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Changing practice to support self-management and recovery in mental illness: Application of an implementation model

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Competing interests

None declared.

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Keywords

Abstract

Health services introducing practice changes need effective implementation methods. Within the setting of a community mental health service offering recovery-oriented psychosocial support for people with mental illness, we aimed to (a) identify a well-founded implementation model and (b) assess its practical usefulness in introducing a new program for recovery-oriented self-management support.

We reviewed the literature to identify implementation models applicable to community mental health, and having corresponding measurement tools. We used one of these models to inform organisational change strategies.

The literature review showed few models with corresponding tools. The Promoting Action on Research Implementation in Health Services (PARIHS) model and the related Organizational Readiness to Change Assessment (ORCA) tool were used. PARIHS proposes prerequisites for health service change and the ORCA measures the extent to which these prerequisites are present. Application of the ORCA at two time points during implementation of the new program showed strategy-related gains for some prerequisites but not for others, reflecting observed implementation progress. Additional strategies to address target prerequisites could be drawn from the PARIHS model.

The PARIHS model and ORCA tool have potential in designing and monitoring practice

change strategies in community mental health. Further practical use and testing of

implementation models appears justified in overcoming barriers to change.

Summary statement

What is known about the topic?

- Guidance from implementation science models may improve success in achieving planned practice changes, but these models still need prospective testing in practice situations.

What does this paper add?

- The Promoting Action on Research Implementation in Health Services model was one of a small number judged easily useable in community mental health, and showed promise in guiding practice change.

Introduction

Practice change and implementation science

An ongoing problem in health care is the mismatch between health care services and interventions that are known to be the most effective and cost effective and the care that is received by many patients (Grimshaw *et al.* 2012). Recognition of the difficulties in changing health care processes has led to a new stream of "implementation" research to building knowledge for more successful change initiatives. Studies without a clear underpinning theory have contributed little to a generalisable implementation knowledge base (Bosch *et al.* 2007; Checkland *et al.* 2009; Proctor *et al.* 2009; Ovretveit 2011) therefore researchers are now being asked to show a theoretical basis in change projects so that the theories are thereby tested and refined (The Improved Clinical Effectiveness through Behavioural Research Group 2006; Davies *et al.* 2010).

However, there are several obstacles to use of theoretical models to guide practice change projects. One difficulty is the sheer number of models available in the literature with none yet properly tested empirically (Helfrich *et al.* 2010; Damschroder and Hagedorn 2011; Ovretveit 2011). A further difficulty is in measuring the components of the available models. Measurement allows implementation leaders to identify barriers, and then to monitor progress in reducing these during a change project (Gagnon *et al.* 2011; Emmons *et al.* 2012; Finch *et al.* 2012) but available survey tools have limited testing and unclear links with published change models (Scott *et al.* 2003; Weiner *et al.* 2008; Finch *et al.* 2012).

A model in a mental health setting

Our group, comprising practitioners and researchers, wished to use a theoretical model in the context of introducing a self-management support program into a mental health organisation. Organisations providing recovery-based psychosocial care in severe mental illness are introducing self-management supports (Sterling *et al.* 2010). Adoption of self-management supporting programs, though, requires that practitioners overcome considerable and often unexamined practice barriers. For example, current health care processes, norms and professional roles do not provide for the time, the information or the communication requirements for shared decision making with patients (Kennedy *et al.* 2007; Torrey and Drake 2010). As a result, health services often fail to fully implement self-management support (Salyers *et al.* 2010; Uppal *et al.* 2010; Torrey *et al.* 2012). Practice change to better support self-management is therefore a priority for mental health services as well as an example of practice change more generally in health care.

Models available to guide implementation of self-management support

While implementation models are available in the research literature, it may not be easy for practitioners to put them into practical use. One difficulty is the sheer number of models available (Damschroder *et al.* 2009; Tabak *et al.* 2012) with none properly tested in practice situations (Helfrich *et al.* 2010; Chaudoir *et al.* 2013). Another difficulty is in measuring the pre-requisites for change proposed within a particular model as few models have explicitly linked survey tools (Chaudoir *et al.* 2013).

