



Australian Mental Health Outcomes and Classification Network

'Sharing Information to Improve Outcomes'

An Australian Government funded initiative

**Development of the Living in the Community (LCQ) measure
of social inclusion for use in mental health**

FINAL REPORT

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Table of Contents

Acknowledgements.....	7
Executive Summary.....	8
About this project	8
Project aim	8
Methods and key findings.....	9
Discussion.....	10
Chapter 1: Introduction	11
Background	11
About this project	16
Project aim	17
Project objective	17
Summary of activities and findings	17
Structure of this report	22
Chapter 2: A Review of individual-level measures of social inclusion for use in mental health	23
Introduction	23
Method	23
Results.....	25
Discussion.....	25
Conclusion.....	26
Chapter 3: Consultations	27
Introduction	27
Method	27
Results.....	29
Discussion.....	31
Conclusion.....	32
Chapter 4: Psychometric analysis	33
Introduction	33
Method	34
Findings	35
Discussion.....	56

Conclusion.....	56
Chapter 5: Development of a social inclusion index.....	57
Introduction	57
Method	57
Findings	57
Discussion.....	61
Conclusion.....	61
Chapter 6: Short Form LCQ (SF-LCQ)	62
Introduction	62
Method	62
Findings	64
Discussion.....	64
Conclusion.....	65
Appendix A: Individual-level measures of social inclusion and related constructs	66
Appendix B: Psychometric testing and properties, advantages and disadvantages of each social inclusion measure	73
Appendix C: Final LCQ.....	80
Appendix D: References.....	88

Exhibits

Exhibit 1: Some definitions of social inclusion in mental health	13
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Figures

Figure 1: Impact of psychological distress on rating of subjective social inclusion	39
Figure 2: Impact of psychological distress on self-advocacy questions.....	39
Figure 3: Impact of psychological distress on outcome questions	40
Figure 4: Impact of psychological distress on stability of subjective social inclusion questions measured on the ‘about right’ scale	42
Figure 5: Impact of psychological distress on stability of self-advocacy questions measured on the performance scale	44
Figure 6: Impact of psychological distress on stability of outcome and recovery questions measured on the performance scale	44

Figure 7: Causal model.....	48
Figure 8: Summary of model of social inclusion (sense of being part of a group or community)	52

Tables

Table 1: Participating services.....	19
Table 2: Psychometric properties examined in appraisal of identified instruments.....	24
Table 3: Location and participation in consultations.....	28
Table 4: Survey duration (LCQ plus K-10)	34
Table 5: Demographics of sample.....	35
Table 6: Pearson's correlation	36
Table 7: Kappa values	37
Table 8: Change in kappa values.....	38
Table 9: Stability of subjective social inclusion questions using the 'about right' scale.....	41
Table 10: Stability of self-advocacy questions using the performance scale	41
Table 11: Stability of outcome and recovery questions using the performance scale.....	42
Table 12: Impact of psychological distress on stability of questions using the 'about right' scale	43
Table 13: Impact of psychological distress on stability of self-advocacy questions using the performance scale	45
Table 14: Impact of psychological distress on stability of outcome and recovery questions using the performance scale	46
Table 15: Classification table and model summary statistics	49
Table 16: Variables in the equation	50
Table 17: Correlation of outcome and recovery questions with sense of being part of a group or community.....	51
Table 18: Pearson's correlation for activity items	53
Table 19: Pearson's correlation for education items.....	54
Table 20: Comparison of results for the LCQ and ABS employment questions	55
Table 21: Simple index descriptives.....	58
Table 22: Relationship between key Fourth Plan indicators and LCQ questions	58
Table 23: Change in values for <i>about right</i> scale	59
Table 24: Policy index descriptives	59
Table 25: Causal index descriptives	59
Table 26: Means outcome scores by index.....	60
Table 27: Advantages and disadvantages of the indexes	61

Table 28: LCQ short form selection matrix 62

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Executive Summary

The document presents the Final Report of the project to develop the Living in the Community Questionnaire (LCQ) to measure social inclusion in the mental health sector.

About this project

The *Fourth National Mental Health Plan* (the Fourth Plan) sets an agenda for collaborative government action in mental health across a framework of five key priority areas, the first of which is 'social inclusion and recovery'. In the context of this priority area, the Fourth Plan promotes the importance of a socially inclusive approach to mental health and wellbeing that includes social and health domains as well as supporting community engagement and connectivity. This approach to social inclusion recognises the need for recovery-orientated services and recognition that the recovery of the individual is a personal journey.

To achieve change in the social inclusion and recovery area, as well as in the other priority areas, a range of actions have been identified. Progress on the achievement of these actions, will be measured against 25 indicators, including several indicators designed specifically to monitor social inclusion of consumers in the following five areas:

- participation in employment by people with mental illness of working age;
- participation in education and employment by people aged 16-30 who have a mental illness;
- community participation more broadly;
- stability of housing; and
- access to a GP.

The Mental Health Information Strategy Standing Committee (MHISSC) (formerly the Mental Health Information Strategy Sub-committee) commissioned the Australian Mental Health Outcomes and Classification Network (AMHOCN) to lead development of a tool to measure the social inclusion outcomes for consumers identified in the relevant Fourth Plan indicators. The underlying constructs of such a measure are closely linked to the concept of recovery. Because people with mental illness often face problems associated with social and economic marginalization, monitoring the extent to which a consumer has positive social inclusion outcomes would provide essential information about his/her overall recovery and would complement the clinical outcome data that are currently collected through the National Outcomes and Casemix Collection (NOCC).

Project aim

The project aimed to give effect to the commitments in the Fourth Plan to strengthen the focus of the mental health sector on social inclusion and recovery.

To achieve this, the project was required to develop a consumer self-report measure that provides information relevant to social inclusion outcomes for youth and adults, using the Activity and Participation Questionnaire 6 (APQ-6) as a foundation. The final measure developed is the LCQ.

