A short form of the Recovery Assessment Scale-Domains and Stages: Development and validation among adults with anxiety disorders

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Abstract

The Recovery Assessment Scale-Domains and Stages (RAS-DS) is a 38-item self-report instrument measuring recovery from serious mental illness. We explored the suitability of the RAS-DS for individuals with anxiety disorders. A parsimonious short form of the scale was developed. Participants with anxiety disorder symptoms (N = 295) completed the RAS-DS, DASS-21 and GAD-7. Confirmatory factor analysis supported the expected four-factor structure. Associations with related scales exhibited the expected pattern supporting construct validity in this population. The Recovery Assessment Scale-Short Form (RAS-SF) was derived by inspection of factor loadings and modification indices, yielding a 20-item scale with five items per subscale. Strong correlations between subscales confirmed the total score represented a valid overarching measure of recovery. The present study indicates that recovery is pertinent to individuals with anxiety disorders. Development of the short-form RAS-SF affords opportunity for routine measurement of recovery in populations with anxiety and other high prevalence conditions.

Keywords: anxiety, RAS-DS, RAS-SF, recovery

With the recent emergence of recovery-oriented practice in mental health services, greater emphasis has been placed on the use of outcome measures that evaluate self-rated recovery (Thornicroft & Slade, 2014). Recovery is conceptualized as a process of creating a hopeful and satisfying life, a renewed sense of identity and ownership of wellbeing, despite the possible limitations caused by mental illness (Anthony, 1993). This is consistent with the salutogenic approach that recognizes the fundamental value of feelings of meaning, mastery, personal control and connectedness (Chan et al., 2018). Such personal recovery is distinct from the conceptualization of clinical recovery, which signifies the amelioration of symptoms (Chan et al., 2018; Enrique et al., 2020). Pelletier et al. (2020), for example, state that within the clinical recovery paradigm 'the role of the ill person is mainly to follow the instructions of professionals and comply with prescribed treatments', whereas personal recovery encompasses 'the empowerment of the persons, their ownership and authorship of their own history, autonomy, and independence in living' (p. 2). Researchers have increasingly incorporated recovery-based indicators (e.g., quality of life, hope and optimism) as key outcome measures of psychosocial interventions (e.g., befriending and peer-support programs) for so-called serious mental illnesses, such as schizophrenia and bipolar disorder (Lloyd-Evans et al., 2014; Siette et al., 2017). To date, however, much of the research regarding recovery has focussed on the unique needs of individuals living with serious mental illnesses, as opposed to more prevalent conditions.

More prevalent psychological conditions, such as depression and anxiety have, until recently, received less research attention from a psychosocial recovery-oriented perspective (McEvoy et al., 2012). Nevertheless, in Australia, 14% of adults meet diagnostic criteria for an anxiety disorder each year, and 4.8% of the overall burden of disease in 2016 was attributable to anxiety disorders (Institute for Health Metrics and Evaluation, 2018; Slade et al., 2009; Whiteford et al., 2013). This high prevalence has persisted despite growing public recognition of mental health issues

and interventions that can aid recovery (Harris et al., 2015; Reavley & Jorm, 2011; Rossetto et al., 2014). Like those with serious mental illnesses, some individuals with anxiety disorders ultimately learn to live with symptoms that are residual or may reoccur (Scholten et al., 2013). Also, during periods of symptomatic recovery, individuals with anxiety disorders often continue to experience impairments in daily functioning (e.g., reduced social and work participation; Barrera & Norton, 2009; Rodriguez et al., 2005; Scholten et al., 2013). In light of these considerations, the concept of personal recovery is centrally relevant to individuals living with anxiety disorders. There is, therefore, a pressing need for a suitable instrument to measure psychosocial recovery dimensions among people living with anxiety and related conditions. Further, this instrument should be feasible for routine use as an outcome measure. Slade et al. (1999) suggest that such an instrument should be brief, simple, relevant, acceptable, available and valuable (see Slade et al., 1999).

Regarding relevance, exploring the concept of personal recovery in the context of living with an anxiety disorder requires consideration of what individuals actually do in their journey towards recovery (Coulombe et al., 2016). Research currently focusses on self-management as a key recovery process used by such individuals to mitigate symptoms, prevent relapse and optimize well-being (Coulombe et al., 2016; Villaggi et al., 2015). One mixed-methods study explored the overall experience of recovery from the perspective of service users with prevalent psychological conditions, specifically, anxiety and depression (McEvoy et al., 2012). Consistent with a salutogenic approach, narrative analysis revealed that the overarching theme of recovery was gaining greater control and balance over various life domains (McEvoy et al., 2012). This sense of control and balance operated on five distinct levels: (1) personal goals, (2) emotion regulation, (3) social capital (i.e., accessibility to social networks), (4) resilience (i.e., coping with threats and challenging circumstances) and (5) self-efficacy (i.e., confidence in ability to organize actions and pursue goals) (McEvoy et al., 2012).