In the context of a self-management supporting practice change, we wished to evaluate the usefulness of implementation models in informing the organisational introduction of self-management support. We aimed to (a) select a particular implementation model with

linked measurement tools that could be readily applied in a mental health care organisation

(b) use the model and associated tools to assess and generate practice change strategies.

Methods

Setting

UnitingCare Wesley Port Adelaide (UCWPA), a provider of government-funded psychosocial support services to South Australians with severe mental illness, ,wished to improve the recovery-orientation of its psychosocial support service. A UCWPA review identified the Flinders Program[TM] (Flinders Chronic Condition Management Program) as the new service delivery framework. The Flinders Program[TM] has a strong self-management orientation. It provides the health worker with tools and structured motivational process to collaboratively agree and facilitate achievement of both clinical and psychosocial goals (Lawn *et al.* 2007; Lawn *et al.* 2009). The program has been associated with improved self-management in mental health and physical health conditions and comorbidities (Lawn *et al.* 2007; Battersby *et al.* 2008; Crotty *et al.* 2009; Battersby *et al.* 2013).

A practice change was planned, requiring UCWPA workers to base all psychosocial support work on Flinders Program[TM] processes and measures. UCWPA and academic partners at Flinders University aimed to use research-based processes to inform the practice-change.

Methods

Participants

Participants were a sample of five of the fifteen UCWPA teams undergoing implementation of the Flinders Program[TM]. The five sites were in the southern part of metropolitan Adelaide and rural areas to the south of Adelaide.

Procedure

Selection of model and measurement tool

Literature was searched for models proposing the factors required for implementation of health care change, applicable in mental health care settings. Databases searched were Medline and PsycInfo, combining terms for organisational and practice change, theories, and heath care services. Substantial work in implementation science began after 2000 (Proctor *et al.* 2009), therefore publications 2000 to date were sought at the start of the project (June 2011). For each model identified, we searched for associated measurement tools using the citation index, Google Scholar.

For models found with associated measurement tools, assessments were made of correspondence between model and tool, applicability to community mental health, and ease of completion. Correspondence between model and tool was assessed by inclusion of all model components. Applicability in mental health was assessed based on any reported empirical use in similar settings and/or face applicability judgement by UCWPA staff. Ease of completion was assessed using number of items (Edwards *et al.* 2002).

Based on these assessments, a model with closely corresponding tool, high relevance to mental health and relatively low respondent burden was selected.

Use of the model and tool

The measurement tool was first used soon after a high-level decision within UCWPA to implement the Flinders Program^{TM} (T1, August 2011) and then again, nine months later at a later stage in the active implementation process (T2, April 2012).

Change management strategies in use between the two time-points were recorded. In this real practice setting both management-instituted organisational change strategies, and

any additional strategies prompted by examination of scores at T1, were in use between T1 and T2. Score changes would show effects of both.

Means and standard deviations were calculated and t-tests performed (2 tailed, unequal variances) to compare means at the 2 time-points for ORCA Evidence, Context and Facilitation scales.

The study was approved by the Flinders University Social and Behavioural Research Ethics Committee which advised that signed respondent consent was not required as return of a survey indicated consent. Respondent anonymity provided the required confidentiality, though this prevented matching returns from two time points in analyses.

Results

Selection of model and measurement tool

The following three models were identified as having related measurement tools.

- Practice Change Model (Cohen *et al.* 2004)

- Texas Christian University Program Change Model (Simpson 2009)

- Promoting Action on Research Implementation in Health Services (PARIHS) (Rycroft-Malone *et al.* 2002)

Results of assessments of models and tools are shown in Table 1. The PARIHS model (Rycroft-Malone *et al.* 2002) and corresponding Organizational Readiness to Change Assessment (ORCA) tool (Helfrich *et al.* 2009) were selected as best meeting the criteria of good relationship between model and tool, applicability to practice change in mental health and relatively low respondent burden.

The PARIHS model (Rycroft-Malone *et al.* 2002) has been used to conceptualise implementations in various organisations (Helfrich *et al.* 2010). The model proposes that stakeholder perceptions about three core organisational requirements predict implementation success. The three requirements are Evidence for the proposed practice change, quality of the organisational Context for the change and active Facilitation of the implementation. Each core requirement has further specified components. Evidence includes formal research evidence, professional experience or knowledge, and service user preferences. Context includes leadership culture, staff culture, leadership practices, leadership feedback, readiness to change among opinion leaders; and resources to support practice changes more generally. Facilitation includes senior leadership characteristics, organisation characteristics, clinical champion characteristics and organisational communication.