Methods and key findings

This project employed an iterative approach to develop the LCQ, which included the following stages:

A review of literature and individual-level measures of social inclusion in mental health. This provided the project with information on definitions and domains in social inclusion and identified the APQ-6 as the best foundation tool from which to build the LCQ. (See Chapter 2)

Consultations with the sector, including consumers, service providers, clinicians, carers and other experts, were used to identify the adaptations to the APQ-6 needed to develop a measure tailored to the needs of this project. This resulted in a draft tool for testing. (See Chapter 3)

Psychometric analysis of the draft and final LCQ. The draft tool was subject to several stages of testing and development which informed the final LCQ. A proof of concept trial was conducted with 244 consumers (from 10 mental health services) and 1001 members of the general public through an online panel to test the validity and reliability of the draft LCQ. Test retest reliability was measured using 400 panellists and 50 consumers. While the draft LCQ tested well, it was decided that the usability and utility of the tool could be improved through the inclusion of a dependent variable and changes to some questions. To test this version of the LCQ a further survey of 1001 members of the general public was conducted using an online panel, with 400 of these panellists also completing a second survey to measure test retest reliability.

The revision to the LCQ performed well in the psychometric testing. The instrument met the minimum requirements for reliability and demonstrated construct and criterion validity. (See Chapter 4)

The LCQ data can be used to create an index of social inclusion. Several methods were explored to construct an index (see Chapter 5). These included:

- Simple index, where the dependent variable was used as an index.
- Policy index, where the questions that contribute to the measurement of the social inclusion indicators in the Fourth Plan were transformed then summed to construct an index.
- Causal index, where the variables identified as the key drivers of social inclusion are weighted and summed to construct an index.

The data was also found to be amendable to the development of a short form questionnaire (reducing administration time from 6.77 minutes to 5.35 minutes) by selecting those questions found to be important in the modelling, useful to developing an index and important to the measurement of policy outcomes. (See Chapter 6)

Discussion

The LCQ has met the requirements of the project to give effect to the commitments in the Fourth Plan to strengthen the focus of the mental health sector on social inclusion and recovery. Using the APQ-6 as a foundation, the LCQ has received positive feedback on its construction and content as a consumer self-report measure that provides information relevant to social inclusion outcomes for youth and adults.

The LCQ has also demonstrated that it is a flexible tool that can be applied to a range of settings and with a range of populations.

Chapter 1: Introduction

This chapter provides background information on social inclusion, its measurement and relevance to mental health policy in Australia. It also provides an introduction to this project, including the project aims, objectives, a summary of activities and findings, and an overview of the structure of this report.

Background

Social inclusion is widely recognised as central to mental health (Wilson, 2006). Social exclusion can contribute to poor mental health and poor recovery from mental illness, while mental health problems can systematically promote exclusion through stigma and discrimination, loss of self-esteem and social competence (Bertram & Stickley, 2005; Harrison & Sellers, 2008; Hooley, 2010; Pachoud, Plagnol & Leplege, 2010).

Discussion of the issue of 'social inclusion' in social and health policy has been gaining momentum in countries such as Australia, the United Kingdom and across Europe since the 1980's (Wilson, 2006). People with mental health problems have been shown to be 'one of the most excluded groups in society' (Social Exclusion Unit, 2004, p.3). Consequently, increasing social inclusion of people with mental illness has become a high priority for many countries. Australia's recognition of the centrality of social inclusion to mental health has been reflected in health and mental health policy, including in *Australia's Fourth National Mental Health Plan* (the Fourth Plan) which has 'social inclusion and recovery' as its Priority Area 1 (Australian Health Ministers, 2009).

At a broader level, the importance of social inclusion in general Australian health and social policy is illustrated by the development of a Social Inclusion Unit in 2007 and the subsequent development of government policy and strategy to improve social inclusion for various groups at-risk of social exclusion across Australia (see <http://www.socialinclusion.gov.au>). This is based on the vision of,

"...a socially inclusive society... in which all Australians feel valued and have the opportunity to participate fully in our society." (Social Exclusion Unit, 2011).

Social inclusion and mental health

Social inclusion is central to mental health in a number of ways. Social isolation has been identified as a risk factor for the development of mental health problems (Bertram & Stickley, 2005); mental illness and its treatment can systematically increase social isolation (Bertram & Stickley; Hooley, 2010; Social Inclusion Unit, 2004); and improving social inclusion of the individual is an important contributor to recovery (Harrison & Sellers, 2008; Pachoud, Plagnol & Leplege, 2010).

Furthermore, widespread acceptance of recovery-oriented approaches to the treatment of mental illness no longer makes it acceptable for 'recovery' from mental illness to relate purely to a decline in

symptoms. Rather, 'recovery' also relates to a return to some level of autonomy and functioning in a variety of life domains, and to an acceptable subjective quality of life (Pachoud, Plagnol & Leplege, 2010). In this way, social inclusion can also be used as an indicator of recovery from mental illness (Priebe, 2007) as well a contributor. As Anthony (1993) states, "recovery from the consequences of mental illness is sometimes more difficult than recovering from the illness itself" (p.6).

Mental illness and socially isolation

Social isolation for people with a mental illness can result from a number of causes. For example, stigma and discrimination can reduce opportunities for social interaction (Hooley et al, 2010) and participation in various life domains including paid work (Social Inclusion Unit, 2004). Severe mental illness can reduce social competence (Hooley, 2010), confidence and self-esteem (Anthony, 1993; Borba et al, 2011; Hooley) which in turn affect social interactions and existing social relationships. Also, mental health care that takes place in a setting that is separated from the community (particularly for severe mental illness) can create an environmental barrier to community participation, particularly when it takes place over the long term (Bertram & Stickley, 2005).

Defining social inclusion in mental health

Despite general agreement of the importance of 'social inclusion' in mental health, a clear and accepted definition has not emerged within the mental health field (Bertram, 2008; Le Boutillier & Croucher, 2010; Priebe, 2007). In 2007, Marino-Francis and Worrall-Davies conducted a literature review of definitions of social inclusion and concluded that 'no clear definition accepted across fields was found' (2010, p.38). Some examples of definitions of social inclusion that have emerged in the mental health literature are shown in Exhibit 1.

