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The Recovery Assessment Scale – Domains and Stages (RAS-DS): Sensitivity to change over time and convergent validity with level of unmet need

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ABSTRACT

There is a need for robust outcome measures for use in psychiatric services. Particularly lacking are self-rated recovery measures with evidence of sensitivity to change. This study was established to examine the convergent validity and sensitivity to change over time (responsiveness) of the Recovery Assessment Scale – Domains and Stages (RAS-DS), in comparison to level of unmet need as measured by the Camberwell Assessment of Need – Short Appraisal Scale (CANSAS). Convergent validity was examined through cross-sectional correlations between 540 CANSAS and RAS-DS scores collected on the same day for the same individuals. Sensitivity to change was examined using correlations between change scores in CANSAS and RAS-DS where both were collected on the same day and the two time points were separated by 90 days or more (n = 498). Results demonstrated moderate, significant cross-sectional correlations between CANSAS scores and RAS-DS total and domain scores and between change scores of both instruments. Results suggest that the RAS-DS is sensitive enough to detect change over time. Only moderate correlation between the RAS-DS and CANSAS suggests that, in the context of recovery-oriented service provision, it is important to measure self-reported recovery in addition to level of unmet needs.

1. Introduction

With the drive towards more recovery-oriented service provision in mental health services, there have been repeated calls for the use of outcomes measures that evaluate self-rated recovery (Galletly et al., 2016; Thornicroft and Slade, 2014). However, while there are a large number of self-report measures of recovery available, most are at early stages of psychometric testing and few have been tested in terms of responsiveness or sensitivity to change over time (Burgess et al., 2011; Scheyett et al., 2013; Shanks et al., 2013). Key challenges in the process of assessing sensitivity to change over time are the absence of a "gold standard" measure of recovery, as recovery in the context of mental illness is a complex and diverse experience, and debate surrounding what should be used as an objective measure of change over time (Burgess et al., 2011). For an instrument to be useful to the individual tracking their own recovery over time and to services evaluating recovery-focused outcomes, it must have the capacity to capture change over time.

The Recovery Assessment Scale – Domains and Stages (RAS-DS) is an Australian-developed measure of self-reported mental health recovery (Hancock et al., 2015b). Developed from the original Recovery Assessment Scale (Giffort et al., 1995), the RAS-DS was designed to capture a broader range of domains of recovery and also to reflect achievements associated with the later stages of recovery. Original testing of the RAS-DS demonstrated strong internal and construct validity and acceptability to consumers and mental health workers (Hancock et al., 2015b). Initial testing and other published studies have demonstrated that the RAS-DS scores improve over time when individuals are receiving services that are expected to improve their recovery (Hancock et al., 2017, 2015b). These results suggest that the RAS-DS is a useful instrument to measure recovery and may be sensitive to change over time, but further testing is needed.

A number of Australian services simultaneously use the RAS-DS and the Camberwell Assessment of Need – Short Appraisal Scale (CANSAS) (Slade et al., 1999) as key outcome measures. This presented a useful opportunity to examine relationships between CANSAS and RAS-DS to further explore the construct validity of the RAS-DS and its ability to detect change over time. Given the absence of a "gold standard" measure of recovery or an agreed objective measure of change, the CANSAS was considered a potentially suitable tool to be used for this purpose.

CANSAS is a measure of met and unmet need across 22 health and social areas considered important for individuals living with mental

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illness: accommodation, food, looking after the home, self-care, daytime activities, physical health, psychotic symptoms, information (about condition and treatment), psychological distress, safety to self, safety to others, alcohol, drugs, company, intimate relationships, sexual expression, childcare, basic education, telephone, transport, money and benefits (Slade et al., 1999). Developed in collaboration with consumers, the CANSAS has been extensively tested (e.g., Andresen et al., 2000; Macpherson et al., 2003; Slade et al., 2005) and is used in a large number of mental health services across a broad range of contexts. It is generally considered a useful tool to assist with individual service planning and outcome measurement. It was adopted as the mandatory outcome measure for the Australia-wide Partners in Recovery initiative (Department of Health and Ageing, 2012). Although some debate continues around the sensitivity of the CANSAS to detect change over time, some research has identified that individual need areas are reflective of changes over time (Wiersma et al., 2008).

While CANSAS is not a direct measure of recovery, there appears to be overlap between the concepts of recovery and unmet need. When individuals face many unmet needs, these are likely to impede their recovery, conversely when these needs are met, this is likely to support recovery. Some authors have suggested that having few unmet needs can be considered an "objective measure of recovery" (Lloyd et al., 2010). Previous research has also identified relationships between needs as measured by the CANSAS and quality of life (Slade et al., 2005), subjective wellbeing (Werner, 2012) and other measures of recovery (Lloyd et al., 2010).