These themes are reflected in several measures of psychosocial recovery, although the assumed latent structure, and hence the number of subscales, varies (Andresen et al., 2006; Bradshaw et al., 2007; Clarke et al., 2012; Davidson & Roe, 2007; Hancock et al., 2016). However, as might be expected given the chronic nature of serious mental illnesses such as schizophrenia, recovery is often conceptualized as a state of living meaningfully with enduring mental health issues (Davidson & Roe, 2007). By comparison, for anxiety disorders, recovery may encompass the ability to overcome mental illness including the possibility that symptoms may resolve (McEvoy et al., 2012). Coulombe et al. (2016) conducted latent profile analysis on participants recruited through community organizations in Quebec presenting with a range of anxiety and mood disorders. Their analyses confirm three profiles: floundering, struggling and flourishing. Those in the flourishing category exhibited both low symptomatology and high scores on personal recovery indicators. This is consistent with the strong shift towards salutogenic and person-centred approaches across a range of care contexts. Such research suggests that the important elements of recovery identified amongst individuals with serious mental illness are also applicable to those with anxiety disorders. Further, research confirms that recovery as conceptualized from a positive mental health perspective is both a predictor of reduced symptomatology and a central goal in its own right (Hides et al., 2019). MacLeod (2012, p. 279) notes that 'reasons for adopting a well-being enhancing, as well as a distress-reducing, focus include the fact that many psychological problems do not fit the simple acute treatment model of disorder, that positive experience inhibits negative experience, and that people can benefit from therapists seeing them as more than the sum of their problems'. The domains such as personal goals, emotion regulation, social capital, resilience and self-efficacy are clearly germane to this broader salutogenic approach. Items drawn from existing recovery instruments are, therefore, likely to be relevant and acceptable to individuals living with anxiety disorders and the clinicians who provide their treatments.

Several recovery scales have been developed and validated in samples of individuals with psychotic disorders (Andresen et al., 2006; Corrigan et al., 1999; Hancock et al., 2015; Jerrell et al., 2006; Neil et al., 2009). One of the most widely used scales is the Australian-developed RAS-DS (Hancock et al., 2015). This scale is increasingly employed as an outcome measure in recovery-oriented mental health services (Scanlan et al., 2018). The development of the RAS-DS was informed by psychometric testing conducted on the original Recovery Assessment Scale (RAS; Corrigan et al., 1999) suggesting scope to refine the measure. Factor analyses indicated that only 24 of the original 41 RAS items loaded onto five factors (Corrigan et al., 2004). The remaining 17 items were considered theoretically outside the concept of recovery. Further, one factor, willingness to ask for help, was only represented by three similarly worded items. As a result, Hancock, Bundy, Honey, James, and Tamsett (2011) used Rasch analysis with a sample of 92 participants who had primary diagnoses of psychotic and mood disorders to clarify the psychometric properties of the RAS. These authors endorsed a 31-item solution, although they acknowledged that improvements to the scale could still be made (Hancock et al., 2011). Further studies have since refined the scale and subscales on the basis of qualitative methodologies (i.e., interviews, focus groups) and pilot testing with mental health staff and consumers, although no formal factor analytic techniques have been applied (Hancock, Bundy, Honey, Helich, & Tamsett, 2013; Hancock, Bundy, Tamsett, & McMahon, 2012; Hancock, Scanlan, Kightley, & Harris, 2019).

Subsequent to these studies, and associated refinements, Hancock and colleagues (2016) endorsed four subscales for the RAS-DS: (1) Doing Things I Value (purpose and meaning); (2) Looking Forward (hope and self-efficacy); (3) Mastering my Illness (coping skills); and (4) Connecting and Belonging. This is the version endorsed in the RAS-DS manual (Hancock et al., 2016). The authors also note the high intercorrelations between subscales indicate a strong and valid personal recovery dimension (Hancock et al., 2015). In the initial psychometric testing of the RAS-DS, Hancock and colleagues (2015) paired 58 mental health service users with

service staff who completed the measure in-person. The authors note that in this setting, discussion of RAS-DS dimensions may be used to collaboratively identify recovery-focused goals. The majority of the sample comprised consumers with principal diagnoses of psychotic disorders (56.9%), while the remaining proportion included consumers with anxiety disorders (19%), mood disorders (19%) and personality disorders (4.6%) (Hancock et al., 2015). The RAS-DS was positively endorsed by most consumers and staff as a meaningful resource, which facilitated shared understanding of living with mental illness (Hancock et al., 2015). Additional published studies indicate that RAS-DS scores improve across time when individuals are engaged in services that facilitate recovery (Hancock, Scanlan, Gillespie, Smith-Merry, & Yen, 2018; Scanlan et al., 2018). In sum, these results suggest that the RAS-DS has an adequate and growing evidence base, supporting its use as a measure of psychosocial recovery in cohorts with serious mental illness.

