Measuring Recovery in adult community addiction services

Angela Jury, Mark Smith *Te Pou o Te Whakaaro Nui*

This paper assesses the acceptability, clinical utility and psychometric properties of the recovery section in the Alcohol and Drug Outcome Measure (ADOM). The ADOM is a three part outcome measure developed for routine use in alcohol and other drug (AOD) treatment services in New Zealand. Sections 1 and 2 of the measure have previously been tested. This study evaluated the two recovery items in section 3 with 14 consumer addiction leaders, 11 practitioners, and 1,260 clients in addiction treatment services, including 192 matched pairs between treatment admission and 6-week review. Analyses of the acceptability, clinical utility, convergent validity, and sensitivity to change indicate section 3 exhibits acceptable characteristics and meets minimum standards for consumer-based outcome measures. The recovery section 3 has been recommended for routine outcome measurement in adult community-based (outpatient) addiction services as part of the full ADOM measure.

Keywords: recovery, outcome measure, addiction services, alcohol and other drug, psychometric testing.

Commencing with the Blueprint for Mental Health Services in New Zealand (Mental Health Commission, 1998), there has been a strong commitment towards implementing a recovery approach within New Zealand's mental health and addiction services. The Ministry of Health's strategic document Rising to the Challenge 2012-2017: Mental Health and Addiction Service Development Plan (2012) continues to have a strong emphasis on a culture of recovery.

"Recovery" is a subjective term that means different things to different people. Personal recovery differs from clinical recovery, which is primarily focused on symptom abatement and improved functioning (Mental Health Commission, 2011). The recovery process involves people gaining control over their substance use to maximise their health and wellbeing and fully participate in society (see U.K. Drug Policy Commission, 2008). Recovery has been described as "creating a meaningful self-directed life regardless of challenges faced, that includes building resilience, having aspirations and the achievement of these" (Te Pou, 2014a, p. 5). While recovery is an individual process involving multiple pathways which takes place over time, common elements include relationships and support from others, hope and optimism about the future, building a positive identity, finding meaning in life, personal responsibility and control (Davidson et al., 2008; Davidson & White, 2007; Leamy, Bird, Le Boutillier, Williams, & Slade, 2011). A key component of recovery-oriented service delivery involves supporting clients to strive towards personally valued goals, and reintegrate into society through genuine working relationships, and a commitment to recovery principles (Le Boutillier et al., 2011; Slade, 2012).

The ADOM has been developed for the purposes of routine outcome measurement in AOD treatment services, and includes two items assessing changes in personal recovery. From the outset, development of the ADOM has involved input from people using AOD services in New Zealand. It is important that outcome measures incorporate questions that matter to consumers and their acceptability is assessed (Fitzpatrick, Davey, Buxton & Jones, 1998). The ADOM is a three part measure containing 20 items that is administered collaboratively by practitioners and tangata whaiora (clients). The measure's standardised administration procedure involves data collection at key clinical treatment stages of treatment admission, 6-week review, 3-month review, ongoing 3-month reviews, and treatment discharge (see Te Pou, 2014b). The ADOM is freely available at http://www.matuaraki.org.nz

Section 1 of the ADOM contains 11 relatively specific items assessing the type and frequency of substance use over the past four weeks. Section 2 includes seven items assessing the frequency of lifestyle and wellbeing issues, including physical and mental health, relationships, employment, housing and criminal activity. Both Sections 1 and 2 have previously been tested and recommended for routine use across AOD treatment services in New Zealand (Deering et al., 2009; Galea, Websdell, Galea-Singer, 2013; Pulford et al., 2010).

Section 3 of the ADOM includes two items focused on recovery. The recovery items were added to the ADOM following feedback from clients of addiction treatment services and consultation with sector representatives (Galea et al., 2013). The first recovery item in section 3 assesses how close people are to where they want to be in their recovery. Responses are rated on a 10-point scale ranging from 1 (no anchor) to 10 (best possible). Research by Galea and colleagues (2013) indicates this item is perceived as useful by clients in measuring their recovery. It was however found to have positive but low inter-rater reliability based on eight practitioner's ratings of two vignettes of clinical scenarios (Galea et al., 2013). Factors contributing to the low inter-rater reliability of this item may include the level of training of practitioners in administering the ADOM, the absence of a response anchor for response option one, and the ability of individuals to discriminate between different response options (see Fitzpatrick et al., 1998; Hasson & Arnetz, 2005). Although this type of measure is generally more sensitive to small changes that occur,

the use of alternative response options (for example, a 5-point Likert-type scale) may improve the psychometric properties of this item and be more acceptable to clients. Further testing is required to examine this, along with the validity and sensitivity to change of this recovery item.

