances – (e.g. self now – ideal self)	STAXI Novaco Anger Scale
Truneckov, & Viney, (2007)	Traditional grid (Kelly, 1955) *Topic*: self and important people to participant	10x NR	Provided	Elicited	Pre and post	NR	Content analysis (NR)	Self-characterisation Conners' rating scale
Vitali et al (2020)	Traditional grid (Kelly, 1955) *Topic*: self and important others	10x9	Provided	Elicited	Pre and post	NR	Correlation Content analysis	PHQ-9 GAD-7
Winter (1983)	Traditional grid (Kelly, 1955) *Topic*: Self	15x12	Provided	Elicited	Pre and post	NR	"Conflict" examines correlations or distances between constructs being inconsistent which each other	SSI HDHQ HOQ EPI:N C

Winter & Gournay (1987)	Traditional grid (Kelly, 1955) *Topic:* self and important people to participant	16x16	Provided	Provided	Pre and post, plus follow up	Repeated	PCA – complexity of construing Element distances (e.g. self – ideal self) Correlation Mean rating of construct to capturing the uniformity of ratings	MHVS MMPI POI FSS WI HDHQ MMQ TEQ WAI
Winter et al (2006)	Traditional grid (Kelly, 1955) *Topic:* self and important people to participant	15x15	Provided	Elicited plus 5 provided	Pre and post, 6 and 18 month follow up	NR	Mean ratings of the elements on each of the supplied constructs Percentage of variance accounted for by each supplied construct Elements distances Correlations Variance explained by PCA-cognitive complexity	HDHQ FQ AS ACQ BDI STAI
Winter et al (2018)	Traditional grid (Kelly, 1955) *Topic:* self and important people to participant	5 x NR	Provided	Elicited	Pre and post	Repeated elements. New elicited constructs	PCA – complexity of construing Element distances (e.g. self –ideals self, self --others) Polarisation of construing Constriction Conflict or logical inconsistency	MANSA HAMD-21 RSE VAS

Winter et al (2007)	Traditional grid (Kelly, 1955) *Topic:* self	4x 13	Provided	10 elicited and 3 provided	Pre, post treatment, follow up	NR	PCA – complexity of construing Element distances (e.g. self –ideal self; self – ideal partner)	BSS BHS BDI BSI

Table Abbreviations: missing data or unclear/poorly reported to understand methodology used (NR); principle component analysis (PCP); Beck Depression Inventory (BDI); Hamilton Depression Scale (HAMD-21); Symptom Checklist Rating Scale (SCL); Self-Rating Depression Scale (SDS); The Minnesota Multiphasic Personality Inventory (MMPI); The Personal Orientation Inventory (POI); Fear Survey Schedule (FSS); Wakefield inventory (WI); Hostility and Direction of Hostility Questionnaire (HDHQ); Maudsley Martial Questionnaire (MMQ); Treatment Expectancies Questionnaire (TEQ); Wilson-Paterson Attitude Inventory (WAI); The Manchester Short Assessment of quality of life (MANSA); Rosenberg Self-esteem scale (RSE); Visual analogue scale (VAS); Eysenck Personality Questionnaire (EPQ); The symptom Index (SI); Inventory of Interpersonal problems (IIP-32); State-Trait Anxiety Inventory (STAI); Hostility and Direction of Hostility Questionnaire (HDHQ); Fear Questionnaire (FQ); Agoraphobia Scale (AS); Agoraphobic Cognitions Questionnaire (ACQ); General health questionnaire (GHQ); Patient Health Questionnaire (PHQ-9); General Anxiety Disorder (GAD-7); the Symptom-Sign Inventory (SSI); the Hostility and Direction of Hostility Questionnaire (HDHQ); the Hysteric- Obsession Questionnaire (HOQ); Eysenck Neuroticism Scale (EPI: N); the Conservatism Scale (C); the Mill Hill Vocabulary Scale (MHVS); Clinical Outcomes in Routine Evaluation (CORE-OM); Five Facet Mindfulness Questionnaire (FFMQ); Psychotic symptom rating scale (PSYRATS); Beliefs about voices questionnaire (BAVQ-R); Brief core schema scale (BCSS); Questionnaire about the process of recovery (QPR); Eysenck Personality Inventory (EPI); Illness Behaviour Questionnaire (IBQ); Beck Scale for Suicide Ideation (BSSI); Beck Hopelessness Scale (BHS); Brief symptom inventory global severity index (BSI); State-trait anger expression inventory (STAXI); Global assessment of functioning (GAF)

DISCUSSION

The aim of this review was to examine existing literature that had employed a RG to evaluate psychological therapy. The comprehensive, systematic search strategy identified 23 relevant studies, which met the inclusion criteria. A narrative synthesis highlighted that RGs have previously been used to assess psychological change in individual and group therapy, such as CAT, CBT and psychotherapy. Both adults and young people, with a range of mental health difficulties such as psychosis and depression, have completed RGs. Studies often reflected "practice-based evidence" (PBE) e.g. small-scale real-world clinical-led research (Barkham, & Mellor-Clark, 2003) and generally consisted of single-arm designs. Common metrics that were used to evaluate the effectiveness of therapy, included complexity of construing measured using PCA, distance between elements, and correlations between constructs and elements. Some studies showed RG results mapped onto self-report outcome measures such as BHS (Beck & Steer, 1988) and BSSI (Beck et al., 1988); however, it is challenging to draw firm conclusions and provide recommendations on future use of RG methodology due to the poor quality evidence base.

The current findings suggest that the most commonly administrated method was the standard traditional RG (Kelly, 1955). Studies generally provided participants with elements and elicited constructs, and often used less than the recommended number (e.g. nine or ten elements and constructs; Faccio et al., 2012). This common implementation of the methodology was consistent with previous research that suggests elicited constructs are more useful and personally meaningful (Jankowicz, 2005). A few studies provided participants with constructs, this might have made it easier for testing specific hypotheses and exploring ways of construing, as researchers would have known these constructs were meaningful for a specific population (Jankowicz, 2005). Providing constructs can also allow group level trends to be examined, as the grids are comparable and individual results can be aggregated. However, this processes requires adopting a nomothetic approach.

Results from the narrative synthesis indicated a limited number of studies elicited novel constructs during follow up assessments. Using different elements and constructs on pre and post-RGs limits the ability to investigate change in metrics such as element distances (Jankowicz, 2005). However, this may not be relevant for all metrics, for example, evaluating overall structure or complexity. Previously studies have described repeated use of the same constructs as a methodology issue as no assessments are made on an individual's ability to formulate new constructs (Thomson, 2000). Conversely, the process

of elicitation is lengthy, and some participants may be less engaged on the second administration.

Consistent with Winter (2003), the findings implied there are many RG metrics that can be used to evaluate psychological change. The distances between elements, complexity of construing and correlations between constructs and elements appeared most sensitive to change. These metrics can provide a unique insight into an individual's construing and self-concepts, which may be harder to elicit with other research methodologies such as interviews (Winter, 1992). For example, the correlations between particular constructs may reflect dilemmas individuals are struggling with. The review found some of these metrics mirrored changes on self-report outcome measures, but this was not a consistent pattern.

Methodological considerations and future research

The EPHPP quality appraisal tool (Thomas et al., 2004) was used to evaluate the methodological quality of the identified papers. Based on the results of the quality appraisal, the evidence base for research using RGs to evaluate therapy on the whole is weak. The majority of studies were single-arm design, which is considered not very robust for evaluating the effectiveness of therapies. Many studies, including those with controlled designs, had non-significant findings (e.g. Hemmings, 1997). This could be due to a lack of power or that the RG metrics are not sensitive to change. It could also mean that, relative to other outcomes, the psychological processes being assessed by RG metrics are resistant to therapeutic change. Due to the studies limitations, it proved difficult to identify changes in outcome variables, or to attribute change in therapy. As noted by Winter (2003), a common challenge was studies insufficient concern to follow or report usual principles of research design and statistics.

A further limitation of the current findings is that they were based on inadequate samples. Ten studies had 20 or less participants, of which, eight had conducted, without sufficient power, at least some inferential statistics. The studies also had a tendency to test a large number of variables on these small samples. This is likely to have led to type 1 error, thus, resulting in inaccurate conclusions and difficulty generalising findings beyond each individual study. Many studies lacked a thorough description of their participant's identity (e.g., gender, ethnicity, socioeconomic status), limiting the understanding of which demographic groups are able to complete RGs. Jankowicz (2005) had indicated younger people may find it harder to complete a RG due to their reflective nature. However, it was

difficult to explore how RGs had been implemented with young people as only limited research has focused on this population. To understand acceptability and efficacy of RGs, further studies should be conducted with fully described cohorts and include a range of populations.

One limitation of the conducted review was the inclusion of only English-speaking studies. This could have inadvertently excluded appropriate literature. Two studies were not included as the full text of the publication was not available in English. One domain (blinding rating) on the EPHPP quality tool rating was scored low in agreement (62.5%), indicating poorer reliability. Strengths of this review were a submitted PROSPERO protocol (Moher et al., 2015) and two independent reviewers screened all eligible papers. This comprehensive way of screening was undertaken to minimise bias and limit subjectivity. A further strength of this review was the inclusion of grey literature, which decreased the risk of publication bias. However, notably, the included unpublished thesis did not follow the usual peer review procedure.

The current study suggests that better quality research, which is clearly reported, would be beneficial to draw firmer conclusions regarding the use of RGs to evaluate therapy. In particular, examining the feasibility of using RGs within RCTs. This research should involve larger samples, appropriate statistical tests, and control groups. Longer follow up assessments are needed, where RGs are compared against robust self-report measures to assess both the concurrent validity and sensitivity to long-term therapeutic gains. Given RGs can provide a large array of different metrics, studies will need clear aims and hypotheses, and a pre-registered protocol before data collection commences. Future research could focus on developing standard RGs, informed by previous research findings, for use with specific populations. Despite this approach being incongruent to PCT values, the collection of data using nomothetic methods may help develop a more robust evidence base.

Implications

There are several implications for clinical practice. The RG may be a useful assessment tool to evaluate psychological change. The methodology has the potential to be used in a range of research designs and clinical practice. RGs do not need to be limited to solely evaluating PCT type therapies; they can be individually tailored and flexibly used in the context of other therapies, depending on the aims of the researcher or clinician. RGs can provide substantial data on individuals' construing processes and cognitive structure.

Clinicians could use the data from RGs to inform assessments, formulations and hypotheses in therapy. For instance, element distances can provide an insight into an individual's sense of self and self-concepts, which could map onto CAT sessions and inform the focus of therapy (Ryle, 1990). However, the abstract nature of the theory underpinning RGs and poor quality evidence base may introduce challenges for novel clinicians or researchers attempting to adopt the technique.

The current study suggests there are limited numbers of RCT using RGs as an assessment method. This has implications for the development of the evidence base. RCTs generally adopt a nomothetic approach, and RGs lengthy administration process and interpretation of results may deter researchers. RGs idiographic tendencies create challenges for making comparisons between participants. Each grid is unique so changes in one person's grid cannot easily compare to changes in another person's. As a result, implementing this methodology in larger scale trials, may feel less appealing. Information from this review could be used to provide researchers and clinicians with guidance for using RGs, for example, initially focusing on widely used metrics such as measuring distances between elements (self and ideal self).

This was the first systematic review to explore how RGs are used to evaluate psychological therapy. By conducting this review, the findings showed how the RG is a theoretical, deductive approach for evaluating therapy; however, the methodology also captures idiosyncratic meaning and experiences (Jankowicz, 2005). The review revealed that the RG has been employed for over 50 years to evaluate various types of therapy within a range of populations. However, despite the approach being widely used, much of the research remains small-scale, tied to real-world clinical context (e.g. PBE). As such the approach has not transitioned to being used within larger scale controlled clinical studies. The key recommendation highlighted within this review is the need to focus on exploring the feasibility of using RGs in larger, more rigorously designed trials. These studies would involve clearly pre-specifying how researchers intend to use the grids and limit the number of comparisons being undertaken and evaluated.

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Paper 2:

Measuring Psychological Change Using a Repertory Grid: A Brief Cognitive Analytic Therapy Informed Intervention for Young People who Self-Injure

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Word count: 6,914 (entire text); 232 (abstract);
5,986 (main text excluding tables, figures and references).

This paper will be submitted for publishing to the Psychology & Psychotherapy: theory research and practice (word count 6,000). Author guidelines can be found in Appendix A (not all appendices included in this thesis will be submitted for publishing but are included for context).

ABSTRACT

Objective:

Self-injury is common in adolescence. Brief relational interventions, such as Cognitive Analytic Therapy (CAT) may help adolescents who self-injure. The Repertory Grid (RG) is an idiographic methodology, which can investigate individuals' self-concepts and measure psychological change. This study aimed to assess the feasibility and acceptability of using a RG with adolescents who self-injure, and explore whether the methodology can measure change following a brief CAT-informed intervention.

Method:

A case series, using a repeated measures design, piloted a five-session CAT-informed intervention for adolescents who engage in self-injuring. Thirteen adolescents, aged 13 to 17 years old (M= 15.15), from two community Child and Adolescent Mental Health Service (CAMHS) participated. Participants completed pre and post-therapy RGs.

Results:

Self-concepts were elicited from the majority of participants (83%). The findings indicated that RGs were a feasible and acceptable measure. There was also evidence of changes in construing (e.g. how people perceive themselves and others) on participants RGs post therapy. This was most notable in the way participants viewed their 'self' and 'ideal self', and 'self' and 'person I care about', indicating improvements in positive perceptions of self.

Conclusions:

RGs are an acceptable assessment methodology for adolescents who self-injure and can provide insight into self-concepts. The results suggest RG's can measure changes following a brief CAT-informed intervention. Further robust exploration is required to investigate the effectiveness of the intervention and understand RGs usefulness when evaluating large-scale studies.

Key words: Repertory Grid, Cognitive Analytic Therapy, Self-Harm, Adolescence, Personal Construct Theory

Practitioner points:

- RGs may provide a more idiographic clinical outcome measure than the traditional self-report questionnaires.
- Adolescents who self-injure tend to construe themselves negatively.
- Attending a brief CAT-informed intervention may lead to positive changes in how adolescents who self-injure view themselves.

INTRODUCTION

Non-suicidal self-injury (NSSI) is defined as an individual engaging in self-harm, such as cutting, without the intention to end their life (International Society for the Study of Self-Injury, 2018; Nock & Favazza, 2009). In the United Kingdom (UK), lifetime prevalence of NSSI has increased from 5% in 2000 to 14% in 2014 (McManus et al., 2019). Self-injury typically starts during early to mid-adolescence, with approximately 17% of adolescents engaging in NSSI (Plener et al., 2015; Swannell et al., 2014). Although engaging in this behaviour does not involve conscious suicidal intent, NSSI during adolescence has been associated with increased risk of suicidal thoughts and attempts (Mars et al., 2019). In England, adolescents who attend hospital due to self-harm are 30 times more likely to die by suicide within a year, compared to the general population of 10–18-year-olds (Hawton et al., 2020). In 2018 suicide was a leading cause of death for adolescents in England: highlighting the need for effective early intervention (McPin Foundation, 2018).

Despite the high prevalence of NSSI, recent systematic reviews suggest there are limited effective interventions for adolescents who engage in this behaviour (Glenn et al., 2019; Witt et al., 2021). A common challenge to developing the evidence base is the population's heterogeneity. The frequency, intention and function of NSSI is unique to each individual (Barrocas et al., 2015; Klonsky & Glenn, 2009; Taylor et al., 2018). A commonly reported reason for NSSI, cites the behaviour as a way of meeting relational needs. For instance managing repeated patterns of feeling rejected, communicating distress and seeking care from others (Peel-Wainwright et al., 2021; Taylor et al., 2018). Individuals may believe there are limited options available other than to cope through using NSSI (Peel-Wainwright et al., 2021). Therefore, it is essential that interventions for this population consider the function of NSSI and individuals emotional and relational difficulties.

Behavioural and psychiatric outcomes are regularly used to assess psychological change and effectiveness of psychological therapy. Questionnaires often focus on frequency and symptom reduction, resulting in restricted understanding of personal meaningful change (Mason, 2008). Psychometric measures can be bias due to social desirability effects and restricted responses. As noted, NSSI is idiosyncratic for each individual (Taylor et al., 2018), and questionnaires may not always capture this, hence more individualised measures of recovery are needed.

Repertory grids (RGs) can overcome these challenges (Kelly, 1955). This methodology has been described as bridging the gap between quantitative and qualitative approaches (Fransella et al., 2004). RGs originated from personal construct theory (PCT, Kelly 1955), which suggests individuals continuously revise how they understand their world, by developing a unique set of bipolar constructs to comprehend and distinguish between things ('elements'), including themselves and others. These constructs allow individuals to develop a framework for making sense of the world and predicting how others will behave, and as a consequence influence how they respond. The RG has been effectively used with children as young as eight years old (Baxter et al., 1998).

RGs have been used to evaluate change following therapy, such as Cognitive Analytic Therapy (CAT; Clarke & Llewelyn, 1994; Clarke & Pearson, 2000). The methodology gathers in-depth information about individuals construct systems, which can be analysed using numerous methods (Winter, 2003). A commonly used analysis is comparing the distance between the elements; the larger the distance between a pair of elements, the more dissimilarity they are in terms of how those elements are ranked across the constructs. For instance, negative perceptions of self have been defined as a large distance between self from ideal self, research has shown this can decrease following therapy (McNair et al., 2016; Winter et al., 2007).

The barriers and benefits model (Hooley & Franklin, 2018) states negative perceptions of self are a possible catalyst for selection of NSSI. Self-criticism and feeling criticised may influence NSSI engagement (Allen et al., 2019). Similarly, NSSI may be motivated by a desire to reduce feelings of shame (Brown et al., 2022) and self-blame (Swannell et al., 2012). Using a RG, Taylor et al (2021) explored the self-concepts of adults who self-injure and found this population held negative views of self. Individuals who had recently self-injured viewed their current self as further away from their ideal self. Less is known about the self-concepts of adolescents who self-injure. Using a RG to explore their self-concepts may provide insight into key mechanisms for engaging in NSSI.

CAT (Ryle, 1990) is a relational and idiosyncratic model, which is guided by reformulation and therapeutic relationships. Concepts from psychoanalytic therapy and PCT (Kelly, 1955) influenced the development of CAT. For instance, the therapy integrates ideas from Kelly's (1955) understanding of elements (significant people or the relationship between self and others) and constructs (psychological characteristics). Central to CAT is the focus on individuals' early relationships, as they are considered

important in how we understand ourselves and others (Ryle & Kerr, 2002). Based on our relational experiences, templates ('reciprocal roles') are formed, which influence future relationships. These templates also shape how people relate to their self and experience the response of others. The therapy explores how these templates can often produce repeated thoughts, feelings and behaviours, creating a vicious cycle, and at times this leads to less integrated selves.

CAT can propose a framework to understand the relational function of NSSI. It can help to develop an empathic understanding of why the behaviour might have enabled individuals to survive (Ryle & Kerr, 2002). Previous research suggested CAT was useful for adolescents who displayed traits associated with Borderline Personality Disorder (BPD)[2], where self-injuring is often a symptom (Chanen et al., 2008). Hallam et al (2021) meta-analysis suggested relational therapies, such as CAT, would be effective in decreasing psychological distress and improving interpersonal problems. Despite the review supporting commissioning of relational therapies, to date, extensive evidence for using CAT to support adolescents who engage with NSSI is limited.

CAT commonly ranges between 16 and 23 sessions, however recently the need for brief interventions, such as six or less sessions, has been recognised (Shapiro et al., 2003). It has also been noted how the most meaningful clinical change often happens within the initial sessions (Kopta, 2003). Brief CAT-informed interventions appear to be acceptable for adults who self-injure (Peel-Wainwright et al, in prep) and lead to improvements in treatment engagement for adolescents who self-injure (Ougrin, 2013). Sheard et al (2000) demonstrated how it is feasible for trainee psychiatrists to adhere to the brief CAT-informed model and develop an appropriate formulation. Developing a short-term therapy for adolescents could allow a large number of people to access the care that they need and fill service gaps within Child and Adolescent Mental Health Services (CAMHS; Glenn et al., 2019).

As there is a limited evidence base for effective therapies to support adolescents who engage with NSSI, the current study proposes to evaluate a pilot 5-session CAT-informed intervention (CATCH-Y; 'Cognitive Analytic Therapy Approach to Containing Self-Harm in Young People'), based on Peel-Wainwright et al (in prep) and Sheard et al (2000) model. Less is known about the administrating of RGs with adolescents who self-injure,

[2] Please note the author recognises the controversy and harm that this diagnosis can create for young people and does not adopt this term in their clinical practice.

and whether RGs could measure psychological change following CATCH-Y. The purpose of this study was to examine the feasibility and acceptability of using RGs with this population. A further aim was to explore the change in RG metrics following completion of CATCH-Y.

The primary hypotheses were (H1) self-concepts would be elicited from 80% of participants using RGs, and (H2) adolescents who self-injure would find RGs understandable to complete. The secondary hypotheses were, CATCH-Y attendance would be associated with: (H3) decrease in the distance between the elements self and ideal self, representing a more positive self-esteem; (H4) increase in the distance between the self and self injuring self, representing improvements in self-injuring behaviour; (H5) decrease in the distance between the self and self when coping, an increased distance between self and self when struggling, representing improvements in perceived coping; and (H6) decreased distance between self and person I care about, an increased distance between self and person I do not care about, representing a more positive self-concept.

METHOD

Design

The current study was within-subjects repeated measures design, with participants acting as their own control. Ethical approval was obtained from an NHS Research Ethics Committee (21/NW/0019; Appendix E) and two NHS Trust's research and development departments (Appendix F). The research was part funded by the Association of Cognitive Analytic Therapists (ACAT; Appendix G) and part of a larger feasibility trial, which was pre-registered with ClinicalTrials.gov (NCT04708262).

Participants

Participants were recruited from two CAMHS in the North West of England. The inclusion criteria stated participants should be; (1) aged between 13 and 17 years old; (2) have a history of self-injuring, defined as at least one episode of NSSI within the last six months; (3) have a lifetime prevalence of two or more episodes of NSSI; (4) have a CAMHS case-manager.

Non-English-speaking adolescents were excluded due to resource constraints, as adaptions, such as translator support, would have been required. Similarly, participants who had a diagnosis of a severe intellectual disability were excluded due to this population needing

additional adjustments beyond the scope of the study. Participants were excluded if they were currently undergoing other forms of one-to-one psychological therapy, or had previously received CAT, or demonstrating a high level of risk to themselves defined as intent/plan/wish to end their life. Risk screening took place during initial eligibility meeting through discussions and asking potential participants to rate their suicidality on a scale where '10' = really want to be alive and '0' = very much want to be dead. Participants who scored three or less, were excluded, and sign posted for support and their clinical team informed. No other exclusion criteria were applied, and clinicians were encouraged to approach everyone on their caseload that met criteria.

Procedure

CATCH-Y was conducted between May 2021 and December 2021. The full study protocol can be found in Appendix H. Referrals were made by case-managers at two CAMHS sites. They provided potential participants with study information and gained consent to contact. The researchers (MM and RH), who were also the therapists, initially telephoned participants to check eligibility and conducted a risk assessment. Suitable participants then met with researchers face-to-face for two pre-therapy assessments. Within the two assessment sessions, participants were encouraged to ask questions and written informed consent was gained. Participants also completed the Self-Injurious Thoughts and Behaviour Interview-Short Form (SITBI; Nock et al., 2007; Appendix I) and a demographic questionnaire (Appendix J). A 30-60-minute semi-structured RG was administrated (see example RG in Appendix K). The researchers were not blind to the purpose of the study.

Participants received five face-to-face CATCH-Y sessions, approximately one week apart, lasting between 40 to 60 minutes. RH facilitated therapy to five participants and MM to six participants. Both facilitators were trainee clinical psychologists in their final year of training, who had attended CAT training and supervised fortnightly by a CAT-accredited clinician. The supervision guided the therapists to work in line with the model, navigate therapeutic relationships and develop CAT-informed reformulations. A week after finishing the intervention, participants attended a final assessment session where they completed a second RG and client satisfaction questionnaire. Participants were reimbursed for their time (£30 voucher).

Intervention

The CATCH-Y therapy guidance document was underpinned by the established CAT-model and previous research (Peel-Wainwright et al., in prep; Ryle & Kerr, 2002; Sheard et al., 2000; Appendix L). The two CAMHS recruitment sites did not routinely provide a similar CAT-informed intervention. Treatment as usual consisted of offering young people and families, a case-manager and being allocated to Cognitive Behavioural Therapy or Family Therapy.

CATCH-Y was a five session intervention. Sessions one to three involved developing a sequential diagrammatic reformulation (SDR; Ryle & Kerr, 2002), by compassionately exploring the relational functions of participant's self-injuring behaviour and how it connects with other relational experiences and emotional coping. This is a technique where collaboratively, the therapist and client 'map out' or reformulate the individual's relational patterns. This 'map' highlights how difficulties are associated with relational patterns ('reciprocal roles') and maintained in current understandable yet problematic cycles. Participants were encouraged to reflect on SDR between sessions. In the fourth session, potential 'exits' were identified to break negative cycles. The fifth session focused on 'consultation' involving significant others to reflect on 'reformulation' learning and to identify any necessary future support. At the end of the intervention the therapist shared with participants and, with consent, their clinical team and/or caregivers, a reformulation letter and a copy of their map.

Measures

Demographic and clinical information

Demographic information was collected via self-reporting including age, sex, ethnicity, and medication.

Self-injuring behaviour

The Self-Injurious Thoughts and Behaviour Interview-Short Form (SITBI) is an interview-based measure used to assess participants' self-injury history (Nock et al., 2007). The questions related to NSSI and were administrated to assess frequency, characteristics of self-injuring, thoughts and behaviours. The measure has shown good interrater reliability, test-retest reliability and concurrent validity (Nock et al., 2007).

Repertory Grid

The RG was administered following a standardised procedure (Jankowicz, 2005). Elements describe specific people or things that the person construes. Participants were

provided with the following elements: (1) Self, (2) Ideal self, (3) Self who no longer self-injuries, (4) Self when coping, (5) Self when struggling, (7) Self-injuring you (6) Person I care about, and (7) Person I do not care about. These were common elements from the RG and self-injuring literature (Fransella et al., 2004; Taylor et al., 2021). All participants used the same elements as it allowed greater comparability between individual grids and expedited the interview process.

Constructs are entities, typically attributes or qualities that a person uses to distinguish between elements. Within PCT, constructs are seen as part of the way a person makes sense of themselves, others and navigates the world. The dyadic method, which is recommended when working with children (Jankowicz, 2005), was used to generate constructs from elements. For example, when presented with a pair of elements, participants were asked 'Can you tell me something that is different/similar between ideal you, and you right now?' They were then asked, what is the opposite pole of the construct, and which is positive and negative, resulting in bipolar constructs. The repetition of the process was continued by randomly selecting pairs of elements until 10 bipolar constructs were identified. For each of the elicited constructs, participants rated each element on a visual 7-point scale (0 = Strongest, 7 = Weakest). The same constructs were used for pre and post-RGs. Researchers had training on eliciting constructs.

To explore participants' experiences of completing the RGs a brief client satisfaction questionnaire, including a Likert scale (Appendix M), was administered in the final assessment session.

Data Analysis

(1) The feasibility and acceptability of RGs was explored using data from the client satisfaction questionnaire. The questionnaires were analysed using percentages to evaluate participants' experiences when completing the RGs.

(2) Inferential statistics were not used due to small sample size. RG data was analysed using IDIOGRID version 2.4 (Grice, 2002). Individually, all participants' grids were analysed by calculating Euclidian distances between elements. The smaller distances suggested higher construed similarity, the larger distances indicated the elements were most different. Principle Component Analysis (PCA) calculated the relationship between both constructs and elements, highlighting the participant's major group of interrelated constructs, and the variances accounted for by these components, showing the extent to

which construing is tight or rigid (Winters, 2003). The loading of elements and constructs on the PCA was used to plot a biplot 'map' of the participant's construct system. The 'maps' would indicate graphically how the elements and constructs are semantically clustered in a two-dimensional space (Euclidean distance).

(3) The same elements and constructs were used at post-assessment, enabling any differences in distances in RG element metrics to be calculated (Euclidean distance). The sample mean change and standard deviations were calculated to explore any possible group trends. The statistical reliability of an individual's RG changes was calculated using two measures: (1) The Standardized Individual Difference (SID; Payne & Jones, 1957), which is considered a conservative measure, and calculates within a normal distribution reliable change is expected to be outside of -1.96 to 1.96 (95% confidence interval). Using this measure allows random variation to be distinguished from reliable change; (2) The Individual Effect Size (IES; Pardo & Ferrer, 2013), which is considered a more liberal measure, states that scores >1.2 standard deviations of pre-treatment score, are considered clinically meaningful reliable change.

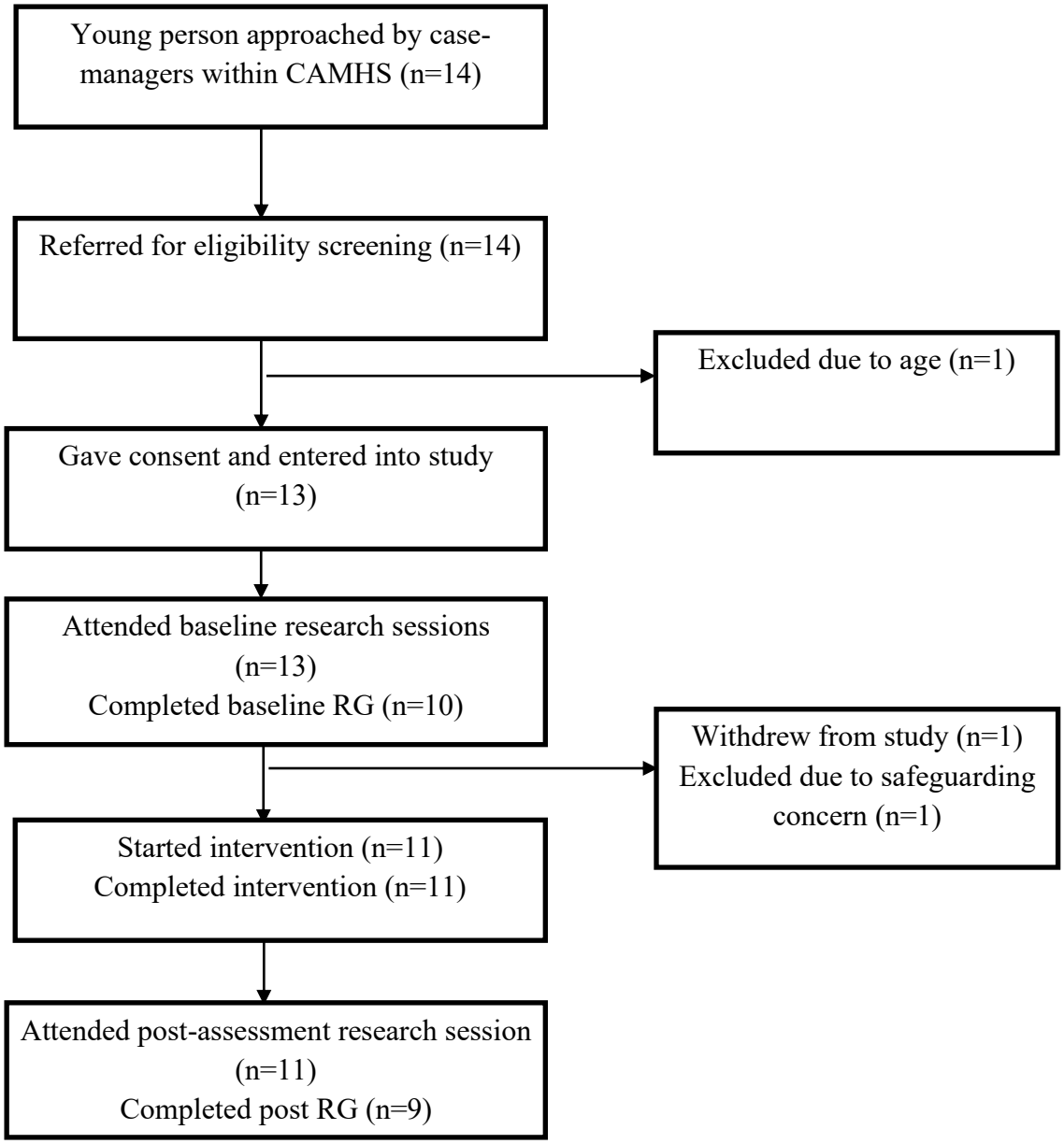
(4) A content analysis was conducted on elicited constructs using the Classification system for Personal Constructs (CSPC; Feixas et al., 2002). The results are not reported within the empirical paper: see Appendix N.