Given the sample characteristics of studies that have validated the RAS-DS (e.g., Hancock et al., 2015; Scanlan et al., 2018), the extent to which the items are appropriate for people experiencing anxiety disorders has not been tested. Nevertheless, subscales identified within the RAS-DS have themes similar to those identified by McEvoy and colleagues (2012) as important for individuals who have attained psychosocial recovery in the context of experiencing an anxiety disorder. For instance, the RAS-DS subscale, Connecting and Belonging (example item, "It is important to have a variety of friends"), overlaps with the need for social capital in recovery from anxiety disorders (Hancock et al., 2016; McEvoy et al., 2012). Indeed, a meta-analysis by Shanks and colleagues (2013) highlighted the need to evaluate the use of recovery-focused measures in a variety of clinical populations, not just those affected by so-called serious mental illnesses. Following this line of reasoning, it seems likely that the RAS-DS factor structure may generalise to individuals living with anxiety disorders.

The present study, therefore, had two aims. The first aim was to investigate whether the RAS-DS is relevant and appropriate for individuals living with anxiety

disorders. Given the novel sample, this includes a requirement to verify the latent structure of the measure. The present study employed confirmatory factor analytic techniques to explore the structure of the RAS-DS among a sample of adults living with self-reported anxiety and related disorders. A second aim was to identify a more parsimonious subset of items to form a shorter version amenable to routine use in a range of contexts consistent with treatment of high prevalence conditions. Specifically, we aimed to reduce the number of items whilst still maintaining an appropriate breadth of content within each dimension.

Method

Participants

Of the 295 adults who participated in the study, 80.1% identified as female (n = 260) and 10.2% identified as male (n = 30). The mean age was 35.18 (SD = 11.21). Participants were recruited via websites of Australian mental health organisations specialising in anxiety and related disorders (e.g., Anxiety Recovery Victoria, Anxiety Disorders Association of Victoria, SANE Australia) and internationally via social media platforms (e.g., Facebook peer-support forums). Participants were excluded if they did not report a lived experience of an anxiety disorder or were younger than 18 years old. Self-reported anxiety conditions included generalised anxiety disorder, social anxiety disorder, and specific phobia. Participants who reported obsessive-compulsive related disorders (OCRDs) and post-traumatic stress disorder (PTSD) were also included. Participants who reported living with depressive disorders were also included if they endorsed substantial comorbid anxiety symptoms. OCRDs and PTSD share clinical features with *DSM-5* anxiety disorders (APA, 2013), including similar psychosocial impairments (Abramowitz & Jacoby, 2014; Levin, Kleinman, & Adler, 2014; Lopez-Sola et al., 2016; Olatunji, Cisler, & Tolin, 2007). Further, comorbidities typify anxiety disorder presentations, and therefore, were an expected feature of the present sample (Essau, Lewinsohn, Lim, Ho & Rohde, 2018).

Materials

Demographics and mental health. Demographic information collected included gender, age, relationship status, education and employment status. Participants were then asked to specify any diagnosed anxiety or related disorders. Other information collected included age of symptom onset, current treatments, and impact on activities of daily life (days impacted per month).

Anxiety. The Generalised Anxiety Disorder-7 scale (GAD-7; Spitzer, Kroenke, Williams, & Löwe, 2006) is a 7-item self-report scale assessing the severity of generalised anxiety disorder symptoms experienced in the past two weeks. Participants responded to each item on a 4-point Likert scale ranging from 0 (*Not at all*) to 3 (*Nearly every day*). The GAD-7 is a valid measure of commonly experienced anxiety disorder symptoms, evidenced by satisfactory internal consistency (α = .88) and convergent validity with other established measures of anxiety in clinical and non-clinical samples (Beard & Björgvinsson, 2014; Löwe et al., 2008; Spitzer et al., 2006). The instrument has also demonstrated strong sensitivity and specificity in the detection of both generalised anxiety disorder and other anxiety disorders (Beard & Björgvinsson, 2014; Löwe et al., 2008; Spitzer et al., 2006).