Within section 3 of the ADOM, the second recovery item examines how satisfied people are with their progress towards achieving their recovery goals. Responses are rated on a 5-point scale ranging from not at all to extremely. This item is derived from the Brief Addiction Monitor (BAM) developed in the U.S. (Cacciola et al., 2013). Permission to use this item within the ADOM was sought from the author (D. Deering, personal communication, 2014). U.S. research with veterans in outpatient and inpatient addiction programmes indicates this recovery item is acceptable to clients, has excellent test-retest reliability, concurrent validity with quality of life measures, and is sensitive to change. It has been proposed that this recovery item be used as a mental health quality indicator for use internationally to compare system performance across countries (Pincus, Spaeth-Rublee, & Watkins, 2011). This item however requires testing for use in New Zealand AOD treatment services.

This paper describes the testing of the recovery questions in section 3 of the ADOM for routine use in adult community-based (outpatient) addiction services in New Zealand, including the perceived acceptability to clients, clinical utility, convergent validity and sensitivity to change.

Method

Study setting and design

The study involved two adult community addiction treatment services, which included one hospital based secondary mental health and addiction service, and one national non-government organisation. Both services have been using the 20 item version of the ADOM. These services reflect a variety of different adult community-based (outpatient) addiction services in New Zealand, in which the collection of the ADOM is most appropriate (for example, opioid substitution treatment, joint AOD and mental health service, rural satellite services, and also include services with a large Māori population base). AOD practitioners in these services were invited to complete an online survey. Retrospective de-identified client data collected routinely by practitioners in clinical practice was also extracted. Permission to use this data was obtained in writing. An online survey of consumer leaders in the addiction sector was also undertaken. The Matua Raki Consumer Leadership group distributed the consumer leaders' survey and provided feedback on draft findings and recommendations.

As the project did not involve the collection of data directly from clients of addiction treatment services, the Northern Health and Disability Ethics Committee advised formal ethical approval was not required.

Data collection

Consumer leaders in the addiction sector were asked to rate six questions about the perceived acceptability of the recovery items, including their perceived usefulness for measuring recovery progress during treatment. Sample items included "I would be willing to answer this question" and "how useful is this question for facilitating dialogue and discussion between consumers and clinicians?". AOD practitioners were also asked to rate six questions about the clinical utility of the recovery items, including their perceived usefulness in clinical practice and how practical they were to administer. Sample items included "I feel comfortable asking clients to complete this question" and "how useful is this question for monitoring the recovery progress of consumers". Average scale scores were calculated. Both surveys were administered online using SurveyMonkey.

De-identified client data collected in two clinical settings was obtained. Client data included demographic characteristics and ADOM scores related to AOD use, lifestyle and wellbeing, and recovery.

Psychometric testing

Client data was used to assess item response rates, the convergent validity, and sensitivity to change of the ADOM's recovery items.

Convergent validity is a type of construct validity and involves examining the association of the measure with other related variables (see Fitzpatrick et al., 1998). The current study assessed the convergent validity by examining the correlation coefficients (r) between the recovery items and mental and social wellbeing items included in section 2 of the ADOM. The importance of mental and social wellbeing has been highlighted in conceptual models of recovery in addictions and mental health (Davidson et al., 2008, Davidson & White, 2007; Leamy et al., 2011). The recovery items were expected to have negative and moderate relationships with mental and social wellbeing indicators based on previous research (Dennis, Scott, Funk & Foss, 2005; McNaught, Caputi, Oades & Deane, 2007; Nelson, Young & Chapman, 2014; Salzer & Brusilovskiy, 2014). The convergent validity was also assessed by examining the relationship between the recovery items. Items assessing similar constructs are expected to have a stronger relationship with each other than items assessing other constructs (see Fitzpatrick et al., 1998). A strong and positive relationship between the recovery items was expected. Data from at least 85 clients was required to have sufficient statistical power to detect moderate relationships (see Cohen, 1992).

Sensitivity to change, or the ability to detect meaningful change over time due to treatment, was assessed using data from one organisation with this information available. Mean scores at treatment admission were compared with those at 6-week review (+/- 2 weeks). While a longer time period would allow for greater changes to be detected, the analyses were restricted by available data. Paired samples t-tests were conducted and the effect size was calculated using Cohen's d. Matched pair data collections from at least 64 clients at baseline and follow-up were required to detect moderate mean differences (see Cohen, 1992).