RESULTS

Sample characteristics

Figure 3 displays the CONSORT diagram outlining the number of participants at each stage of the study.

Figure 3. Consort diagram of participants per referral stage



Fourteen participants were referred to the study by their case-managers and were invited to an initial eligibility assessment. One 18-year-old person was excluded due to age and the remaining were invited to an initial assessment and consented to take part. Following this session, one participant was withdrawn by their clinical team due to external safeguarding concerns. A further participant dropped out after the second assessment. The remaining 11 participants completed CATCH-Y and attended all sessions offered.

Table 5 displays participants' demographic characteristic (n=13). The majority were females (n=7), white British (n=7) and their age ranged from 13 to 17 years old. All participants had accessed mental health services previously.

Table 5. *Participant demographic characteristics*

Demographic characteristics	**n (%)**
Mean age years (SD)	15 (1.3)
Gender	
Female	7 (54%)
Male	4 (31%)
Non-binary	1 (8%)
Prefer not to say	1 (8%)
Ethnicity	
White British	7 (54%)
Black	3 (23%)
Mixed	1 (8%)
British Pakistani	1 (8%)
Asian	1 (8%)
Accessed mental health services	13 (100%)
Antidepressant medication	2 (16%)

Table Abbreviations: Standard deviation (SD); number of participants (n)

Appendix O displays participants' results from the SITBI measure (Nock et al., 2007). All participants had engaged in NSSI in the past month, most commonly through the cutting or carved skin method (n=13). 11 years old was the youngest age of onset for self-injuring (n=2). All participants stated they would likely self-injure again (n=13).

Feasibility and acceptability of RG

With respect to H1, 12 participants attended the second assessment session, of which, ten completed a RG (83%). One RG was completed incorrectly due to administration error; this participant subsequently dropped out of the study prior to starting therapy. Of the 11 participants who attended CATCH-Y, nine completed pre and post-RGs. Two participants were unable to complete the RG during the initial meeting, as they found the information requested too personal to share or struggled finding suitable vocabulary to capture their

self-concepts. Both these participants became distressed whilst attempting to complete the RG before stopping. These participants attended all therapy sessions, but struggled to express their thoughts and feelings.

Out of the 11 participants who attended CATCH-Y, ten completed an adapted client satisfaction questionnaire regarding the RG process. Table 6 displays the results. Regarding H2, 70% participants felt comfortable whilst completing the RG, only 20% found it difficult and 10% did not know. One participant qualitatively reported they enjoyed completing the RG because they could reflect on their NSSI experience in a non-judgmental environment.

Table 6. *Client satisfaction questionnaire results*

Rating	**Easy to complete *(n=10)***	**Uncomfortable/upsetting *(n=10)***
Certainly true	2	1
Partly true	5	1
Don't know	1	1
Not true	2	7

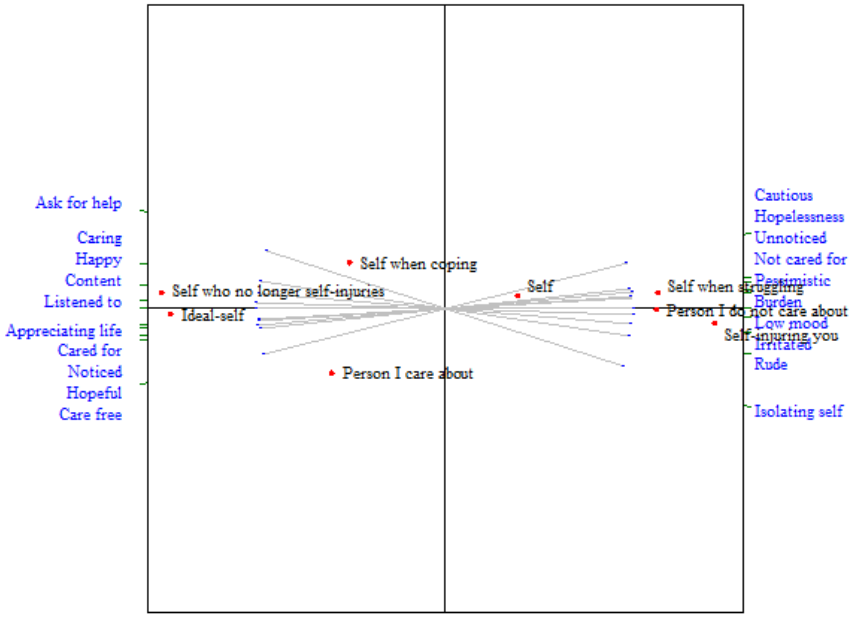
Table Abbreviations: number of participants (n)

Summary of baseline RGs

Participants' baseline RG were analysed using PCA (n=9). This analysis reduces the data onto two dimensions to be presented on a biplot (map), represented in Figures 4, 5 and 6. Appendix P is a supplement file including all participants' baseline RG's. Three themes were apparent:

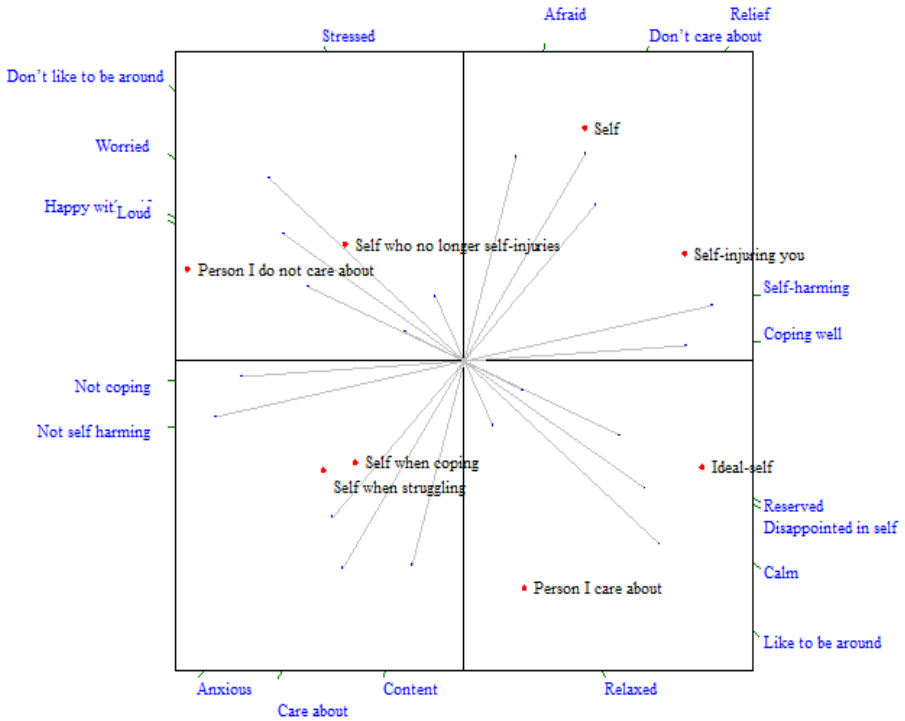
(1) Simplicity of grids: The participants' positive constructs (e.g. optimistic, happy, noticed) appeared to, for the majority, cluster together on one side of the grid, with the negative constructs (e.g. hateful, hopeless, unnoticed) clustered on the opposite pole (n=8; reflected in Figure 4). These participants generally had tight and simplistic construing, which could imply polarised thinking styles. For instance, they may believe there is only one choice; or the self is good or bad, rather than holding more nuanced perceptions. From a CAT perspective, this way of thinking has been developed in early relational contexts where similar dichotomous construing was experienced.

Figure 4. Visual representation of participant 1's baseline RG analysed using PCA



In contrast, Figure 5 displays how one participant's construing was more complex and did not follow a similar pattern, as their negative and positive construing was scattered around the biplot. This suggests they may have a more integrated and varied view of self.

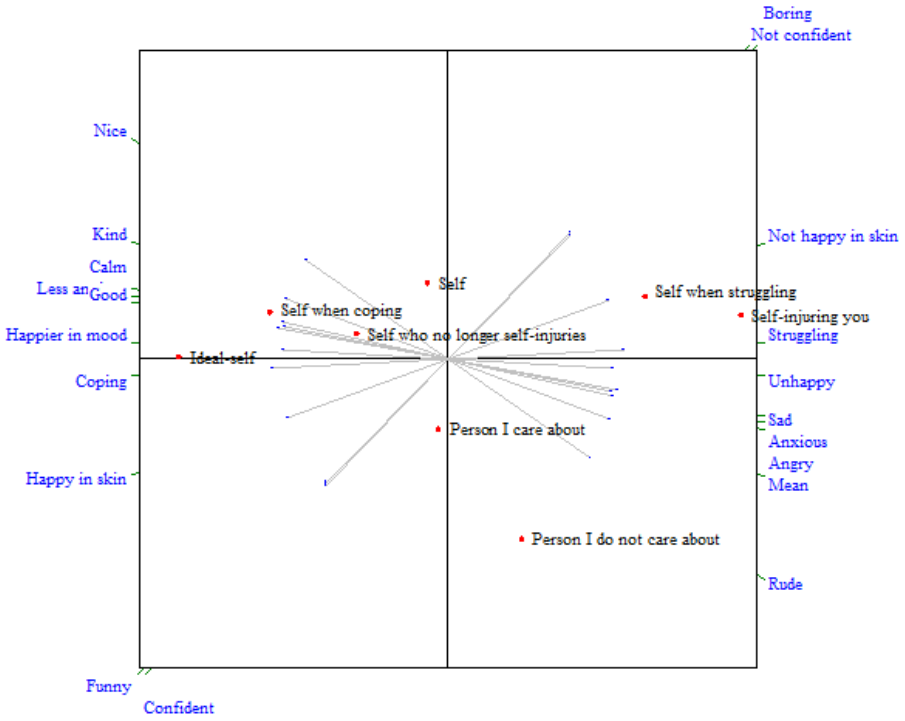
Figure 5. Visual representation of participant 2's baseline RG analysed using PCA



(2) Self-esteem: As expected, a universal feature of the grids was the participants' perception of ideal self as being closer to positive constructs (e.g. not selfish, kind) and a separation to the current self. This is displayed in Figures 4 and 5. The majority of participants construed the self close to negative constructs (e.g. insecure, sensitive, and

sad). This can be seen as negative self-perception or low self-esteem (Figure 4). However, as demonstrated in Figure 6, the self remained equal between the positive and negative poles, but still apart from the ideal self. This was demonstrated in two other participants' baseline grids. This could be interpreted as a more ambivalent perception of self.

Figure 6. Visual representation of participant 3's baseline RG analysed using PCA



(3) *Self-injuring identity:* Self-injuring was generally viewed quite negatively but also close to current self. This indicated, for most participants, self-injuring was a key part of current identity but often a negative one. This is important to consider because, although NSSI is a functional behaviour and often used as coping mechanism, most participants still construe it negatively. As highlighted in Figures 4 and 6, there is a large distance between ideal self and self-injuring self. For most, self-injuring self was close to self when struggling, suggesting that self-injuring is a sign of not coping; represented in Figure 4 and 6. However, there was conflict and ambivalence in some grids in relation to whether self-injuring was positive or negative and whether it influenced participants' views of coping or not coping. Two individuals viewed self-injuring more positively, demonstrated in Figure 5 which shows little difference between self-injuring you and ideal self. Similarly, this grid demonstrated little difference between self when struggling and self when coping; suggesting participants were experiencing dilemmas around their perception of recovery.

Changes in participant's pre and post therapy RG

Table 7 reports the change in element distances between the pre and post-therapy for key hypotheses. Notably, a decrease in distance indicates that the two elements are being construed more similarly, while an increase implies greater differentiation between the elements. In respect to hypothesis three, the majority of participant's distances between the self and ideal self decreased in the expected direction (n=8). This indicates that participants construed themselves to be closer to their ideal selves following completion of therapy; this could be interpreted as an improvement in self-esteem or self-concept. For most participants this change was considered reliable on IES, indicating clinically meaningful differences. However, on the more conservative measure (SID), this change was only reliable for one participant. Interestingly, when comparing the visual representations of the pre and post-therapy grid analysed using PCA, the ideal self generally remained stable, whereas the self moved. This could suggest that individuals are not re-evaluating who they want to be, but in fact feel closer to their goal.

For hypothesis four there was a mixed pattern in change of distance between the self and self injuring self pre and post-therapy. The variability in results suggests the function and perceived benefits of self-injuring is individualised and changes may not happen consistently. A few participants showed an increase in distance between elements, and the IES indicated the change in three participants was reliable; however, SID indicated reliability for only one of these participants.

Regarding hypothesis five, no consistent patterns in change were found for self and self when coping pre and post-therapy. IES reported two participants showed reliable decrease and one participant indicated a reliable increase in the distance. However, the conservative SID measure identified none of these changes as reliable. Similarly there was not a consistent pattern of change in distance in the self and self when struggling pre and post-therapy. One participant showed a reliable increase in distance for self and self when struggling on SID, and the liberal IES measure suggested two further participants showed reliable change in increased distance. This suggests participants perceived themselves to be struggling less, or more specifically their current self as increasingly distant from themselves when struggling.

With respect to hypothesis six, the distance between self and people I care about, most participants decreased in the expected direction (n=8). This indicates these two elements were construed as being more similar to each other following therapy; the change in five

participants was considered reliable (IES), however only one of the participants change was reliable on SID. This may indicate that individuals cared more about themselves following CATCH-Y. For self and people I do not care about the direction of change varied and did not follow a pattern. No reliable change was found on SID. However, the IES suggested the change in four participants was reliable.

Table 7. *Participant distance metrics for the pre and post-therapy repertory grid*

Distance	Participant	Pre-therapy Distance	Post-therapy Distance	Change in distance from pre to post	Reliable change based on SID?	Reliable change based on IES?
Self, Ideal self	1	8.31	7.28	-1.03	No	No
	2	9.75	3.32	-6.43	No	Decrease
	3	9.90	6.63	-3.27	No	Decrease
	4	15.49	5.66	-9.83	Decrease	Decrease
	5	11.79	5.66	-6.13	No	Decrease
	6	10.05	6.40	-3.65	No	Decrease
	7	6.08	1.41	-4.67	No	Decrease
	8	8.60	5.92	-2.68	No	No
	9	8.89	10.58	1.69	No	No
	M	9.87	5.87	4	No	-
	SD	2.61	2.53	3.33	-	-
Self, Self-injuring self	1	6.24	5.29	-0.95	No	No
	2	6.16	8.12	1.96	No	No
	3	6.48	4.80	-1.68	No	No
	4	4.36	8.37	4.01	No	Increase
	5	6.86	8.37	1.51	No	No
	6	7.00	11.36	4.36	Increase	Increase
	7	9.54	13.15	3.61	No	Increase
	8	9.85	8.37	-1.48	No	No
	9	3.16	4.90	1.74	No	No

	M	6.63	8.08	1.3	No	-
	SD	2.14	2.86	2.26	-	-
Self, Self when coping	1	7.48	5.74	-1.74	No	No
	2	5.48	6.00	0.52	No	No
	3	6.24	2.83	-3.41	No	Decrease
	4	9.80	4.90	-4.90	No	Decrease
	5	6.00	4.90	-1.1	No	No
	6	3.32	8.43	5.11	No	Increase
	7	3.46	1.41	-2.05	No	No
	8	6.08	3.87	-2.21	No	No
	9	7.42	8.12	0.7	No	No
	M	6.14	5.13	-0.91	No	-
	SD	2.01	2.28	2.74	-	-
Self, Struggling self	1	7.48	5.74	-1.74	No	No
	2	10.82	11.36	0.54	No	No
	3	4.12	2.83	-1.29	No	No
	4	3.32	8.31	4.99	Increase	Increase
	5	5.00	8.31	3.31	No	Increase
	6	7.55	11.18	3.63	No	Increase
	7	6.93	8.83	1.9	No	No
	8	6.63	7.28	0.65	No	No
	9	5.39	4.12	-1.27	No	No

	M	6.36	7.55	1.07	No	-
	SD	2.24	2.91	2.31	-	-
Self, People I care about	1	9.00	5.39	-3.61	No	Decrease
	2	9.59	6.00	-3.59	No	Decrease
	3	6.86	3.16	-3.7	No	Decrease
	4	12.96	4.12	-8.84	Decrease	Decrease
	5	6.93	4.12	-2.81	No	No
	6	5.10	3.74	-1.36	No	No
	7	5.10	1.41	-3.69	No	Decrease
	8	5.92	4.80	-1.12	No	No
	9	7.75	9.59	1.84	No	No
	M	7.69	4.70	-2.69	No	-
	SD	2.52	2.26	2.86	-	-
Self, People I do not care about	1	10.68	7.87	-2.81	No	Decrease
	2	6.93	8.12	1.19	No	No
	3	8.25	5.57	-2.68	No	Decrease
	4	7.07	10.25	3.18	No	Increase
	5	5.39	10.25	4.86	No	Increase
	6	5.39	4.58	-0.81	No	No
	7	9.85	11.36	1.51	No	No
	8	7.87	7.42	-0.45	No	No

9	8.25	6.48	-1.77	No	No
M	7.74	7.99	0.22	No	-
SD	1.79	2.28	2.30	-	-

Note: The Standardized Individual difference (SID); The Individual Effect Size (IES); Not applicable (-); Sample Mean (*M*); Sample standard deviation (*SD*)

DISCUSSION

The primary aim of this study was to explore whether adolescents who self-injure are able to complete RGs and if they are considered an understandable measure. Secondary aims focused on exploring possible changes in construing for adolescents who attended CATCH-Y. In relation to the first hypothesis, most adolescents could complete the RG. Hypothesis two was partly met, as the majority of participants found the RG understandable and acceptable to complete. Regarding the third hypothesis, change occurred in the expected direction as participant's construal of the self and ideal self was closer, representing a more positive self-esteem. In relation to the fourth hypothesis, the self and self-injuring self did not change with any consistency. Similarly, hypothesis five was not met; participant's pre and post-therapy RGs did not consistently change in the expected directions between self and self when coping, and self and self when struggling. Whereas, hypothesis six was partly met because, as predicted, participants viewed themselves as closer in similarity to people they cared about following therapy. However, no consistent pattern was found with changes between self and person I do not care about.

The majority of participants completed the RG, demonstrating they are a feasible measure in this population. Consistent with previous research (Baxter et al., 1998), the youngest participant in the current study (13 years old) completed a RG. Participants generally rated the method as understandable and acceptable, suggesting good face validity. RGs provide an opportunity to explore relationships and personal construing in a non-judgmental and opened-ended manner. This form of 'listening' allows individuals to feel comfortable when completing RG (Jankowicz, 2003). For individuals who are not familiar with sharing personal information, this process may be more challenging. The two participants who were unable to complete the RGs also found therapy difficult. This was perhaps due to the RG and therapy being too complex and abstract or participants feeling too distressed. For these individuals, a brief CAT-informed approach does not necessarily need to be precluded but particular care should be taken to work within their Zone of Proximal Development (ZPD; Vygotsky, 1978) in terms of their emotional and relational literacy. For instance, being mindful of certain conversations and pace of joint reformulation.

Our results suggest adolescents who self-injure generally have dichotomous ways of thinking and view things or self as having no nuance. Findings from Peel-Wainwright et al (2021) meta-synthesis might reflect this, where participants see self-injuring as, at times, the only option for meeting their interpersonal needs. Research suggests these patterns of

thinking are hard to change (Ryle, 1990). In CAT terms, these problem patterns are coined ‘dilemmas’ (Ryle, 1990). Individuals who develop these thinking patterns are believed to find it hard to imagine a middle ground between two extremes, and do not see themselves as having integrated states (Ryle & Kerr, 2002). These patterns are reflected on some baseline RGs; suggesting the methodology could be appropriate to track these processes, as some of them may be present during therapy.

The results of this study suggest that adolescents who self-injure generally have a negative self-perception or low self-esteem. This is consistent with wider research (Allen et al., 2019; Brown et al., 2022; Hooley & Franklin, 2018; Swannell et al., 2012). For many participants self-injuring self was considered far away from their ideal self. This mirrored Taylor et al (2021) findings, which suggested individuals who have recently engaged with NSSI, feel further away from the person they want to be. This current study demonstrates that for many individuals, self-injuring is a salient part of their sense of self, even though it is construed negatively. These results are congruent with the barriers and benefits model (Hooley & Franklin, 2017), which indicated how individuals perceive themselves, is a key factor for engaging in NSSI. This is important to consider when offering therapeutic support, as whilst NSSI is often seen as a helpful distract from negative emotions or a functional coping behaviour (Hasking et al., 2017), it is often construed in unconstructive terms. Understanding the function of an individual’s self-injuring behaviour and whether it is communicating unmet needs is an imperative (Peel-Wainwright et al., 2021). Using the RGs to understand these psychological processes and monitor change may be a key outcome for NSSI treatment trials. The RG may also be useful as part of an assessment to guide therapy and formulations.

Although the pre and post-therapy change data is quite mixed, there are a few promising trends that suggest CATCH-Y may be helpful. Notably, participants’ construal of the ideal self and self changed as expected. These findings were consistent with previous research, which showed the self and ideal self to increase in similarity following therapy (McNair et al., 2016; Winter et al., 2007). The findings indicated that the current self tended to shift, suggesting participants’ self-concept for who they became was more in line with how they construe an ideal self. This maybe a benefit from attending CATCH-Y as CAT’s reformulation process focuses on modifying negative reciprocal roles and unhelpful ways of relating to self (Ryle, 1990). CATCH-Y aimed to empathically explore early experiences, current fears and threats, and help participants consider more accepting views of their past and increase positive self-relating. However, it is worth noting, there is limited

evidence of reliable change in these metrics, and without a control group it is hard to interpret the findings as relating to CATCH-Y attendance.

Following therapy, the majority of participants viewed themselves as closer in similarity to person I cared about. This may suggest that initially participants have idealised traits of people they care about and viewed these as disconnected from themselves. However, following therapy these positive characteristics may have been internalised, adopting a more caring stance towards self. Moreover, participants may have believed the person they care about had reciprocal caring feelings. These findings could suggest some of CAT's process mechanism occurred following CATCH-Y attendance; changing relational patterns (i.e. self-to-self relationship) as individuals start to feel more integrated and connected with parts of self (Ryle & Kerr, 2002). However, no consistent pattern was found with changes to person I do not care about.

The lack of consistent patterns of change between pre and post-therapy, self and self-injuring self could reflect how the function of NSSI varies for each individual and as this behaviour could be longstanding, and require more time to change. Increased closeness of self and self-injuring self may represent a more integrated view of the self and part of it might be that individuals are trying to cope. Alternatively, an increased distance could mean moving away from self-injuring as a coping strategy which is received favourably. There were no consistent patterns for change in, self and self when coping and self and self when struggling. This may suggest that participants saw no improvement in coping following therapy. Ryle (1990) proposed after completion of CAT, therapeutic change can occur sometime afterwards, and, as the study had no follow up assessments and CATCH-Y is mainly focused on reformulation rather than exits, this could be a potential explanation.

Limitations and future research

The study used a client satisfaction questionnaire to highlight that participants viewed RGs as feasible and acceptable. Further qualitative research is needed to explore adolescents' views on completing RGs and how best to use the methodology in practice i.e. the size of grid, eliciting elements or providing constructs. Additionally, future studies are needed into a possible association between the acceptability of RGs, dropout rates, and efficacy of CAT therapy. These studies could provide insight into the process required to complete a RG and indicate possible appropriate therapeutic approaches e.g. skills based interventions such as Dialectical Behaviour Therapy (Rathus & Miller, 2002) rather than a reflective approach.

Despite promising findings regarding change following CATCH-Y attendance, the study was not designed to provide a robust evaluation of the therapy, as it was a small-scale study examining RG changes. Methodological limitations such as a lack of a control group meant any changes in personal constructs could not be directly attributed to CATCH-Y. Confounding variables may have influenced the findings such as the completion of the RG itself resulted in change, rather than the therapy having an impact. Further large-scale research should triangulate RG outcomes with other measures such as psychometric outcomes or qualitative interviews to understand the efficacy of CATCH-Y. In addition, the study had a dual therapist-researcher role. This may have led to potential bias and issues with demand characteristics, as participants would have had more time to develop a therapeutic relationship. Research suggests developing therapeutic relationships is key for effective interventions (Hartley et al., 2022).

Further limitations regarding the sample should be considered. The sample size was small and case-managers from two CAMHS services referred participants. Although the sample included a range of ethnicities, genders and ages, selection bias is likely, limiting the generalisability of findings. Additionally, it was not possible to use inferential statistics due to the sample size. The SID and IES were seen as appropriate measures, as the study was underpowered to detect statistically significant change. However, the results should still be considered with caution in a clinical context. The SID requires large effect size to detect a true change; resulting in the high possibility of obtaining a type two error (false negative; Ferrer & Pardo, 2019). In contrast, the IES is considered the opposite. The liberal measure is more prone to type one error (false positive; Pardo & Ferrer, 2013). Further large-scale controlled trials of CATCH-Y are required to robustly evaluate changes in RG outcomes.

Implications

The findings suggest that RGs would provide a useful addition in clinical trials for evaluating therapeutic change. Exploring the self-concepts of adolescents can provide insight into their psychological processes relating to self-injuring. Prior to the RG assessment, the in-depth information provided by participants may not have been easily accessed (Winter, 1992). The distances between elements are only apparent once the grid is complete. This means participants do not make explicit choices about the similarity between elements; instead distances are a consequence of how two elements are construed. This is likely to reduce the impact of reporting bias.

The patterns highlighted on the RGs, could be used to inform hypotheses and formulations. The grids provide insight into how each person sees themselves within their environment (Kelly, 1955) and highlights cognitions and relationships that could be explored within therapy. Although this is preliminary evidence, these findings suggest that an individual's ability to complete and understand a RG could be a good indication of whether a brief CAT-informed intervention would be helpful. Further research on brief CAT-informed interventions, could use the RG as a suitability-screening tool. However, these are only initial hypotheses, which require further exploration. Despite RGs benefits, idiosyncratic data can be problematic when evaluating findings because each grid is unique, making it challenging to compare changes between participants. This may suggest using RGs to evaluate large-scale trials is more complex. RGs can provide a huge array of outcomes; therefore, if a larger scale study adopts the methodology, clear aims and hypothesis would need to be developed from the outset.

The study indicates that the RG methodology is considered an acceptable measure for adolescents who self-injure and provides insight into their self-concepts. Although cautionary, there is some indication that CATCH-Y may result in changes in self-perception. Future large-scale research studies are needed to explore whether RGs are a helpful way to evaluate CAT-informed interventions for this population.

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Paper 3: Critical Reflection

Paper three is a critical reflection of the development and process of the systematic review (paper one) and empirical study (paper two). The theoretical and methodological considerations of the papers are highlighted, and the trainee's personal reflections are shared. An overview of the thesis is initially proposed, the papers are then separately discussed.

Overview

The repertory grid (RG) is a structured methodological assessment tool developed from Personal Construct Theory (PCT, Kelly, 1955). The trainee decided to conduct research that would help expand their knowledge on the use of alternative outcomes to traditional self-report measures. Underpinned by PCT; the RG proposes that people have idiosyncratic realities of the world based on their experiences. Construing is an active process that people use to interpret and perceive the world, themselves and others. Several studies have used RGs to evaluate therapeutic change (Winter, 2003). There is no standard procedure regarding how RGs should be implemented and analysed. This means the approach can be flexibly used, which may feel ambiguous to researchers or practitioners who are new to the methodology.

The trainee has a personal interest in working with adolescents. Drawing from previous clinical experience from working in CAMHS and immersing themselves in relevant literature, the trainee is aware of the increased rates of adolescents needing access to mental health support, particularly those who self-injure (McManus et al., 2019). Peel-Wainwright et al (2021) meta-synthesis indicated relational needs influence the maintenance of self-injuring difficulties. This suggests interventions such as Cognitive Analytic Therapy (CAT, Ryle & Kerr, 2002), which has a relational focus, could be a suitable intervention to support this population. RGs and PCT were involved in the development of CAT (Ryle, 1990). The therapy requires individuals to self reflect and explores relational patterns between themselves and others, similar to aspects of the RG process. The trainee noted that RGs may be a useful way to evaluate a CAT-informed intervention, but limited research had been conducted examining adolescents who self-injure completing RGs. Therefore, a feasibility and acceptability study exploring the use of this methodology would be appropriate, and secondly it could evaluate a CAT-informed intervention for this population.

Paper 1: Systematic Review

This section describes the process of completing a systematic review that explores how RGs are used to evaluate therapeutic change.

Rationale for review topic

The empirical paper focused on implementing RGs within the context of a brief intervention. This methodology was novel to the trainee; therefore, it was imperative they conducted a systematic review to develop their understanding of the evidence base and ensure a coherent narrative linked paper one and paper two. When exploring the literature on RGs a significant amount of time was needed to understand the methodology. The evidence base was challenging to comprehend, as the theory appeared abstract in nature. Preliminary exploration highlighted RGs had been used to evaluate therapy since 1970s (Fransella & Joyston-Bechal, 1971), and the methodology had not grown significantly in popularity since.

To date, there have been no systematic reviews exploring how RGs have been used to evaluate therapy. Winter (2003) conducted a review of this topic, however, this was now outdated and not systematic in nature. García-Mieres et al (2019) systematic review explored how RGs aid understanding of individuals with psychosis identities; however, this was not relevant for understanding how the methodology evaluated therapy. Arguably a review was needed to address a gap in the literature.

Search strategy

When conducting a systematic review the use of an effective search strategy is important to ensure all key papers and studies are included, opposed to only a sample (Boland et al., 2017; Cooke et al., 2012; Walsh & Downe, 2005). The PICO/S (Population, Intervention, Comparison, Outcome/Study design) strategy is commonly used when conducting a systematic review (Miller & Forrest, 2001). However, adopting this approach entirely was not suitable, as this review focused on the use of the RG methodology as a tool rather than comparing interventions or study outcomes.