As both the RAS-DS and CANSAS are increasingly being used as routine outcome measures in recovery-oriented mental health services, it is important to further explore the measurement properties of these instruments. Additionally, it is important to examine the overlap between the constructs of unmet need and recovery to determine if both constructs need to be measured to most accurately capture improvements over time. As service funding is increasingly being tied to outcomes achieved, it is critically important to ensure that the right outcomes are being measured and that the instruments used to measure these outcomes have robust measurement properties. This study was established to take advantage of a large dataset of routinely collected RAS-DS and CANSAS scores to further explore the usefulness of these instruments as outcome measures.

The primary aim of this study was to explore whether the RAS-DS was sensitive enough to detect change over time (sensitivity to change or "responsiveness", Hypothesis 2). In this context, change in CANSAS scores was considered the "objective" measure of change. However, for change in CANSAS scores to be a useful indicator of change in recovery, the association between CANSAS scores and RAS-DS scores firstly needed to be confirmed (convergent validity: Hypothesis 1). Therefore, the two hypotheses guiding this study were:

Hypothesis 1. That there will be a cross-sectional, inverse relationship between level of unmet need as measured by the CANSAS and both RAS-DS total and each of the RAS-DS domain scores.

Hypothesis 2. That there will be an inverse relationship between change over time in unmet need as measured by CANSAS and change over time in both RAS-DS total and each of the RAS-DS domain scores.

2. Methods

This study was approved by the researchers' university's Human Research Ethics Committee.

2.1. Data sets

This study used de-identified, routinely-collected outcomes data from two large community managed mental health organisations and one Primary Health Network, all providing a lead-agency role for a federally-funded mental health program (Partners in Recovery). Partners in Recovery was established to provide service linkage and brokerage services for individuals with severe and persistent mental illnesses with complex needs who required connection to and services from multiple agencies (Hancock et al., 2016b; Isaacs et al., 2017). The overall aim of the program was to enhance coordination and linkage within the mental health service system and, by doing so, support improved consumer outcomes (Isaacs et al., 2017). Data sets contained basic demographic information and outcome measures (RAS-DS and CANSAS) collected between 2013 and 2016.

2.2. Instruments

2.2.1. Recovery Assessment Scale – Domains and Stages (RAS-DS)

The RAS-DS is a self-report measure of mental health recovery. It includes 38 items clustered into four domains of recovery. These domains are: functional recovery (labelled "Doing things I value"); personal recovery ("Looking forward"); clinical recovery ("Mastering my illness"); and social recovery ("Connecting and belonging"). Each item is rated on a 4-point scale from 1 = "untrue" to 4 = "completely true". "Percentage scores" are calculated for each domain and an overall score (Hancock et al., 2016a). Higher scores represent more advanced levels of mental health recovery.

2.2.2. Camberwell Assessment of Need – Short Appraisal Scale (CANSAS)

The CANSAS includes a list of 22 areas considered as potentially important needs for individuals living with mental illness. Each item is rated as either an "unmet need"; "met need" or "no need". While no definitive method for calculating "total scores" for the CANSAS has been described in the literature, one of the most common "total scores" used in research involving the CANSAS is number of unmet needs (Slade et al., 2005, 1999; Werner, 2012).

For this study, an *a priori* decision was made to also use an alternative "total score" for the CANSAS. This alternative "total score" was "percentage of unmet need" and was calculated based on number of unmet needs divided by total number of needs identified (unmet needs plus met needs). This decision was taken because percentage unmet need seemed to more accurately reflect the level of unmet need, especially in the context of measuring change over time. For example, having six unmet needs in the context of 18 needs identified overall (33% unmet need) would seem to be qualitatively different to having six unmet needs in the context of only eight needs identified overall (75% unmet need). Additionally, a reduction of two unmet needs in the same context would also represent qualitatively different change. Reducing from six to four unmet needs in the context of 18 overall needs represents a reduction of 11 percentage points in unmet need (from 33% to 22%), however, a change from six to four unmet needs in the context of eight overall needs represents a reduction of 25 percentage points in unmet need (from 75% to 50%).

With both scoring approaches, higher scores represent higher levels of unmet need. The CANSAS can be completed by a staff member or via an interview with the consumer. In this study, staff rated CANSAS scores were more consistently available in the data set, so these were used.

2.3. Data analyses

Analyses were conducted to examine each of the hypotheses guiding this study. All analyses were completed using IBM SPSS Statistics, Version 22. Significance level was set at $\alpha = .05$.

2.3.1. Hypothesis 1

That there will be a cross-sectional, inverse relationship between level of unmet need as measured by the CANSAS and both RAS-DS total and RAS-DS domain scores.

To examine this hypothesis, the dataset was restricted to individuals