Data analysis

All data was screened prior to analysis. Client data with more than 25% of missing responses on the ADOM were deleted from analysis. In total, 21 cases were deleted, of which 12 were at

treatment admission and nine at 6-week review.

Ethnicity was prioritised so that New Zealand Europeans and other ethnicities that also identified as Māori or Pacific were coded as the latter. Preliminary analyses indicated that one of the addiction treatment services had a greater proportion of Māori and less Pacific peoples than the other. However, the results of both services were combined given preliminary analyses yielded similar results. Analyses were performed using SPSS version 22 using listwise deletion.

Results

A total of 14 consumer leaders in the addiction sector completed an online survey about the perceived acceptability of the recovery items, including at least two Māori and four New Zealand Europeans. Online surveys about the clinical utility of the recovery items were also completed by 11 AOD practitioners, including 10 New Zealand Europeans/ Other, one Pacific person; four males and seven females.

Data from 1,260 clients were available for analysis at treatment admission and 262 at 6-week review. There were a total of 192 matched pairs between treatment start and 6-week review. Baseline characteristics in Table 1 indicate two-thirds of clients were males and one-third Māori. Alcohol and cannabis use were most frequently reported as shown in Table 2. Table 3 also indicates problems with work, study or caregiving were common among clients.

Table 1. *Client Demographic Characteristics at Baseline*

Measure	Baseline (*N*=1,260) %	Baseline & 6-week review (*n*=192) %
Gender		
Male	70.3	68.6
Female	29.5	30.9
Transgender	<1.0	<1.0
Ethnicity		
Māori	32.8	24.2
Pacific	12.8	14.9
Asian	<1.0	<1.0
NZ European/Other	54.0	60.3

Table 2. *Any AOD Use Over the Past Month at Baseline*

Substance	Baseline (*N*=1,129) %	Baseline & 6-week review (*n*=192) %
Alcohol	74.8	71.1
Cannabis	31.6	27.1
Amphetamine	11.2	10.5
Opioids	3.3	3.1
Sedative/tranquiliser	4.5	5.2
Cigarettes/nicotine	68.3	66.1

Table 3. *Lifestyle and Wellbeing Indicators Over the Past Month at Baseline, N=1,260*

ADOM Section 2 Measure	Never	<weekly	1-2 x week	3-4 x week	Daily
%					
Physical health interference	56.2	13.9	10.4	4.9	14.6
Mental health interference	48.5	15.2	12.1	8.7	15.5
AOD use led to family/friend conflict	60.3	19.5	9.3	5.5	5.4
AOD use led to work/activity interference	65.2	14.0	9.0	4.2	7.6
Engaged in work/other activity	24.8	3.7	8.4	8.8	54.4
Housing difficulties	86.6	5.6	1.3	1.3	5.2
Illegal or criminal activity	80.5	12.4	3.3	1.5	2.3

Acceptability and clinical utility

Both of the ADOM's recovery items were perceived on average to be at least moderately acceptable and useful to the consumer leaders surveyed (see Table 4). Open ended feedback suggested the recovery items were particularly useful for stimulating conversations with clients about their recovery, developing a better understanding of individual recovery and goals, and reflection by clients who can often be relatively self-critical.

The AOD practitioners surveyed moderately agreed on average that the recovery items were feasible to administer in clinical practice. The recovery items were rated as moderately useful on average for use in clinical settings based on questions about their potential to facilitate dialogue and discussion, monitor clients' recovery progress, and indicate whether clients had benefitted from treatment or not. Open ended feedback from practitioners indicated the ADOM's recovery items were particularly useful for facilitating discussion about the meaning of recovery with clients, looking at individual recovery goals, and for clients in reflecting on their recovery journey. The recovery items were also seen as useful for creating a sense of hope amongst clients. Practitioners noted how client improvement was often associated with changes over time in client expectations about recovery and their goals.

Psychometric testing

Item response rates are one indicator of the acceptability of items to respondents. The analysis of client data indicated that both the recovery items had less than 5% missing data. Item response rates ranged from 96-97%.

The relationship between items was examined to assess the convergent validity. Table 5 indicates that both of the recovery items (ADOM questions 19 and 20) had a negative and moderate relationship with indicators of mental and social wellbeing at baseline. Similar relationships were detected using 6-week review data. Table 4 also indicates the recovery items had a large and positive relationship with each other.

To assess the sensitivity to change of the recovery items, individual client ratings at baseline and follow-up were compared. In response to the question "overall, how close are you to where you want to be in your recovery", 18.2% of client ratings worsened, 22.4% stayed the same, and 59.4% improved between treatment admission and 6-week review. Over the same time period, 13.5% of people's ratings of their level of satisfaction with their progress towards achieving their recovery goals worsened, 34.4% stayed the same, and 52.1% improved.