The ORCA tool was developed by Helfrich and colleagues (Helfrich *et al.* 2009) to operationalize the PARIHS model. Each of the three core requirements in the model (evidence, context and facilitation) is represented by an ORCA scale. Each scale is made up of numbered sub-scales for components of the core requirement. Each subscale in turn is made up of three to six items (labelled a,b,c etc) corresponding to lowest-level sub-components of the PARIHS model (Hagedorn and Heideman 2010). The ORCA has undergone initial validation work (Helfrich *et al.* 2009).

Use of the model and tool

Administration of ORCA

A few wording modifications were made to the ORCA to reflect UCWPA organisational structure, usual terminology in the Australian mental health sector, and services provided in psychosocial support. For example, "consumer" was used rather than

"patient", and "recovery care" was used instead of "clinical care" or "treatment". Subscale 13 on the original ORCA instrument refers to an implementation clinical champion. As this role was not present in UCWPA, subscale 13 was omitted (though original ORCA scale numbering is retained).

ORCA responses

Response rates were 79% of the 34 staff at T1, and 53% of the 32 staff for T2 (where fewer reminders were used).

"Don't know/Not applicable" responses are one indicator of the applicability of a tool and these responses were selected by more than 25% of respondents for some ORCA items. At T1, six items received this response (evidence scale items 3b and 4b and facilitation scale items 18a, 18d, 19d and 20d). At T2, five items received this response (context scale item 11a, and facilitation scale items 18a, 18d, 19d and 20d). These responses may indicate that organisational processes referred to in the item were not fully in place, that staff lack knowledge about them, or that wording was not clear. Understanding and wording of these items will be reviewed for future ORCA surveys in the organisation.

ORCA scores and change strategies

Table 2 shows ORCA scores and Table 3 shows change strategies with proposed relationships to model components. This allows assessment of links between strategies for PARIHS components and scores and score changes. The overall Evidence score at T1 was 3.4 (SD0.91), lower than the overall scores for Context at 4.1(SD0.85) and Facilitation at 3.9 (SD0.68). While UCWPA leaders had selected the Flinders Program[TM] based on published evidence, it appeared that this information had not been shared effectively with

the staff group. As shown in Table 3, management-initiated strategies related primarily to other components of the model, with a single presentation to staff relating to the Evidence component. New strategies targeting knowledge of research studies were therefore initiated; a plain English digest of published research provided to all staff, and a further presentation to staff explicitly featuring research evidence. At T2 the overall Evidence score was 3.7 (SD1.37), significantly higher than at TI (p0.03).

Scores at T1 for Context and Facilitation were higher than for Evidence and addressed by planned management-initiated strategies (primarily training, team and organisational meetings, and performance metrics) therefore not targeted by the research group for further change strategies. Increases in these scores between T1 and T2 were not significant.

Organisational data on the extent of practice change

Organisational data indicated increasing use of the Flinders Program[TM] during the period of the study. Sixty five staff were trained to use the Flinders Program[TM]. At T1, no service recipients had a Flinders Program[TM] while at T2, newly referred service recipients were receiving the Flinders Program[TM], with partial implementation for existing service recipients. Implementation was incomplete at the end of the study measurement period and continued beyond it.

Discussion

To summarise findings, among the plethora of available implementation models and measures, we identified few models which had well-linked measures and which appeared readily useable for implementation of practice change by organisational leaders in psychosocial support. The PARIHS model and the ORCA tool did meet these requirements and were adopted for use within an actual implementation. PARIHS and ORCA proved feasible for managing this organisational change.

In this project, the ORCA showed different ratings for prerequisites specified by PARIHS. The Evidence prerequisite (staff perceptions about strength of evidence) scored most poorly and this barrier was not well addressed by management-initiated change strategies. Evidence-related strategies were instituted and were followed by an increased Evidence score. This indicates a possible relationship between score and strategies. Context and Facilitation prerequisites showed non-significant improvement in response to strategies related to those prerequisites. This may suggest a lack of relationship between score and strategies. On the other hand, some strategies relating to these prerequisites were begun before the first ORCA administration and these prerequisites scored better even at the start, so the study may have been badly timed for detection of change for these prerequisites. Gradual implementation progress was indicated by other organisational data in line with the positive direction of change in ORCA scores.