The disparities and differences between definitions are likely to reflect the complexity of the multidimensional 'social inclusion' concept, its lack of clear theoretical underpinnings, and the varying purposes and contexts for which it has been defined (Bates & Repper, 2001; Morgan et al, 2007; Schneider & Bramley, 2008; Wilson, 2006). The complexity of the concept is captured in the conclusion of Huxley et al (2006) that social inclusion is relative to the society of the individual, multi-dimensional, dynamic (changing over time), and multi-layered (relating to all levels of society from the individual to the global level).

As a result of these complexities and discrepancies, the term 'social inclusion' in the literature is often used interchangeably, or at minimum overlaps, with concepts such as 'social exclusion' (Morgan et al, 2007 refers to these terms as two ends of the same spectrum), 'social capital' (Morgan et al, 2007), 'poverty', 'disadvantage' and 'deprivation' (Scutella, Wilkins & Horn, 2009; Schneider & Bromley, 2008) and various others (see Huxley et al, 2006 for differentiation between social inclusion and other related concepts).

Exhibit 1: Some definitions of social inclusion in mental health

Marino-Francis and Worrall-Davies (2010, p.38):

“Social inclusion is about each person taking part in society and having control over their own resources. It is also about a community that cares for its members, makes them feel welcome and is willing to adjust to fit their various needs.”

Mental Health Commission of New Zealand (2009, p.1):

“[Social inclusion is]... the extent to which people are able to exercise their rights and participate, by choice, in the ordinary activities of citizens.”

Slade (2009):

“[Social inclusion is]... a person’s right to participate as an equal citizen in all the opportunities available, employment, education and other social and recreational activities.”

Bates and Repper (2001, p.19):

“[Social inclusion means]... full access to mainstream statutory and post sixteen education, open employment, and leisure opportunities alongside citizens who do not bear these [mental illness] labels.”

Sayce (2001, p.12):

“[Social inclusion is]... a virtuous circle of improved rights of access to the social and economic world, new opportunities, recovery of status and meaning, and reduced impact of disability. Key issues will be availability of a range of opportunities that users can choose to pursue, with support and adjustment where necessary.”

Measuring social inclusion

Objective and subjective components of social inclusion

Importantly, the various uses of the term ‘social inclusion’ have also led to disparities in the level to which definitions of social inclusion include a subjective element. While some have used ‘hard’ indicators (Priebe, 2007) such as whether a consumer is employed, their number of social contacts, and their living situation, to indicate their level of social inclusion, others have argued that a person is not socially included simply because they ‘participate’ in certain specified life domains. Rather, they argue, it is also necessary that the person *feels* included or feels a part of the community or society in which they live. As Boutillier and Croucher (2010) state:

"Recovering quality and meaning of life is more complex than simply engaging in community activities or increasing social contacts, as implied by tools such as the inclusion web (Hacking and Bates, 2008). Individuals who are physically involved in their communities are not socially included unless they feel socially included. Social inclusion must include personal meaning, a sense of involvement and social connectedness, rather than simplifying the concept to a person's hours of physical engagement with his or her community." (p.137)

Conversely, therefore, a person is also socially *excluded* if they would like to have more opportunities for inclusion (Morgan et al, 2007) and not if their lack of participation is by choice. While there is no one accepted definition of 'social inclusion' for use in mental health, the commonalities among the definitions listed in the Exhibit 1 Box do indicate a tendency toward the inclusion of *choice or self-determination* to participate in society as an integral component, in addition to a more objective indication of the extent of a person's participation in various life domains. This approach is in line with that recommended by Huxley et al (2006) as a conclusion to their review of social inclusion indices:

"... any proposed social inclusion index should focus on the availability of opportunity to access material and other resources, and the subjective view of this availability. It should address the extent to which the person participates in these life activities, and also the person's subjective perception of the value or benefit of these activities for themselves... [and] the degree to which the person wishes to have more or less or the same level or type of participation in each life domain..." (p. 6)

Levels of measurement

'Hard' indicators of social inclusion are typically used at the population level. For example, the Australian Government's Social Inclusion Unit uses population-level indices to measure the incidence of certain risk factors for social exclusion (such as low income, long-term unemployment, access to services) among population sub-groups most at risk of being social excluded (such as Indigenous Australians, and migrants and refugees) (Social Inclusion Unit, 2009). These indices are used to measure the effectiveness of social inclusion policy and strategy at a national level. However, these population-level indices are not the focus of this review.

This review focuses on individual-level measures of social inclusion. Individual-level measures of social inclusion allow the clinician or service provider to assess the individual's level of social inclusion at a point in time, and to track progress by repetition of that measure. For some measures, it may also be possible to aggregate individual responses at a group level to determine trends in social inclusion for a particular group (such as users of a particular service).

Domains of social inclusion

In addition to the lack of agreed definition of social inclusion in mental health, there is also no general agreement on those life domains or dimensions that are essential to a person being socially included. While research evidence suggests that participation in a variety of life domains and services that provide

opportunities for community participation can promote recovery from mental illness (Dyer et al, 2009), the exact constitution of those essential domains remains to be established (Morgan et al, 2007).

The Australian Social Inclusion Board (2011) has included four primary life domains as being essential to social inclusion for all Australians: education and training ('learn'), employment ('work', including voluntary work and caring), connecting with people and using local community resources ('engage'), and having the opportunity to influence decisions that affect them ('have a voice'). While it may be appropriate to adopt the Social Inclusion Unit's definition of social inclusion when developing a measure of social inclusion for mental health service users, this definition has been developed with a number of at-risk groups in mind, and it may not purely reflect the experiences of mental health consumers.

The creators of the social inclusion measures included in this review have created their measures for different purposes and in different countries. These measures include additional life domains to meet those purposes (see Appendix A).

Psychometric properties of social inclusion measures

An essential precursor to the development of a measure is the definition of the construct that is to be measured. Given that there is not yet one standard preferred definition of 'social inclusion' used across the mental health field, there cannot, therefore, be one standard measure. Furthermore, as there is no agreement across the literature on those life domains in which participation is essential for mental health, no measure can propose to holistically measure levels of social inclusion. Assessment of the psychometric properties of measures of social inclusion, such as validity and reliability of social inclusion measures is therefore difficult. As Priebe (2007) states:

"[assessment of psychometric characteristics]...are based on psychological test theory and the assumption that there is a well-defined construct that needs to be measured... Items can be summarised in scores, but the score does not necessarily reflect an underlying construct." (p. s18)

Despite these difficulties, development of a quality measure of social inclusion is necessary to assess the effectiveness of projects, services and policies that aim to enhance it. As stated by Morgan et al (2007):

"Interventions designed to promote social inclusion need clear guiding definitions and goals if they are to be evaluated and subsequently integrated into routine clinical care." (p.482).