On average, significant mean differences between baseline and 6-week review were detected for both recovery items (see Table 6). Recovery ratings were on average moderately higher at 6-week review compared with treatment admission.

Table 4. *Acceptability and Clinical Utility of the Recovery Items*

	Consumer leaders' responses (*N* =14)	
Measure	Q19. Overall, how close are you to where you want to be in your recovery? *M* (SD)	Q20. How satisfied are you with your progress towards achieving your recovery goals? *M* (SD)
Acceptability		
Acceptability*	3.1 (0.7)	3.3 (0.6)
Perceived usefulness≠	3.2 (0.8)	3.3 (0.7)
	AOD practitioners' responses (*N* = 11)	
Clinical utility		
Feasibility*	3.3 (0.4)	3.2 (0.8)
Perceived usefulness≠	3.4 (0.9)	3.3 (0.9)

Note. *Rated on a 4-point scale ranging from 1=*disagree* to 4=*strongly agree.* ≠Rated on a 4-point scale ranging from 1=*not at all useful* to 4=*very useful.*

Table 5. *Correlation between the Recovery Items and Mental and Social Wellbeing at Baseline, N=1,160*

Measure	Q19	Q20
Q13. Mental health interference	-.45*	-.38*
Q14. AOD use led to family/friend conflict	-.44*	-.33*
Q15. AOD use led to work/activity interference	-.42*	-.34*
Q19. How close to where you want to be in your recovery	-	.67*
Q20. Satisfaction with progress towards achieving recovery goals	.67*	-

Note. *p<.01

Table 6. *Change in Recovery between Baseline and 6-Week Review, n=192*

Measure	Baseline *M* (*SD*)	6-weeks *M* (*SD*)	*p*	Effect size *d*
Q19. How close to where you want to be in your recovery	5.5 (2.6)	6.7 (2.2)	<.001	0.53
Q20. Satisfaction with progress towards achieving recovery goals	3.2 (1.2)	3.8 (1.1)	<.001	0.53

Discussion

The main aims of this study were to assess the acceptability and clinical utility of the recovery items included in the ADOM, as well as their convergent validity and sensitivity to change.

Client-based outcome measures need to incorporate questions that matter to clients of addiction treatment services (see Fitzpatrick, et al., 1998). Earlier research provides some evidence to support the acceptability of the ADOM's recovery items amongst clients (see Cacciola, et al., 2013; Galea, et al., 2013). The low proportion of missing data found on the recovery items in the current study provides further evidence indicating they are acceptable to clients in addiction treatment services. Consumer leaders in the addiction sector also indicated that they understood the recovery items, that the questions were easy to answer, and that they would be willing to answer these.

Earlier work has identified the importance of gaining practitioner 'buy-in' in the implementation and routine use of outcome measures (see Wheeler, Websdell, Galea & Pulford, 2011). When practitioners were asked similar questions to consumer leaders, they indicated the recovery items were feasible to administer in clinical practice. There was a high level of agreement between consumer leaders' and practitioner's ratings of the acceptability and feasibility of the recovery items.

Both consumer leaders and AOD practitioners perceived the recovery items to be useful in clinical practice. The ability of the recovery items to facilitate dialogue and discussion was seen as their greatest benefit. Feedback also indicated that the process of measurement can help facilitate recovery by generating hope and optimism, and is strengthened where there is support from others. The results indicate the recovery items have at least a moderate level of acceptability to consumer leaders and clinical utility amongst AOD practitioners surveyed.

Validity is a key psychometric property of any measure and can be assessed using a variety of strategies. Tests of convergent validity were undertaken and indicate the recovery items were related to indicators of mental and social wellbeing. These findings were expected based on models of personal recovery (see Leamy, et al., 2011) and previous research (McNaught, et al., 2007; Nelson, et al., 2014; Salzer & Brusilovskiy, 2014). The convergent validity was also demonstrated by the detection of a strong and positive relationship between the recovery items.

The ability of a measure to detect changes over time is an important characteristic of client-based outcome measures (Fitzpatrick, et al., 1998). While recovery ratings for some individuals may worsen in the initial stages of treatment, small improvements on average were expected within the first 6-weeks. Scores on both of the recovery items were found to increase on average between treatment admission and 6-week review. The amount of improvement in progress towards achieving recovery goals was similar to that reported by Nelson and colleagues (2014) over a period of four weeks amongst U.S. veterans in an inpatient addiction programme. Findings indicate the recovery items are sensitive to change.