Psychological Distress. The Depression Anxiety Stress Scales (DASS-21; Lovibond & Lovibond, 1995) is a 21-item self-report instrument measuring the severity of three negative affective states, depression, anxiety and stress/tension, over the previous week. Each subscale is comprised of seven items, scored on a 4-point Likert scale ranging 0 (*Did not apply to me*) to 3 (*Applied to me very much or most of the time*). Items for each subscale are summed and multiplied by 2 to provide a direct comparison to the original 42-item version (Henry & Crawford, 2005). The factor structure of the DASS-21 is stable when compared to the DASS, and its items demonstrate adequate construct validity and high internal consistency in clinical and non-clinical samples (Antony, Bieling, Cox, Enns, & Swinson, 1998; Henry & Crawford, 2005).

Recovery. The Recovery Assessment Scale – Domains and Stages (RAS-DS; Hancock et al., 2015) is a 38-item measure of psychosocial recovery. Items are available at www.ras-ds.net.au. The measure contains four subscales: (1) Doing Things I Value, (2) Looking Forward, (3) Mastering my Illness and (4) Connecting and Belonging. Each item is rated on a 4-point scale ranging from 1 (*Untrue*) to 4 (*Completely true*). Items are summed to obtain subscale and total scores, with higher scores representing more advanced stages/levels of recovery in the context of living with serious mental illness (Hancock et al., 2016). The RAS-DS has demonstrated strong internal reliability (α = .96) and construct validity. RAS-DS scores have been found to be sensitive to change over time among large samples of Australian consumers of mental health services (Hancock et al., 2018; Scanlan et al., 2018).

Procedure

Following approval from the human research ethics committee at the host institution, research advertisements were posted online to mental health organisations and social media support groups. Participants were directed to a link to the survey hosted on Qualtrics.com. As the survey was hosted on an online platform, it was completed at a time and place convenient to the participant.

Analysis strategy

Initial analyses aimed to confirm psychometric characteristics of the RAS-DS in adults living with self-reported anxiety and related disorders. The focal analysis, therefore, was a confirmatory factor analysis (CFA) modelling the four-factor structure reported in other populations (e.g., Hancock et al., 2015; Hancock et al., 2019). The present study met acceptable sample size requirements (subject-item ratio) for reliable CFA (MacCallum, Widaman, Zhang, & Hong, 1999; Tabachnick & Fidell, 2007). Several fit indices were considered for the evaluation of goodness-of-fit: χ^2/df (normed chi-square; < 2 desirable), the comparative fit index (CFI; values ≤ 0.95 desirable), standardised root mean square residual (SRMR; values ≤ 0.08

desirable) and root mean square error of approximation (RMSEA; values ≤ 0.07 desirable) (Hooper, Coughlan, & Mullen, 2008). Consistent with the first aim of the study, this provided evidence regarding the appropriateness of scale items in the context of anxiety and related disorders. Consistent with the second aim of the study, a short-form of the RAS-DS was also derived by inspection of factor loadings and modification indices. To assess convergent validity, associations between RAS-DS scores and theoretically related constructs as measured by the GAD-7 and DASS-21 were examined using Pearson's correlation coefficients. Correlations between original RAS-DS scores and short-form scores were examined to confirm concordance of the latent constructs represented by original and short-form versions of the scale. Internal reliabilities were assessed with Cronbach's alpha. The conventional statistical significance level of p =.05 was adopted. Analyses were conducted with SPSS (V 26.0) and AMOS (V 26.0).

Results

Demographic characteristics of the present sample are presented in Table 1. Descriptive statistics, internal consistencies and intercorrelations for all measures are presented in Table 2. Distributions for all measures approximated normality. The positive skew typically evident in community samples without psychopathology was not evident in the present sample due to elevated negative affective symptoms.

Confirmatory factor analysis (CFA)

CFA of RAS-DS items was used to test a model with four correlated subscales as originally specified. In this original scale, the Looking Forward subscale (18 items) has many more items than other subscales. The large number of items in this subscale gave rise to a correspondingly large covariance matrix. As model fit is judged by the extent to which the model can replicate this matrix, initial fit was poor. To overcome this challenge, an exploratory factor analysis (EFA) was conducted on the Looking Forward subscale to determine a smaller and more parsimonious set of

items to represent this factor. Eight items were chosen to balance the need to have a number of items, which did not substantially exceed that for other subscales whilst retaining broad representation of the intended domain. Inspection of these retained items confirmed that a range of cognitions was canvassed. Eigenvalues for retained items ranged from 0.69 to 0.81. In contrast, eigenvalues for the omitted items ranged from 0.51 to 0.67. Maximum likelihood estimation yielded eight items with loadings above .68 (items 5, 6, 7, 8, 10, 12, 14, 17).