As part of the scoping process, several trial runs of database searches were completed to develop the search terms for the review questions. This included combining terms using Boolean operators and Medical Subject Headings (MeSH). The trainee had regular discussions with supervisors and the University library systematic review service before refining the final search strategy. The preliminary searches suggested the strategy should

be kept broad due to the number of studies available. For example search terms such as "therapy" or "intervention" were too specific, reducing the number of studies identified. The term "personal construct theory" was too broad as it identified a significant number of studies. Therefore, it was decided that only "repertory grid" and/or "rep grid" would be used as search terms. The searches were supplemented with forwards and backwards citation searching, and authors of included papers were emailed to ask if any relevant papers were missed. Five authors replied either stating they were not aware of any further papers or provided papers, which subsequently did not match the inclusion or exclusion criteria. This added further confidence to the search strategy.

The search was carried out in February 2021. Unfortunately, due to time pressure it was not possible to update the searches before thesis hand in (April 2021), resulting in potential recent papers being missed. The search will be updated as part of the journal review and submission process. Five databases were searched (PsychINFO, EMBASE, CINAHL Plus, MEDLINE and Web of Science). These databases included mainly peer-reviewed studies, which boosted the quality of the review findings (Sacks et al., 1996). The trainee took a pragmatic decision not to use the Proquest database as it searches entire texts rather than titles, abstract and keywords, resulting in high false positive rates. However, this may have led to bias, as studies from grey literature could have been missed. It is well known that significant findings are more likely to be published (the "file-drawer problem'; Rosenthal, 1979) and non-significant findings are difficult to access (Balshem et al., 2013).

Inclusion and exclusion criteria

Methodological reporting was poor in many of the studies. This made the selection process difficult. To reduce bias and increase reliability, a second rater screened 100% of identified papers from the five databases. Any discrepancies were discussed with the research team. The inclusion criterion for this review was kept relatively broad to incorporate all relevant studies that use RGs to evaluate therapeutic change. There were no restrictions on the type of therapy or population, as long as RGs had been administrated across at least two time points pre and post-therapy.

The review was limited as only English language studies were included, this led to the exclusion of papers and potential biases, for example Abe et al (2011) was written in Japanese. The trainee could have translated the non-English papers using programs such as Google Translate; however, Jackson and Kuriyama (2019) systematic review questioned the accuracy of this process and whether these studies reflected the creditability of those

published in English. Despite this exclusion criterion, a study from a country where English is not the native language e.g. Spain was included in the current review.

Quality appraisal

In order to appropriately interpret results from the included studies, an accurate assessment of study quality is required when conducting a systematic review (Armijo-Olivo et al., 2010). The Agency for Healthcare Research and Quality (Williams et al., 2010) tool was initially chosen. However, on further exploration, it was deemed not appropriate as it focused on observational studies. The trainee also considered using The Consensus-based Standards for the selection of health Measurement Instruments (COSMIN; Mokkink et al., 2006). This tool examines properties of outcome measures, however, because the aim of the review was to explore how RGs are used and not to test the reliability and validity of the measure or explore its psychometric properties, the trainee did not deem it as appropriate.

The Effective Public Health Practice tool (EPHPP; Thomas et al., 2004) was chosen as the quality assessment tool. This tool has good content and construct validity, and inter-rater reliability (Armjio-Olivo et al. 2010; Jackson & Waters, 2005; Thomas et al., 2004). The trainee decided not to amend the measure despite its limitations, (e.g. strong focus on gold standard RCT that reduce other methodologies to weak quality), as understanding how RGs are used to assess therapeutic change should be embedded within the context of the quality of the study design. Rather than reporting only global ratings, as this can be misrepresentative of the study qualities (Liberati et al., 2009), a table and narrative summary of all quality assessment domain scores was presented. Despite the EPHPP providing guidance on how to rate items the trainee found, on some occasions, the task ambiguous and subjective. To reduce bias, a second independent researcher rated 35% of the included studies. The agreement between the raters was 87.5% for the total scores, and between 62.5% and 100% for individual domains (M=85.4%). Differences arose on a few domains e.g. one scorer rated a paper ‘strong’ for data collection method when they only used RGs, whereas another scorer rated it as ‘weak’ due to excluding other psychometric measures. There was a lack of clarity within the guidance document; therefore no exact conclusions could be decided. Instead, the discrepancy was discussed and resolved by entering ‘not applicable’. The EPHPP relies on good quality methodological reporting for scoring. Unfortunately, the quality of reporting was poor amongst the included papers. This may reflect the less strict journal criteria requirements to publish research in 1970-

2000s, or error, and/or word count restrictions. This is particularly evident when rating 'weak' for selection bias and blinding, where authors failed to describe the process.

Developing the synthesis

A narrative synthesis was chosen as the review aimed to understand how RGs evaluated interventions; in addition, the evidence base on the research question was not extensive (Popay et al., 2006). A meta-analysis was neither feasible nor appropriate as the included studies were heterogeneous in terms of design, population, and administration of RGs (Haidich, 2010). Furthermore, Cipriani and Geddes (2003) advised against conducting meta-analyses when the evidence base is poor quality and inconsistent.

Data extraction

The trainee found data extraction an unsatisfying process, which led to doubting their ability to complete the review. Due to the abstract nature, complex language and poor reporting, the trainee was required to read the papers multiple times to understand the necessary information and seek clarity in supervision. In most cases, the uncertainty was due to authors excluding information or the ambiguity of the reporting. When the findings were still unclear, the trainee attempted to contact authors, however, the response was limited due to potentially outdated email addresses.

Tables were produced to extract and present the findings of the narrative synthesis. The studies were presented in alphabetical order to highlight how David Winter was lead author on 20.8% of the included studies (k=5) and published a further study with colleagues (Paz et al., 2019). The quality of the evidence base has improved since the earliest study (Fransella & Joyston-Bechal, 1971). It is recognised within academic literature, that weak methodologies can result in elevated effect size (Tarrier et al., 2008) and there has been a marked improvement in methodological rigour (Tarrier, 2005). The trainee reflected how this was apparent within the current review.

There were only three gold-standard randomised control trials (RCT; Hemmings, 1997; Paz et al., 2019; Winter et al., 2018). RCTs can be criticised for being clinically orchestrated, with strict inclusion and exclusion criteria that do not reflect clinical settings (Rosen et al., 2006). One included study was a dissertation (Thomson, 2000), which would have decreased the risk of publication bias. Many studies reflected small-scale practice-based evidence (e.g. Clarke & Llewelyn, 1994; Clarke & Pearson, 2000). The benefits of these types of studies have been documented (Beutler, 2009), and researchers argue that gathering data in 'real world' settings, leads to better service provision. This type of

research is considered to have high external validity because of the nature of the samples and the therapy is conducted in practice (Barkham & Mellor-Clark, 2003). Notably, this research does not follow rigorous systematic procedures that reduce bias and confounds, and limits generalisability of findings.

Extracting the studies data analysis procedures and findings was difficult, as a number of unfamiliar methods were used such as 'intensity' and 'concordance of a person's perceptions'. Papers also poorly reported the meaning of these analyses (Fransella & Joyston-Bechal, 1971). As a consequence, the trainee spent considerable time reading and digesting the literature; hence, they have provided an analysis summary sheet in response (Appendix D).

Systematic review summary

The review explored a novel research question and addressed a gap in the literature. The trainee adhered to recommended systematic review reporting guidelines (Moher et al., 2009). This included running broad scoping searches of the evidence base and pre-registering a protocol on International Prospective Register of Systematic Review (PROSPERO; reference: CRD42021239525; Appendix B).

This narrative synthesis offered further understanding of how RGs are used to evaluate therapy, and suggested the methodology is mainly used for evaluating smaller scale research. Methodological flaws in the current evidence base limits our understanding around how RGs can be used to assess psychological change. Further large-scale research is required.

Paper 2: Empirical Study

This section describes an evaluation of a brief CAT-informed intervention for adolescents who self-injure using a RG technique.

Rationale for the topic

The mental health needs of adolescents are significantly increasing (Deighton et al., 2018; James et al., 2010). This is highlighted in the rates of self-injuring amongst this population (Plener et al., 2015; Swannell et al., 2014). There is also a consensus shown in literature, that there are limited effective interventions to support these individuals (Glenn et al., 2019; Witt et al., 2021).

RGs have previously been used as an alternative to traditional self-report measures to assess effectiveness of psychological interventions. As noted, RGs were developed from PCT (Kelly, 1955) and can aid our understanding of personal meaningful change. The approach is unique as a completed RG can evaluate individuals underlying assumptions and perceptions about relationships with others and self (Kelly, 1955). Limited research has been conducted to explore the self-concepts of adolescents who self-injure and whether, following therapy, there is change in their construing.

CAT (Ryle & Kerr, 2002) is a relational therapy, which integrates ideas from psychoanalytic therapy and PCT. Both Sheard et al (2000) and Peel-Wainwright et al (in prep) evaluated a brief CAT-informed intervention for adults who self-injure. Both studies found that brief approaches were considered acceptable and feasible. Ougrin et al's (2013) brief CAT-informed intervention with adolescents who self-injure was found to improve future treatment engagement. This promising study was conducted within an Accident and Emergency department. Brief interventions could be a solution to improving access to services in the community. A brief CAT-informed intervention may help an adolescent who self-injures, as the behaviour is often viewed as a response to relational and interpersonal stressors (Peel-Wainwright et al., 2021). In response, 'CATCH-Y' (Cognitive Analytic Therapy Approach to Containing Self-Harm in Young People) was proposed as a 5-session CAT-informed study.

As previously documented, there are limitations to traditional self-report measures and less is known regarding the self-concepts of adolescents who self-injure. Therefore the primary aims of this empirical study was to explore the feasibility and acceptability of using RGs with adolescents who self-injure. A secondary aim was to explore if RGs could examine therapeutic change following CATCH-Y.

Design

The study design was within-subjects repeated measures, with participants acting as their own control. Multiple baselines were not chosen as the study's primary aims were based on feasibility and acceptability. In addition, multiple baselines may have inadvertently increased risk of boredom and demand characteristics if participants were asked to complete the RG many times due to its time-consuming nature.

The trainee was aware that the Medical Research Council (Craig et al., 2019) suggests that both quantitative and qualitative methods should be used to investigate the feasibility and

acceptability of novel interventions. However, the trainee did not want to focus on utilising an only qualitative design, such as interviews, due to the risk of adolescents struggling to contribute and elaborate on feedback. Since completing the study, the trainee reflected on how this was arguably a good decision, based on various participants' level of psychological distress and engagement within therapy.

Exclusion and inclusion criteria

Recruitment was conducted in community CAMHS settings. The research team chose not to recruit from in-patients CAMHS as they felt participant retention may have been challenging. There is now increased pressure for shorter stays within hospital (England NHS, 2020) and psychiatrists ultimately decide when young people are discharged, resulting in a possible loss of contact with the participant.

The trainee hoped by using a broad inclusion and exclusion criteria, the study could continue to be developed for use in clinical settings, compared to tightly controlled studies with strict inclusion and exclusion criteria. The study included participants who:

- Were aged between 13 to 17 years old, as non-suicidal self-injury (NSSI) generally starts and peaks in adolescent years (Plener et al., 2015).
- Experienced one episode of NSSI in last six months and had a lifetime prevalence of two or more episodes NSSI. This meant participants within the study were able to reflect on recent experiences.
- Had a CAMHS case-manager, who could be involved in risk management, and future care planning. Unfortunately, this meant participants could not be recruited via 3rd sector organisations or self-referral, as they might not have an allocated CAMHS case-manager. The safety of participants was salient, particularly as the study was based on a new intervention.

Participants who did not speak fluent English and/or diagnosed with severe learning disabilities were excluded. The trainee recognised that this is discriminatory and creates barriers for developing an evidence base for these underrepresented populations (Shepherd et al., 2019). However, adaptions would have been required beyond the scope of a doctoral thesis, such as using interpreters, adapting relevant documents to ensure accessibility, as well as extending the assessment period and slowing down the pace of therapy (Lloyd & Clayton, 2014). Individuals with an autistic diagnosis were included, however, only one participant was referred, and subsequently they were removed from the study by their clinical team due to safeguarding concerns.

A further exclusion criterion was high risk to self, which was screened for within the initial eligibility assessment, using a '0' to '10' scale (see paper two). If participants had answered three or less, where '0' = very much want to be dead, they would have been excluded from the study. No participants were excluded as they all scored three or above. As the study progressed and participants felt comfortable with the trainee they opened-up further about their suicidal thoughts, which indicated they were struggling more than the initial eligibility assessment identified. Although it was decided on a case-by-case basis, no participants were excluded if they subsequently made risk disclosures during the study. In line with BPS (2021) recommendations, it was imperative to acknowledge and manage this risk to ensure safety of participants. Therefore, the trainee followed the risk protocol; this document was co-produced by the research team, a clinical psychologist working within community CAMHS and an Expert by Experience who had previously engaged in NSSI (Appendix Q). The trainee appropriately managed any distress experienced by participants, within the clinic room initially, followed-up by sharing risk information with relevant professionals and caregivers. On some occasions the trainee requested CAMHS clinicians/caregivers to join the sessions.

Recruitment

Ethical approval was obtained from the National Research Ethics Service in February 2021. Recruitment occurred from two local NHS Trusts (site A and site B). There was delay, beyond the trainee's control, in receiving approval from site B local Trust Research and Development Department. This meant recruitment initially started on site A in May 2021, and then July 2021 on site B.

The initial recruitment target of six to seven participants was quickly achieved; therefore the trainee increased the target to 13, which was also achieved. This experience contrasts with previous research studies (Bucci et al., 2015), which suggests the recruitment process is often more difficult than anticipated. Often within research, case-managers are considered 'gatekeepers' to recruitment (Patterson et al., 2011). This applied to the current study, as it was the enthusiasm and engagement from case-managers that helped accelerate the recruitment process. To highlight this, once study recruitment closed, case-managers continued to contact the trainee to refer participants.

There are a few possible explanations for why the recruitment process progressed smoothly. In line with Bucci et al (2015) recommendations, the trainee had regular face-to-

face communication with case-managers to encourage engagement. Potentially, case-managers may have recognised that the study filled an unmet need and provided additional support to services. This reflects previous research (Furimsky et al., 2008), which suggested case-managers employ a cost-benefit filter when approached to support research studies, exploring service users' needs versus the input and effort required from them. Additionally, the ethics committee agreed to verbal consent to contact; this is likely to have minimised extra work for case-managers.

The broad inclusion criteria meant participants had varying levels of social and psychological difficulties. Many had been subject to adverse childhood experiences (ACEs), struggled academically, excluded from school, and/or been hesitant to engage with current CAMHS teams. This might have reflected the high-threshold now required to access support from CAMHS. Although the study only recruited a small sample, it was heterogeneous in term of ages, ethnicities and genders captured. The trainee found reporting demographic data challenging, as the questionnaire aimed to capture nuances in gender identity. The trainee is aware there are issues with research data versus data from other sources.

Rational for repertory grid methodology

Before conducting this thesis, the trainee's knowledge of RGs was limited. The trainee learnt RGs allow for exploration of psychological change using an idiographic approach, as they bridge the gap between qualitative and quantitative research (Jankowicz, 2005). RGs had previously been used to explore psychological change following CAT with adults (Clarke & Llewelyn, 1994; Clarke & Pearson, 2000). The development of CAT was influenced by RGs and PCT, for example, the methodology had been implemented to explore self-to-self relationships and relationships with others (Bristow, 2004). RGs can also highlight dilemmas in relationships (Bristow, 2004). Paper one highlighted that adopting this methodology with adolescents who self-injure would offer a novel contribution to the literature. Paper one also emphasised how RGs are suitable for exploring small-scale research.

Selection of elements and constructs

Participants were provided with the majority of elements to investigate relationships of interest e.g. self-injuring. The elements selected were based on previous studies (Taylor et al 2021; Winter et al., 2007). It is well documented that adolescents who self-injure often have poor self-esteem (Junker et al., 2019). Therefore the elements ideal self and self were included to demonstrate how close to or far away from those qualities the participant felt.

Significant people in the participant's life are commonly included in RGs (Winter, 1992), thus the study included person I care about and person I do not care about.

In line with previous research, the trainee believed that participants found it useful (Landfield & Cannell, 1988) and meaningful (Cromwell & Caldwell, 1962) to elicit their own constructs. Consistent with previous research (Winter, 2003), the process of eliciting constructs was lengthy and impacted on some participants concentration and engagement. An alternative approach would have been to provide participants with constructs; however this would have compromised personal meaning.

Assessment sessions

The original study proposal stated that to reduce bias, the trainee would not have the dual role of therapist-researcher. Instead the roles would be shared between the trainee and Rebecca Haw, a trainee clinical psychologist who was co-delivering the project. However, due to time constraints such as trainee placement commitments, limited research study days, isolations due to COVID-19 and second year exams, it was challenging to maintain this initial proposal and an ethics amendment was made (August 2021).

Following the ethics amendment, the trainee noticed how participants, particularly ones who were nervous, seemed to value meeting with only one trainee throughout the CATCH-Y study. However, the trainee often found themselves in a role dilemma alternating between 'researcher', 'therapist' and as a 'doctoral student' invested in the project. The trainee was required to be flexible and mindful about the different expectations of the roles. Often participants wanted to talk about their emotional difficulties within an assessment/research session, which introduced tension between the goals and aims of the intervention versus research (Gabriel, 2005). Although, this felt like a rejection given the participants high level of need, conversations were managed sensitively by naming the frustration, validating the participant's experiences and explaining that their concerns would be communicated to their case-manager and followed up.

Due to the age of the participants, dyadic approach was chosen to elicit constructs as it is recommended to use with younger people (Jankowicz, 2005; Salmon, 1976). The research team anticipated that some young people may struggle to elicit elements. Therefore, the trainee practiced administrating RGs before meeting with participants. Despite this, one of the first RGs was administrated incorrectly, which meant it was unable to be analysed.

In line with previous research (Mason, 2008; Randal et al., 2016), maintaining consistency by using the same constructs elicited by an individual's pre-CATCH-Y at post-CATCH-Y assessment allowed for change to be explored. Paper one documents how, when exploring element distances, it is essential not to change the constructs for post therapy analysis. This also shortened the second RG assessment session for participants, which helped decrease feelings of boredom.

Repertory grid analysis

Paper one highlighted how there are a variety of ways RGs can be analysed. Given the aims and sample size of this study, statistical analysis was not appropriate, and no power calculation was conducted. Instead, the results would mainly be presented descriptively. A summary of the findings were:

1. Descriptive statistics found most participants thought RGs were feasible and acceptable.
2. Baseline grids were analysed using principle component analysis and highlighted three common themes among participants: polarised thinking styles, low self-esteem, and ambivalence around their self-injuring identity.
3. Measuring element distances showed changes in participants' pre and post-therapy RG, particularly the distance between self to ideal self.
4. Content analysis of constructs using the Classification System for Personal Constructs (CSPC: Feixas et al., 2002) framework explored how participants construed the majority of constructs using emotional or personal categories. This analysis was included as an appendix as it was not the focus of the studies aims and hypotheses and also word count limitations (Appendix N).

The analyses at stages two and three were run using the computer package Idiogrid version 2.4 (Grice, 2002). No written guidance was available on using Idiogrid therefore, before commencing the analysis, the trainee needed to familiarise themselves with the programme and gain support from their supervisor.

The trainee reflected on how most participants were engaged in the process of completing a RG. One participant commented how they appreciated being able to share their thoughts and feelings regarding self-injuring using a non-judgmental method. Two participants struggled to complete the RG, and both subsequently found the therapy sessions tricky. The trainee reflected how RGs require a similar ability of reflection and openness to CAT approaches. Therefore, when carrying out an initial assessment the RG methodology may

be a useful triage tool to identify adolescents who were more suited to brief approaches, e.g. if they were able to verbalise their emotional and relational experiences. This could indicate where to pitch the pace, content and structure of the therapeutic sessions, based on the participant's zone of proximal development (ZPD; Vygotsky, 1978).

Experience of delivering CATCH-Y

The research team developed CATCH-Y based on research by Sheard and colleagues (2000) and Peel-Wainwright et al (in prep). CAT was a novel approach to the trainee; therefore, before meeting with participants, they attended teaching and engaged with reading, and practice exercises with supervisors. The trainee initially felt anxious and lacked confidence. However, consistent with previous research, this anxiety reduced when more experience was gained (Bischoff & Barton, 2002; Folkes-Skinner et al., 2010). Fortnightly group supervision with a CAT-accredited supervisor provided expert guidance on clinical cases, which meant the trainee felt assured whilst learning the model. In addition, group supervision offered invaluable support and facilitated cohesion on delivering the study, consistent with previous research findings (Thompson et al., 2008).

The study was conducted in the context of COVID-19 pandemic. This lead to significant changes in the participants' day-to-day relational needs such as increased isolation, less time with peers and more time spent with family (Panchal et al., 2021). In line with previous research (Peel-Wainwright et al., 2021), relational factors are believed to influence the onset, maintenance and management of self-injuring. This might explain why participants preferred face-to-face appointments at CAMHS, rather than home visits or video-conferencing, in contrast to previous findings (Hollmann et al., 2021). Booking clinic rooms within CAMHS was challenging at times, however, the trainee aimed to ensure participants had the same time slot each week. As this was not always possible it was necessary to adopt a flexible approach.

The study indicated that adolescents who struggle to express their emotions or discuss relational factors may benefit less from a brief CAT-informed approach. The trainee used a non-verbal method to support these participants by writing a therapeutic end of therapy letter to offer reflections on the process. In CAMHS, adolescents could be discharged from services if they were viewed as "not engaging". This may occur without considering if there is a protective function as to why the young person is avoiding talking about their emotions. Tony Ryle's well-known statement 'push where it moves' (Ryle & Kerr, 2002) guided the trainee's delivery of CATCH-Y, particularly in the pace of developing a joint

reformulation and did not 'push' anything that was met with reluctance, or overwhelming anxiety.

The trainee recognised the importance of considering the participants wider system to facilitate change e.g. the relationship between the adolescent, their family and CAMHS. In some cases maintaining on-going communication with participant's case-managers was challenging, for instance, when it became necessary to share risk information. This might reflect the current environment of mental health services, where caseloads have high levels of complexity, increased levels of staff burnout and struggles with job retention (Johnson et al., 2012). In session five, a CAMHS case-manager and/or family were expected to join the session to share the reformulation, however, this was often challenging to facilitate. Some participants reported they either felt uncomfortable with their caregiver knowing their personal thoughts and feelings or described knowing the CAMHS case-manager less than the trainee. On occasions case-managers were not contactable to organise sessions and some participants found this lack of joint up working reinforced their struggles.

The trainee adhered to the Code of Ethics and Conduct (BPS, 2018) when managing confidentiality. Challenges arose when caregivers expected feedback on therapy content. Confidentiality meant that limited information could be shared, except risk, however at times this felt unsupportive of the system, but it was essential to respect participants' privacy. For understandable reasons, some participants feared talking to their caregivers about their difficulties. On many occasions' confidentiality was broken when the trainee needed to feedback risk information. The trainee had concerns whether this would impact on the therapeutic relationships, however, for most participants it appeared they appreciated information being shared, as they did not know how to open up to their caregiver.

Empirical paper summary

The research findings suggested that RGs are an acceptable measure for adolescents who self-injure. The methodology provided an insight into the self-concepts of this population. The themes highlighted suggested participants had low self-esteem, ambivalence regarding self-injuring and their identity and dichotomous beliefs about self, without any nuance. There are some suggestions that CATCH-Y attendance led to alterations in self-concepts. Whilst conducting this empirical study the trainee learnt new skills in managing clinical risk, working with adolescents, liaising with CAMHS, and delivering brief CAT-informed interventions.

Dissemination

Papers one and two will be submitted to the Journal of Psychology & Psychotherapy: Theory Research and Practice (Appendix A). The journal is a high impact journal centred on clinical psychology topics. A lay summary of the study findings will be made available for study participants, their caregivers, and CAMHS involved in recruitment. In addition to this, findings will be disseminated to the wider public via Twitter. Presenting the study at the University Postgraduate Research Conference will enable the findings to reach a wider audience. Attending a CAT specialist interest research group will also provide further opportunity for presenting key findings.

Personal reflections

Paper one and paper two were completed in parallel, due to the time constraints of the clinical psychology doctoral training course. Unfortunately, this meant the systematic review findings did not directly inform how the RG methodology was administrated or the analysis chosen to evaluate the results in the empirical study. Nevertheless, on reflection how the trainee decided to use the RG was in line with the findings of the review. This included providing the same predefined elements to all participants and eliciting constructs using the dyad method. This allowed us to generate constructs that were personally meaningful to the participants. In addition, using the same constructs in the post-CATCH-Y assessment allowed the changes in participants' elements distances to be compared from one time point to another. Using principle component analysis to examine participants' baseline grids and change in distance between elements was also a common measure for evaluating change. As noted in the review, inferential statistics were not used on the small CATCH-Y sample, as there would have been a lack of power. The review recommended that nine or ten elements are an appropriate number to understand an individuals personal construct system. The RG administrated in CATCH-Y only used seven elements. This might have limited our understanding of the participants construct systems. However, the majority of studies included in the review were based on adult samples. Therefore, using seven elements might have been an appropriate starting point when exploring the feasibility and acceptability of using RG with young people.

The trainee worked alongside a fellow trainee clinical psychologist, Rebecca Haw, who led a separate project examining the feasibility and acceptability of CATCH-Y. Working with a peer made the process less stressful as it reduced the workload and provided a chance to share ideas and reflect. Rebecca also administrated the RG to the participants allocated to her. In the same way, the trainee administrated Rebecca's outcome measures to their

allocated participants. The trainee has gained skills from working in a team such as the need for good organisation, regular communication, shared decision-making and workload management.

Whilst completing this thesis, the trainee has learnt invaluable clinical and research skills and gained knowledge on an area of particular special interest (CAT). The trainee hopes to work within CAMHS post qualification and continue to use brief relational approaches in practice. Since the completion of this thesis, there has been an update of the CATCH-Y manual based on the trainees' findings, and senior members of the research team plan to develop this evidence base further. Despite the challenges, conducting a systematic review on RGs provided an understanding of the methodology and how it may be useful when developing practice-based evidence. The trainee enjoyed implementing the RG methodology as it reflected their personal values e.g. the importance of exploring an individual's perspective using their own words and narrative, rather than predefined categories and assumptions.

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APPENDICES

Appendix A: Psychology & Psychotherapy: theory research and practice: Author Guidelines

The Psychology & Psychotherapy: theory research and practice

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2. AIMS AND SCOPE

Psychology and Psychotherapy: Theory Research and Practice is an international scientific journal with a focus on the psychological aspects of mental health difficulties and well-being; and psychological problems and their psychological treatments. We welcome submissions from mental health professionals and researchers from all relevant professional backgrounds. The Journal welcomes submissions of original high quality empirical research and rigorous theoretical papers of any theoretical provenance provided they have a bearing upon vulnerability to, adjustment to, assessment of, and recovery (assisted or otherwise) from

psychological disorders. Submission of systematic reviews and other research reports which support evidence-based practice are also welcomed, as are relevant high quality analogue studies and Registered Reports. The Journal thus aims to promote theoretical and research developments in the understanding of cognitive and emotional factors in psychological disorders, interpersonal attitudes, behaviour and relationships, and psychological therapies (including both process and outcome research) where mental health is concerned. Clinical or case studies will not normally be considered except where they illustrate particularly unusual forms of psychopathology or innovative forms of therapy and meet scientific criteria through appropriate use of single case experimental designs.

All papers published in *Psychology and Psychotherapy: Theory, Research and Practice* are eligible for Panel A: Psychology, Psychiatry and Neuroscience in the Research Excellence Framework (REF).

3. MANUSCRIPT CATEGORIES AND REQUIREMENTS

- Articles should adhere to the stated word limit for the particular article type. The word limit excludes the abstract, reference list, tables and figures, but includes appendices.

Word limits for specific article types are as follows:

- Research articles: 5000 words
- Qualitative papers: 6000 words
- Review papers: 6000 words
- Special Issue papers: 5000 words

In exceptional cases the Editor retains discretion to publish papers beyond this length where the clear and concise expression of the scientific content requires greater length (e.g., explanation of a new theory or a substantially new method). Authors must contact the Editor prior to submission in such a case.

Please refer to the separate guidelines for Registered Reports.

All systematic reviews must be pre-registered.

Brief-Report COVID-19

For a limited time, the *Psychology and Psychotherapy: Theory, Research and Practice* are accepting brief-reports on the topic of Novel Coronavirus (COVID-19) in line with the journal's main aims and scope (outlined above). Brief reports should not exceed 2000 words and should have no more than two tables or figures. Abstracts can be either structured (according to standard journal guidance) or unstructured but should not exceed 200 words. Any papers that are over the word limits will be returned to the authors. Appendices are included in the word limit; however online supporting information is not included.

4. PREPARING THE SUBMISSION

Free Format Submission

Psychology and Psychotherapy: Theory, Research and Practice now offers free format submission for a simplified and streamlined submission process.

Before you submit, you will need:

- Your manuscript: this can be a single file including text, figures, and tables, or separate files – whichever you prefer. All required sections should be contained in your manuscript, including abstract, introduction, methods, results, and conclusions. Figures and tables should have legends. References may be submitted in any style or format, as long as it is consistent throughout the manuscript. If the manuscript, figures or tables are difficult for you to read, they will also be difficult for the editors and reviewers. If your manuscript is difficult to read, the editorial office may send it back to you for revision.
- The title page of the manuscript, including a data availability statement and your co-author details with affiliations. *(Why is this important? We need to keep all co-authors informed of the outcome of the peer review process.)* You may like to use this template for your title page.

Important: the journal operates a double-blind peer review policy. Please anonymise your manuscript and prepare a separate title page containing author details. *(Why is this important? We need to uphold rigorous ethical standards for the research we consider for publication.)*

- An ORCID ID, freely available at https://orcid.org. *(Why is this important? Your article, if accepted and published, will be attached to your ORCID profile. Institutions and funders are increasingly requiring authors to have ORCID IDs.)*

To submit, login at https://www.editorialmanager.com/paptrap/default.aspx and create a new submission. Follow the submission steps as required and submit the manuscript.

If you are invited to revise your manuscript after peer review, the journal will also request the revised manuscript to be formatted according to journal requirements as described below.

Revised Manuscript Submission

Contributions must be typed in double spacing. All sheets must be numbered.

Cover letters are not mandatory; however, they may be supplied at the author's discretion. They should be pasted into the 'Comments' box in Editorial Manager.

Parts of the Manuscript

The manuscript should be submitted in separate files: title page; main text file; figures/tables; supporting information.

Title Page

You may like to use this template for your title page. The title page should contain**:**

- A short informative title containing the major key words. The title should not contain abbreviations (see Wiley's best practice SEO tips);
- A short running title of less than 40 characters;
- The full names of the authors;
- The author's institutional affiliations where the work was conducted, with a footnote for the author's present address if different from where the work was conducted;
- Abstract;
- Keywords;
- Data availability statement (see Data Sharing and Data Accessibility Policy);
- Acknowledgments.