Another important psychometric property is the reliability or consistency of results produced by a measure at different times or by different raters (Coolican, 1994). U.S. research indicates the item assessing progress towards achieving recovery goals has excellent test-retest reliability (Cacciola, et al., 2013). The item assessing how close people are to where they want to be in their recovery was found to have positive but low inter-rater reliability when tested by Galea and colleagues (2013). This may be partly explained by the level of practitioner training in administering the ADOM. Nevertheless, when the findings of Galea et al. were recoded onto a 5-point scale based on the ADOM information systems guidelines (Te Pou, 2014b), a high level of agreement between raters was found in post-hoc analyses, with 7 out of the 8 practitioners having corresponding ratings. Evidence therefore indicates both the recovery items have an acceptable level of reliability.

Based on data collected from a range of sources and addiction settings, the study provides evidence indicating both the recovery items included within the ADOM meet minimum psychometric testing standards for consumer-reported outcome measures (see Fitzpatrick et al., 1998; Reeve et al., 2013). Nevertheless, several key limitations need to be taken into account.

Valuable insights for this project were gained from a small convenience sample of consumer leaders in the addiction sector. It would also be useful to talk to clients directly in clinical settings who are likely to currently be at different places in terms of their wellbeing and recovery journey, and may have different levels of literacy and understanding of the concept of recovery.

The current study gathered feedback from a small sample of AOD practitioners working in two organisations. As the professions of practitioners were not gathered, it is not possible to assess whether the views of different groups vary. In addition, the level of readiness to implement the ADOM and the perceived benefits amongst practitioners may differ in other clinical settings. Use of the recovery items may also be more challenging in some contexts and with some population groups. The utility of the recovery questions in residential settings also requires testing.

Recovery is an individual process that is aided by a range of factors over

time. Clients of addiction treatment services may appear to have made little recovery progress based on their ratings of the ADOM's recovery items if their recovery goals have changed. Such ratings may also inappropriately suggest that treatment has been ineffective. The tool can nevertheless help facilitate discussion with clients about their recovery aspirations and the process of recovery. There may however be differences in practitioner's and clients' understandings of the recovery concept. The inclusion of a recovery definition within the ADOM may help facilitate greater shared understandings and more standardised administration. There is also growing interest in exploring perspectives on the concept of recovery and wellbeing across the diversity of clients. This will assist in refining the ADOM and other client-based outcome measures.

Finally, this study's findings are based on pooled data provided by two organisations. While potential differences in the results were examined in preliminary analyses, the data from only one organisation was used in sensitivity to change analyses. This largely reflects the length of time the ADOM has been implemented within different organisations. Once data is available over a longer time period, it would be useful to undertake further analyses.

Conclusion

In summary, the two global recovery items included in the ADOM meet minimum standards for their introduction to routinely assess client recovery as part of the full measure in adult community-based (outpatient) addiction services. Findings indicate measurement of the recovery process is beneficial for clients of addiction services. The tool is reportedly enabling better engagement and discussion with clients about their recovery and progress. As a result, clients may be more involved in their treatment and engaged in their own care, leading to better treatment outcomes (see Donnelly et al., 2011; Goodman, McKay, & DePhilippis, 2013). For AOD practitioners, the routine collection of recovery data can help in assessing treatment progress, informing future planning, identifying the need to make treatment changes, and in reflecting on their own practice (see Donnelly, et al., 2011; Hatfield & Ogles, 2004). At a service level, standardised recovery outcome data is useful for informing and demonstrating a commitment to recovery oriented service planning and delivery.

Based on the study's findings it is recommended that both the recovery items be considered for routine use as part of the ADOM in adult community-based (outpatient) addiction services in New Zealand. Further research examining the test-retest reliability, concurrent validity with more comprehensive measures, and the generalisability of the results to different populations and clinical settings (e.g., residential and primary care settings) is also recommended to build a stronger evidence base. Future research into the reliability should consider the utility of a 5-point response scale being used for both recovery items, and the impact of factors such as training in the administration of the ADOM. Nevertheless, testing indicates that the recovery items meet minimum psychometric testing standards for client-reported outcome measures. The recovery items in section 3 of the ADOM as part of the full measure should therefore be considered for the national collection of mental health data into PRIMHD (programme for the integration of mental health data). This would make New Zealand one of few countries currently in the world in which measurement of recovery forms part of its national mental health data collection.

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Corresponding Author:
Angela Jury
Researcher
Te Pou o Te Whakaaro Nui
PO Box 108-244
Symonds Street
Auckland 1150
angela.jury@tepou.co.nz