The CFA model was repeated with the new parsimonious item set: Doing Things I Value (6 items); Looking Forward (8 items); Mastering my Illness (7 items); Connecting and Belonging (7 items). CFA of this model exhibited a moderate fit, as presented in Table 3. Inspection of modification indices indicated overlapping variance between items *within* each subscale suggesting that a more parsimonious model was feasible. Such a model is highly desirable as it suggests a shorter scale more amenable to wide-spread use among people with high prevalence conditions. Remaining items were inspected to confirm that the range of cognitions canvassed was broadly representative of those in the original item set. An advantage of the CFA techniques employed is that modification indices highlight items which duplicate the content of other items. This encourages development of an item set, which parsimoniously captures as broad a range of cognitions within a specific domain as possible. Correlations between original and trimmed subscales were very high (0.93–0.98), further confirming that similar domains were represented. Further, fit indices were substantially improved; for example, CFI values were 0.792 and 0.950 for original and final models, respectively. The resulting 20-item model is presented in Figure 1. All loadings were above 0.5 except for Item 35 within the Connecting and Belonging subscale. Further, there were strong to very strong correlations between all subscales, consistent with the total score representing a valid overarching recovery dimension.

Psychometric properties

Internal consistencies for original (RAS-DS) and trimmed (RAS-SF) item sets are presented in Table 2. Internal consistencies were uniformly high for all subscales, despite the reduced number of items. Correlations between the original 38-item and the 20-item short-form subscales are presented in Table 2. These ranged from .93 to .98 confirming that constructs represented by the reduced item sets were very similar to those represented by the full scale. To further assess construct validity, associations with the DASS-21 and GAD-7 scales were determined as presented in Table 2. These correlations indicate a very similar pattern of relationships for full and reduced item sets. The association between the total RAS-SF with depression was large. In contrast, the association between the RAS-SF and anxiety scores was moderate. This is consistent with extant conceptualisations of recovery as detailed in the Discussion.

Discussion

The present study aimed firstly to determine whether the RAS-DS is relevant and appropriate for individuals living with anxiety disorders, and secondly to derive a shorter form (RAS-SF) more amenable for routine use in a range of contexts consistent with treatment of high prevalence conditions. Regarding the first aim, research into the psychometric properties of the RAS-DS has largely focused on populations with so-called serious mental illness, such as schizophrenia (e.g., Hancock et al., 2015; Scanlan et al., 2018). Consistent with previous research, analyses confirmed the expected four factor structure in the current cohort with anxiety and related disorders. Inspection of factor loadings confirmed that the conceptualised dimensions were appropriate for this sample. Internal consistencies confirmed reliability. Patterns of association with related scales evidenced construct validity. A second aim was to identify a parsimonious subset of items to form a shorter version of the scale. CFA suggested that a 20-item scale with five items per subscale adequately and parsimoniously captured variants on these dimensions.

Consistent with the original RAS-DS, strong correlations between subscales confirmed that the total score represented a robust overarching measure of recovery. Further, very strong associations between RAS-SF subscales and corresponding RAS-DS subscales confirmed similar constructs.

Broadly, the 20-items comprising the RAS-SF appears to be relevant to individuals with anxiety disorders. This is evidenced by the intended factors having emerged and face validity of the corresponding items. This builds upon previous research indicating that the RAS-DS measures the processes that consumers with severe mental illness identify as integral to their recovery (Hancock, Scanlan, Gillespie, Smith-Merry & Yen, 2018; Waks et al., 2017). Consideration should, however, be given to the item, *"Although my symptoms may get worse, I know I can handle it"* from the Mastering My Illness subscale. Whilst this item loaded appropriately in the final RAS-SF model, the wording specifying that "*my symptoms may get worse"* was conceived for individuals with enduring mental health conditions (e.g., schizophrenia, bipolar disorder) for whom current gold-standard treatments often do not result in sustained symptom resolution (Lean et al., 2019). Recovery when focused on people living with severe and persistent mental illness is described as a process of living a meaningful life "with or without the presence of mental health issues" (Australian Health Ministers' Advisory Council, 2013, p. 2). Nevertheless, people with anxiety disorders have a better prospect of substantial or complete symptom remission accompanying their personal recovery (Coulombe et al., 2016), hence the question should perhaps not tacitly imply otherwise. It is suggested that this item be worded *"Although my symptoms may fluctuate, I know I can handle it"*. Such wording may render the item more applicable to individuals living with anxiety disorders or other high prevalence psychological conditions, whilst remaining suitable for individuals living with serious mental illness.