Authorship

Please refer to the journal's Authorship policy in the Editorial Policies and Ethical Considerations section for details on author listing eligibility. When entering the author names into Editorial Manager, the corresponding author will be asked to provide a CRediT contributor role to classify the role that each author played in creating the manuscript. Please see the Project CRediT website for a list of roles.

Abstract

Please provide an abstract of up to 250 words. Articles containing original scientific research should include the headings: Objectives, Design, Methods, Results, Conclusions. Review articles should use the headings: Purpose, Methods, Results, Conclusions.

Keywords

Please provide appropriate keywords.

Acknowledgments

Contributions from anyone who does not meet the criteria for authorship should be listed, with permission from the contributor, in an Acknowledgments section. Financial and material support should also be mentioned. Thanks to anonymous reviewers are not appropriate.

Practitioner Points

All articles must include Practitioner Points – these are 2-4 bullet point with the heading 'Practitioner Points'. They should briefly and clearly outline the relevance of your research to professional practice. (The Practitioner Points should be submitted in a separate file.)

Main Text File

As papers are double-blind peer reviewed, the main text file should not include any information that might identify the authors.

The main text file should be presented in the following order:

- Title
- Main text
- References
- Tables and figures (each complete with title and footnotes)
- Appendices (if relevant)

Supporting information should be supplied as separate files. Tables and figures can be included at the end of the main document or attached as separate files but they must be mentioned in the text.

- As papers are double-blind peer reviewed, the main text file should not include any information that might identify the authors. Please do not mention the authors' names or affiliations and always refer to any previous work in the third person.
- The journal uses British/US spelling; however, authors may submit using either option, as spelling of accepted papers is converted during the production process.

References

This journal uses APA reference style; as the journal offers Free Format submission, however, this is for information only and you do not need to format the references in your article. This will instead be taken care of by the typesetter.

Tables

Tables should be self-contained and complement, not duplicate, information contained in the text. They should be supplied as editable files, not pasted as images. Legends should be concise but comprehensive – the table, legend, and footnotes must be understandable without reference to the text. All abbreviations must be defined in footnotes. Footnote symbols: †, ‡, §, ¶, should be used (in that order) and *, **, *** should be reserved for P-values. Statistical measures such as SD or SEM should be identified in the headings.

Figures

Although authors are encouraged to send the highest-quality figures possible, for peer-review purposes, a wide variety of formats, sizes, and resolutions are accepted.

Click here for the basic figure requirements for figures submitted with manuscripts for initial peer review, as well as the more detailed post-acceptance figure requirements.

Legends should be concise but comprehensive – the figure and its legend must be understandable without reference to the text. Include definitions of any symbols used and define/explain all abbreviations and units of measurement.

Supporting Information

Supporting information is information that is not essential to the article, but provides greater depth and background. It is hosted online and appears without editing or typesetting. It may include tables, figures, videos, datasets, etc.

Click here for Wiley's FAQs on supporting information.

Note: if data, scripts, or other artefacts used to generate the analyses presented in the paper are available via a publicly available data repository, authors should include a reference to the location of the material within their paper.

General Style Points

For guidelines on editorial style, please consult the APA Publication Manual published by the American Psychological Association. The following points provide general advice on formatting and style.

- **Language:** Authors must avoid the use of sexist or any other discriminatory language.
- **Abbreviations:** In general, terms should not be abbreviated unless they are used repeatedly and the abbreviation is helpful to the reader. Initially, use the word in full, followed by the abbreviation in parentheses. Thereafter use the abbreviation only.
- **Units of measurement:** Measurements should be given in SI or SI-derived units. Visit the Bureau International des Poids et Mesures (BIPM) website for more information about SI units.
- **Effect size:** In normal circumstances, effect size should be incorporated.
- **Numbers:** numbers under 10 are spelt out, except for: measurements with a unit (8mmol/l); age (6 weeks old), or lists with other numbers (11 dogs, 9 cats, 4 gerbils).

Wiley Author Resources

Manuscript Preparation Tips: Wiley has a range of resources for authors preparing manuscripts for submission available here. In particular, we encourage authors to consult Wiley's best practice tips on Writing for Search Engine Optimization.

Article Preparation Support: Wiley Editing Services offers expert help with English Language Editing, as well as translation, manuscript formatting, figure illustration, figure formatting, and graphical abstract design – so you can submit your manuscript with confidence.

Also, check out our resources for **Preparing Your Article** for general guidance and the **BPS Publish with Impact infographic** for advice on optimizing your article for search engines.

5. EDITORIAL POLICIES AND ETHICAL CONSIDERATIONS

Peer Review and Acceptance

Except where otherwise stated, the journal operates a policy of anonymous (double blind) peer review. Please ensure that any information which may reveal author identity is blinded in your submission, such as institutional affiliations, geographical location or references to unpublished research. We also operate a triage process in which submissions that are out of scope or otherwise inappropriate will be rejected by the editors without external peer review. Before submitting, please read the terms and conditions of submission and the declaration of competing interests.

We aim to provide authors with a first decision within 90 days of submission.

Further information about the process of peer review and production can be found in 'What happens to my paper?' Appeals are handled according to the procedure recommended by COPE. Wiley's policy on the confidentiality of the review process is available here.

Clinical Trial Registration

The journal requires that clinical trials are prospectively registered in a publicly accessible database and clinical trial registration numbers should be included in all papers that report their results. Authors are asked to include the name of the trial register and the clinical trial registration number at the end of the abstract. If the trial is not registered, or was registered retrospectively, the reasons for this should be explained.

Research Reporting Guidelines

Accurate and complete reporting enables readers to fully appraise research, replicate it, and use it. Authors are encouraged to adhere to recognised research reporting standards.

We also encourage authors to refer to and follow guidelines from:

- Future of Research Communications and e-Scholarship (FORCE11)
- The Gold Standard Publication Checklist from Hooijmans and colleagues
- FAIRsharing website

Conflict of Interest

The journal requires that all authors disclose any potential sources of conflict of interest. Any interest or relationship, financial or otherwise that might be perceived as influencing an author's objectivity is considered a potential source of conflict of interest. These must be disclosed when directly relevant or directly related to the work that the authors describe in their manuscript. Potential sources of conflict of interest include, but are not limited to: patent or stock ownership, membership of a company board of directors, membership of an advisory board or committee for a company, and consultancy for or receipt of speaker's fees from a company. The existence of a conflict of interest does not preclude publication. If the authors have no conflict of interest to declare, they must also state this at submission. It is the responsibility of the corresponding author to review this policy with all authors and collectively to disclose with the submission ALL pertinent commercial and other relationships.

Funding

Authors should list all funding sources in the Acknowledgments section. Authors are responsible for the accuracy of their funder designation. If in doubt, please check the Open Funder Registry for the correct nomenclature: https://www.crossref.org/services/funder-registry/

Authorship

All listed authors should have contributed to the manuscript substantially and have agreed to the final submitted version. Authorship is defined by the criteria set out in the APA Publication Manual:

"Individuals should only take authorship credit for work they have actually performed or to which they have substantially contributed (APA Ethics Code Standard 8.12a, Publication Credit). Authorship encompasses, therefore, not only those who do the actual writing but also those who have made substantial scientific contributions to a study. Substantial professional contributions may include formulating the problem or hypothesis, structuring the experimental design, organizing and conducting the statistical analysis, interpreting the results, or writing a major portion of the paper. Those who so contribute are listed in the byline." (p.18).

Appendix B: Prospero protocol

NIHR | National Institute for Health Research

https://www.crd.york.ac.uk/prospero/display_record.php?ID=CRD42021239525

PROSPERO

International prospective register of systematic reviews

Review methods were amended after registration. Please see the revision notes and previous versions for detail.

Citation

Molly Marsden, Peter Taylor, Samantha Hartley. A systematic narrative review examining the use of repertory grids to evaluate psychological interventions. PROSPERO 2021 CRD42021239525 Available from: https://www.crd.york.ac.uk/prospero/display_record.php?ID=CRD42021239525

Review question

How are repertory grids used to evaluate psychological

interventions? The aims of the review are the following:

a) What repertory grid metrics (e.g. distances, correlations, metrics of organisation or structure) are commonly used to measure therapeutic change?

b) What are the commonalities and differences in how repertory grids are employed to evaluate interventions (e.g. are they always administrated pre-post, do they use pre-set constructs, individual vs., group level analysis)?

c) To what extent does change in repertory grid metrics converge with other indicators of therapeutic change?

d) What types of psychological intervention studies are repertory grids used?

e) What types of trial designs are repertory grids used?

Searches [1 change]

The following electronic databases including MEDLINE, PsycINFO, Embase, Web of Science, and CINAHL will be searched for papers relevant to the review question e.g. studies that use repertory grids to evaluate psychological interventions.

The following terms will be combined with Boolean operators:

("Repertory grid*") or ("Rep grid*)

Only two search terms will be used to ensure comprehensive searching of the literature. Repertory grids are a smaller area of research. Therefore, keeping the search terms broad would ensure we capture all of the studies.

MeSH terms will also be used in the search to include subject headings, which map onto relevant keywords. A record of relevant MeSH terms used within the search strategy will be kept. Articles retrieved from these searches will be screened against inclusion/exclusion criteria for the review. Studies published up until the 25.02.2021 and in the English Language

will be included in the search.

Types of study to be included [1 change]

Included:

1) Uses of a repertory grid methodology; 2) Administrated the repertory grid across two time points; 3) Be evaluating change in a psychological intervention. We have defined a psychological intervention as the use of verbal and non-verbal techniques to bring about change in psychological process (including behavioural, relational, dynamic, interpersonal and cognitive processes); 4) Written in or translated into the English language; 5) Studies including both published and grey literature. Exclusion:
1) Review papers; 2) Case studies or papers that had three or less participants (couple = one couple); 3) Book chapters or presented as a conference extract; 4) Papers that have three or less participants (couple = one participant); 5) Parenting programmes; 5) Were not written in English; 6) Did not use a repertory grid methodology; 6) Analysed existing text such as information from Internet forums or newspaper articles; 7) Did not report on original research data (e.g.reviews or editorials).

Condition or domain being studied

The domain being studied is repertory grid methodology. A repertory grid is defined as a structured interviewing technique, which seeks to capture some aspect of a participants construing or perception of themselves, others or the world around them, uncontaminated by the interviewer's own view point (Jankowicz, 2003). The basis for construing is the organisation of beliefs and knowledge in a system of bi- polar constructs.

For the purpose of this review the repertory grid should be used to measure psychological change related to a psychological intervention, and completed at least two time points.

Participants/population

There will be no restrictions on the population (e.g. no gender or age restrictions, adolescent and adult populations will be included).

Intervention(s), exposure(s)

The papers must be evaluating change from any type of psychological intervention. A psychological intervention is defined as the use of verbal and non-verbal techniques to bring about change in psychological process (including behavioural, relational, dynamic, interpersonal and cognitive processes.

Comparator(s)/control

Studies designed to evaluate psychological interventions that incorporate repertory grids as an outcome measure will be included, encompassing both studies incorporating some form of comparator or control arm and single-arm studies or trials.

Main outcome(s) [1 change]

The two main outcomes of the review:

• Commonalities and differences in how repertory grids are implemented to evaluate interventions, including choice of metrics used to evaluate change.

• Whether evidence of therapeutic change in other outcomes (pre-post change, or differences between treatment arms) is mirrored or not in repertory grid data. In other words, where other psychological intervention outcome measures indicate a therapeutic (or detrimental) effect, to what extent does repertory grid data converge or diverge with this finding.

Measures of effect

Not applicable.

Additional outcome(s)

None

Measures of effect

Not applicable.

Data extraction (selection and coding) [2 changes]

1. Specific electronic databases will be searched using the terms outlined above.

2. Search results will be exported into Endnote software.

3. Duplicate search results will be deleted.

4. All study titles and abstracts will be exported to an excel spreadsheet and screened against predefined inclusion and exclusion criteria by a independent reviewer and lead author. Any discrepancies will be reviewed by the research team. Any studies not meeting criteria will be excluded at this stage. If eligibility is unclear, the study will be retained at this stage.

5. The full text of all remaining studies will be screened by lead author and one independent reviewer in parallel to check for eligibility against the inclusion and exclusion criteria. Any discrepancies will be reviewed by the research team. Studies that do not meet the criterion will be excluded.

6. Reference lists from included papers, and recent (within the last 4 years) systematic or narrative reviews in the topic area will be searched for any additional eligible studies.

7. The grey literature will be searched to ensure that unpublished dissertations are included.

8. Articles that cite the remaining included papers will also be screened. Papers that are found to be potentially eligible will undergo the above process (Stages four - six).

9. All authors of included studies will be contacted for unreported/missing data, and to ask if they have any other eligible research (published/unpublished).

10. Accurate records will be maintained at each stage and reported using the Preferred Reporting Items for Systematic Reviews and Meta-Analyses flow chart. Data extraction will be undertaken by lead author to extract study characteristics, study design, intervention details, repertory-grid procedure used, repertory-grid metrics used, convergence/divergence between repertory grid and other outcome measures.

Risk of bias (quality) assessment [1 change]

In order to critically appraise the methodological quality of the identified studies The Quality Assessment Tool for Quantitative Studies was used (EPHPP; Thomas, 2004). This tool has been devised to evaluate intervention study designs such as randomised control trials (RCT), cohort pre-post studies and case-control studies (Deeks et al, 2003). The EPHPP assesses eight domains: (1) selection bias (external validity), (2) allocation bias, (3) Confounding, (4) Blinding (detection bias), (5) Data collection methods, (6) Withdrawals and dropouts (attrition bias), (7) Statistical analysis, (8) Intervention integrity. Scoring of the studies involved rating each section using one of three scores, strong (3 points), moderate (2 points) or weak (1 point). The domain scores are then averaged to provide the total score. Based on their total score, studies are assigned an overall quality rating of weak (1.00-1.50), moderate (1.51-2.50) or strong (2.51-3.00). To ensure the quality of the ratings, two reviewers (CSM and MM) conducted the quality ratings independently for all identified papers. Reviewers were not blinded to study identifiers (e.g. author's names, institutions, journals). All reviewers received the same training and guidance documents on the use of each tool. Discrepancies were

agreed upon through discussion and with the PJT.

Strategy for data synthesis

Given that the focus of the review is not on a specific association or effect, meta-analysis will not be appropriate here. A narrative synthesis and appraisal of the studies will therefore be conducted on the data. Common patterns and themes will be highlighted on how repertory grids are implemented, with a focus on identifying commonalities in usage as well as areas of difference. Gaps in how repertory grids have been used so far and the contexts they have been applied to will be highlighted. Evidence of convergence and divergence between repertory grid data (e.g. change in grid distances over time) and other measures of therapeutic outcome used within studies will be summarised. The narrative synthesis will be balanced with a critical review of the strengths and weaknesses of studies, informed by the risk of bias assessment.

Analysis of subgroups or subsets

Not applicable

Contact details for further information Molly Marsden
molly.marsden@postgrad.manchester.ac.uk

Organisational affiliation of the review

University of Manchester

Review team members and their organisational affiliations

Miss Molly Marsden. University of Manchester Dr Peter Taylor. University of Manchester
Dr Samantha Hartley. University of Manchester

Type and method of review

Narrative synthesis, Systematic review

Anticipated or actual start date

25 February 2021

Anticipated completion date

25 February 2022

Funding sources/sponsors

None

Conflicts of interest
None known

Language
English

Country
England

Stage of review [1 change]

Review Ongoing

Subject index terms status
Subject indexing assigned by CRD

Subject index terms
Humans; Narration; Psychosocial Intervention

Date of registration in PROSPERO
26 February 2021

Date of first submission
25 February 2021

Appendix C: Supplementary information on deviation from protocol

Supplementary File Justifying Prospero Protocol Amendments

On 25th February 2021, following PRISMA guidance (Moher et al., 2009) the trainee registered a protocol with the International Prospective Register of Systematic Reviews (PROSPERO; reference number: CRD42021239525; appendix B). However, whilst completing the screening process, two revisions to the protocol were required and an amendment was made on 21st January 2022:

1. Exclusion criteria changes:

a) Sample size: During the process of screening the 83 full-texts that appeared eligible from their titles and abstracts, it became apparent that there were many case studies based on either one or two participants, using repertory grids to evaluate therapy. The studies were typically descriptive in nature rather than evaluative. The trainee decided not to include these, as they wanted to understand how he repertory grid tool was being employed in studies where the focus was evaluating the intervention across a sample of individuals.

b) Parenting programmes: The trainee decided to exclude parenting programmes due to the intervention indirectly benefiting the child also, and only the attending parent completes the repertory grid. For example, an outcome for Gould et al's (2004) study showed improvements in the parent-child relationship. However, the repertory grid would only capture the parent's opinion of this change.

2. Quality appraisal tool:

a) When submitting the protocol The Agency for Healthcare Research and Quality (Williams et al., 2010) was initially selected. The tool was designed to assess the risk of bias in the quantitative studies on various domains. The tool focused on observational studies, rather than a range of methodological studies. The trainee decided The Quality Assessment Tool for Quantitative Studies (EPHPP; Thomas, 2004) was more suitable for the studies included within this review. This tool has been devised to evaluate intervention study designs such as randomised control trials (RCT), cohort pre-post studies and case-control studies (Deeks et al, 2003).

Appendix D: Supplementary information on repertory grid metrics

Supplementary File Provide Further Information on Repertory Grid Analysis

Analysis conducted using repertory grid data	**Information on the analysis**
Element distances	The higher the distance between a particular pair of elements, the greater is their construed dissimilarity.
Correlations between constructs or elements	The correlation between two constructs or elements indicates the degree of similarity in their meaning or how they are perceived
Principle component analysis to visualise the data	Principle component analysis can be used in this way to map the repertory grid data onto a two-dimensional plot, allowing visual inspection.
Principle component analysis to complexity of construing	"Principal component analysis can indicate the client's major groups of interrelated constructs; the higher the variance accounted for by the first component, the "tighter," or more unidimensional, is the client's construct system." (Winter, 2003, p. 26)
Rating scores	"The positive construct of each pair (score 10) was defined by the desired direction of change. For each of the rating scales the scores were added and then divided by the number of construct pairs to obtain mean rated scores." (Fielding, 1975, p. 190)
Intensity	"An equivalent measure of tightness can be derived by summing the squares of correlations between the client's constructs. Again, the higher the score derived, the more unidimensional and rigid is the client's construing." (Winter, 2003, p. 26)
Consistency	"This is a measure of the extent to which a pattern of construct relationships is maintained from one grid to another." (Winter, 2003, p. 26)
Content analysis / characteristics of constructs	Coding of the content of elicited constructs. Numerous methods were available e.g. Feixas et al (2002) coding methodology.
Change in the salience of elements	"The percentage of the total sum of squares accounted for by each element indicates it's meaning, with higher percentages indicating increased meaning (Winter, 1992)" (Randal et al., 2016, p. 503. "Meaning" here refers to personal importance or salience.
Imbalance	"This is a measure of the extent of logical inconsistency in relationships between constructs in the grid and, therefore, of potential conflict." (Winter, 2003, p. 26) "Logical inconsistency" refers to the identification of inconsistent or conflictual ratings within the grid. For example, ratings for

	the construct “intelligent” might be positively associated with ratings for “confident”, but negatively associated with ratings for “popular”. However, if “popular” and “confident” are positively associated this then creates a conflict since “intelligent” is associated with both higher and lower perceptions of being “popular”.
Mean ratings of the elements on each of the supplied constructs	“The higher the mean rating, the more the emergent pole of the construct is applied to the elements.” (Winter et al., 2006, p. 11)
Percentage of variance accounted for by each supplied construct	“This is used as an index of a construct’s superordinancy (Fransella & Bannister, 1977).” (Winter et al., 2006, p. 11)
Consistency	“This is a measure of the extent to which a pattern of construct relationships is maintained from one grid to another.” (Winter, 2003, p. 26)
Polarisation of constructs	“This is generally assessed by the extremity of ratings in the grid” (Winter, 2003, p. 26). A high score indicates that an element is highly salient.
Constriction	“This is a measure of the extent to which rating scale points are used excessively. For example, a large number of midpoint ratings in the grid may indicate a high level of uncertainty” (Winter, 2003, p. 26)
Element and constructs distances	Distances between elements and constructs can be generated, which reflect the degree to which a particular element is rated on a particular construct (e.g. the extent to which the element “self” is rated highly on the construct “feels acceptable”; Feinberg-Moss & Oatley (1990).

Appendix E: Ethical approval was obtained from an NHS Research Ethics Committee

Dr Peter Taylor
Senior Clinical Lecturer and Clinical Psychologist
The University of Manchester
Division of Psychology & Mental Health, School of Health Sciences
Faculty of Biology, Medicine and Health, Zochonis Building, Room 2.33, University of Manchester
M13 9PL

Email: approvals@hra.nhs.uk
HCRW.approvals@wales.nhs.uk

24 February 2021

Dear Dr Taylor

HRA and Health and Care Research Wales (HCRW) Approval Letter

Study title:	**A Case-Series of a Brief CAT-Informed Intervention for Young People who self-injure (CATCH-Y)**
IRAS project ID:	**287611**
Protocol number:	**N/A**
REC reference:	**21/NW/0019**
Sponsor	**The University of Manchester**

I am pleased to confirm that **HRA and Health and Care Research Wales (HCRW) Approval** has been given for the above referenced study, on the basis described in the application form, protocol, supporting documentation and any clarifications received. You should not expect to receive anything further relating to this application.

Please now work with participating NHS organisations to confirm capacity and capability, in line with the instructions provided in the "Information to support study set up" section towards the end of this letter.

How should I work with participating NHS/HSC organisations in Northern Ireland and Scotland?
HRA and HCRW Approval does not apply to NHS/HSC organisations within Northern Ireland and Scotland.

If you indicated in your IRAS form that you do have participating organisations in either of these devolved administrations, the final document set and the study wide governance report

(including this letter) have been sent to the coordinating centre of each participating nation. The relevant national coordinating function/s will contact you as appropriate.

Please see IRAS Help for information on working with NHS/HSC organisations in Northern Ireland and Scotland.

How should I work with participating non-NHS organisations?
HRA and HCRW Approval does not apply to non-NHS organisations. You should work with your non-NHS organisations to obtain local agreement in accordance with their procedures.

What are my notification responsibilities during the study?

The standard conditions document "*After Ethical Review – guidance for sponsors and investigators*", issued with your REC favourable opinion, gives detailed guidance on reporting expectations for studies, including:

- Registration of research
- Notifying amendments
- Notifying the end of the study

The HRA website also provides guidance on these topics, and is updated in the light of changes in reporting expectations or procedures.

Who should I contact for further information?
Please do not hesitate to contact me for assistance with this application. My contact details are below.

Your IRAS project ID is **287611**. Please quote this on all correspondence.

Yours sincerely,

Natalie Marking
Approvals Specialist

Email: approvals@hra.nhs.uk

Copy to: *Ms Lynne MacRae*

Appendix F: Approval from two local NHS Trust's research and development departments

Research and Innovation Department

NHS
Pennine Care
NHS Foundation Trust

Research and Innovation Department
Trust Headquarters
225 Old Street
Ashton-under-Lyne
OL6 7SR
Email: researchdevelopment.penninecare@nhs.net

Date: 14th April 2021

Miss Molly Marsden – Trainee Clinical Psychologist
Division of Psychology and Mental Health
The University of Manchester
2nd Floor Zochonis Building
Brunswick Street
Manchester
M13 9PL

Dear Molly

Letter of access for research
PCFT ref: 100520 / IRAS ID: 287611
Short study title: CATCH-Y: A Feasibility Trial
Full title of research: A Case-Series of a Brief CAT-Informed Intervention for Young People who self-injure (CATCH-Y)

This letter should be presented to each participating organisation before you commence your research at that site:
Pennine Care NHS Foundation Trust

In accepting this letter, each participating organisation confirms your right of access to conduct research through their organisation for the purpose and on the terms and conditions set out below. This right of access commences on: **14th April, 2021 and ends on 29th September, 2022 (proposed study end date at site)** unless terminated earlier in accordance with the clauses below.

As an existing NHS employee you do not require an additional honorary research contract with this organisation (henceforth referred to as Pennine Care). Pennine Care is satisfied that the research activities that you will undertake in the organisation are commensurate with the activities you undertake for your employer. Your employer is fully responsible for ensuring such checks as are necessary have been carried out. Your employer has confirmed in writing to this organisation that the necessary pre-engagement checks are in place in accordance with the role you plan to carry out within Pennine Care. Evidence of checks should be available on request to Pennine Care.

You have a right of access to conduct such research as confirmed in writing in the letter of permission for research from Pennine Care. Please note that you cannot start the research until the Principal Investigator for the research project has received a letter from us giving permission to conduct the project.

You are considered to be a legal visitor to Pennine Care premises. You are not entitled to any form of payment or access to other benefits provided by Pennine Care to employees and this letter does not give rise to any other relationship between you and Pennine Care or this organisation, in particular that of an employee.

While undertaking research through Pennine Care, you will remain accountable to your employer **Greater Manchester Mental Health NHS Foundation Trust** but you are required to follow the reasonable instructions of the Research and Innovation Department in this NHS organisation or those given on their behalf in relation to the terms of this right of access.

Where any third party claim is made, whether or not legal proceedings are issued, arising out of or in connection with your right of access, you are required to co-operate fully with any investigation by Pennine Care or this organisation in connection with any such claim and to give all such assistance as may reasonably be required regarding the conduct of any legal proceedings.

You must act in accordance with Pennine Care policies and procedures, which are available to you upon request, and the Research Governance Framework.

You are required to co-operate with Pennine Care in discharging its duties under the Health and Safety at Work Act 1974 and other health and safety legislation and to take reasonable care for the health and safety of yourself and others while on Pennine Care premises. Although you are not a contract holder, you must observe the same standards of care and propriety in dealing with patients, staff, visitors, equipment and premises as is expected of a contract holder and you must act appropriately, responsibly and professionally at all times.

If you have a physical or mental health condition or disability which may affect your research role and which might require special adjustments to your role, if you have not already done so, you must notify your employer and Pennine Care prior to commencing your research role at each site.

You are required to ensure that all information regarding patients or staff remains secure and strictly confidential at all times. You must ensure that you understand and comply with the requirements of the NHS Confidentiality Code of Practice and the Data Protection Act 2018. Furthermore you should be aware that under the Act, unauthorised disclosure of information is an offence and such disclosures may lead to prosecution.

Pennine Care will not indemnify you against any liability incurred as a result of any breach of confidentiality or breach of the Data Protection Act 2018. Any breach of the Data Protection Act 2018 may result in legal action against you and/or your substantive employer.

You should ensure that, where you are issued with an identity or security card, a bleep number, email or library account, keys or protective clothing, these are returned upon termination of this arrangement. Please also ensure that while on the premises you wear your ID badge at all times, or are able to prove your identity if challenged. Please note that Pennine Care does not accept no responsibility for damage to or loss of personal property.

This letter may be revoked and your right to attend Pennine Care terminated at any time either by giving seven days' written notice to you or immediately without any notice if you are in breach of any of the terms or conditions described in this letter or if you commit any act that we reasonably consider to amount to serious misconduct or to be disruptive and/or prejudicial to the interests and/or business of Pennine Care or if you are convicted of any criminal offence. You must not undertake regulated activity if you are barred from such work. If you are barred from working with adults or children this letter of access is immediately terminated. Your employer will immediately withdraw you from undertaking this or any other regulated activity and you MUST stop undertaking any regulated activity immediately.

Your substantive employer is responsible for your conduct during this research project and may in the circumstances described above instigate disciplinary action against you.

If your circumstances change in relation to your health, criminal record, professional registration or suitability to work with adults or children, or any other aspect that may impact on your suitability to conduct research, or your role in research changes, you must inform the organisation that employs you through its normal procedures. You must also inform the Research and Innovation Department and your nominated manager within this organisation.

Yours sincerely

Simon Kaye
Research and Innovation Manager
Pennine Care NHS Foundation

cc: Research and Innovation Department - Pennine Care NHS Foundation
HR Department - **Greater Manchester Mental Health NHS Foundation Trust**

Manchester University
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Molly Marsden
Clinical Psychology
Zochonis Building
University of Manchester
M13 9PL

Date: 07/06/2021

Dear Ms Molly Marsden,

Letter of access for research

MFT Study Ref	Study Title
B01168	A Case-Series of a Brief CAT-Informed Intervention for Young People who self-injure (CATCH-Y)

This letter confirms your right of access to conduct research through Manchester University NHS Foundation Trust (MFT) for the purpose and on the terms and conditions set out below. This right of access commences on **07/06/2021** and ends on **29/09/2022** unless terminated earlier in accordance with the clauses below.

You have a right of access to conduct such research as confirmed in writing in the letter of permission for research from this organisation. Please note that you cannot start the research until the Principal Investigator for the research project has received a letter from us giving confirmation from this organisation's agreement to conduct the research.

The information supplied about your role in research at the organisation has been reviewed and you do not require an honorary research contract with this organisation. We are satisfied that such pre-engagement checks as we consider necessary have been carried out. Evidence of checks should be available on request to the organisation.

You are considered to be a legal visitor to the organisations premises. You are not entitled to any form of payment or access to other benefits provided by this organisation to employees and this letter does not give rise to any other relationship between you and the organisation, in particular that of an employee.

While undertaking research through the organisation you will remain accountable to your substantive employer but you are required to follow the reasonable instructions of the organisation or those instructions given on their behalf in relation to the terms of this right of access.

Where any third party claim is made, whether or not legal proceedings are issued, arising out of or in connection with your right of access, you are required to co-operate fully with any investigation by the organisation in connection with any such claim and to give all such assistance as may reasonably be required regarding the conduct of any legal proceedings.

You must act in accordance with the organisations policies and procedures, which are available to you upon request, and the UK Policy Framework for Health and Social Care Research.

You are required to co-operate with the organisation in discharging itsr duties under the Health and Safety at Work etc Act 1974 and other health and safety legislation and to take reasonable care for the health and safety of yourself and others while on the organisations premises. You must observe the same standards of care and propriety in dealing with patients, staff, visitors, equipment and premises as is expected of any other contract holder and you must act appropriately, responsibly and professionally at all times.

If you have a physical or mental health condition or disability which may affect your research role and which might require special adjustments to your role, if you have not already done so, you must notify your employer and each organisation prior to commencing your research role at that organisation.

You are required to ensure that all information regarding patients or staff remains secure and *strictly confidential* at all times. You must ensure that you understand and comply with the requirements of the NHS Confidentiality Code of Practice and the Data Protection Act 2018. Furthermore you should be aware that under the Act, unauthorised disclosure of information is an offence and such disclosures may lead to prosecution.

You should ensure that, where you are issued with an identity or security card, a bleep number, email or library account, keys or protective clothing, these are returned upon termination of this arrangement. Please also ensure that while on the organisations premises you wear your ID badge at all times, or are able to prove your identity if challenged. Please note that the organisation do not accept responsibility for damage to or loss of personal property.