As a result of this need, a number of researchers have aimed to develop instruments that measure levels of social inclusion for the purpose of assessing clinical or project outcomes, or to enhance clinician-consumer discussion. This review identifies a number of these measures.

About this project

The *Fourth National Mental Health Plan* (the Fourth Plan) sets an agenda for collaborative government action in mental health across a framework of five key priority areas, the first of which is 'social inclusion and recovery'. In the context of this priority area, the Fourth Plan notes:

"Policy and service development needs to recognise the importance of a holistic and socially inclusive approach to health in promoting mental health and wellbeing, that includes social as well as health domains and supports people to establish community engagement and connectivity."(p.25)

"... [A recovery approach] represents a personal journey toward a new and valued sense of identity, role and purpose together with an understanding and accepting of mental illness with its attendant risks."(p. 26)

A range of actions has been identified to achieve change in the social inclusion and recovery area, as well as in the other priority areas. Progress will be measured against 25 indicators, including several designed specifically to monitor social inclusion of consumers in the following five areas:

- participation in employment by people with mental illness of working age;
- participation in education and employment by people aged 16-30 who have a mental illness;
- community participation more broadly;
- stability of housing; and
- access to a GP.

The Mental Health Information Strategy Standing Committee (MHISSC) (formerly the Mental Health Information Strategy Sub-committee) has considered how to progress the information development work that will address the need to collect national data that will be suitable for reporting against the social inclusion indicators (as well as the requirements of developing recovery-oriented consumer outcome measures and measures of consumers' experiences of care). The MHISSC recommended that a measure be developed that addresses the social inclusion outcomes for consumers identified in the relevant Fourth Plan indicators. The underlying constructs of such a measure are more specific than but closely linked to the concept of recovery. Because people with mental illness often face problems associated with social and economic marginalization, monitoring the extent to which a consumer has positive social inclusion outcomes would add essential information about his/her overall recovery and would complement the clinical outcome data that are currently collected through the National Outcomes and Casemix Collection (NOCC).

The Australian Mental Health Outcomes and Classification Network (AMHOCN) was given the task of undertaking this project. The initial focus of this project was on developing an instrument that could be used to monitor the extent to which consumers engage in meaningful vocational and community activity, have stable and affordable housing, and have a GP to look after their general medical needs.

However, it was anticipated that other aspects of social inclusion that are important elements of a person's recovery might also be identified during the project. The project was designed to identify these and make recommendations about the desirability and feasibility of incorporating these additional social inclusion outcome areas into a new consumer self-report measure.

Several principles underpinned the project. Firstly, any measure must be meaningful to consumers who will ultimately have to complete the measure. Secondly, there was recognition that social inclusion measures should have immediate relevance for services, and should encourage them to consider their current clinical practices and develop pathways that support community participation and minimise the risk of social exclusion. Thirdly, although the current project was not about implementation, there was an acknowledgement that the development of the new measure would need to recognise the role and contribution made by existing consumer-level NOCC measures, and would need to augment rather than duplicate these.

The starting point for the project was the Activity and Participation Questionnaire 6 (APQ-6). The APQ-6 was developed by New South Wales Health and assesses consumers' involvement in a range of social and vocational activities. New South Wales is currently well advanced in the process of implementing it as a discretionary component of their local Mental Health Outcomes and Assessment Tool (MH-OAT) collection. Other jurisdictions have expressed interest in the possibility of the APQ-6 being used on a similar basis within their services.

Project aim

The project aimed to give effect to the commitments in the Fourth Plan to strengthen the focus of the mental health sector on social inclusion and recovery.

Project objective

The main objective of the project was to develop a consumer self-report measure that provides information relevant to social inclusion outcomes for youth and adults, using the APQ-6 as a foundation.

Summary of activities and findings

AMHOCN established a Technical Advisory Group (TAG) to provide advice on the development of the measure. The TAG comprised members with specific expertise in this area, consumers, carers and other invited experts. The TAG met to develop an initial draft of a measure which was then taken to a broader sector consultation across the states and territories with a range of key stakeholders including consumers, carers, clinicians and jurisdictional representatives. Consultations also took place with members of the Mental Health Information Development Expert Advisory Panels.

This sector consultation provided valuable feedback on the range of key issues that consumers, carers, clinicians and others within the mental health sector saw as important when considering the social inclusion aspects of recovery.

A draft version of the measure was also presented to MHISSC. The measure, at that stage, was known as the *Life in the Community Questionnaire* (LCQ).

In the latter half of 2011, AMHOCN undertook proof of concept testing of the LCQ. The proof of concept pilot saw a small number of services using the LCQ as part of clinical practice. The views of consumers and clinicians who used the tool were gathered online and in focus groups.

AMHOCN also undertook an online survey with consumers, carers and clinicians and presented the LCQ at the TheMHS Conference.

A report on the results of the proof of concept pilot was presented and discussed at MHISSC. The results of the proof of concept pilot were promising but indicated the need for additional work in order to create a measure that not only enabled reporting around the national indicators but which also produced high quality information. Those who used the LCQ in clinical practice were more positive than those who simply reviewed the LCQ and provided feedback.

Following discussion, MHISSC agreed that AMHOCN should move forward with further development of the measure and subsequent field trialling.

To further inform the next stage of measure development, AMHOCN undertook a review of the literature. The aims of this review were to identify:

- available individual-level measures of social inclusion;
- the domains included in social inclusion measures; and
- the psychometric properties and acceptability to users of published measures of social inclusion (or closely related concepts).

The literature review found that there was no one adapted definition, nor one agreed theoretical framework for the concept of social inclusion. As a result, measures designed to assess social inclusion varied in content, approach and purpose.

AMHOCN then engaged the services of IPSOS Australia Social Research Institute to provide technical advice on the further development of the measure.