Correlations of the RAS-SF with other measures provide further support that the scale validly measures the recovery construct in a sample experiencing anxiety

disorders. While clinical recovery (symptom amelioration) differs from personal recovery, these results confirm the expected relationship between the two. In fact it has been suggested that, for high prevalence mental health conditions, personal recovery may lead symptom abatement (Coulombe et al., 2016; Hides et al., 2019). While symptom amelioration/abatement is not required for personal recovery, this body of literature describes a process of gaining greater control, with illness and symptoms interfering less and less with life. The moderate correlation between recovery scores and anxiety symptoms confirms the recovery domain as distinct from psychopathology. This is consistent with the emerging view that it is not only important to address symptom load, but to promote positive functioning and well-being as a separate but related goal (Iasiello, van Agteren, Keyes, & Cochrane, 2019; Schotanus-Dijkstra, Keyes, de Graaf, & ten Have, 2019; Teismann, Brailovskaia, Totzeck, Wannemüller, & Margraf, 2018).

For the 38-item RAS-DS, Hancock and colleagues (2015) noted the clear presence of an overarching recovery construct. Large correlations between RAS-SF subscales similarly indicate that each subscale contributes meaningfully to the full scale, and that the 20-item set adequately captures the personal recovery construct. In particular, the number of items in the Looking Forward subscale was significantly reduced. Nevertheless, the variance associated with the original, larger item set is still accounted for. This is confirmed by the particularly high correlation of 0.98 between original and reduced item sets, corresponding to 96% shared variance. This indicates that, particularly for screening purposes in larger populations, some items in the larger item set can be considered redundant from a psychometric perspective.

Although the RAS-SF is well suited for outcome measurement and screening in populations with high prevalence conditions, the larger item set of the RAS-DS may still be useful to provide additional insights for collaborative intervention planning. This is consistent with the originally envisaged use of the RAS-DS in populations with serious mental illness. In this context, clinicians supporting recovery-focussed interventions often discuss RAS-DS responses with clients as a

precursor to collaborative recovery focussed goal setting. The RAS-DS manual specifies that it is useful for … 'consumers to talk about the "results" together; identifying the recovery areas that consumers feel positive about (rated 3 or 4) and celebrating these. Staff and consumers should also look at and talk about the areas of recovery that could be worked on (the ones they scored 1 or 2) and discuss which of these are most important to the consumer and could therefore be incorporated into recovery action plans and goals' (for detailed discussion, see Hancock et al., 2016).

Results of the present study confirmed the feasibility of a shorter recovery scale applicable to adults living with anxiety and related disorders. Regarding screening, the scale will allow identification of individuals whose symptom load may be improving but nevertheless are failing to flourish. Regarding the monitoring of client outcomes, there may be benefits afforded by this more parsimonious instrument such as suitability of inclusion in a battery of outcome measures and feasibility for use when services struggle to meet demand. The use of such a scale is highly desirable as selfmanagement is an integral and highly valued aspect of treatment among individuals with high prevalence psychological conditions (e.g., Coulombe et al., 2016; Villaggi et al., 2015). Its brevity also allows for wide application in settings such as general medical practice, community clinics, private psychology and psychiatry practice, youth mental health services (Hancock et al., 2019) and other psychiatric and community settings (Hancock et al., 2018; Waks et al., 2017). Hence, the use of recovery-based progress monitoring and outcome measures can be considered centrally relevant in the adoption of a recovery perspective in diverse mental health settings (Villaggi et al., 2015; Waks et al., 2017). The RAS-SF, therefore, will fill a gap in clinical practice. Further, the use of the same number of items per subscale (five) increases routine interpretability as each subscale has the same potential range. Nevertheless, further validation of the psychometric properties of this scale is required to replicate and extend the current study.

When considering the present results, it is important to acknowledge several limitations. Firstly, the present study did not examine the clinical utility of the RAS-SF. It was initially intended that the RAS-DS be employed in collaborative practice including clinician and consumer (Hancock et al., 2015). Future studies should apply the RAS-SF within a range of mental health settings to determine whether the 20-item RAS-SF provides similar clinical value. It would also be useful to replicate the present results across a range of other high prevalence conditions, such as depressive disorders, and possibly even non-specific psychological distress identified by primary care providers. There would also be benefit in further assessing the psychometric properties of the RAS-SF. This could include consideration of convergent validity with other well-validated measures of recovery, such as the Stages of Recovery Instrument (STORI; Andresen et al., 2006).

Clinical diagnostic interviews were not conducted. Despite this, GAD-7 scores obtained for the sample indicated that, on average, participants' levels of anxiety reached the cut-off for an anxiety disorder diagnosis (Beard & Björgvinsson, 2014; Löwe et al., 2008; Spitzer et al., 2006). Nevertheless, it is possible that participants were included who primarily suffered from a depressive rather than anxiety disorder. Although depressive and anxiety conditions are often comorbid, further research among cohorts with confirmed clinical diagnosis of an anxiety disorder is desirable. This sample is also limited by the gender balance, the majority of participants being female. This is somewhat reflective of the general population in which women are more likely than men to report anxiety disorders and seek treatment (Judd et al., 2008; Slade et al., 2015). Future research is required to investigate recovery in male and diverse gender populations. For such populations, a recovery focus may be perceived as more empowering and less stigmatizing.