This organisation may revoke this letter and any organisation may terminate your right to attend at any time either by giving seven days' written notice to you or immediately without any notice if you are in breach of any of the terms or conditions described in this letter or if you commit any act that we reasonably consider to amount to serious misconduct or to be disruptive and/or prejudicial to the interests and/or business of the organisation or if you are convicted of any criminal offence. You must not undertake regulated activity if you are barred from such work. If you are barred from working with adults or children this letter of access is immediately terminated. Your employer will immediately withdraw you from undertaking this or any other regulated activity and you MUST stop undertaking any regulated activity immediately.

Your substantive employer is responsible for your conduct during this research project and may in the circumstances described above instigate disciplinary action against you.

No organisation will indemnify you against any liability incurred as a result of any breach of confidentiality or breach of the Data Protection Act 2018. Any breach of the Data Protection Act 2018 may result in legal action against you and/or your substantive employer.

If your current role or involvement in research changes, or any of the information provided in your Research Passport changes, you must inform your employer through their normal procedures. You must also inform your nominated manager and the R&D office in this organisation.

Yours sincerely

Elizabeth Mainwaring
Research Operations Manager

CC. Manager in NHS Organisation rachel.williams@mft.nhs.uk
Study Coordinator lauren.manderson@mft.nhs.uk

Appendix G: Funding letter from the Association of Cognitive Analytic Therapists

From: Alison Jenaway [mailto:alisonjenaway@googlemail.com]
Sent: 20 October 2020 19:35
To: Peter Taylor; Louise Barter
Cc: HARTLEY, Samantha (PENNINE CARE NHS FOUNDATION TRUST); DUDLEY, Jay (DEVON PARTNERSHIP NHS TRUST)
Subject: Re: Research funding agreed by Trustees

Dear Peter, I am pleased to let you know that the Board of Trustees of ACAT were pleased to agree to your funding request of £1125 for "A Case series of a Brief CAT - informed Intervention for young people who have self injured". Please invoice Louise Barter who i have copied in and please acknowledge the funding from ACAT in any publication or publicity about the study.
Best wishes, Alison jenaway (previous Chair of ACAT).

Dr Alison Jenaway
Consultant Psychiatrist in Medical Psychotherapy, CAT Therapist and Supervisor
07771 595594
alisonjenaway@googlemail.com

Collaborate

Appendix H: Full Study Protocol

RESEARCH PROTOCOL

A Case-Series of a Brief CAT-Informed Intervention (CATCH-Y) for Young People that have self-injured.

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1) RESEARCH TEAM & KEY CONTACTS

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2) INTRODUCTION

Non-suicidal self-injury (NSSI), the term used for when somebody purposefully hurts themselves without intending to end their life. Often, it suggests that there are other difficulties going on in someone's life. Talking therapies can be offered to help however

currently there is little evidence to show which therapies help most. CATCH-Y (Cognitive Analytic Therapy for Containing Self-Harm in Young People) is a brief talking therapy which has been created to support young people who self-injure. It aims to help young people and those around them build to a shared understanding of their difficulties. Previously a group of adults, who have a history of self-harm, have engaged in a trial version of CATCH-Y for adults, in which it was found to be positive, safe and feasible.

The study will aim to recruit nine young people who have self-injured in the past. Participants must be aged between 13 - 17 years old and have self-injured within the last six months. They will be recruited from local Child and Adolescent Mental Health Services (CAMHS). The therapy is five sessions long, with two assessment sessions before the therapy begins and one assessment session post-therapy. Online assessments will be completed throughout. CATCH-Y involves working with the therapist to understand a young person's past and current experiences, linked to their self-injurious behaviours. We believe that this individualised approach would benefit these young people.

As a novel treatment, and in accordance with the medical research council (MRC) framework, the feasibility and acceptability of CATCH-Y should be considered before progressing to a larger trial. In this study, we are examining the feasibility and acceptability of the CATCH-Y intervention through attendance and retention rates, data completion and intervention acceptability. As a secondary measure, we are looking at whether CATCH-Y shows preliminary evidence for positive change. Questionnaires can often limit participant's responses as they use set questions and move away from the intended personalised approach. Therefore, in addition to feasibility measures, repertory grids will be used as an alternative assessment measure to look at personal change. The measure may gather more meaningful outcomes from therapy. The repertory grid will be developed with the young person based on their own thoughts about themselves, others and their current difficulties. The study plans to use these grids to measure changes before and after the therapy.

The findings from this study will help to develop the therapy and improve further testing in larger studies. If this is successful, CATCH-Y could be available as a treatment for young people who self-injure.

3) BACKGROUND

Non-suicidal self-injury (NSSI) can be defined as "directly and intentionally inflicting damage to one's own body tissue without intention of suicide and not consistent with cultural expectations or norms" (Nock, Joiner, Gordon & Lloyd-Richardson, 2006, p.1). It can be differentiated from "self-harm", which also encompasses suicidal behaviours. Often, NSSI is indicative of underlying emotional difficulties and predictive of later psychological problems (Daukantaite et al., 2020). Rates of NSSI have increased from 5% in 2000, to 14% in 2014 in the UK (McManus et al., 2019). Furthermore, adolescents have

a greater lifetime prevalence of self-injury than adults, with non-suicidal self-injury rates of 17% in adolescents, 13% in young adults and 6% in adults (Swanell et al., 2014). Whilst there is some evidence for NSSI leading to a higher risk of suicide (Wilkinson et al., 2011), it is distinct in its function, intent and epidemiology and can have other serious consequences such as scarring, infection and accidental death, as well as evoking complex feelings of shame and guilt (Butler & Malone, 2013). With suicide being the leading cause of death for young people in England in 2015, interventions for young people who self-harm, including those who engage in NSSI, is now a national health priority (McPin Foundation, 2018).

Current reviews of the support available for young people who have self-injured show the sparsity of evidence based-interventions (Turner, Austin & Chapman, 2014). This may be partly accounted for with the diversity of reasons for self-injury (Taylor et al., 2018), which necessitate a more individualised approach. One review of interventions for NSSI found that structured therapeutic approaches focussing on collaborative therapeutic relationships, motivation to change and directly addressing NSSI behaviours the most effective however the evidence currently available is of low quality (Turner, Austin & Chapman, 2014). Whilst there are significant differences in the functions of self-injurious behaviours, commonly reported reasons are largely interpersonal or intrapersonal (Taylor et al., 2018). Relational approaches to intervention may therefore be appropriate when working with young people who self-injure, due to the emphasis being on making sense of inter/intrapersonal patterns of relating.

Cognitive analytic therapy (CAT) is a relational therapy, which suggests an internalisation of relational patterns from childhood that may manifest themselves throughout a lifetime, influencing relationships towards the self and others. Pilot trials have shown that CAT may be helpful when working with individuals who self-injure (Sheard et al., 2000; Ourgin et al., 2013). Widely documented issues of access to interventions within CAMHS services (Department of Health, 2017) mean that brief interventions could be accessed and implemented more widely than their longer-term counterparts.

Cognitive Analytic Therapy for Containing Self-Injury (CATCH) is a brief intervention based upon CAT principles aimed at those who self-injure. A feasibility trial of CATCH found evidence that the intervention is acceptable to participants and safe (Peel-Wainwright et al., in prep). This intervention has been adapted for the needs of young people and adolescents (CATCH-Y; Taylor, Turpin & Hartley, 2019). CATCH-Y is a brief intervention that uses a collaborative, relational approach. With early evidence showing that young people who self-harm respond well to CAT (Sheard et al., 2000; Ougrin et al., 2013), and the need for timely intervention, CATCH-Y could have both therapeutic and service level benefits. No study to date has looked at CATCH-Y with young people.

According to the Medical Research Council (MRC) Complex Intervention Development Framework (2019), the first step in progressing with CATCH-Y is assessing the feasibility of the intervention by exploring whether it is safe and acceptable through a case-series. This will determine the plausibility of larger trials, through evaluation of the attendance, recruitment and retention of participants. Therefore, this study will be a case-series which evaluates the feasibility and acceptability of the CATCH-Y intervention for young

people who self-injure. If outcomes indicate plausibility, a randomised control trail (RCT) will determine the clinical benefits of implementing the CATCH-Y intervention.

4) STUDY OBJECTIVES

4.1 Primary Question/Objective:

The primary aim of this study is to assess the feasibility and acceptability of a brief, five-session CAT intervention (CATCH-Y) in a population of young people who have self-injured.

- Is CATCH-Y a feasible and acceptable intervention for young people who have self-injured?

4.2 Secondary Question/Objective:

The potential benefits of the intervention are assessed as a secondary aim to determine whether there is preliminary evidence of change over the course of therapy.

- To investigate how young people's personal constructs change following attending CATCH-Y.
- To explore whether there is preliminary evidence showing improvements in affect, motivation, self-injury urge severity and perceived recovery.

A tertiary aim is to determine the feasibility of employing the repertory grid technique to examine the construal of young people who self-injure.

5) STUDY DESIGN & PROTOCOL

5.1 Participants

Participants will be young people aged 13 to 17 years with a recent history of NSSI. This will be defined as one or more episodes of non-suicidal self-injury in the past six months, with a lifetime prevalence of two or more episodes of NSSI. A sample size of nine will be used which is in line with other case-series in the field (Taylor et al., 2019; Searson, Mansell, Lowens, & Tai, 2012). An attrition rate of 1/7 is also predicted, based upon the outcomes of the CATCH study (Peel-Wainwright et al., in prep) and therefore we are aiming to recruit nine participants, expecting that eight will complete the study.

5.2 Study Intervention and/or Procedures

This study is part of wider research that encompasses two trainee projects. Both researchers will receive fortnightly supervision from a qualified CAT practitioner plus fortnightly supervision from internal research supervisors (PT and SH) whilst conducting the intervention.

Whilst the intention is to conduct the stated sessions face-to-face, the current Covid-19 restrictions may warrant remote online delivery of these sessions, in which case we would use an appropriate web platform (such as Zoom or Microsoft Teams). If the intervention is completed remotely, the 'remote therapy and procedure guidance – COVID-19' would be followed to ensure that the therapy is delivered safely. To reduce bias, one researcher will conduct phase 1 and 3. Another researcher will conduct phase 2.

Phase 1: Baseline
Appointments will be conducted face-to-face at a mutually convenient location or via a video conferencing platform (e.g. zoom). Caregivers will be present in appointments for participants under the age of 16 (16-17 years old at their discretion).

Consent: Whilst gaining face to face consent is preferable, this will be dependent upon whether circumstances such as the presence of COVID-19 related restrictions mean that only remote contact is possible. In the procedure where face to face meeting is possible, the researcher would share the PIS again, giving the opportunity for young people/their caregivers to ask any questions. Written consent will be gathered from all young people and caregiver where the child is below 16. For young people under the age of 16, we will not use Gillick competence in the absence of caregiver consent. For participants aged 16-17, we will encourage informed consent is gathered from caregivers but not essential. Young people who do not consent to take part would not be involved even where a caregiver provides consent. Seeking consent rather than assent from young people is consistent with the Nuffield Bioethics committee recommendations (2015).

Where only remote contact is possible, young people and their caregivers will be sent a digitally generated version of the consent form using the University of Manchester survey platform. Participants would be provided a link to this form and asked to complete the questions along with their name and the date of submission. The researcher would be available remotely at this time to answer any queries that the young person or their caregiver may have. The same age-dependent rules would apply for the remote consent form.

Following consent, the baseline assessments will be administrated (demographic information, SITBI and repertory grids) in two 30-60-minute appointments. Burden will be monitored and breaks provided. Participants will be asked to complete outcome measures online one week prior to the intervention starting. A link to select survey, where participants can complete the measures, will be sent via email, once a date for the first therapy session is arranged. Consideration will be given to any foreseeable delays that might prevent a timely start to the intervention and the baseline session adjusted accordingly so that the intervention is able to start within a week of the baseline measures.

Phase 2: Intervention
One week after baseline, the intervention delivered by the researchers will start. The intervention will run over five sessions, each lasting around 30 - 40 minutes and delivered within seven weeks (allowing for cancellations).

Researchers will follow the CATCH-Y manualised treatment guide. CATCH-Y is a brief, five session psychological intervention based upon CAT principles and designed to help young people who have self-injured.

Sessions 1-3: Focuses on the process of mapping or ‘reformulation,’ where the emphasis is on forming a collaborative understanding of the young person’s behaviour patterns.
Sessions 3-4: The focus begins to shift towards identifying exits (or ways of breaking out of unhelpful patterns), which can be applied by the young person.

Session 5: The final session is a 'consultation' session, which focuses on consolidating what has been learned within the therapy collaboratively with another key individual such as parent or clinician. This key individual will be invited to the session at the participant's discretion.

After each intervention session, participants will be asked to complete outcome measures online. A link to a University of Manchester approved online survey platform, where participants can complete the measures, will be sent every Friday throughout the intervention period via email. There will also be the option of completing these measures by phone where issues arise in using the online platform. This will start after the first intervention session and continue until four weeks after the completion of or withdrawal from therapy.

The therapy will be delivered by two trainee clinical psychologists. Previous research has shown trainee clinical psychologists can be successfully trained to deliver CAT informed therapies for people who self-injure (Peel-Wainwright et al., in prep). The trainee providing therapy would not be the same that undertakes research assessments. Therapists will receive regular group clinical supervision every two weeks. One supervision session every four-weeks will be delivered by a CAT accredited supervisor. Other clinical supervision will be delivered by clinical psychologists with an understanding of CAT informed approaches.

Therapy sessions one to four will be audio-recorded with the consent of the participants and caregivers (where participants are aged under 16 years). This will be done using an encrypted recording device. All audio recordings will be saved as pseudonymised data and saved on a University of Manchester secure shared drive. A subset of 10% (~ 4 sessions) will be rated independently using the Competence in Cognitive Analytic Therapy (CCAT; Bennett & Parry, 2006) tool to evaluate adherence to the approach.

Phase 3: Follow-up
One week after completing or withdrawing from the intervention participants will be invited to a follow up assessment (either in person or via zoom) to complete a repertory grid for the second time. Participants will also be asked to complete the post-intervention measures online using The University of Manchester's survey platform, including the adapted client satisfaction questionnaire.

Participants will be sent a written debriefing sheet in the post, including researchers contact details. Participants will be able to still seek further interventions via CAMHS. Participants will be reimbursed with a shopping voucher (£30).

6) STUDY PARTICIPANTS

6.1 Inclusion Criteria:

- Participants will be between the ages of 13 – 17 years.
- Participants will have self-injured at least once in the past six months and have a lifetime history of two or more episodes of NSSI.
- Participants will have a clinician allocated to them within a CAMHS service.
- Participants will have access to the Internet.

6.2 Exclusion Criteria:

- Participants will be excluded if they are currently receiving alternative psychological therapies from a mental health professional. Participants may be receiving other forms of ongoing contact and support that do not constitute a formal psychological therapy.
- Participants will be excluded if they have a severe intellectual disability, which would impair their ability to participate without considerable adaptations being made to the intervention.
- Participants will be excluded if they have inadequate English-language speaking skills due to limitations in their ability to engage with talking therapies in the English language.
- Participants will be excluded if they are judged at high risk of harm to themselves, operationalised as having current suicidal thoughts with a high intent or active plan to end their life.

6.3 Recruitment:

The recruitment pathway outlined will require participants under the age of 16, to provide consent to contact and consent to participate from both young person and caregiver. Participants over the age of 16, who can be seen alone, will not require caregiver consent, only consent from the young person. We will still advise that consent to contact from caregivers is desirable, but not essential.

We will recruit from Child and Adolescent Mental Health Services (CAMHS) within Greater Manchester Mental Health NHS Foundation Trust and Pennine Care NHS Foundation Trust (see appendix A).

<u>Phase 1: Advertising</u>

Service managers will be contacted and researchers will attend the above services to inform teams of the study, detailing the referral process and to inviting them to refer. Researchers will be in regular contact by phone/face to face to collect referrals.

<u>Phase 2: Consent to contact</u>

Clinicians from the above services will identify young people appropriate for the study from caseloads using the criteria provided. They will provide the young person and parent/carer with an information sheet. If interested in partaking in the study, clinicians from trusts that are willing to take responsibility of data sharing will ask young people and their parent/carer for their verbal consent to contact to share their contact details with the research team. If aged 15 or under, verbal consent to contact will be required from both young person and caregiver. If they are unable to take this responsibility, they will share the contact details of the research team with the potential participants and details of how to contact. If a young person contacts the research team, this will be considered consent to contact. The research team will liaise regularly with clinicians by phone, video call or in person, and will collect contact details of potential participants who have given consent to contact at these times.

<u>Phase 3: Screening</u>

A researcher will then contact the young person via phone call to confirm interest (if contact has not already been made by the young person). Verbal consent will be requested to talk with the young person's clinical team. An initial eligibility screening will

then take place over the phone where the young person and their caregiver is asked questions around their NSSI. If the young person is 15 and under, then these conversations will be required to take place with both the young person and their caregiver. If the inclusion criterion is met, they will then be invited to participate in the study and a face-to-face appointment organised.

6.5 Participants who withdraw consent:
Participants can withdraw consent at any time without giving any reason, as participation in the research is voluntary, without their care or legal rights being affected.

7) OUTCOME MEASURES

Primary Outcome Measures
The primary aim of this study is to assess the feasibility and acceptability of a brief, five-session CAT intervention (CATCH-Y) in a population of young people who have self-injured. This will determine whether it is viable to deliver and evaluate the therapy in a larger RCT. Feasibility will be assessed through recruitment rates and data completeness. The attendance and retention of participants, as well as feedback of their experience will determine acceptability.

Retention rates: Attendance at each session will be recorded to determine whether over 70% of participants will be retained from baseline to the end of the study.
Referral rates: Referrals will be recorded to test the hypothesis that >50% of those who are referred to the study and are eligible to participate, consent to take part.

Measurement data: Completion of measurements will be analysed to test whether the level of missing data exceeds 20% per assessment.

Acceptability: An exploration of factors that influence engagement (including what was helpful/unhelpful) will be determined in the adapted version of the client satisfaction questionnaire.

Secondary Outcome Measures
Self-Injurious Thoughts and Behaviours Interview (SITBI): The SITBI is a structured interview, which assesses the frequency and characteristics of NSSI in young people (Nock et al., 2007). These authors evaluated the SITBI with a population of adolescents who self-injure and found comprehensive validity and reliability. It is now widely used in research into NSSI. In this study, the self-injurious subsection will be used. This measure will be used at baseline only.

Repertory grids: The repertory grid will be used to explore changes in participants' perceptions of the self, others and their experiences of NSSI. Participants will be asked to complete them prior to, and following, completion of CATCH-Y. This assessment will be completed as a structured interview, with one of the researchers talking through and explaining each step. The repertory grids will be developed following established techniques (Jankowicz, 2003). Previously repertory grids have been used with adolescents (Sewell, 2020). These measures will be used pre and post intervention.

Motivation for Youth Treatment Scale (MYTS): This evaluates motivation to change and desire to find solutions to difficulties in youths and their caregivers. A psychometric evaluation of the MYTS conducted with young people aged 11-18 found it to be a reliable tool for assessing important dimensions of intrinsic treatment motivation (Breda & Riemer, 2012). This measure will be assessed online using select survey, pre and post intervention.

Recovery Questionnaire (ReQuest-YP): Examines recovery of functionality and outlook post-treatment. An evaluation of the psychometric properties of the ReQuest-YP with 65 young people showed good internal consistency and test-retest reliability (Bentley, Bucci & Hartley, 2019). This measure will be assessed online using select survey, pre and post intervention.

Alexian Brothers Urges to Self-injure scale (ABUSI): A measure to assess the frequency, intensity and duration of the urge to self-injure. The ABUSI has shown good internal consistency and reliability (Chavez-Flores et al., 2019). In addition, a recent study found that the ABUSI provided valid information in a population of students who self-injured (Dimitrova, Radkova, Stoyanov & Petrov, 2020). This measure will be assessed online using select survey, pre, post and weekly during the intervention. It will also be assessed for four weeks post-intervention.

Patient Health Questionnaire for Adolescents (PHQ-9A): Low mood clinical evaluation. An examination of the PHQ-9A completed by 442 young people, showed positive validity of the measure (Richardson et al., 2010). This measure will be assessed online using select survey, pre, post and weekly during the intervention. It will also be assessed for four weeks post-intervention.

Client Satisfaction Questionnaire (CSQ): An adapted version of this questionnaire (Attkinsson & Zwick, 1982) will be used to gain feedback and measure aspects of the acceptability of the intervention. This measure will be assessed online using select survey, post-intervention.

Measure	**Pre-Intervention (Online and F2F)**	**During (Online)**	**Post-Intervention (Online)**	**Follow up (4 weeks post-intervention)**
SITBI	Y			
Repertory Grids	Y		Y	
MYTS	Y		Y	
ReQuest-YP	Y		Y	
ABUSI	Y	Y	Y	Y
PHQ-9	Y	Y	Y	Y
Client Satisfaction			Y	

Questionnaire				

Benefits and implications of answering the research question

NSSI is a concern for young people, for who it causes significant distress (Hawton, Sanders & O'Connor, 2012) and heightens their risk of death by suicide (Colman et al., 2004). With suicide being the leading cause of death for young people in England in 2015, interventions for young people who self-harm, including those who engage in NSSI, is now a national health priority (McPin Foundation, 2018).

Current reviews of the support available for young people who have self-injured show the sparsity of evidence based-interventions (Turner, Austin & Chapman, 2014). This may be partly accounted for with the diversity of reasons for self-injury (Taylor et al., 2018), which necessitate a more individualised approach. Widely documented issues of access to interventions within CAMHS services (Department of Health, 2017) mean that brief interventions could be accessed and implemented more widely than their longer-term counterparts.

CATCH-Y is a brief intervention that uses a collaborative, relational approach. With the need for timely intervention and early evidence showing that young people who self-harm respond well to CAT (Sheard et al., 2000; Ougrin et al., 2013), CATCH-Y could have both therapeutic and service level benefits.

According to the Medical Research Council (MRC) Complex Intervention Development Framework (2019), the first step in progressing with CATCH-Y is assessing the feasibility of the intervention by exploring whether it is safe and acceptable through a case-series. This will determine the plausibility of larger trials, through evaluation of the attendance, recruitment and retention of participants. If outcomes indicate plausibility, a randomised control trail (RCT) will determine the clinical benefits of implementing the CATCH-Y intervention. Such studies may improve the treatment options and increase the accessible service provision available for young people who self-injure.

8) DATA COLLECTION, SOURCE DATA AND CONFIDENTIALITY

Participant's phone numbers will be used in this study to contact for arranging appointments, recruitment and screening purposes. Their email addresses will also be used to send out weekly online assessments. This information will be stored on an electronic file on a secure University of Manchester shared drive, only accessible by members of the research team. Participants will be allocated a unique ID number and this will be used for all data management and linking purposes. A separate document containing participant's name and their associated ID numbers will be created and kept only on a secure shared drive at the University of Manchester. Data relating to age, gender, nature of difficulties and other demographic information will also be collected. These details will be stored on a secure, University of Manchester shared drive, with non-identifiable unique ID numbers.

During the study, participants will be asked to complete weekly online assessments, which will be done through the online survey platform select survey. Participants will not

be asked to input any identifiable information and instead, they will each be sent an email containing a link to a standardised survey which is specific to them. The online assessments will be hosted on a University of Manchester approved, secure platform (e.g. select survey).

Therapy sessions one to four will be audio recorded using an encrypted recording device, or password-protected computer. Audio recordings will immediately be transferred to a University of Manchester secure drive upon completion of the session. No audio recordings will be left stored on the computer or recording device. Upon completion of data collection, a subset of 10% of recorded sessions will be selected at random to be rated using the CCAT tool by a qualified member of the research team. Upon completion of the ratings, all audio recordings will be destroyed.

During the study, any hard copies of data (e.g. questionnaires, repertory grids) will be stored in a secure site file, which will be kept locked in secure filing cabinets at the University of Manchester. Paper consent forms (if the procedure followed is face to face) will also be kept a secure storage facility, separate to that of questionnaires or any other participant identifiable data. At the end of the study, data will be archived and stored in secure filing cabinets in a locked office with a senior member of the research team (Dr Peter Taylor) at The University of Manchester. If the procedure followed is remote, then any remote confidential consent information will be stored on an electronic file on a secure University of Manchester shared drive, only accessible by members of the research team. Upon completion of the 'phone screen script,' it would be immediately transferred to the secure UoM shared drive and no copies would be saved elsewhere. Data will be stored in compliance with The University of Manchester's Standard Operating Procedure 'Information Security Classification, Ownership and Secure Information Handling'.

Details regarding clients' presentation will be included in the write-up of the study. This may also include the publication of direct quotes. However, all information will be appropriately anonymised to ensure that no specific individuals can be identified from this material. No identifiable data will be written up for the doctoral thesis or for publication.

To comply with the University of Manchester's research storage policy, consent forms will be retained as essential documents for a period of 5 years after the end of the study. However, information such as participant contact details will be deleted as soon as they are no longer needed. Data will be anonymised at the earliest opportunity and anonymous data will be stored for at least 5 years after the date of any publication, which is based upon it. This is to comply with the University of Manchester policy on research data storage. After this period, all paper documents will be shredded and electronic files will be deleted from the server.

<u>Breaking confidentiality</u>

The participant information sheet will clearly state that the information collected in the study will be confidential unless participants indicate any possible risk to themselves or others. The researcher will reiterate this at the beginning of the study. If a possible risk or safeguarding issue is raised during the study, the researcher will restate the boundaries of

confidentiality and the possible consequences of making a disclosure. If risk/safeguarding issues or indicators of other unknown mental health difficulties arise during the study, the participant's case clinician will be notified and will follow these up appropriately. Immediate risk will be handled in accordance with local service policy. Throughout, a previously developed risk management protocol will be followed.

9) STATISTICAL CONSIDERATIONS

9.1 Statistical Analysis

Primary Outcomes

Descriptive statistics will be used to summarise feasibility aspects of the study (recruitment, retention and data completeness). The statistical programming package R will be used to carry out the analysis. Frequency statistics and percentages will be calculated to determine whether the hypotheses related at recruitment, missing data and attendance rates, have been met.

To explore the acceptability of the study, mean scores and standards deviations will be calculated for the appropriate items on the adapted client satisfaction questionnaire. All data will be presented in graphs and explored to better the understanding of the acceptability of the intervention.

Secondary Outcomes

Whilst the study is not expected to produce statistically significant changes over the short study period, meaningful data will be explored and trends over time will examine for all measures. Means and standard deviations will be collected, with 95% confidence intervals where appropriate, for the outcome measures. All measures will be analysed to determine the pre-post treatment effect sizes as well as changes over time and whether the effect is maintained at follow-up.

Trends will be examined and mean changes over time will also be calculated for the ABUSI and PHQ-9A which are administered weekly throughout the study period. This data will be plotted on graphs to identify any trends toward significance. Individual graphs will also be produced to examine individual change and to consider inflexion points. Clinically significant change will also be calculated using the Reliability Change Index (Jacobson & Truax, 1991) for all of the secondary outcomes. The Standardized Individual Difference (SID) will also be used as an alternative to the RCI that is more conservative but better protects against false positives (Ferrer & Pardo, 2014).

Repertory Grid Analysis: Individual participant repertory grid data will be analysed using IDIOGRID version 2.4 (Grice, 2002).

Stage one: Analysing relationships within a single grid

Principle component analysis will be conducted on individual grids to generate a two-dimensional visual plot of how that person construe's themselves and others. The loading of elements and constructs on the principal components will be used to plot a 'map' of the subjects construct system. The 'maps' will indicate graphically how the elements and constructs are semantically clustered in a two-dimensional space (Euclidean distance). The analysis will also highlight the degree of interrelatedness of the individual's

constructs, suggesting the extent to which their construing is tight or rigid (Winters, 1992).

Stage two: Analysing multiple grids

The second stage will involve analysis to explore change in individual personal constructs across pre and post repertory grid. The same elements and constructs will be used at post-assessment, enabling the difference or change in repertory grid metric to be calculated. Distances between elements of interests (Euclidean distance) will be obtained. The individual difference in element distances will be reported, sample mean change, standard deviations, and effect size, this will highlight whether there are any group trends. The reliability of the individual's grid change will be determined using the Standardized Individual Difference (SID) (Ferrer & Pardo, 2014). This will allow random variation to be distinguished from reliable change.

Stage three: Content analysis

Content analysis is a way of grouping the information present in a large set of repertory grids, by collecting and categorising the different forms of construal present in the set. The main points of information from each grid will be compared systematically, comparing and contrasting, and drawing inferences from sample. Qualitatively we will look for evidence for any broader structural changes in the grids.

Stage four: Feedback questionnaires

Feedback questionnaires will be analysed using descriptive level information regarding how they found completing the repertory grids and CATCH-Y (e.g. were they easy to complete and an understandable tool). Open-ended questions will be analysed to explore themes and which components of the repertory grids were well received and which were less well received or understood.

9.2 Sample Size:

The target sample size is n=9 who will all receive the CATCH-Y intervention. A feasibility study on the CATCH intervention found 1/7 participants did not complete the study (Peel-Wainwright et al., in prep) and therefore it is expected that we will recruit nine participants and complete the intervention with eight. If a participant no longer wants to continue at the baseline stage, another eligible participant will be recruited. If a participant drops-out during the intervention stage another participant will not replace them. As the aims of the study were not statistical inference but acceptability and feasibility in the form of recruitment, retention and missing data outcomes, the sample size was similar to other case series in the field (Taylor et al., 2019; Searson, Mansell, Lowens, & Tai, 2012) and no power calculation is required. Other research has administrated repertory grids to small-scale case design for as low as 2 participants (McNair, Woodrow, & Hare, 2016). The sample is reflective of the time and resource limited nature of the project, with the goal of gaining preliminary evidence to support the progression and development of a larger scale RCT.

10) DATA MONITORING AND QUALITY ASSURANCE

The study will be subject to the audit and monitoring regime of the University of Manchester.

11) SAFETY CONSIDERATIONS AND ADVERSE EVENTS

NHS Research Ethics Committee approval will be obtained before commencing research. The study will be conducted in full conformance with principles of the "Declaration of Helsinki", Good Clinical Practice (GCP) and within the laws and regulations of the country in which the research is conducted.

It is unlikely that there will be any adverse events/risks associated with participation in this study, as these have not been evident in the previous adult trials of CATCH. Adverse and Serious Adverse Events will be monitored during the course of the study. If an adverse event is deemed to be directly related to the participation of the study (i.e. an adverse reaction) project activities for that participant would be paused and the research team would review whether the participant should be withdrawn from the study, and whether the project as a whole should continue or be halted.

There is a possibility that safeguarding or other risk issues will arise during the participation of the study. To combat these issues, study information including the potential risks will be explained in a clear and age appropriate way at the start of the study. We will work alongside clinicians and clinical services, liaise regularly and keep them informed as needed where risk becomes apparent. We know from past research that research participation is largely experienced as positive, even where the focus is self-injure, and distress is rare (Biddle, 2013). Our current risk management protocol (developed collaboratively with those with lived experience of self-harm and clinical psychologists) will be reviewed to reflect CAMHS procedures/population e.g. how/when to involve caregiver.

12) PEER REVIEW

This project has been independently peer reviewed by the The University of Manchester research sub-committee for the DClinPsy Programme.