AMHOCN, working with IPSOS and members of the TAG, made a number of major modifications to the *Life in the Community Questionnaire*. To distinguish this revised questionnaire from the previous version, the name of the questionnaire was changed to the *Living in the Community Questionnaire* (LCQ).

MHISSC endorsed the field trialling of the LCQ and AMHOCN subsequently liaised with MHISSC jurisdictional representatives to identify services that would be keen to participate in the trials.

The LCQ was trialled in services during 2013, the aim being to test the questionnaire on a larger group of consumers in public mental health services - the services in which it might be used.

This would:

- expose the questionnaire to a broader range of stakeholders and, through field trials, gain information on its psychometric properties and meaningfulness for consumers;
- obtain feedback from service providers on their views on the meaningfulness and usefulness of the measure in clinical practice;
- using the results of the field trial, modify the measure to produce a final version that might be used routinely in mental health services; and
- determine how the questionnaire might be used in clinical practice.

AMHOCN worked with the NSW Consumer Advisory Group (NSWCAG) and Victorian Mental Illness Awareness Council (VMIAC) to engage mental health consumers in a test-retest component of the trial. AMHOCN also conducted a national online panel survey to test the reliability of the LCQ with the general public.

Ten mental health services in New South Wales, Victoria, Queensland, Western Australia and South Australia were nominated to participate in the national trial (Table 1). The services varied greatly in terms of size and in the types of services provided. Most were adult services. Two had a young persons' focus. Two specifically provided services to older persons. Some were in large metropolitan areas and some provided services across large regional areas.

Table 1: Participating services

State	Service	Type of service
NSW	Specialist Mental Health Service for Older People - Shoalhaven and Illawarra	Older persons
	Wollongong Adult Community Mental Health Service	Adult
	Northern New South Wales LHD Mental Health Services	Adult, older persons, inpatient
	Blacktown Early Access Team	Young persons
QLD	Caboolture Adult Mental Health Team	Adult
	Redcliffe Caboolture Community Care Unit	Adult inpatient
	Inner North Brisbane Mental Health Service	Adult
SA	Eastern Clinical Psychosocial Rehabilitation Program	Adult
Victoria	Eastern Health Mental Health Services	Adult
WA	YouthReach South	Young persons

By March 2013, all participating sites had completed the trial and during May 2013, AMHOCN worked with the NSW CAG and VMIAC to engage mental health consumers in the test-retest component of the trial.

IPSOS Social Research Institute undertook an analysis of the data gathered from the trial to provide a greater understanding of the psychometric properties of the questionnaire. The public mental health services sample data had n=244 and the test-retest sample data had n=50.

During May 2013, AMHOCN also conducted a national online panel survey to test the reliability of the LCQ with the general public. Quotas were set to provide a representative sample by age and gender. The sample size for the survey was n=1001. This general public sample was also administered the K-10 to measure psychological distress. A sample of n=400 of the general public survey also completed a retest survey.

The initial data analysis indicated that, overall, the LCQ performed well in the psychometric testing. The instrument met the minimum requirements for reliability and demonstrated construct and criterion validity.

IPSOS identified a number of opportunities for enhancement of the LCQ, including:

- improvements to the questions requiring numeric data (specifically Q1 and Q3) e.g. reduction to the number of options and ensure the data collected relates to social inclusion;
- incorporation of additional dependent variables that specially address social inclusion. There is no direct measure of social inclusion in the LCQ. Even aggregating the dependent variables on the measure used in the trial, it does not cover the concept of social inclusion; and
- a possible restructure of the questionnaire to facilitate construction of a short-form questionnaire that could produce the index in the same way as the long-form without question order and content affecting the result.

In August 2013, AMHOCN convened a meeting of the TAG to discuss the results of the data analysis and next steps. As a result, a number of modifications were agreed to the LCQ. These included:

- capturing total hours for social activities and education instead of asking people to identify hours for specific activities within these categories (too onerous and not able to be captured with any degree of accuracy);
- separating family responsibilities from the category of voluntary or unpaid work (people do not perceive family responsibilities in the same way as “work”); and
- reviewing the employment questions to allow comparison with data captured through employment questions used in Australian Bureau of Statistics surveys.

Given that the modifications would impact upon the psychometric properties of the measure, it was agreed that the revised LCQ would again be tested with the national online panel, including administration of the K-10 and the test-retest component.

AMHOCN conducted a national online panel survey, fielded by MyOpinions, in July 2014 with the general public. The sample size for the survey was n=1001. Quotas were set to provide a nationally representative sample by age and gender within state/territory. The sample was also administered the K-10 to measure psychological distress. The median duration of time for survey completion (including the K-10) was nearly one minute shorter than the previous survey at 6.77 minutes. A sample of n=400 of the general public sample also completed a retest survey.

The objectives of this research were three fold:

- to determine if the changes made to the LCQ improved the reliability of the questionnaire;
- to determine if the changes made to the LCQ better reflect the underlying model of social inclusion; and
- to test changes made to specific questions.

IPSOS Social Research Institute undertook analysis of the data. In summary, the modified version of the LCQ performed well in the psychometric testing. The instrument met the minimum requirements for reliability and demonstrated construct and criterion validity:

- **Administrative:** The rate of missing data and completion time were both reduced.
- **Reliability:** The questionnaire was found to have high levels of correlation between the test and retest scores, with moderate levels of intra-rater agreement. The stability of the results (that is, the consistency of the direction of rating between test and retest) was found to be high.
- **Modelling:** The research was able to validate the underlying model of social inclusion. Causal modelling demonstrate that *sense of being part of a group or community* worked well as a dependent variable, being predicted by subjective social inclusion questions and strongly correlating with outcome and recovery questions.
- **Changes to individual question:** All changes to individual questions worked well with the rates of missing data declining and high correlations between test and retest results and at least moderate kappa scores for intra-rater agreement on rating questions.

Structure of this report

The remainder of this report provides a more detailed overview of the development of the final version of the LCQ, its psychometric properties, potential use as an index of social inclusion and adaptation to a short form for more regular use in clinical settings.

Chapter 2: A Review of individual-level measures of social inclusion for use in mental health provides a review of literature and measures in social inclusion and their relevance to this project.