In sum, the present study indicates that, whilst originally derived in the context of the experience of those living with serious mental illness, the central themes of psychosocial recovery are also germane to individuals living with anxiety and related disorders. Further, this is likely to generalize to other high prevalence

conditions. Government and peak bodies are increasingly endorsing, and sometimes requiring, a recovery-oriented model within mental health service provision systems (see Le Boutillier et al., 2011). The RAS-SF holds potential as a relevant and appropriate outcome measure to monitor recovery among adults with anxiety disorders. Further, as a short form, this scale opens the opportunity for routine screening in contexts more consistent with high prevalence conditions. Routine use of such outcome measures can improve service provision by facilitating assessment of the broader recovery needs of service users living with anxiety and related disorders. Further, such assessment facilitates active inclusion and involvement of services in their own recovery.

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Ethics approval

Human research ethics approval for this study does not permit the data to be made publicly available. Please contact the authors to access de-identified data.

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Table 1

Demographic Characteristics of Total Sample (N = 295)

	Variable	*n*	%
Relationship status	Married	84	28.5
	Single	91	30.8
	Defacto relationship	95	32.2
	Divorced	19	6.4
	Other	6	1.7
Employment status	Full-time	119	40.3
	Part-time/casual	76	25.8
	Student	47	15.9
	Domestic work	14	4.7
	Disability pension	11	3.7
	Retired	5	1.7
	Unemployed	10	3.4
	Seeking work	13	4.4
Reported diagnosis*	Generalised anxiety disorder	208	70.5
	Social anxiety disorder	100	33.9
	Phobia	25	8.5
	Obsessive-compulsive disorder	44	14.9
	Post-traumatic stress disorder	82	27.8
	Hoarding disorder	8	2.7
	Trichotillomania/Excoriation disorder	39	13.2
	Depression	161	54.6
Treatment	Engaged	161	54.6
	None	119	40.3
	Awaiting	15	5.1

Functional impairment.	No days absent	78	26.4
	1-7 days	179	60.7
	More than 7 days	38	12.9

Note. * Participants could specify more than one anxiety disorder. Participants were also asked to report depression as this often comorbid with anxiety disorders.

Functional impairment = Frequency of reported impairment in usual activities in the previous 30 days

Table 2

Descriptive Statistics, Internal Consistencies and Pearson's Correlations for DASS-21, GAD-7, original RAS-DS, 20-item RAS-SF

Variable	*M*	*SD*	*α	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
1. DASS-D	8.87	5.73	.92	1	0.59*	0.65*	0.87*	0.65*	-0.52*	-0.34*	-0.52*	-0.41*	-0.36*	-0.52*	-0.33*	-0.51*	-0.41*	-0.40*
2.DASS-A	8.27	5.18	.86		1	0.73*	0.88*	0.66*	-0.23*	-0.10	-0.23*	-0.20*	-0.18*	-0.23*	-0.10	-0.20*	-0.21*	-0.21*
3. DASS-S	10.63	4.70	.85			1	0.89*	0.75*	-0.32*	-0.19*	-0.33*	-0.25*	-0.24*	-0.31*	-0.18*	-0.30*	-0.24*	-0.27*
4. DASS-21	27.75	13.70	.92				1	0.78*	-0.42*	-0.25*	-0.42*	-0.33*	-0.30*	-0.41*	-0.24*	-0.39*	-0.33*	-0.34*
5. GAD-7	10.97	5.21	.88					1	-0.32*	-0.14*	-0.32*	-0.30*	-0.23*	-0.31*	-0.14*	-0.31*	-0.29*	-0.26*
6. RAS-DS	106.75	20.51	.94						1	0.72*	0.95*	0.82*	0.73*	0.97*	0.71*	0.89*	0.81*	0.73*
7. DT	17.78	3.65	.81							1	0.61*	0.47*	0.45*	0.76*	0.98*	0.61*	0.47*	0.44*
8. LF	49.47	11.22	.93								1	0.72*	0.57*	0.88*	0.59*	0.93*	0.72*	0.58*
9. MI	18.39	4.61	.85									1	0.50*	0.80*	0.47*	0.64*	0.98*	0.51*
10. CB	21.10	4.72	.80										1	0.77*	0.45*	0.55*	0.48*	0.96*
11. RAS-SF	56.30	11.60	.92											1	0.76*	0.87*	0.80*	0.78*
12. DT	14.37	3.25	.80												1	0.59*	0.46*	0.44*
13. LF	13.71	3.89	.89													1	0.64*	0.56*
14. MI	13.28	3.44	.80														1	0.49*
15. CB	14.94	3.78	.80															1

Note. DT = Doing Things I Value subscale. LF = Looking Forward subscale. MI = Mastering my Illness subscale. CB = Connecting and Belonging subscale. DASS-D = DASS-21 Depression scale. DASS-A = DASS-21 Anxiety scale. DASS-S = DASS-21 Stress scale.