13) ETHICAL and REGULATORY CONSIDERATIONS

13.1 Approvals

NHS Research Ethics Committee approval and HRA approval will be obtained before commencing research. The study will be conducted in full conformance with all relevant legal requirements and the principles of the Declaration of Helsinki, Good Clinical Practice (GCP) and the UK Policy Framework for Health and Social Care Research 2017.

13.2 Risks

Concerns from service-users about the implications of participating in the research and talking openly about their behaviours (such as fear of hospital admission or judgement from researchers) could be apparent. To mitigate this, we aim to familiarise service-users

with the research team, with photographs of the researchers in correspondence. We will also ensure that all study information is clear and accessible to young people, and have utilised PPI consultations to incorporate the best ways of doing this.

Whilst conducting the therapy, it may become apparent that there are safeguarding risks to the young people or those around them. It would be the duty of the researchers to report these risks to the CAMHS workers who would deal with this appropriately, or to safeguarding teams. If the risk was immediate, researchers would assess and manage the risk appropriately and in line with local policies and the risk management protocol. A risk management protocol (developed with clinical psychologists and experts by experience) has been adapted from past research for use in this study. To ensure that there is an open line of communication with regards to risk, all-young people participating in the study will require a key worker at a CAMHS service. Furthermore, all young people will be informed of the bounds of confidentiality around contacting their parent/carer if the researchers feel that it is necessary. This will be made explicit from the start.

14) STATEMENT OF INDEMNITY

The University has insurance available in respect of research involving human subjects that provides cover for legal liabilities arising from its actions or those of its staff or supervised students. The University also has insurance available that provides compensation for non-negligent harm to research subjects occasioned in circumstances that are under the control of the University.

15) FUNDING and RESOURCES

Completion of this project is in partial fulfilment of the Doctorate in Clinical Psychology Qualification. As such, the researcher will receive a £400 research budget from The University of Manchester to be used towards the completion of this research (e.g. for purchasing of measures).

16) PUBLICATION POLICY

The results of the study will be written up in two forms, for the doctoral theses of Rebecca Haw and Molly Marsden. The results will also be prepared for publication in an academic journal. Contact details for the trainee are provided on the participant information sheet, explaining that participants can get in touch if they would like to receive a written summary of the results and/or relevant publications upon request.

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Appendix I: Self-Injurious Thoughts and Behaviour Interview- Short Form

MANCHESTER 1824
The University of Manchester

A sub-section from the Self-injurious Thoughts and Behaviour interview (SITBI; Nock, Holmberg, Photos, & Michel, 2007)

These questions ask about your thoughts and feelings of self-injurious behaviors. Please response as accurately as you can by writing your answer or ticking the box.

1. Have you ever actually purposely hurt yourself without wanting to die?
    a. [ ] no
    b. [ ] yes

2. How old were you the first time you purposely hurt yourself without wanting to die?

    _____

3. How old were you the last time?

    _____

4. Now I'm going to go through a list of things that people sometimes purposely do to harm themselves without wanting to die. Please let me know which of these you've done:
    a. [ ] cut or carved skin
    b. [ ] burned your skin (i.e., with a cigarette, match or other hot object)
    c. [ ] inserted sharp objects into your skin or nails
    d. [ ] picked areas of your body to the point of drawing blood
    e. [ ] hit yourself on purpose
    f. [ ] gave yourself a tattoo
    g. [ ] scraped your skin to the point of drawing blood
    h. [ ] other (specify):_____

5. How many times in your life have you purposely hurt yourself without wanting to die? (Please give your best estimate)

    0-5 times, 6-10 times, 11-30times, 31-50times, 51+ times

    How many times in the past year? (Please give your best estimate)

0-5 times, 6-10 times, 11-30times, 31-50times, 51+ times

How many times in the past month? (Please give your best estimate)

0 times, 1-5 times, 6-10 times, 11-30times, 31+times

How many times in the past week? (Please give your best estimate)

0 times, 1-5 times, 6-10 times, 11-30times, 31+ times

6. On average, how long have you thought of purposely hurting yourself without wanting to die before actually doing it?
    a. [ ] 0 seconds
    b. [ ] 1–60 seconds
    c. [ ] 2–15 minutes
    d. [ ] 16–60 minutes
    e. [ ] less than one day
    f. [ ] 1–2 days
    g. [ ] more than 2 days
    h. [ ] wide range (spans > 2 responses)

7. Have you ever received medical treatment for harm caused by purposely hurting yourself without wanting to die?
    a. [ ] no
    b. [ ] yes
8. On a scale of 0 to 4, what do you think the likelihood is that you will purposely hurt yourself without wanting to die in the future? _____

0	1	2	3	4
Not at all	A little bit	Somewhat	Very Much	Extremely

Thank you for completing the questionnaire.

For the researchers: individual participant reference number

Appendix J: Demographic questionnaire

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The University of Manchester

A Case-Series Examination of a Brief CAT-Informed Intervention for Young People that have Self-Injured

Demographic Questionnaire

Please tick each box as appropriate:

ABOUT YOU

1. **What is your gender?**

   - ☐ Male
   - ☐ Female
   - ☐ Non-binary
   - ☐ Male to female transgender
   - ☐ Female to male transgender
   - ☐ I prefer to describe myself as _____
   - ☐ Prefer not to say

2. **What is your age? (please write below)**

3. **What is your ethnic group?**

   - ☐ White
   - ☐ Mixed
   - ☐ Asian
   - ☐ Black
   - ☐ Chinese
   - ☐ Other (Please Specify) _____

ABOUT YOUR HEALTH

4. **Do you have a psychiatric/ mental health diagnosis?**

   - ☐ Yes _____ (please write if you are happy for us to know)
   - ☐ No

5. **Do you currently access mental health services or on a waiting list?**

   - ☐ Yes
   - ☐ No

6. **Are you currently on any medication related to a mental health difficulty?**

   - ☐ Yes
     Please state _____
   - ☐ No

Thank-you for completing this questionnaire

Appendix K: Example repertory grid

Example Repertory Grid

Elements across the top and constructs elicited from a participant along the sides.

	Self	Ideal-self	Self-injuring you	Self who no longer self-injures	Self when coping	Self when struggling	Person I care about	Person I do not care about	
Like to be around	5	1	2	5	3	4	1	7	Don't like to be around
Care about	6	5	6	5	4	3	1	3	Don't care about
Not self harming	6	6	6	1	2	2	3	1	Self-harming
Reserved	3	1	1	1	2	2	2	5	Loud
Relaxed	6	2	4	7	6	6	3	1	Stressed
Calm	4	1	6	6	6	6	2	7	Worried
Coping well	3	4	2	7	6	6	3	6	Not coping
Content	6	3	4	4	3	3	4	4	Afraid
Relief	4	2	1	2	7	7	6	4	Anxious
Happy with self	7	4	5	2	7	7	4	2	Disappointed in self

Appendix L: CATCH-Y therapy guidance document

COGNITIVE ANALYTIC THERAPY APPROACH TO CONTAINING SELF-HARM IN YOUNG PEOPLE (CATCH-Y)
MANUAL

Peter Taylor
Clive Turpin
Samantha Hartley

The initial CATCH intervention was largely based upon: Sheard, T. , Evans, J. , Cash, D. , Hicks, J. , King, A. , Morgan, N. , Nereli, B. , Porter, I. , Rees, H. , Sandford, J. , Slinn, R. , Sunder, K. and Ryle, A. (2000), A CAT-derived one to three session intervention for repeated deliberate self-harm: A description of the model and initial experience of trainee psychiatrists in using it. British Journal of Medical Psychology, 73: 179-196. doi:10.1348/000711200160417

The approach was adapted initially to 1) shift the focus from overdoses to self-harm more broadly, 2) move away from a hospital based context for the intervention, 3) reduce the number of sessions to two.

In revising the intervention for young people (CATCH-Y), we sought the views of young people who have utilised Child and Adolescent Mental Health Services (for difficulties including self-harm) in both the community and inpatient settings. We also consulted clinicians who work in this area. The main changes were: 1) Increase of session number to 5, with the 5th session incorporating a handover to coordinating clinician and/ or family member; 2) Reduction in standard session length to 60 minutes and flexibility in this; 3) To include explicit provision of psychoeducation where appropriate; 4) Flexibility in the location of sessions; 4) Emphasis on systematic factors/ opportunities as part of the reformulation and potential exits (e.g. family-based treatment/ social care involvement).

The terms ‘young person’ and ‘client’ are used interchangeably throughout this document.

OVERVIEW

This manual gives a brief overview of a five-session (four plus one) Cognitive Analytic Therapy (CAT) intervention aimed at young people (aged 13-17) with experiences of self-harm. This manual assumes an existing knowledge of CAT and does not provide a detailed definition of CAT concepts and ideas. CAT is a personalised and idiosyncratic therapy that is guided by the reformulation and therapeutic relationship created between therapist and client. Therefore, the manual offers guidance to core elements of consideration, rather than a 'how-to' or 'step-by-step guide'. Practitioners using this approach should already have a good grounding in CAT, experience of working with young people in a clinical capacity and appropriate clinical supervision structures in place to support the dynamic and formulation-driven adaptation and implementation of the guidance.

The intervention is based around five face-to-face sessions, preferably spaced a week apart. The intervention centres on developing a shared, collaborative, relational understanding of a client's self-harming behaviour, drawing upon the Cognitive Analytic Therapy (CAT) framework for making sense of these experiences. Broadly the goals of the intervention are to:

- Develop a shared relational understanding of the client's experience of self-harm, capturing the antecedents, consequences and patterns related to this behaviour.

- Using CAT constructs of 'Reciprocal Roles' and 'Procedures' (see below) to help develop clients' awareness, and understanding of these experiences. These concepts do not necessarily need to be named in the therapy but should be used where appropriate by the therapist to help explore, develop and elaborate on the client's understanding of their experiences.

- Provide an initial exploration of how a client might start to use their developed awareness to prevent a repeating pattern escalating or pause to create a space to reflect. This may include developing basic 'Exits' with the client and/or the system supporting them, based on the formulation that is developed.

- Roles, procedures and exits should include explicit consideration of systemic influences and opportunities, such as relationships with systems in the young person's life (e.g. school) and potential options for service-level exits (e.g. liaison with social care), alongside the individual young person's active role.

- Share this understanding with the young person's coordinating clinician and/ or family members to handover this understanding in the hope it will engender greater relational understanding of their self-harm, inform care planning and highlight and/or avoid any potential blocks to effective care.

Introducing the Intervention

As this is a short intervention it is necessary to be mindful of clients' expectations about the intervention and transparent about the aims and potential benefits. It is important to be clear about the length of the sessions and the intervention from the start, and may be helpful to remind clients of this as work progresses and use the brevity to aid focus.

Clients will be made aware at the baseline assessment that the intervention is part of a research trial. If directly asked about the impact/helpfulness of the intervention, it can be stated that you are hoping to find out whether this sort of brief intervention can be helpful for people who self-harm, and that you know anecdotally that many people appear to value and benefit from this sort of intervention, although cannot give assurance.

When introducing the therapy it could be suggested that the goal of the intervention is to develop a way of understanding why the person self-harms, that looks at the patterns that people can get stuck in, rather than necessarily coming up with solutions or new ways to cope. The emphasis is on understanding why a young person self-harms – how it is useful or important to them in relation to their other difficulties and not to provide a 'quick-fix' solution to stopping it; if the young person doesn't yet want to stop self-harming, that's ok.

The intervention could be introduced as an opportunity to think about these experiences and highlight how developing an understanding of them could support future change.

The content of therapy should be briefly discussed; i.e. it will involve discussing experiences and ideas, and drawing out patterns of how the self-harm happens. Emphasis should be placed on doing what works for that young person and figuring that out together during therapy- i.e. in the relative balance of mapping and talking, questions and hypotheses. At this point the therapist might explore previous experiences or discussions related to self-harm and what has felt helpful/ unhelpful.

Therapist Style

In line with a standard CAT approach the therapist should aspire to adopt the following therapeutic manner:

- Working collaboratively, getting alongside the client to try and understand their world and their experiences.
- Being aware of the inherent power imbalance between therapist and client but also between adult and child, and working with an awareness and mitigation of its impact.
- Being curious and open minded.
- Showing appropriate empathy and concern (avoiding alarmist or judging comments).
- Within CAT therapists can be proactive, making suggestions or suggesting hypotheses, sharing their thoughts. However, this should be carefully paced in light of the client can take in, to avoid running ahead of them or leaving them feeling overwhelmed or pressured to respond in a certain way. Particular care should be

taken to work within a young person's Zone of Proximal Development (ZPD) in terms of their emotional and relational literacy.

Session structure

Most therapeutic approaches, including CAT, place value on the 'therapeutic frame'. Alongside this, young people value flexibility and adaptability in terms of session location and length. It is therefore important that the therapist balances these competing demands and takes time to explore with the young person; a) where therapy would be best located (default is at a clinic location but options might include school, home or GP surgery) and b) how long therapy lasts (maximum is 60 minutes per session but a minimum of 30 minutes is acceptable). Exploration and contracting around these elements should occur prior to session one and be finalised there. Within the following sessions the agreement about location of the sessions should be adhered to, but the length of the session might be increased (e.g. from 30 to 60 minutes) if re-contracted in the previous session.

Session one and an overview of key therapeutic processes

The initial session should last around 60 minutes, and include:

- Provide a brief introduction to what the therapy involves (see above), including the number and duration and focus of the conversation, checking how this sounds to the client and fits with their expectations. (5 minutes)
- Reiterate requirements around risk and confidentiality (this will have been covered in their previous meeting with the researcher) including briefly referring back to the plan discussed in their first meeting about what might be done if there is a concern about risk of harm to themselves or others. (2 minutes)
- Exploration of sharing information with parents in line with the young person's age and competence. Where competent, the young person can decide for no information from therapy to be shared with parents (aside from that pertaining to risk, which would be done by the care coordinator).

Self-Harm Self-Help file

Participants can be sent the Self-Harm Self-Help file (see Appendix I) by post or email following randomization, to complete before the first therapy session. If clients have not completed this it can be done at the start of the session. If completed in the session this can be done in an interactive manner, asking the client the questions verbally, with the file visible to both therapist and client. It is not essential to complete the File. It may be that in starting a session there is already important content to pick up on and that going through the File would only disrupt this process. However, if the File has been offered (whether completed or not) then it should always be discussed (otherwise the client may feel they are being asked to do something which is not important).

If the File is completed then the client's responses on the File should be discussed. The goal of this activity is not to collect data or get to a "correct" answer, but to open a discussion about the client's experiences of self-harm. It should be explained that the file is not an exhaustive list and won't fit for everyone.

The therapist should explore with the client if any of the feelings or patterns covered in the File seem particularly relevant to their self-harm. Where this is the case, it can provide a potential starting point in mapping out the client's experiences of self-harm. For example the therapist can start this process by writing out the states/feelings on a separate sheet of paper.

Where feelings or patterns listed in the File have some relevance, but do not seem to capture the client's experience fully, this is an opportunity to try to further elaborate on the client's own experience (e.g., "So the feeling is not quite like X, how would you say it is different? Is it more like …"). This would be another starting point for formulation.
If clients struggle to engage with the File or identify any feelings or patterns that fit for them, it is important to reflect that this is fine, the ideas in the File will not fit for many people. This is then a starting point to suggest working together to try and better understand the client's own experiences around self-harm.

Mapping
The remainder of the session should then focus on the process of formulating or 'mapping' the client's experiences around self-harm. This should involve an active, collaborative discussion between the therapist and client, with the therapist drawing out a visual representation of the client's experiences as the discussion develops, taking care to use the client's own words (e.g. Figure 1).

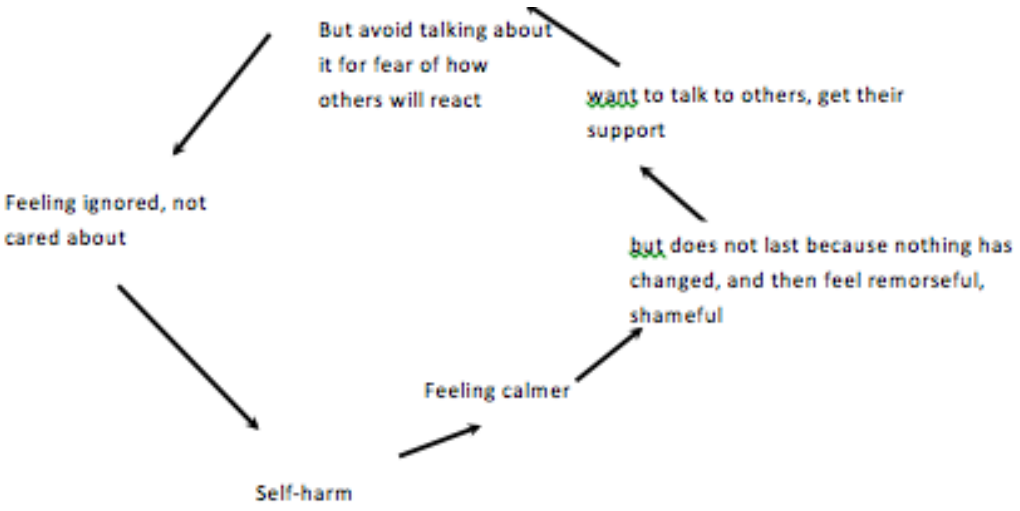


Figure 1: A simple map outlining hypothetical pattern of events around self-harm. See other examples in Sheard et al (2000).

A typical starting point would be to begin with self-harm itself on the diagram, and then to either track backwards or forwards in time, asking about the events that precede or follow

self-harm. Clients can be given the choice about the direction they would like to focus on. An exception might be where a client already strongly identifies with an item in the Self-Help File and this may become the natural starting point for mapping. When tracking it is preferable to start with a single (but typical) recent experience, rather than to talk in generalities (the latter may lead to overly vague and less personally meaningful content). In tracking a client's experiences it is likely that gaps will occur (e.g. going straight from an event or feeling into self-harm). The therapist should work with the client to identify and try and fill these gaps. Symbols such as question marks can be used on the diagram to indicate areas or places where the client is not sure what goes there. Where clients describe a sudden shift in feeling, leading up to self-harm, it may help to draw out this shift (see Figure 2) as a means of exploring intervening states. A client might be asked at which point along this arrow would they be likely to self-harm, and what the feelings might be called that precede or follow this point.

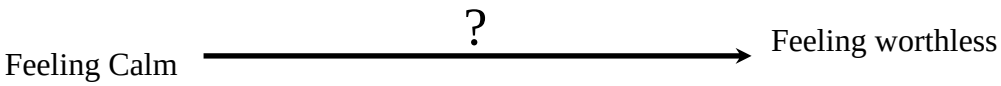


Figure 2: Mapping sudden shifts in state

Alexithymia is commonly associated with self-harm, and as such it is possible that clients may struggle with the labelling and naming of emotional states or feelings. Young people might especially be limited in their emotional literacy or delineation. Suggestions can be provided by the therapist in a curious and open manner ("I wonder if the feeling is a bit like … or more like …"). Where possible it is good to use the client's own language and wording in drawing out the visual map. Where a feeling is not easily labelled, it might help instead to ask about where it is felt in the body, or even see if the client is able to draw a representation of the feeling (could draw it onto an outline of a person).

Where clients do not explicitly refer to others or systems (e.g. school) in their lives it might be helpful to explicitly inquire about what others are doing or not doing at a particular point.

Where clients struggle to identify states preceding or following their self-harm, another approach may be to ask about what the place or state or feeling they are trying to get away from when the self-harm occurs, and likewise, what the state they are trying to get to is like.

The process of mapping should focus on typical experiences relating to self-harm. It will usually be helpful to begin by focussing on a specific incident of self-harm, but where this is done the therapist would then check whether this is pattern that typically occurs for other instances of self-harm. It is possible that for some clients there is no single pattern that fits every case and the focus may be on mapping out one or two commonly occurring patterns. Young people can especially struggle with questioning. Where this is either observed or explicitly stated, the therapist can offer guesses or hypotheses and request feedback/ elaboration/ clarification from the young person. This process – of offering guesses rather

than questioning but needing the young person's input to ensure accuracy - should be made explicit.

Appendix II provides a series of example diagrams that capture particular, general patterns (adapted from Sheard et al., 2000). These are intended as a guide for therapists and should typically not be used in therapy in the first instance, but may be helpful in some situations. For example, these diagrams can be considered where a client describes experiences that appear to match one of these diagrams. This may be helpful where a client is struggling to elaborate on their experiences. However, caution should be taken to try to avoid the situation where a client agrees a diagram fits their experience out of acquiescence. This might be avoided by being clear it is unlikely the standard diagram will fully match the client's experiences, and using it as an opportunity to then explore what might be different for the client.

The pacing of the mapping process should be largely led by the client. Based on CAT theory, different clients will have different Zones of Proximal Development (ZPD; the area between what they might achieve alone, and what they are able to do, accommodate or tolerate with the therapist's help). As such some clients will be less able to develop and elaborate an understanding of their experiences than others. The goal of the therapist is to work within their ZPD, rather than to bring all clients to the same point (e.g. a fully completed and worked out map). It is also important to remain mindful of the client's window of emotional tolerance in order to maintain reflective capacity. It might be useful to have a discussion at the start of therapy as to how client and therapist will be aware of when the tolerance threshold is being reached and how they can check-in on that during the course of therapy and manage it. An example might be checking-in on a 0-10 scale as to how overwhelmed the client feels and where this increases above 6, the therapist and client will dial-down the emotional focus of the conversation. The therapist should maintain an awareness of how information related to this process might inform the reformulation or understanding of enactments, while also considering the ZPD and working to engage the young person within their current ZPD.

Some different ways clients might respond to the intervention are outlined below:

- Clients wishes to move too fast, sharing their experiences and insights but with little elaboration or connection with these experiences. For these individuals the job of the therapist is to slow the pace of the work and focus on deepening the shared understanding of the feelings and experiences linked to their self-harm. The above stance may also apply to clients who appear very avoidant of emotional content.

- Client is demanding rescue and expresses overwhelming, difficult feelings that flood the session. Therapist would try to adopt a more cognitive stance, identifying and labelling relevant emotions/feelings without exploring these and focus on how this link together within the map/diagram.

- Client wants to push on to solutions to their problems before an understanding of their self-harm has been developed. Therapist may respond by slowing the pace, re-iterating the focus on understanding their self-harm, and the value of this. In some cases a client's need for quick solutions may even form part of the map (e.g. look for quick solutions but ultimately feel disappointed when these do not emerge or do not help) but this would need to be done carefully to avoid client feeling judged.

Identification of Reciprocal Role Procedures

During the process of mapping the therapist can begin to work with the client to identify particular Reciprocal Roles (RRs) that are linked to a client's experiences of self-harm. RRs are discussed in detail elsewhere (e.g. Rykle & Kerr, 2002). Briefly, they represent internalised patterns of relating, that have emerged as a result of earlier experiences, and guide the way the individuals relate to themselves and others. RRs are bipolar (e.g. see Figure 3) and tend to capture three forms of relating: self-to-self; self-to-other; other-to-self. Thus an individual may feel rejected or shamed in response to a rejecting other (other-self), but they may also become rejecting and shaming to themselves, for example as part of negative inner dialogue (self-self).

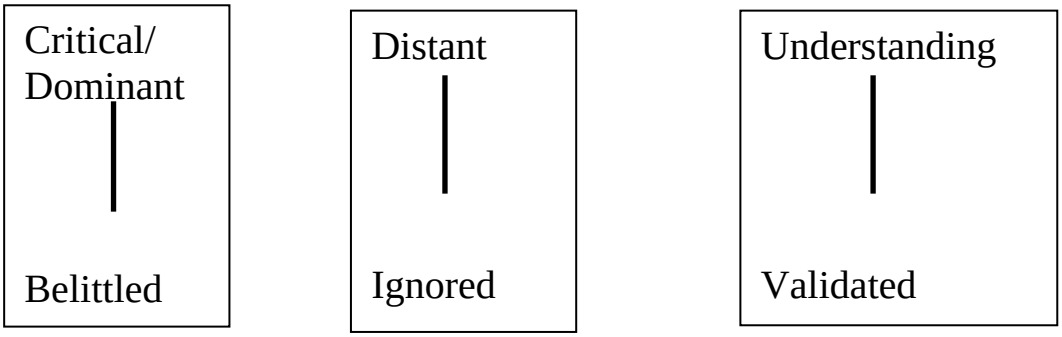


Figure 3: Example Reciprocal Roles

One method to help identify RRs is to focus on the following questions:

- How did you feel towards yourself at this time?
- How did you feel towards others at this time?
- How did you feel others were relating to you at this time?
- How did you feel you were being treated by that system (e.g. school) at that time

It may also help to begin by identifying how the client felt in a given situation, before moving on to ask about what the other person was doing or not doing (or what they were doing to themselves) that led to feeling this way. By doing this the two poles of the RRs can be elucidated. When identifying RRs it is important that the pole labels are meaningful to clients and ideally deepen their awareness of the feelings present during that time. It is tempting for therapists to assume what the opposite pole will be (rejecting to rejected, abusing to abused) but these poles do not necessarily co-occur and client's experiences may differ (rejecting to ignored/uninterested or crushed). Hence RRs should match client's experiences as closely as possible. Therapists should provide some brief, accessible psychoeducation around RRs when they arise in the formulation, e.g. we learn how people relate to us and vice versa when we are young and then we tend to relate to ourselves and

others in similar ways, often creating difficult feelings that we try and cope with but we can end up getting stuck.

Problem Procedures

Within CAT a number of commonly occurring, problematic procedures have been noted. Whilst these procedures do not describe every pattern a client might struggle with, they apply to some clients. Where present it may be helpful for the therapist to comment on these emerging patterns.

- **Traps**: Where negative expectations lead to behaviour which ends up confirming these expectations (I know she won't care so I avoid her and end up feeling like she does not care)
- **Snags**: Where a particular aim is abandoned because of expected negative consequences (I do not ask for help because I know they will react negatively)
- **Dilemmas**: Where a client's feelings are caught between two alternatives (either I am a push-over and do what others tell me, or I kick back and get angry), black or white.

It is important to identify these patterns not by their conceptual labels, but in terms of the client's own experiences, incorporating psychoeducation relating to that individual cycle (e.g. 'have you noticed that the way you tend to cope with feeling anxious actually leads to more anxiety?').

Identifying Patterns in the Room

Whilst CAT often focuses on identifying problematic patterns and RRs within the therapy relationship, this may not be possible within the short duration of this intervention, and is not expected. Nonetheless, there may be times where it is helpful to make links between the client's experiences and their relationship with yourself.

- Where patterns are apparent that seem likely to affect a client's likelihood of attending the next session (e.g. a pattern of feelings other cannot help and cutting off contact from them).
- Where client's way of relating is creating a barrier to progressing with the intervention (e.g. unwilling to engage in the intervention for fear that it might not help) it may help to reflect on how this process seems very difficult for them and ask about whether this feels like a barrier in other contexts.
- Where clients reflects positively on the experience of the intervention it may helpful to explore how their interaction with yourself differs to others they have captured in the mapping.
- Where an example from the therapy room might be more within the client's ZPD than one outside (e.g. 'sometimes I guess you might think I don't really get what you're saying- like I'm not listening properly, like it feels with school', rather than 'do you sometimes feel like your mum doesn't listen either'- which the client might not be ready to explore)

Ending Session One

Endings are an important focus in CAT. Whilst this intervention is brief, it may be helpful to reiterate towards the end of the initial session that three more (plus one extra with their clinician/ family member) remain and reflect on feelings relating to this. It might be helpful to discuss what the client would like to get from the following sessions, or how they would like to approach them, based on session 1 and their hopes/ expectations. The brevity of this intervention may be challenging or difficult, which can be acknowledged (see below "Negative reactions to short intervention"). For some clients, where endings or related experiences (e.g. perceived rejection) have emerged as relevant feelings, it may be useful to link the ending of the session to this observation. In these instances it may help to explore how the client typically responds to endings and also how this (the next intervention session) could be an opportunity to do something differently. This may include thinking aloud about why it might be difficult to attend the next session.

Following sessions one, two and three, a relevant between-session activity should be set for the young person to do in the week before the next session. The activity should link to the content of that particular session, but they would tend to involve either a) reflecting on mapping and reformulation; b) focus on monitoring for patterns or difficulties in everyday life; c) practicing or trying out potential exits or ways of doing something differently. Planned activities should be discussed and agreed collaboratively within the session, and space should always be allowed to review how this went at the subsequent session. As with all other aspects of the intervention, the between-session activity should work within and stretch slightly the client's ZPD; i.e. if the young person is able to reflect on patterns then an activity could be to spot and note them in action, whereas if a young person finds this too much then noting instances of self-harm might be less taxing while still facilitating more focused discussion in the subsequent session.

Clients should be encouraged to reflect on the initial session and try to keep formulations or relational patterns in mind to support the work in the following session, for instance, what are the things that you'd like to take away from our conversation. For clients where a map has started to be developed they could be asked to reflect upon it and make notes on recognition and/or add to it. If the map has been developed further it can be used more actively to recognise relational pulls, patterns and new ideas of strategies that have occurred between the sessions. The client should take a copy of the map or encouraged to use their phone (if present) to take a photo to improve the availability of it.

The final 10 minutes should be kept aside to reflect on the conversation and content and help ease the transition from the session back to everyday life. This is particularly important for clients who experience distress during the session, allowing space for these clients to return to a less distressed state before the session is closed. This might be achieved through validation and normalisation that this psychological work can be difficult, and non-problem talk on non-arousing subjects or an activity (e.g. a brief card game).

Session Two-Four

Sessions two-four should be 60 minutes long or shorter where this has been contracted. Once again the last 10 minutes can be set aside as time to wind-down and help the transition from the intervention to everyday life.

Session two should begin with a review and recap of the ground covered in session one, using the diagram(s) or map(s) developed in the first session as a prompt. Also of any homework tasks set in the last session are reviewed. Where homework is not undertaken the reasons why, including whether this work was difficult or challenging, should be discussed. The diagram or map may help facilitate and exploration of the reasons behind not completing tasks. Using the map in this way may help these discussions feel non-judgmental or less emotionally charged.

The focus of the second session and beyond will then depend on the progress made in and between sessions, and may involve further development of the mapping process or a move to focus on exits (see below).

Exits

Once a map has been collaboratively developed the next task is to consider how the client might use a developed relational awareness to pause and reflect on the identified pattern and explore what alternatives might exist, avoiding any explicit push towards change where this is not yet welcomed. For example this could involve stepping out of a situation, sharing their thoughts or feelings, asserting themselves, or if change is restricted/limited/minimal how acknowledging this might be helpful.

It is important not to move on to exits too soon, before a shared and valid understanding of a client's self-harm has been developed (though there may be an implicit or explicit pressure from some clients to do this) and before motivation to change self-harm is enhanced (if this was limited to start with).

Given the short duration of this intervention, identified exits are likely to be limited in their complexity. Within the context of this intervention exits can also be presented as a starting point for longer-term change, for example, engaging with further psychotherapy as a means of changing the way they respond in a particular situation or providing them with additional coping resources. Helping develop a client's motivation and hope in relation to further therapy is a valid outcome to the intervention. Using the formulation map to guide the coordination of care (i.e. is individual therapy the right thing yet/ do other services need to be involved/ is family-based treatment required) might also be possible. It is desirable to find a middle ground between the onus of change being on the client and the system, exploring and offering exits that sit with both the young person and the people around them (e.g. family members, clinicians, teachers). Exits might include enhancing understanding by sharing the reformulation, thus reducing RRs such as blaming/assuming-misunderstood and blamed.