Unforseen benefits of using a tool included creation of a process and a continued focus on implementing change, even during a period of significant senior staff changes. Use of the tool was not optimally integrated into the work of the UCWPA Quality and Planning Committee during the period reported. Potential was identified for greater practical use to inform and motivate the change leadership group. Strategies could be designed to directly

address individual ORCA subscales if the tool was integrated into change management in this way.

Some limitations of this study relate to the restricted use of the tool and model within this project. More comprehensive evaluation of implementation models and measures could be achieved by further rounds of change strategies and measurement, by closer alignment of change strategies with the model, by testing in other organisations, and by studies comparing outcomes from model-informed strategies with those from conventional strategies. Within this study, a lower response rate for the second survey meant that changes in scores could reflect differences in the groups responding rather than changes in the organisation over time. The study also used a model and tools that are still being refined. For example, additional PARIHS components are proposed (Rycroft-Malone *et al.* 2013), optimal weightings for the three major components of PARIHS are not yet determined (Helfrich *et al.* 2009) and ORCA validation work is incomplete (Helfrich *et al.* 2011). However, this drawback also applies to other models and tools in practice change implementation (Chaudoir *et al.* 2013). We also made some changes to the instrument to reflect the implementation setting (replacing "patient" with "consumer" and "clinical care" and "treatment" with "recovery care", and removing the subscale referring to an implementation clinical champion). These changes potentially weakened links with earlier validation work.

Overall, the PARIHS model and ORCA tool appeared applicable and potentially useful to improve the introduction of self-management in mental health. They provided structure and data which motivated and informed a practical self-management implementation. Further practical application and testing of these and other models and tools appear justified.

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Table 1. Assessment of relevance and burden of models and corresponding measurement tools

Model	Related measurement tool/s	Links with model	Use in community mental health	Number of items
Practice Change Model (Cohen *et al.* 2004)	Measuring Organizational Attributes of Primary Care Practices (Ohman-Strickland *et al.* 2007)	Measures some elements of 1 of the 4 major model components	Developed (Ohman-Strickland *et al.* 2007) and later used (Sloane *et al.* 2011) in primary health care	28
Texas Christian University Program Change Model (Simpson 2009)	Organizational Readiness for Change Simpson and Dansereau 2007	Measures the 4 components of the model (with different versions for different types of staff)	Developed for substance abuse treatment but modifications used other mental health situations (Hamilton *et al.* 2010)	129 (staff tool) and 115 (directors tool) (Simpson and Dansereau 2007)
Promoting Action on Research Implementation in Health Services (PARIHS) (Rycroft-Malone *et al.* 2002)	Two tools found: 1. Organizational Readiness to Change Assessment (ORCA) (Helfrich *et al.* 2009). 2. Alberta Context Tool (Estabrooks *et al.* 2009).	1. Measures all components of PARIHS, but authors state that further validation needed (Helfrich *et al.* 2009). 2. Measures "potentially modifiable" elements of 1 of the 3 major model components.	1. Not setting-specific (Helfrich *et al.* 2009; Hagedorn and Heideman 2010). 2. Versions for various settings and worker groups (Estabrooks *et al.* 2011).	1. 77 2. 56