* α = Cronbach's alpha

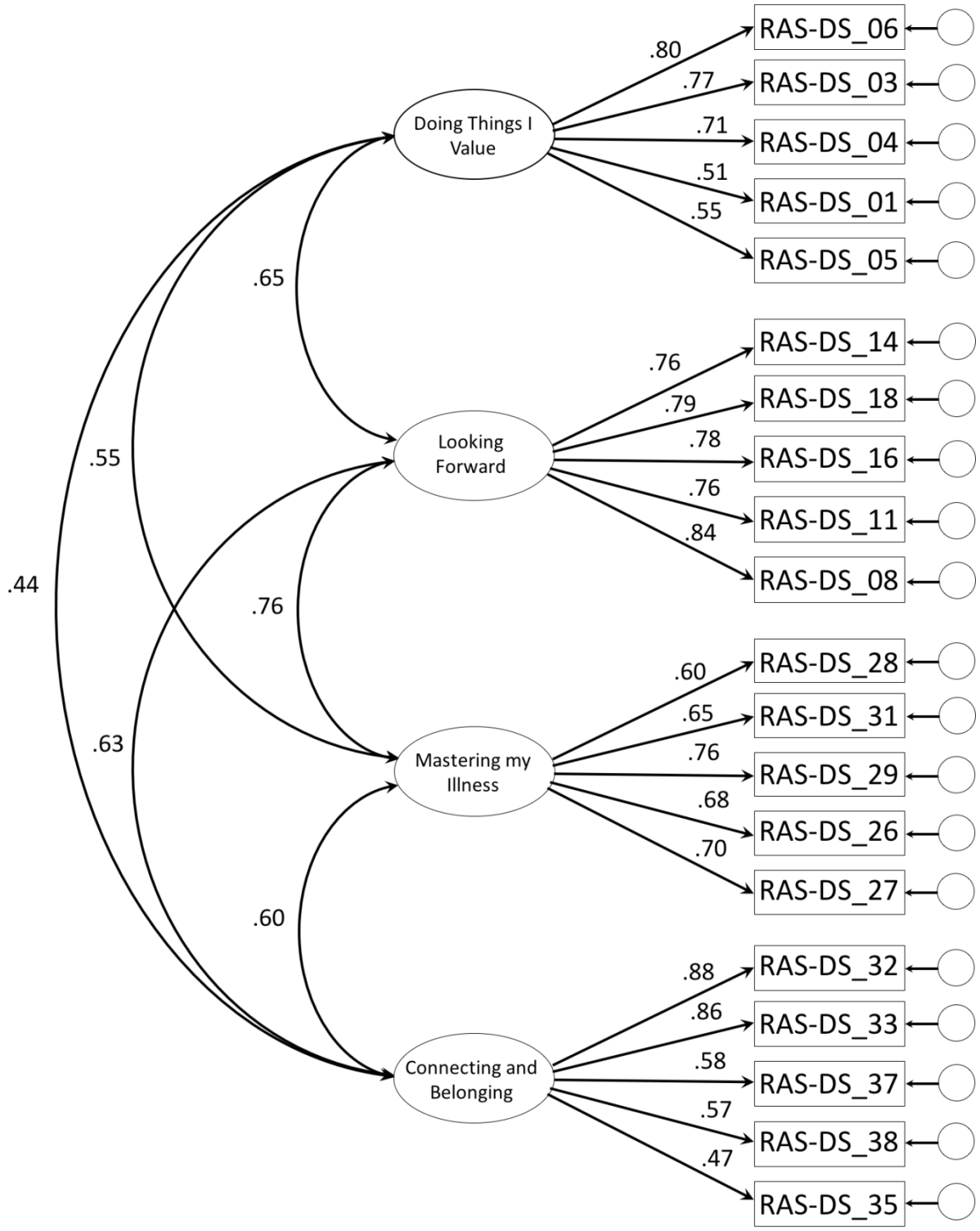

Figure 1. Final correlated four-factor RAS-SF model. RAS-DS items are represented as rectangles connected to the latent factors depicted as ellipses.