Chapter 3: Consultations describes the initial consultation methods and findings based around the adaptations needed to the APQ-6 in order to develop a measure tailored to the needs of this project.

Chapter 4: Psychometric analysis presents the final stage of the testing and psychometric analysis of the LCQ.

Chapter 5: Developing an index of social inclusion presents several methods that can be used to develop an index of social inclusion from the LCQ

Chapter 6: Short form LCQ (SF-LCQ) presents a short form of the LCQ based on relevance of questions to key analysis and clinical settings.

Chapter 2: A Review of individual-level measures of social inclusion for use in mental health

The purpose of this review was to update the earlier work of Bates (2002a) who reviewed all available measures of social inclusion to 2002. To measure the effects of changes implemented by mental health services to enact social inclusion policies, it is essential that Australian mental health services have available a quality measure that can be used to assess the social inclusion 'status' of mental health service users.

Introduction

This review examines available measures of social inclusion published in the literature between 2002 and 2012. As this is a large and complex field, several exclusion criteria were necessarily applied to the search for measures. Only instruments that aim to measure social inclusion at the individual level have been included. That is, measures aimed at assessing the extent of social inclusion promoted by service-level activities have been excluded.

This review also includes only those measures of social inclusion designed for, or applicable to, mental health service users. Therefore, measures designed for people with intellectual or physical disability have been excluded, as have social inclusion indices designed for use at the population level (such as those used for census or household surveys).

As previously discussed, the social inclusion concept overlaps with a number of other concepts, but only measures of those constructs mostly closely related to social inclusion have been included (such as community participation; Huxley et al, 2006).

Method

Identification of instruments to be included in the review

The literature was examined to identify: (1) available individual-level measures of social inclusion; (2) the domains included in social inclusion measures; and (3) the psychometric properties and acceptability to users of published measures of social inclusion (or closely related concepts). PsycINFO and Medline databases were searched using the terms 'social inclusion and mental health' and 'social inclusion and measures' as search terms. Search terms that often overlap with the concept of 'social inclusion' were also used in searches of PsychINFO and Medline, namely 'community participation', 'social capital', and 'social isolation'. A general Internet search was also conducted using the terms 'social exclusion measure' in a Google search engine.

Evaluation of identified instruments

The measures identified for this review (Appendix A) have their psychometric properties (where available) specified in Appendix B. An attempt to evaluate the relative advantages and disadvantages of each measure has also been made in. The psychometric properties and assessment criteria used to evaluate these measures is outlined in Table 2. These criteria are also in line with the comments of Stewart et al. (2010):

"Measures for routine assessment in community mental health services should be brief, inexpensive, valid, reliable, and sensitive to change, yet be simple to administer, score and interpret and require minimal training. Measures of community participation should consider all major domains of role functioning, not only employment. Recovery-oriented measures should enable consumers to report their actual community activity, their satisfaction with their current activities, their participation in goals, and their desire to change their level of activity within a specific domain." (p.259)

Table 2: Psychometric properties examined in appraisal of identified instruments

Definitions
<p>Validity - Refers to the extent to which the instrument measures what it intends to measure</p> <p>Content validity - Refers to the instrument's comprehensiveness (i.e., how adequately the sampling of items reflects its aims)</p> <p>Construct validity - Involves conceptually defining the construct to be measured and assessing the internal structure of its components and the theoretical relationship of its item and subscale scores</p> <p>Criterion validity - Assesses the extent to which the instrument correlates with a 'gold standard' or more established measure of the same theme a</p> <p>Concurrent validity - Pits the instrument against a comparable measure/s at the same point in time</p> <p>Predictive validity - Assesses the instrument's ability to predict a future outcome, such as resource use or treatment response</p>
<p>Reliability - Is the extent to which a given instrument gives stable, consistent results, or can be considered as the inverse of the degree of error obtained from any measurement</p> <p>Test-retest reliability - Is the degree of agreement when the instrument is completed by the same individual at two different points in time</p> <p>Inter-rater reliability - Defined as the degree of agreement when the same instrument is administered to the same individual by different interviewers at the same point in time</p>
<p>Sensitivity to change - Related to both validity and reliability – an instrument that is both valid and reliable, and which demonstrates change over time, can be regarded as being sensitive to change</p>
<p>Feasibility and utility - Related to concepts such as ease of administration, acceptability to stakeholders etc.</p>

Source: Dare, Hardy, Burgess, Coombs, Williamson, Pirkis (2008).

Results

From a review of the individual-level measures of social inclusion and closely related constructs, eleven measures were identified for inclusion (Appendix A). Measures vary in the life domains and activities they are designed to assess, the techniques used to measure these domains, and the purpose for which they were designed. For example, some measures were designed purely for clinical use, while others have been used for research purposes only.

A review of the psychometric testing carried out for each of the measures identified in Appendix A found that as some instruments were designed for clinical purposes and not as psychometric scales, a number of instruments have no psychometric properties attached. With no 'gold standard' measure of social inclusion available for comparisons, and the essential components of such as measures ill defined, criterion validity is particularly difficult to assess.

Discussion

It is clear from reviewing the mental health literature relating to the measurement of social inclusion that social inclusion is a complex construct. Little agreement has been reached in the literature on a standard, acceptable definition of social inclusion or on those life domains or activities that contribute to an individual's level of social inclusion and subsequently to their mental health. Huxley et al (2006, 2012), in particular, have attempted to synthesise the complexities of defining and measuring social inclusion and can be referred to for a review of these issues.

This review aimed to identify measures of social inclusion that have been used in the mental health literature in the period 2002-2012. While eleven measures were reviewed, one was included as it composed part of a larger social inclusion measure (the Socially Valued Role Classification Scale; Harris et al, 2011), and three further measures were developed purely for clinical or research use and did not constitute psychometric scales. Seven measures, therefore, were identified as psychometric measures of social inclusion or constructs closely related to social inclusion.

The lack of conceptual clarity relating to social inclusion has meant that social inclusion measures widely vary on the domains they are designed to measure and their approach to measurement.

All the identified measures require further psychometric testing and refinement. Assessing the validity of measures of social inclusion is particularly difficult as there is no clearly defined 'social inclusion' construct to use as a standard. Researchers can only specify that definition of social inclusion they have adopted and test the validity of their measure against it. This does, however, make comparisons between measures difficult.