In developing exits a starting point would be to go through the map and ascertain where the client feels they are most likely to be able to notice what is going on, and stop, or pause, the pattern. This includes recognising there will be places where difficult states or feelings are too strong for the client to step out of the pattern, but there may be points where this is more possible. Symbols such as a pause sign can be added to the diagram to help indicate these points in the cycle. The therapist can then explore with the client what they might be able to do differently at this point and how others can help with this. Potential ideas for exits are listed below:

- Options for experimenting with different ways of seeking help or support that might break old patterns (e.g. patterns of avoidance).
- Client works on better identifying and reflecting on the pattern they are caught in, possibly cycling forward to where they know they are likely to end up, and using this knowledge as motivation for trying to halt the process.
- Use of flash cards or other visual aids or reminders to help halt or pause the process.
- Exits drawing on existing support network and coping skills.

Exits can be added visually to the diagram. The map should be framed as a tool the client can take home after the therapy to help them in the future. Identification and discussion of potential exits might also provide information that leads to the elaboration of reciprocal roles and procedures, such as when blocks to solutions are encountered.

Ending & Goodbye Summarising

Time should be given to discussing the ending of the intervention, including any positive or negative feelings this generates. For clients with high or idealised expectations of change disappointment is likely, and time should be given to explore these feelings. Where appropriate links might be made back to the map that has been developed (e.g., “I wonder if you’re feeling a little let down even? If we look at the map I notice there has been a common pattern of feeling this way”). Clients could be encouraged to think about what they usually do with these feelings and what they could possibly do differently. Reflecting on the sessions as a whole helps to consolidate understanding and awareness and thinking about how this might continue, such as returning to the map and holding some of the conversations in mind, using writing might also help promote ongoing reflection.

In Session four, it will be helpful to allow space for the therapist to summarise and share their understanding of the young person’s difficulties, drawing together the work that has been done across the four sessions. This summary can take the form of a written ‘Goodbye letter’, as in traditional CAT, but it might also be a verbal summary. A formal goodbye letter is not required for CATCH-Y, but some form of ‘goodbye summary’ is. The goodbye summary should encompass a) key patterns or procedures linked to self-harm, b) key reciprocal roles or relational patterns, c) any potential exits that have been discussed or practiced, d) wider reflections (as appropriate and bearing in mind the client’s ZPD) on any challenges within the therapy, including, for example, difficult enactments of roles, with a particular focus on important steps or gains the young person has made (e.g. “I know that opening up and talking about these experiences has been incredibly hard for you; I think it

says a lot about your inner strength that you have been able to overcome these barriers and start to share these experiences with me"). The summary should be offered tentatively, allowing for adjustment or correction by the young person. Following this summary, it is important to allow time for the young person to comment on what has been said and offer their own reflections.

Negative Reactions to Short Intervention

From qualitative research we have seen that some individuals view their difficulties as very entrenched and can be sceptical of the idea that a short intervention will be of any use. If such concerns arise it can be noted to emphasise that such concerns are understandable, and whilst this five session intervention may not be enough to resolve or work through all of the difficult experiences they might have faced, it may nonetheless be a useful stepping stone, perhaps starting some helpful processes or changes in how they think about their experiences that could lead to bigger changes in the future. It might be worth highlighting that things have been tried before, possibly over longer time periods, and not yet been effective, and therefore the current intervention is to try and ensure any future care is worth the young person's time and effort.

For some clients the brevity of the therapy may activate or bring to the surface negative feelings about treatment (e.g. that this intervention can't help or that nothing will help) or the possibility of change more generally (e.g. that nothing will help). Where such feelings are apparent it may be possible to comment on these and being them into the therapy room. Such feelings may be a useful indicator in thinking about patterns with others that are linked to their self-harm (e.g. they feel let down by others who cannot help and this feeling leads into self-harm). In these cases links could be made between the feeling in the therapy room and these wider patterns. However, care should be taken that this does not feel blaming or judging, and is done in a curious and open-minded way.

Negative feelings may also be apparent towards the end of a session, and it may be helpful to explore where these typically lead and how this situation could be different (e.g. feeling it won't help so maybe they will miss the next session altogether, but what might it be like if they attend the next session despite this feeling).

The fifth session

The nature and purpose of session five should have been alluded to from the start of therapy and highlighted again and planned for during session three. The therapist and the young person will discuss the importance of handing over their joint understanding to the coordinating clinician and a family member (the latter where the young person consents) with the aim of sharing understanding and thus facilitating more effective care. The therapist will invite those appropriate and discuss with the young person in advance how this session will be managed(e.g. who will speak about which aspects, what aspects of the map will be emphasised, will questions be fielded and by whom). There should be an emphasis on empowering the young person to share their own map, coupled with an awareness of their ZPD and the inherent challenges of power imbalances in this process. It may help to focus this discussion on the plan for session five around what feels most

helpful to the young person and to think together, using the map as a guide, around what might be useful. It will also be important to avoid generating unrealistic expectations about what might be achieved in this fifth session, whilst still keeping an optimistic focus on what change might be possible (e.g. it is unlikely that a parent's whole approach to parenting could be altered).

Session five should be around 60 minutes in length. Where possible it may be helpful to begin the session with the young person, to briefly recap on what will be discussed and how, and to check how they feel about the session. By involving them in this way at the start, it may be possible to help them feel like they have a role in guiding and directing the conversation based on their own needs, rather than just being a subject to be discussed by adults (a feeling they may have experienced before). Depending on the client it may also be helpful to agree on a plan around what to do if they become overly distressed or need to take time out form the session (how this might be communicated and acted on). The other attendees, who may include (but not limited to) parents, clinicians, social workers, and teachers can then be invited in, and the session proper started.

The therapist should take the role of facilitating the discussion. The session should begin by discussing the purpose of the session (which will focus primarily on how the young person is best supported and helped) and also key ground rules or boundaries for the session, especially around confidentiality. The first part of the session proper can then be spent summarising the reformulation or map that has been developed with the young person. It should be explained that the map essentially captures the feelings and relational experiences form the young person's perspective. In this sense the discussion should not be about whether the map is right or wrong, the map captures the young person's experience, and this is valid, even if it differs to how others experience the same situations.

The therapist should check in regularly with the other attendees to ensure they understand and to clarify any uncertainties. Depending on the stage the young person is at, it may be beneficial to allow them space to introduce and explain some aspects of the map. The discussion is focused on summarising the work and looking ahead, but done to also include wider systems and to think more specifically about their role in helping the young person. The second part of the session should focus on a review of planned exits or recommendations for future support, and a discussion of these within the group.

It is possible that the content of the map may directly relate to individuals invited to the fifth session. This issue needs to be managed with care due to the potential for some individuals to feel blamed or judged (e.g. parents who feature heavily in the map as rejecting or unsupportive). There may be times where due to the nature of a person's impact on the client it would not be appropriate to have them present at the meeting. In other situations, making it clear the map reflects the young person's personal experience within a range of relationships, reflecting that this may at times be difficult to hear, and keeping the focus on the young person and how they're to be best supported, may help.

A good conclusion to the fifth session may be to produce, in addition to the existing maps, a list of recommendations, exits, or plans, for helping the young person in the future, with actions identified for the young person as well as others they interact with. This list or plan could be typed and shared, with a copy kept in the young person's notes along with the map.

CATCH-Y Manual Appendix I
Self-Harm Self-Help File

The Self harm self help file

This booklet is yours to complete prior to the first session with the therapist. It can help to share how things are for you and start the conversation without too many questions. It is meant as a first step towards understanding the patterns of thinking, feeling and behaviour that lead to you harming yourself.

We try to sort out our problems in our life and in our relationships but sometimes the ways we cope leave us even more stressed or things keep going wrong. Most of our ways of coping are habits that have developed over a long time. Sometimes they start off as useful but now lead to stress and suffering. Sometimes the habits are so familiar it is difficult to put them into words. This file is designed to help recognise some of the habits and patterns that you notice in your life.

Through completing the booklet and conversations with your therapist, we hope it will give you a chance to take a step back and see

- If your ways of coping are not working well or are adding to your stress

- If so, how you might begin to change with the support of those around you

Part One: Confusion caused by changes in how we feel towards ourselves and other people

Some of us change a lot in the way we feel towards ourselves and other people from day to day, or moment to moment. When in these different states of mind we may have very strong feelings or feel completely unemotional.

Here are some examples of different states of mind which can happen sometimes or often in our lives, can you mark in the boxes which of these you experience and how strongly?

++ means you feel it definitely and strongly applies to you
+ means it applies to you but not strongly
0 means it does not apply to you

1.	Feeling or expecting to be let down, rejected, hurt	++	+	0
2.	Feeling or hoping to feel very safe, cared for, and perfectly close	++	+	0
3.	Feeling angry with myself and wanting to harm myself	++	+	0
4.	Feeling emotionally very calm or cut off and wanting to harm myself	++	+	0
5.	Feeling or expecting to feel punished	++	+	0
6.	Feeling guilty, bad, unworthy of love and care	++	+	0
7.	Feeling I've always got to do things for others, that it's too much, tired out	++	+	0
8.	Feeling very angry with others, and maybe wanting them to suffer	++	+	0
9.	Feeling no one cares, feeling rejected, abandoned, very alone	++	+	0
10	Wanting to give perfect love and care to another person	++	+	0
11	Being very busy, full of energy, cut off from emotions	++	+	0
12	Feeling let down, cheated, and that other people owe me something	++	+	0
13	Feeling numb, emotionally blanked off or cut off from myself	++	+	0

	and others			

These changes in how we feel towards ourselves and other people can be very confusing. Which of the following descriptions below best suits how you feel about yourself?

1.	The way I feel about myself and others is usually always the same	++	+	0
	The way I feel about others is constantly changing, but this does not affect how I feel about myself	++	+	0
2.	The way I feel about myself and others is constantly changing	++	+	0

Part Two: Vicious circles

Sometimes we seem to go round in circles. We try and help ourselves but end up in just the same position or in an even worse one. It is as if we are trapped in a vicious circle. We can call this pattern a **trap**; here are some examples. Can you mark in the boxes which, if any apply to you **in your daily life**?

Avoidance trap

I feel unable to cope with certain situations, feelings or people. I try to avoid these things, for example, by pretending they are not happening or distracting myself. Avoiding them makes me feel better for a little while, but the problem or feelings are still there and get even worse.

Do you do this?
Often □
Sometimes □
Never □

I must please others trap

I want to be liked by others, so I try to be nice and avoid upsetting anyone. But I end up becoming a bit of a *pushover*, someone who gets bossed around or taken advantage of by others. Because of this I become angry with other people or I try to avoid or run away or avoid these people. Other people then become cross or upset with me.

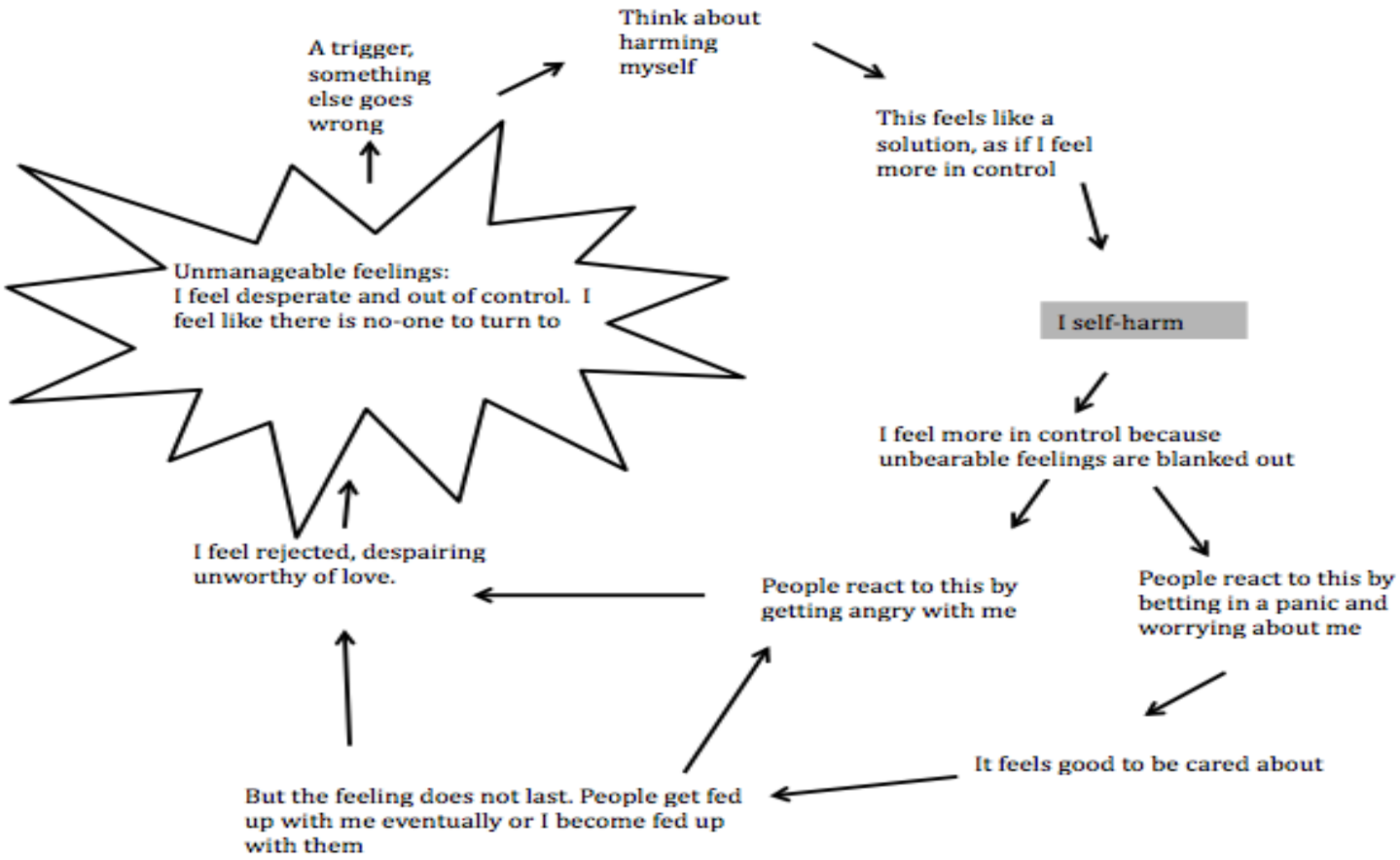
Do you do this?
Often □
Sometimes □
Never □

‘I’ll only do it badly’ trap

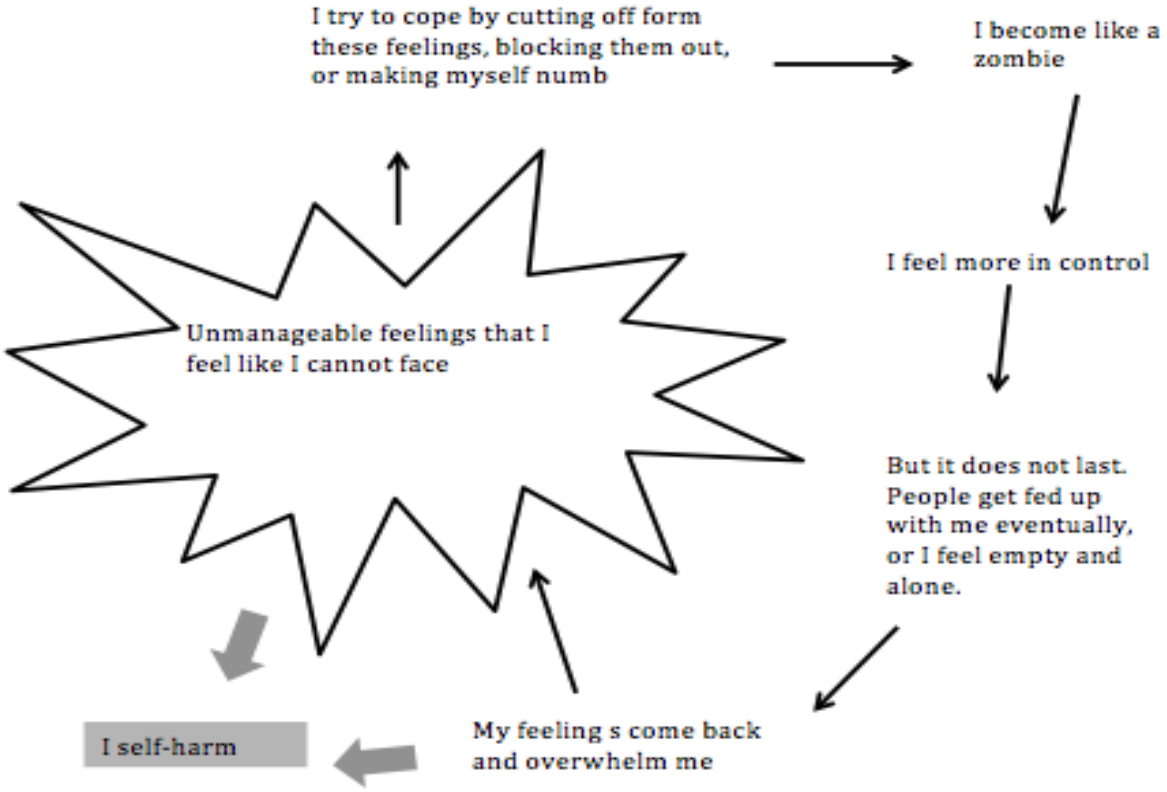
I expect that I will do things wrong or handle things badly. This could be in relationships, at school or at home. Because of this I give up easily, or I think a lot about how what I have done could be better. This leaves me feeling like a failure or unhappy.

Do you do this?
Often □
Sometimes □
Never □

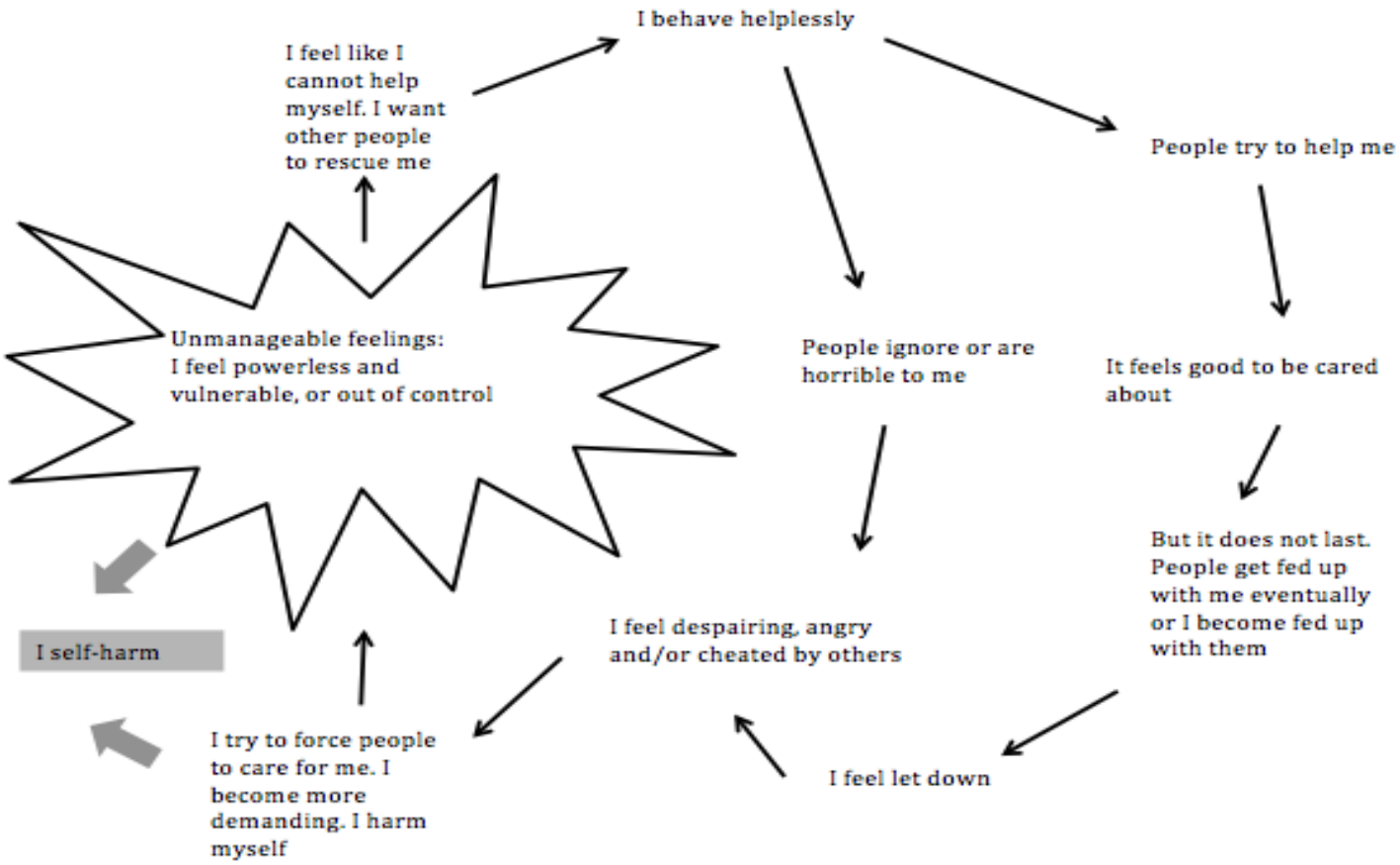
CATCH-Y Manual Appendix II
Template diagrams



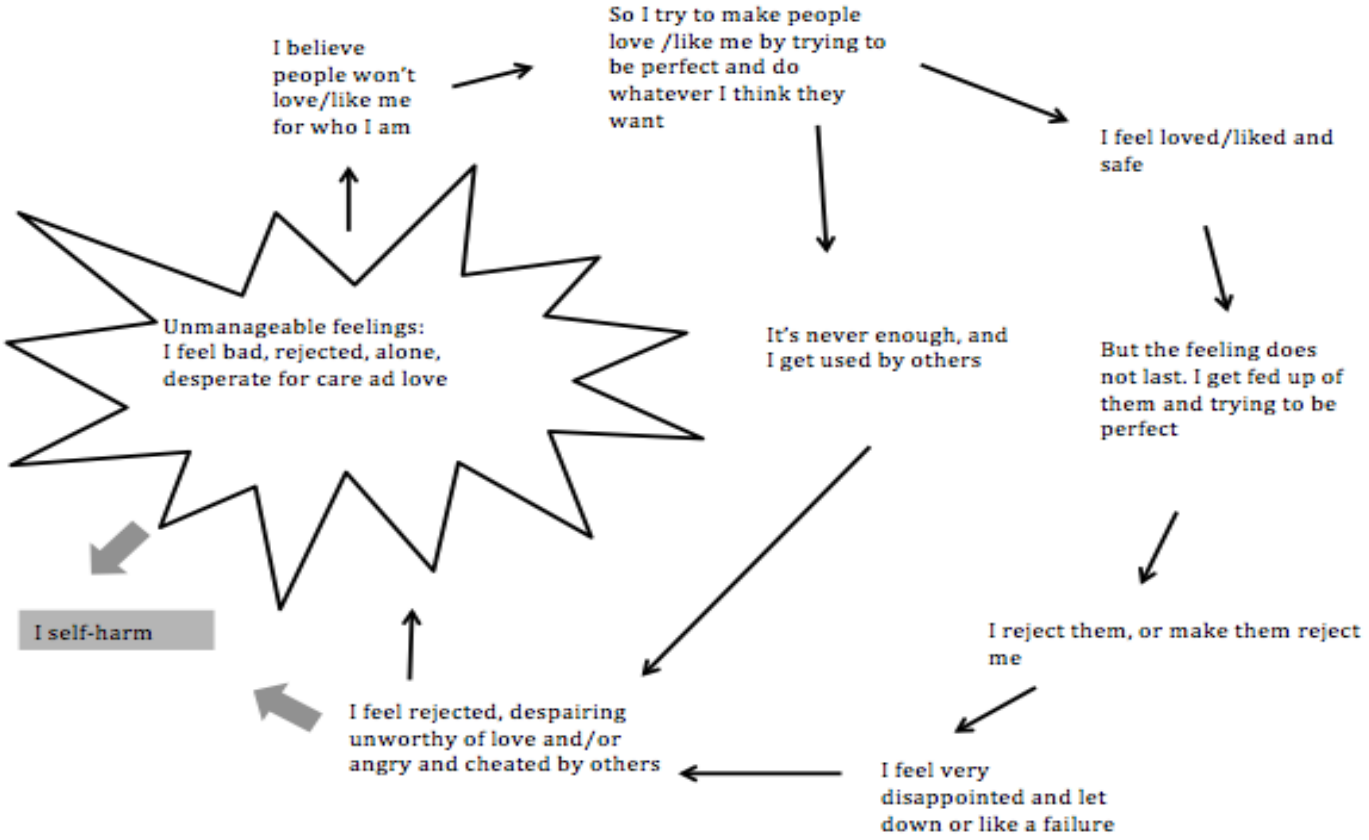
'Feeling out of control' Map



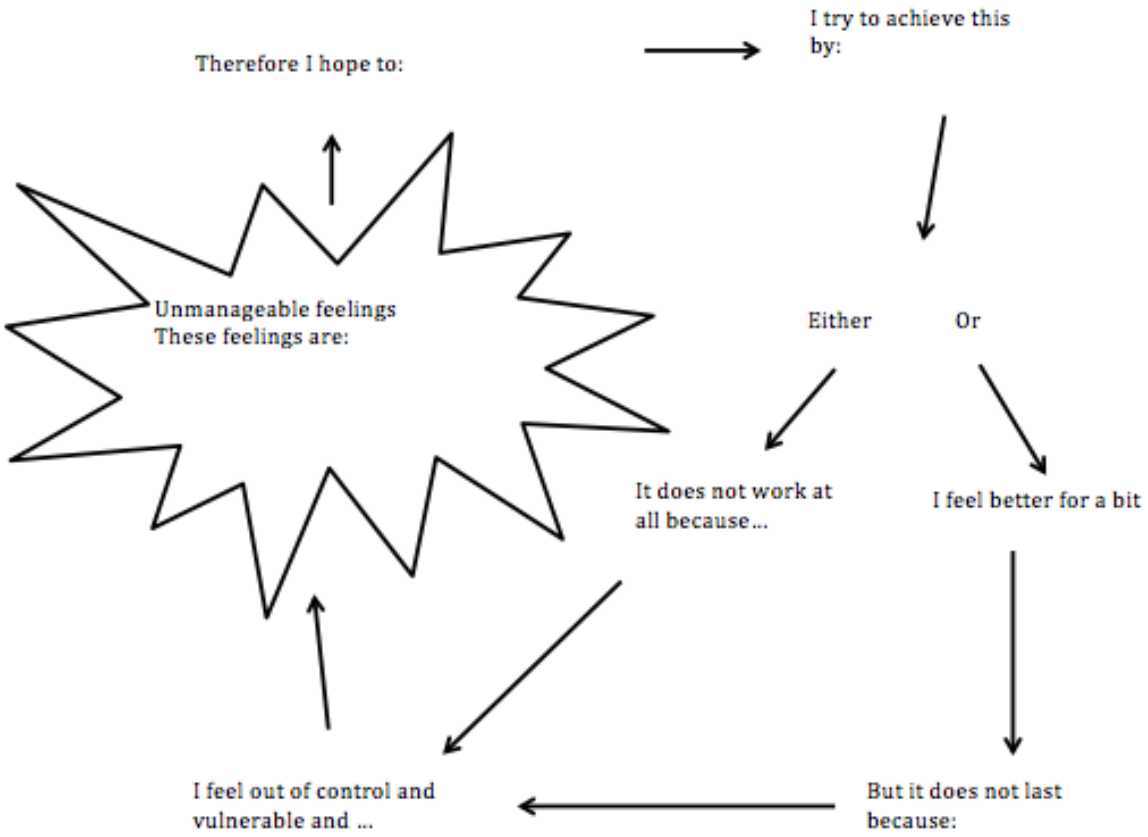
'Cutting off from feelings' Map



'Feeling helpless' Map



'Wanting others to like or love me'
Map


Therefore I hope to:
I try to achieve this by:
Unmanageable feelings
These feelings are:
Either
Or
It does not work at all because…
I feel better for a bit
I feel out of control and vulnerable and …
But it does not last because:

Blank Map

Appendix M: Client satisfaction questionnaire

A Case-Series Examination of a Brief CAT-Informed Intervention for Young People that have Self-Injured

Please enter your individual participant reference number in the box (You have been sent this number in the email or text reminding you to do this survey).

Please read the questions and click the box that best reflects your answer to the question

Client satisfaction/acceptability questionnaire

Thank you for participating in the CATCH-Y study. We are asking participants to complete a questionnaire to gather feedback on their experience of the study.

Please read the questions and circle or write in the box your answer to the question.

Assessment sessions:

These questions are about the Repertory Grid task (this was the task where you were asked about yourself and different people in your life) that you will have been asked to do before you started the therapy.

1. I understood how to complete the repertory grid

   Certainly True *Partly True* *Not True* *Don't know*

2. I found the repertory grid easy to complete

   Certainly True *Partly True* *Not True* *Don't know*

3. I found completing the repertory grid uncomfortable or upsetting

   Certainly True *Partly True* *Not True* *Don't know*

Therapy sessions:

4. I found attending the sessions a positive experience

   Certainly True *Partly True* *Not True* *Don't know*

5. I found the therapy sessions helpful

   Certainly True *Partly True* *Not True* *Don't know*

6. I felt I could speak about my difficulties safely within the sessions

   Certainly True *Partly True* *Not True* *Don't know*

7. My views and worries were taken seriously by the therapist

   Certainly True *Partly True* *Not True* *Don't know*

8. I felt the therapist knew how to help me

   Certainly True *Partly True* *Not True* *Don't know*

9. I feel more hopeful about the future

   Certainly True *Partly True* *Not True* *Don't know*

10. If a friend needed this sort of help, I would suggest to them to come here

    Certainly True *Partly True* *Not True* *Don't know*

Was there anything you liked about the therapy?
(Please write your answer in the space below)

Was there anything you disliked about the therapy?
(Please write your answer in the space below)

Any additional comments?
(Please write your answer in the space below)

Thank you for completing the questionnaire.

Appendix N: Content analysis of repertory grid constructs

Supplementary analysis on RG data: Content Analysis

Method

(3) A content analysis was conducted on elicited constructs using the Classification system for Personal Constructs (CSPC; Feixas et al., 2002). The CSPC provides a framework for grouping constructs using six main areas: moral, emotional, relational, personal, intellectual, and values. The reliability of the CSPC is very high compared to standard norms (Feixas et al., 2002) and has been used in previous research (Wittkowski et al., 2019). MM and SH categorised the constructs independently. MM compared the number of constructs rated similar by SH and presented the findings as a percentage.