Table 2. ORCA scores for scales and subscales at the two measurement time-points

Subscale number*	Elements measured	Time 1 mean (SD) N=27	Time 2 mean (SD) N=17
	Evidence Scale		
1	Own view on strength of evidence	3.2 (0.88)	3.4 (0.77)
2	Expert colleagues' views on strength of evidence	3.9 (0.60)	4.3 (0.75)
3	Research	3.5 (0.89)	3.8 (1.07)
4	Clinical experience	3.4 (0.87)	3.6 (0.81)
5	Service user preferences	3.4 (0.93)	3.6 (1.93)
	Evidence scale (items 3a to 5d)	*3.4 (0.91)*	*3.7 (1.37) p=0.03*
	Context Scale		
6	Leader culture	4.1 (0.79)	4.5 (0.64)
7	Staff culture	4.5 (0.68)	4.5 (0.51)
8	Leadership behaviour	4.2 (0.85)	4.3 (0.66)
9	Measurement (leadership feedback)	4.0 (0.87)	4.2 (0.86)
10	Opinion leaders	4.2 (0.66)	4.5 (0.58)
11	General resources	3.5 (0.87)	3.6 (1.04)
	Context scale (items 6a to 11d)	*4.1 (0.85)*	*4.3 (0.80) p=0.11*
	Facilitation Scale		
12	Leaders practices	4.0 (0.67)	4.0 (0.54)
14	Leadership implementation roles	3.9 (0.69)	4.0 (0.71)
15	Implementation team roles	4.1 (0.78)	4.2 (1.09)
16	Implementation plan	3.7 (0.73)	3.9 (0.89)
17	Project communication	4.0 (0.76)	3.9 (0.79)
18	Project progress tracking	3.9 (0.65)	4.1 (0.46)
19	Project resources and context	3.7 (0.73)	3.8 (0.78)
20	Project evaluation	3.9 (0.71)	4.1 (0.61)
	Facilitation scale (items12a to 20e)	*3.9 (0.68)*	*4.0 (0.73) p=0.08*

* Subscale 13 refers to Clinical Champions and was omitted because there were no Clinical Champion roles for this project.

Table 3. Implementation strategies in use before and between measurement time-points

Period	Stage of implementation	Details of strategies (*and related PARIHS component*)
	Exploration	
August 2010	UCWPA Community Mental Health senior management recognise need for the 15 teams to utilise a consumer centred common service model.	Delegate responsibility to the UCWPA Quality and Planning Committee for reviewing service models and recommending preferred model.
October 2010 – February 2011	Quality and Planning Committee recommend Flinders Program as preferred service model.	Literature research and review of models used by other services in the sector were compared with consumer centred principles.
	Adoption decision	
February 2011 – April 2011	Flinders Program accepted by senior management as the preferred service model.	Partnership established between UCWPA and Flinders University to assist with establishing and embedding the Flinders Program. Quality and Planning Committee to plan and monitor implementation. UCWPA Training Committee to arrange Flinders Program training for all teams.
	Flinders University Knowledge Exchange Grant enables study of the implementation of the service model.	ORCA the preferred research tool to evaluate the implementation.
	Formal partnership discussions between Flinders University and UnitingCare Wesley Port Adelaide Community Mental Health.	A Memorandum of Understanding, Intellectual Property Document and Flinders Program Licence Agreements initiated.
	Active implementation	
May 2011 – October 2011	UCWPA community support workers, management and consumer workers to be accredited Flinders Program practitioners.	Flinders Program training begun for all UCWPA mental health teams at their service site. Staff begin to undertake assignments for accreditation.
July 2011 T1 First ORCA survey: Five teams with no direct experience of the Flinders Program participate in the ORCA survey.		
August 2011	UCWPA Community Mental Health Annual State Conference has a focus on the Flinders Program.	Training and accreditation assignments continue for existing staff (*Context – resources*). 2011 UCWPA Community Mental Health 1 day all-staff meeting focused on the Flinders Program and implementation.

		Keynote speakers from Flinders University and implementation goals identified (*Facilitation - leadership and implementation team*).
November 2011 onwards	Flinders Program embedding as preferred service delivery model.	Data and reporting systems incorporate the Flinders Program and associated measures (*Context - measurement).* Implementation featured in team meetings and part of performance management meetings (*Context - staff culture/opinion leaders, Context - measurement, and Facilitation - communication*). Newly appointed staff trained in the Flinders Program.(*Context - resources*) Presentation by academic expert on using the Flinders Program^{TM} with clients who have mental illnesses (*Evidence - clinical experiences* and *Evidence - patient preferences*).
October 2011	Staff informed about published evidence relating to the Flinders Program.	*Digest of research evidence circulated to UCWPA staff (*Evidence - research*). *2012 UCWPA Community Mental Health planning day includes presentation from Flinders University academic on aspects of the Flinders Program and overview of research evidence (*Evidence – research*).
April 2012 T2 Second ORCA survey: ORCA survey re-administered to the five teams.		

*Strategies initiated by the research team in response to T1 scores