Conclusion

No identified individual-level measure of social inclusion yet has comprehensively established psychometric properties, and many require further refinement to improve their quality. A number of measures have been developed in consultation with mental health service users and demonstrate good acceptability; however, measures such as the SCOPE-short form (Huxley et al, 2012) have been developed and tested for use in the UK and would require adaptation, testing and refinement for use in Australia. The ease of administration and time involved to administer the various measures varies widely. Each measure has its relative strengths and weaknesses and no single measure emerged as being immediately appropriate for use with mental health service users.

Despite the variations in approach to the measurement of social inclusion, some life domains did emerge as being common across a number of measures. The definitions of these concepts and the way that they were measured, however, did vary:

- Paid employment
- Education and/or training
- Social contacts with family, friends and neighbours
- Community participation.

These commonly included domains largely align with those domains adopted by the Australian Government's Social Inclusion Unit (2011), with the exception of the domain 'have a voice', which is difficult to operationalise and was not included in these measures.

Chapter 3: Consultations

The project involved three phases: an establishment phase, a consultation phase and a reporting phase. The activities relating to each of these phases are described in more detail below.

Introduction

An initial draft version of the LCQ was developed in 2011, based on the APQ-6. Sector consultations with this version of the LCQ occurred across the states and territories with a range of key stakeholders including consumers, carers, clinicians and jurisdictional representatives. Consultations also took place with members of the Mental Health Information Development Expert Advisory Panels (Expert Panels).

This sector consultation provided valuable feedback on the range of key issues that consumers, carers, clinicians and others within the mental health sector saw as important when considering the social inclusion aspects of recovery.

Method

Phase 1: Establishment phase

The establishment phase involved the development of a set of resources that would guide the consultation phase (see below). The primary resource was a PowerPoint presentation which: described the concept of social inclusion and its relationship to the broader notion of recovery; highlighted the focus on housing, employment, education, community participation and access to a GP as important indicators of social inclusion in the Australian mental health policy context; outlined the scope of the project; and introduced a range of approaches to measuring social inclusion, including a particular emphasis on the APQ-6.

The APQ-6 itself formed part of the set of resources. Some modifications were made to the original instrument during the establishment phase, in order to broaden its scope to include all of the Fourth Plan indicators. The modified version of the APQ-6 effectively split the questions into three sections: (a) Foundations for social inclusion; (b) Evidence of social inclusion; and (c) Change. The first section included additional question, taken from the ABS National Health Survey, on housing and physical health (including access to a GP). The second and third sections retained the original questions from the APQ-6 but modified them slightly for clarity.

In order to obtain perspectives on the use of the APQ-6 in clinical practice, contact was made with a number of NSW services who had been using the measure. Respondents were positive about the instrument and felt that it supported clinical discussions and care planning. They noted that it was simple to use, easy to understand and was not a burden in terms of collection. Some respondents noted issues in terms of applicability to CaLD and ATSI populations that may need to be addressed. Other

respondents indicated that reliably calculating the number of hours spent on various activities was often a challenge for consumers.

The establishment phase also involved setting up a TAG to provide specific advice on the comprehensiveness and psychometric soundness of the APQ-6 in terms of its ability to capture information on social inclusion (e.g., whether existing items should be retained, deleted or modified, and whether new items should be added). The TAG comprised members with specific expertise in this area, including individuals who were involved in the original development of the APQ-6, consumers, carers and other invited experts: Mr Gavin Stewart; Dr Grant Sara; Dr Geoff Waghorn; Professor Alan Rosen; Professor Philip Burgess; Professor Jane Pirkis; Ms Jackie Crowe; Mr Lei Ning; Mr Allen Morris-Yates; and Mr Bill Buckingham. The group met twice during the course of the project (once on 21 March 2011 and once on 23 May 2011).

Phase 2: Consultation phase

Consultations were undertaken with a range of key stakeholders, including consumers and carers, jurisdictional representatives and members of the Expert Panels. Table 3 summarises the consultations, and provides an indication of their scope.

Table 3: Location and participation in consultations

Location	Date	Number of attendees
ACT	23 March 2011	6
NSW	4 April 2011	11
QLD	20 April 2011	9
VIC	28 April 2011	7
SA	9 May 2011	9
WA	11 May 2011	12
Consumers and carers	16 May 2011	10
National Expert Panel	1 April 2011	17
Forensic Expert Panel	8 April 2011	11
Child and Adolescent Expert Panel	14 April 2011	10
Older Persons Expert Panel	29 April 2011	10
Adult Expert Panel	2 May 2011	8

The consultations were typically undertaken with each group face-to-face. The consultation involved facilitated discussions about a modified version of the APQ-6 as it related to foundations for social inclusion, evidence of social inclusion, and change in degree of social inclusion. Each item was discussed in turn, and consideration was then given to whether there were any missing domains. The focus varied slightly, depending on the nature of the group.

The draft measure was also sent for comment to Professor Peter Huxley in the UK who has researched and written extensively on social inclusion and mental illness.

Phase 3: Reporting phase

The reporting phase involved bringing together the findings from the consultations, presenting a draft version of the recommended social inclusion measure, and indicating the necessary 'next steps' towards implementing the measure in services.

Results

Stakeholders who participated in the consultations responded to a modified version of the APQ-6. The modified instrument included three items that were not included in the original APQ-6, and related to housing and physical health, which were both seen as **foundations for social inclusion**. It included the first five questions from the original APQ-6, which related to **evidence of social inclusion** in the following areas: employment, education and social activities. Alternative or additional responses were sometimes provided for these questions. The modified instrument also included the final question from the original APQ-6 which related to **change** in participation in employment, education and social activities; again, with minor changes to the stem question and the potential responses.

Stakeholders made a number of overarching comments about assessing social inclusion via the modified instrument. One of their key points was that, as it stands, the instrument is not really an outcome measure because most of the questions do not offer the capacity for change to be measured or meaningfully interpreted over time. For example, if a consumer indicated that he went out for a meal or to be entertained at one point in time and then, some time later, took part in religious activities, what would this say about improvement or deterioration in his/her level of social inclusion? These stakeholders felt that for the instrument to be considered an outcome measure it would need to yield a total score (or at least sub-scale scores) that could be monitored over time. Having said this, some stakeholders commented that, despite its limitations as an outcome measure, the modified instrument had clinical utility in terms of fostering conversations between the clinician and the consumer. These stakeholders felt that the instrument would send a strong message that clinicians are in more than just symptoms, and could inform the development of a recovery plan.