Results

Content analysis of constructs

Table Nine displayed the results from the content analysis; 90 constructs were elicited, and grouped into categories using CSPC (Feixas et al., 2002). The majority were classified as 'emotional' (27.78%) and the remaining constructs mostly related to 'personal' (24.44%) and 'moral' (16.67%). A second rater also categorised the constructs to check for reliability in the findings (SH). The 'moral' category had 100% agreement, and the lowest was the 'values' category with 67% agreement. The researchers (MM and RH) also noted how the younger participants generally used emotional words to describe constructs rather than a range of categories.

Content analysis of constructs

Category	Number of constructs (%)	% of constructs rated the same by second rater	Construct examples
Emotional	25 (27.78%)	96%	'Happier in mood – unhappy' 'Calm/worried'
Personal	22 (24.44%)	55%	'Confident – not confident' 'Quiet – Loud'
Moral	15 (16.67%)	100%	'Kind – Mean' 'Caring – Rude'
Intellectual	13 (14.44%)	86%	'Coping – Struggling' 'Motivated – inability to do stuff'
Relational	11 (12.22%)	69%	'Asking for Help – Isolating self' 'Comfortable around others – not comfortable around others'
Values	4 (4.44%)	67%	'Purpose – No meaning' 'Take control – feeling in control'
Total	90 (100%)	79%	

Discussion

The findings indicated how adolescence construction of self develops as they get older, as the younger participants mainly used emotional language, rather than abstract or relational language. Previous research indicates cognitive and affective maturity increases through adolescence, which means less concrete constructs are used and an increase in evaluative and reflective constructs occurs (Procaccia et al., 2014). This is mirrored in the findings of the current study and suggests eliciting constructs may provide a useful insight into how and where the therapy should be implemented based on individual's reflective competence.

Appendix O: Results from the SITBI (Nock et al., 2007)

SITBI Results

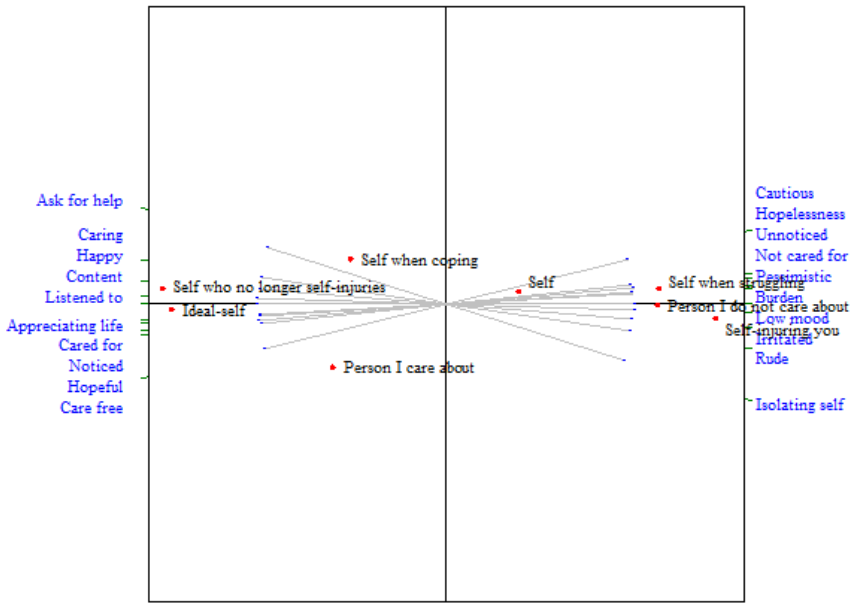
SITBI results	n
Mean age of first Self-Injuring (range), years	13 (11-15)
Types of self injuring	
Cut or carved skin	13
Picked areas of your body to the point of drawing blood	6
Hit yourself on purpose	8
Gave yourself a tattoo	2
Scraped your skin to the point of drawing blood	6
Inserted sharp objects into your skin or nails	2
Number of self-injuring in lifetime	
11-30 times	4
31-50 times	6
51+ times	3
Number in the past years	
11-30 times	7
31-50 times	5
51+ times	1
Number in past month	
1-5 times	10
6-10 times	3
Number in past week	
0 times	6
1-5 times	7
Length of time of thought before self-injuring	
1-2 day	1
1-60 seconds	2
1 – 60 minutes	2
Less than one day	2
Wide range (spans > 2 responses)	6
Mean future self-injuring likelihood (range)*	3.5 (2-4)

Note (*) *max rating four*

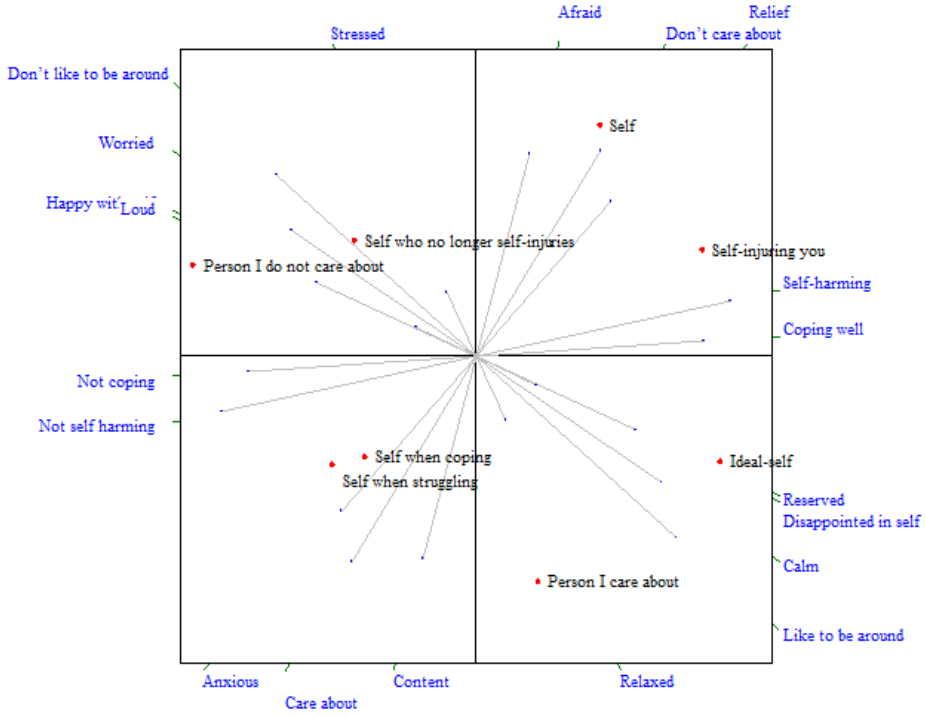
Appendix P: Supplement file including all participants' baseline repertory grids

Supplementary file of participant's baseline repertory grids

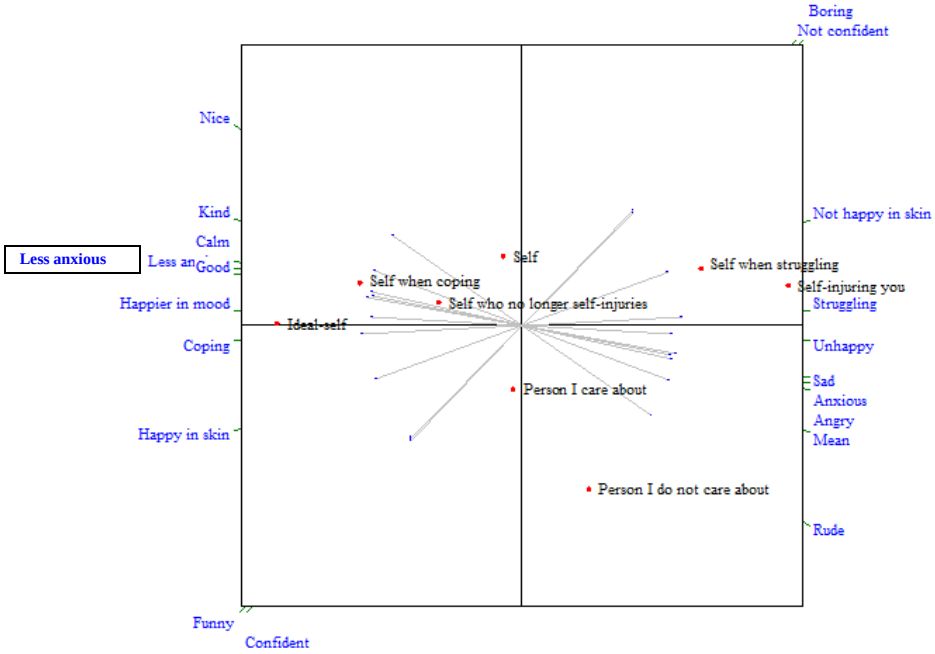
Participant 1 (Figure 4 in text)



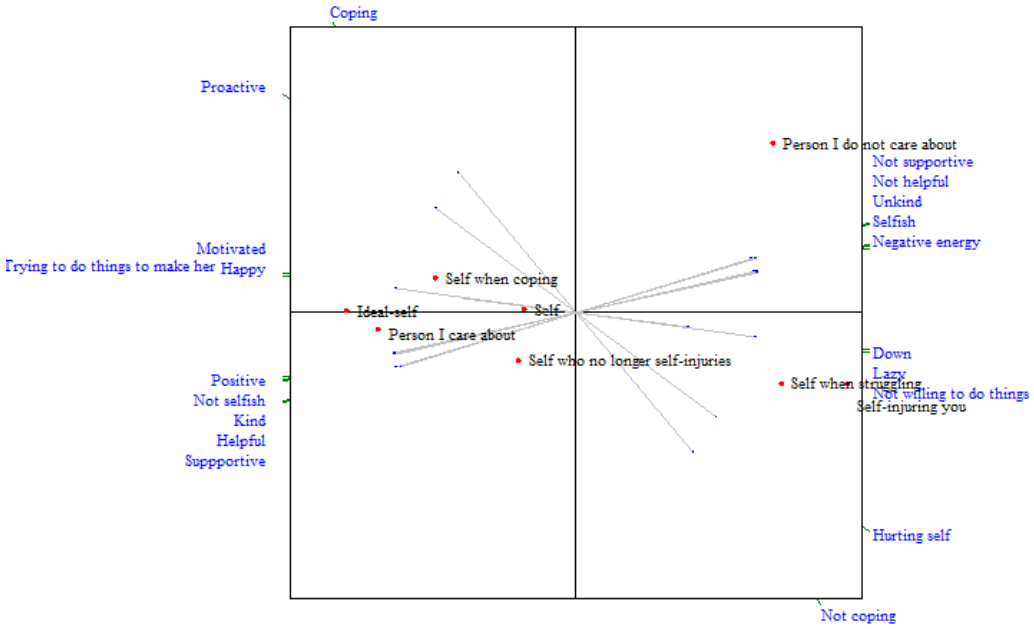
Participant 2 (Figure 5 in text)



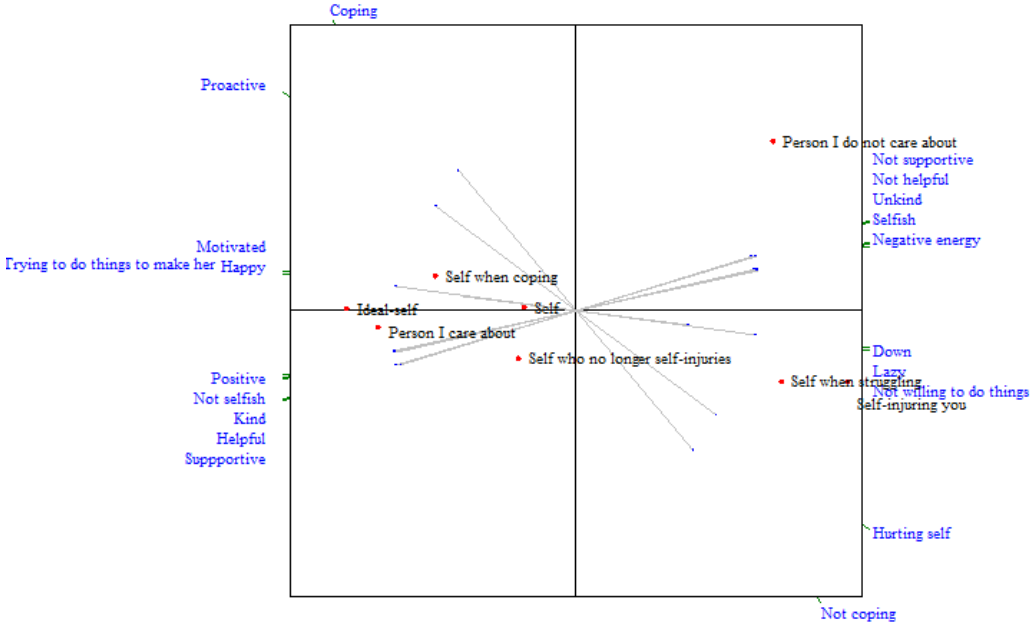
Participant 3 (Figure 6 in text)



Participant 4

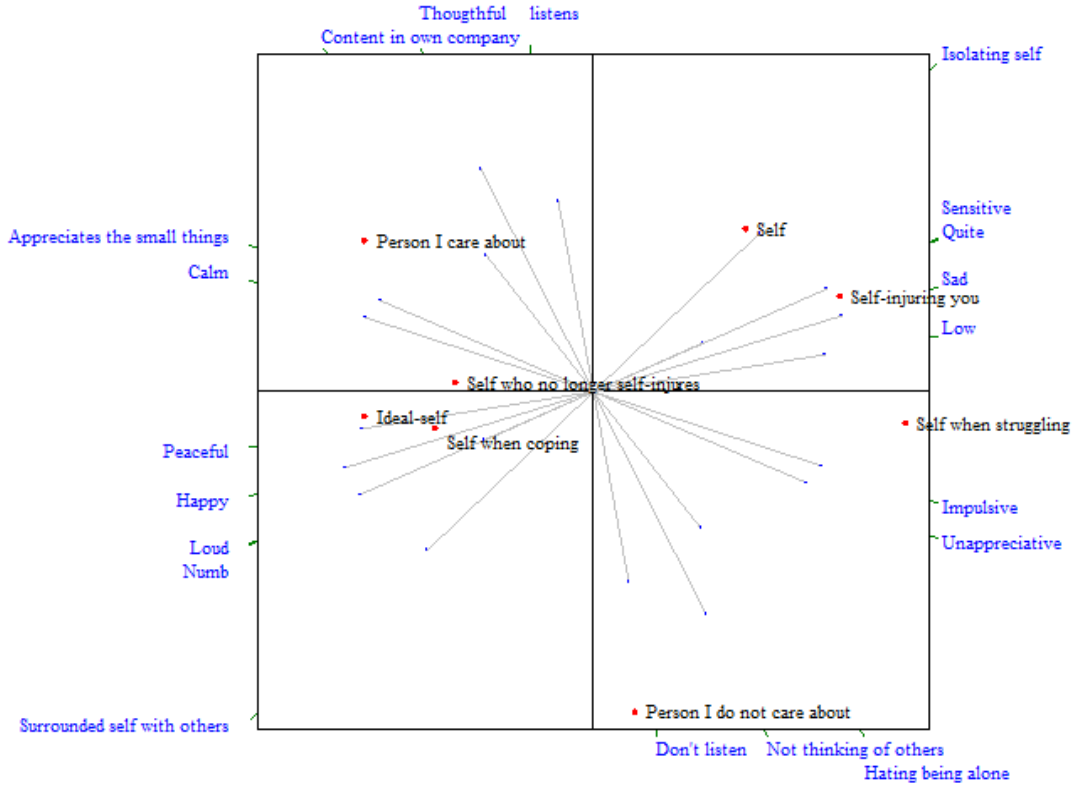


Participant 5

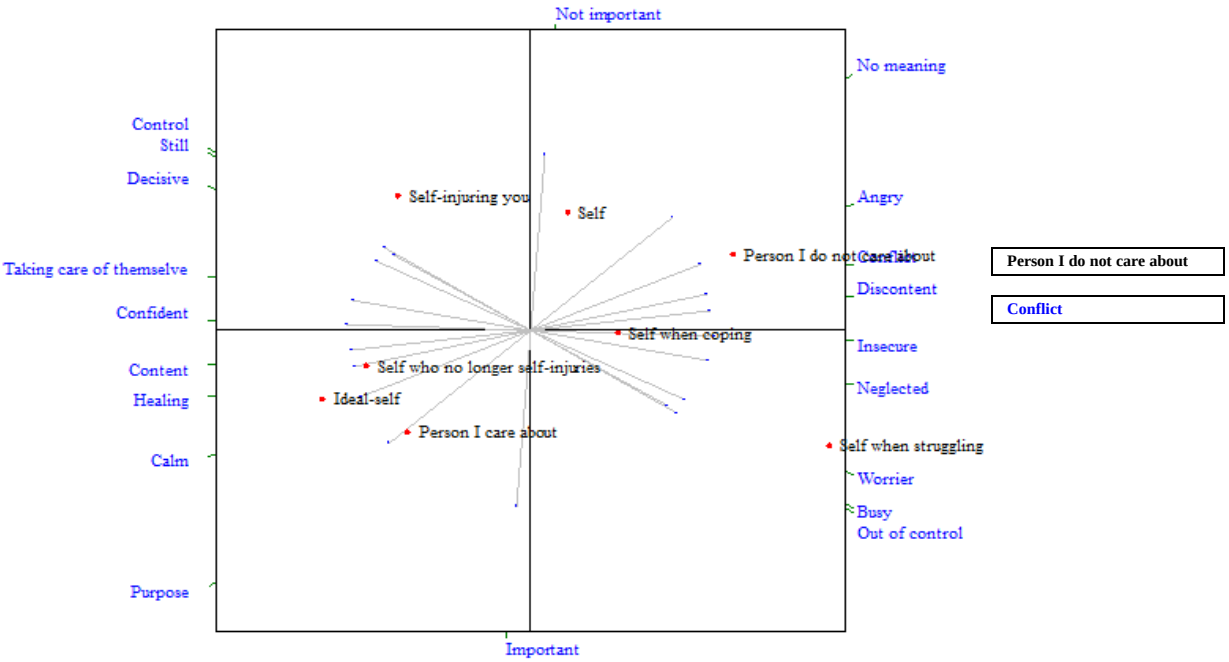


Participant 6

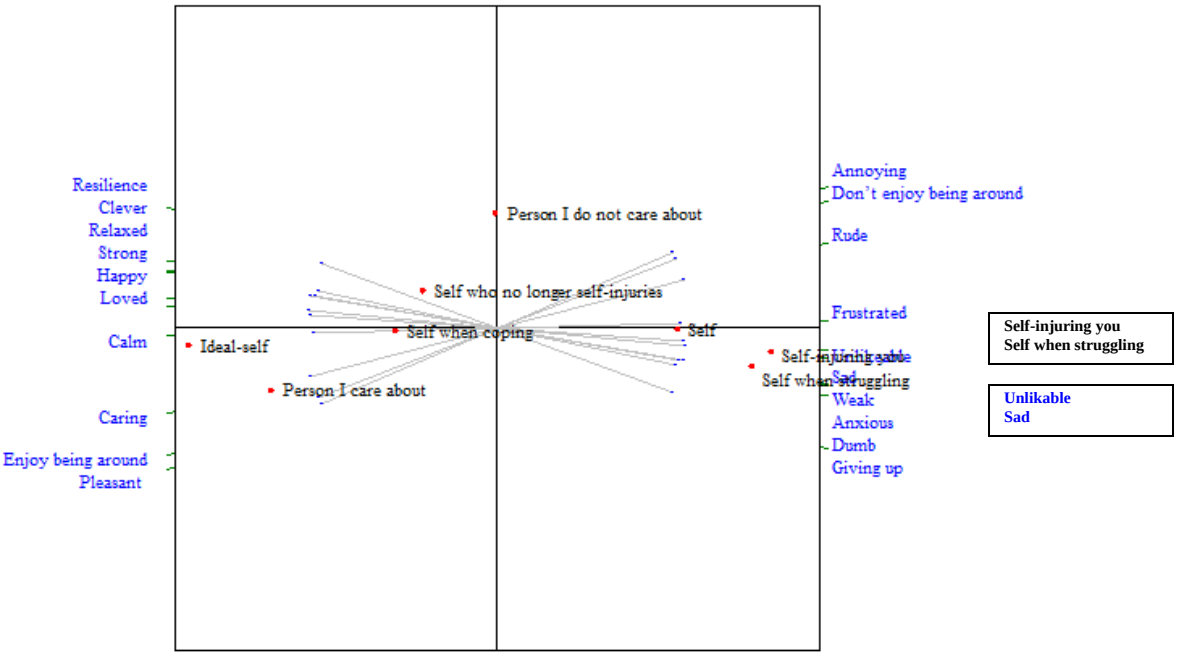
Participant 7



Participant 8



Participant 9



Appendix Q: Risk protocol

A Case-Series Examination of a Brief CAT-Informed Intervention for Young People that have Self-Injured

Risk protocol

Overview

This protocol has been developed in collaboration between Alexandra Brown (Trainee Clinical Psychologist), Cameron Latham (Expert-by-Experience and Mental Health Consultant), Dr Peter Taylor (Clinical lecturer and Clinical Psychologist) and Dr Adam Danquah (Clinical Lecturer and Clinical Psychologist).

The protocol has been further adapted for working with young people by Dr Samantha Hartley (Clinical Lecturer and Senior Clinical Psychologist), Molly Marsden (Trainee Clinical Psychologist), Rebecca Haw (Trainee Clinical Psychologist and Dr Rachel Williams (Clinical Psychologist).

General principles

A realistic and genuine discussion should be had with all participants during the first meeting (prior to consent being taken) about the possibility of distress/risk during the study, and what might be a helpful response if this were to happen for them. Risk related information plans will be shared with clinicians and parents if needed (either directly or via clinician). Researchers will be open with young people about decision making in relation to risk from the beginning of the study and plans will be developed together.

This discussion should cover helpful contacts, any current risk management planning and other strategies they find helpful at times of distress, possibly also including other suggestions for helpful resource (e.g. Childline, Young Minds, Samaritans) if needed. The researcher will agree with the young person that they will monitor risk throughout the therapy i.e. by checking in with the person (towards the beginning) what their level of risk is, and checking in again if their level of distress appears to worsen during the session. An agreement will be made with the young person at the start of the work that they would try to let the researcher know if they felt their risk had changed.

Another goal of this discussion is to explain the limits of confidentiality and discuss how to manage this should issues arise. Furthermore, during this discussion it should be agreed what actions will be taken by both participant and researcher if risk becomes apparent, with the emphasis (except in extremis) upon the researcher and participant building understanding and trust. Just as the researcher can be trusted to follow ethical and research standards, the participant should also be ‘trusted’ to know how to manage their emotions and feelings.

The researcher should also explain to the participant the study email account will not be checked consistently throughout each day, or overnight. The researcher

will not be available outside of meetings or via telephone contact between sessions, and it will also be sensitively explained to participants that the researcher cannot act as a crisis or clinical service. However, it is possible that participants may become distressed while in contact with the researcher during the initial baseline session, therapy sessions, and the debrief session. Therefore, the risk protocol covers these meetings and telephone calls.

Procedures to be followed throughout the study:-

To be enacted if the researcher is concerned about the participant's current and subsequent welfare, for example if a participant:

- Reports or displays notable distress
- Reports thoughts or feelings related to suicide
- Reports current urges to harm themselves

If participant reports or shows signs of low or moderate distress:

- Pause the session/phone call (with the participant's agreement) and allow time to talk about other topics including how the participant feels, and then carefully observe levels of distress.
- If distress seems to have lessened, discuss with participant whether or not they wish to continue with the study/the current phone call or session.
- If distress remains prominent or worsens, follow steps below.

If participants report more severe distress or thoughts/feelings related to current urge to self-harm or suicidal ideation:

- Halt or pause the session/phone call.
- Try to assess what the participant needs at this point in time - active listening alone, validation, acknowledgement, and normalisation.
- Allow the participant an appropriate amount of time to say more about how they are feeling and allow time to listen to them, be non-judgmental and empathic.
- Ask specifically about any thoughts of suicide, if not already mentioned.
- Where these are present, assess level of immediate risk (this should be done as part of a calm, collaborative conversation, avoiding appearing panicked). The researcher should ask about intent, planning/access to means, and how hard it feels to resist this for both suicide and non-suicidal self-injury (NSSI). A Likert scale could be used to assist this discussion and quantify risk.
- Ask the participant: Do you feel that taking part in this interview is affecting how you feel? If so, in what way? / Is participation making you feel more like self-injuring or suicidal?

- If so, explain that the researcher has a duty of care and refer to current risk management (previously discussed) or previously agreed plan of action.
- Risk management should be a collaborative process, taking into account the wishes of the participant; however the limits of confidentiality should be reiterated.
- In judging the level of risk associated with urges to self-harm/attempt suicide it is important to involve the participant themselves in discussing this. In doing this the researcher can check with the participant about the usual severity of their self-harm and aftercare (including any aftercare they provide themselves such as wound cleaning and also any health services they routinely attend), and also their degree of suicidal ideation.
- Be aware of the increased likelihood of subsequent contact, perhaps taking the form of a distressing email (see guidance below). The email account should have a standard automatic reply that reiterates signposting information.

Sharing risk information with parents/caregivers and their CAMHS clinical team

Researchers will make case-by-case judgements about when to share information with parents/caregivers. This will be based on what the young person's current known risk is and the safety plan currently in place i.e. if their known risk is that they have thoughts to self-harm but do not act on these thoughts, it is likely that the parents/caregivers and/or CAMHS clinician would not be notified about the on-going thoughts of this nature. However, if their thoughts became more suicidal or they had acted on thought to self-harm, then the researcher would be looking to share this information as this would be a change in their risk presentation.

Similarly, if they were known to want to self-harm but were not able to at present due to parent/caregiver removing sharps, the research would likely inform parent/caregiver and CAMHS clinician. If the young person had managed to self-harm by obtaining access to means (e.g. access to sharp objects or medication), then parent/caregivers and CAMHS clinician would be informed to develop or update a safety plan to keep the young person safe.

Sharing risk information with parent/caregivers and CAMHS clinical teams for young people under/over 16 years old

Similarly to the above, researchers will make the judgement on what to share with parent/caregivers based on the young person's risk presentation, rather than whether they are under/over 16 years old. Researchers will base this decision largely on whether there is a need to change the CAMHS risk plan that is currently in place. If yes, researchers will share information with parent/caregiver and CAMHS clinical team.

Researchers will disclose self-harming behaviours such as using blades, razors, and sharp bits of glass/plastic to cut the skin as these have the potential to be lethal. However, this is not an extensive list and researchers will use their clinical judgement when making decisions. If the young person is self-harming by scratching e.g. with fingernails, Lego bricks, as long as it was not causing bleeding, then the researchers may not disclose specifics to parents/caregivers and CAMHS clinicians. However, researchers would let parent/caregivers know that the young person was experiencing increased distress and/or urges to harm themselves so that they could be mindful of this.

Where taking part in the study is having an adverse effect on the participant the study should be immediately halted.

If the researcher considers the risk level to have returned to low to moderate, and the participant is euthymic, lucid and appears to have capacity, the participant will be asked if they wish to continue with the phone call, session or interview, and be reminded of their right to withdraw at any point without adverse consequences for their psychological and health care.

If the participant does not feel able to continue the phone call, session or interview, but is eager to remain involved in the research, this could be discussed with them, once they have had a break from the study, and once the issue has been reviewed by the study supervisors.

The participant would be judged as high risk of intentional or accidental suicide if

- Current suicidal ideation present, and suicidal intent rated moderate to high, but no plan or access to lethal means.
- Urges to self-harm that are hard to resist are present and could result in severe injury (e.g. planned overdose or hanging), long-term disability or death.

Clinical judgement should be employed in making this judgement and a cautious approach should generally be adopted where uncertain. The participant should be involved in this discussion where possible.

If high level of risk is identified **then the researcher should follow the procedure below:**

- ❒ Encourage participant to immediately contact support(s) and clinician(s)/psychiatric emergency services to inform of risk
- ❒ If the participant does not feel able to do so, the researcher will seek permission from the participant to contact these people on their behalf (clinician(s)/contact support(s)/psychiatric emergency services) to inform them of level of risk and enlist their assistance in getting participant to a clinician. However, if the participant does not consent, it will be explained that confidentiality will need to be broken in order to share relevant risk information*.

- ❒ Call Project Supervisor(s)

- ❒ Record adverse event

* Where researcher is required to contact and inform others of risk this should be first discussed with the participant where possible. It can be emphasised this action is about keeping the participant safe. It can also be discussed if the participant has preferences regarding who you contact or how you share this information. Where possible (and not conflicting with duty of care or other requirements of the researcher) participants' preferences should be taken into account.

The participant would be judged as being at imminent risk of intentional or accidental suicide if:

- Current suicidal ideation present, and suicidal intent rated moderate to high, with plan and access to lethal means.
- Plan to self-harm in a way that could result in severe injury, long-term disability or death (e.g. planned overdose or hanging), and access to means

If imminent level of risk is identified **then the researcher should follow the procedure below:**

- ❒ The research will initially focus on ensuring the young person feels safe. The researcher will then signpost the young person to further support e.g. helplines, CAMHS clinician, and parent or carer.
- ❒ Call Project Supervisor(s) only once the young person is safe.
- ❒ If consent can be gained for the steps below then this is preferable, if not the researcher must break confidentiality.
- ❒ Researcher tells/calls clinician (and people in support network, ideally with the participant's consent) to inform them of level of risk and enlist their assistance in getting subject to a clinician.
- ❒ If in with researcher: Participant should not be left alone. They can leave with family member/friend, researcher should accompany Participant to Hospital Emergency Department.
- ❒ If on the phone: Participant should not remain at home alone. Researcher tells/calls clinician (and people in support network, with the participant's consent) to inform them of level of risk and enlist their assistance in getting the Participant to a clinician.
- ❒ If an ambulance is being sent, stay on the phone with the Participant until the ambulance arrives. Researchers will have a spare mobile phone available during meetings so they can remain on the phone with the participant.
- ❒ If Participant refuses to do the above: call 999 and inform of subject's location and risk level.
- ❒ Call participant 1-2 days following the above to follow up, repair rupture if appropriate
- ❒ Record serious adverse event

Risk expressed via email

It will be made clear that the address is to be used for the research project only and that emails will only be checked at regular intervals. This will be noted on advertising material and also within an automatic reply. Moreover, the automatic reply will reiterate signposting information. It will be made clear to participants that researchers will not necessarily be able to follow up emails by contacting participants where risk or distress is shared. This is important as there is a possibility that participants may understandably seek care from the research team, if they feel distressed or vulnerable. The team will set up clear boundaries related to email use, including the account only being checked during normal office hours (9am-5pm) and from a work location.

Where researchers read an email from a participant that indicates high or immediate risk to themselves they should act by informing the clinician (and people in the participant's support network, ideally with the participant's consent) to inform them of level of risk. If the researcher has an appointment scheduled with the individual they should first call the participant to check they are still wish to see the researcher and check-in with the participant with regards to their level of risk and how they are feeling at that point.

Personal Safety and Boundaries

In responding to the above situations it is important that the researcher balances these actions against their own personal safety, and should avoid situations where their personal safety feels compromised. Lone working policies from The University of Manchester and partaking NHS trusts will be adhered to.

In addition, where any of the above incidents take place the researcher should inform their supervisor(s) and arrange a time to debrief with regards to the situation, including a focus on how they have personally been affected.