Stakeholders also commented on the sensitivity of the questions. They noted that for someone who feels quite socially excluded, being asked about their participation may be quite confronting. These stakeholders were of the view that the instrument needs a preamble that explains why they are being asked the questions.

A number of stakeholders commented on the need for the instrument to be brief and simple, in order to maximise completion rates. Some mentioned that this brevity might be achieved by having several versions of the instrument, with each designed for particular population groups. They suggested that, for example, young people and older people (particularly retired older people) might typically participate in different types of employment, education and social activities, and the creation of

different versions of the instrument would reduce redundancies for any given group. In addition to simplifying the instrument, this makes it more relevant for each group.

Some stakeholders commented on issues to do with the format of the instrument, noting, for example, that in some instances multiple responses were permissible and in others the consumers should tick one box only. They felt that additional instructions might be required to avert potential confusion. Many stakeholders favoured the use of Likert scales wherever possible, although some were also keen to see additional free text response options (e.g., a question at the end which asked, 'Is there anything else important to you that we haven't talked about?').

Some stakeholders considered broader issues around the way in which the instrument might be administered. They questioned the optimal time period within which a consumer's level of social inclusion might be expected to change, and they asked whether the instrument would be administered as an aid to clinical care and would be kept on file. Some suggested that the instrument should be administered alongside other consumer self-report measures in the NOCC suite; others suggested that it should be administered as a 'snapshot' or 'census' survey. In addition to this, some stakeholders commented on the fact that the instrument might need to be completed by a carer in some cases (e.g., where there were language or comprehension barriers). It was suggested that, in field testing, a range of approaches should be used to administer the measure.

Stakeholders were encouraged to indicate whether particular areas were missing from the modified instrument, and they mentioned a variety. A number of stakeholders felt that questions about social activities did not capture the nub of the social inclusion issue, which they saw as being about the quantity and quality of meaningful relationships. Some felt that the questions were designed to elicit information about a given circumstance (e.g., level of participation in various activities) but not about the consumer's emotional response to this circumstance (e.g., how connected to his/her community he/she felt, the degree of stigma he/she experienced, whether he/she had a 'voice' in his/her community). Some felt that more contextual information was required to facilitate more meaningful interpretation of responses to some questions (e.g., the barriers to a consumer's social inclusion, what supports he/she needed to participate to a greater degree, and the factors impinging on his/her desire to change in a given area). It was also suggested that there was a need to specifically ask whether a person had been excluded from activities (social, education, employment, housing or medical care).

In addition to concerns that the instrument did not capture information about the quantity and quality of relationships or about social connectedness, stakeholders mentioned a number of specific omissions. Some commented that forensic/legal issues that are likely to have an impact on social inclusion are not captured, and others wanted more detailed demographic information to be collected at the beginning of the instrument. Several stakeholders commented on the importance of pets for many people with mental illness, and noted that this was not ascertained by the instrument. Several also mentioned that acting as advocates often aided consumers in their own recovery, and expressed concern that this was not captured. Some thought that feeling safe in their community was a strong indicator of consumers'

social inclusion. A number of stakeholders noted that income and access to transport were foundations for social inclusion.

In regard to the title of the measure, some stakeholders felt that it would provide more clarity for consumers if it indicated that it was about community or social participation. Stakeholders also noted the importance of using the current language of recovery, otherwise the measure may become dated quickly.

A number of stakeholders indicated a keenness to be involved in piloting a revised instrument.

Discussion

Stakeholders had varied views about the best approach to take with developing an instrument to measure the five relevant indicators in the Fourth Plan (participation in employment by people with mental illness of working age; participation in education and employment by people aged 16-30 who have a mental illness; community participation more broadly; stability of housing; and access to a GP), but a number of key principles emerged from the consultations.

- The social inclusion instrument should address the five relevant indicators from the Fourth Plan.
- The social inclusion instrument should be brief, but should contain sufficient detail to ensure that its terminology is clear.
- The social inclusion instrument should capture the way the consumer feels about his/her degree of social inclusion, and not just the quantity of his/her activities that might be considered evidence of social inclusion.
- Particular efforts should be made to ensure that the social inclusion instrument captures the notion of social connectedness.
- The social inclusion measure should be framed as an outcome measure which has the capacity to measure a consumer's improvement or deterioration in levels of social inclusion over time. The use of Likert-type rating scales may assist in this regard.
- In addition to measuring outcomes, the social inclusion measure should facilitate clinician-consumer dialogue about social inclusion. In some cases, this might mean that additional probe questions are required and that the potential for free-text responses might be required.
- The social inclusion instrument should not duplicate information collected elsewhere in mental health services and, if possible should create the potential for comparisons with population norms.

Conclusion

Social inclusion is a crucial element of consumers' recovery. The policy emphasis given to social inclusion in the Fourth Plan is welcomed, and it will be important to get the measurement of the indicators associated with it right.

Continued modification of the APQ-6 could lead to an instrument that could be mapped to the original but was also more tailored for use as an outcome measure and took into account some of the other concerns of stakeholders regarding terminology etc. Having said this, pursuing this option would not be simple. Even small differences in terminology (e.g., the addition of extra options in a given list) would render the two instruments not strictly comparable. Changes to formatting (e.g., conversion of response sets to categorical ratings or Likert scales) would also have implications for routine data capture systems.

Chapter 4: Psychometric analysis

This chapter provides an overview of the psychometric properties of the LCQ. Both the draft and final versions of the LCQ were subjected to psychometric testing. The focus of this chapter is on the psychometric properties of the final version of the LCQ.

Introduction

In the psychometric testing of the draft questionnaire, the LCQ performed well. The instrument met the minimum requirements for reliability and demonstrated construct and criterion validity:

- **Missing data:** The overall rate of missing data was very low at an average of 2% and did not increase as a function of questionnaire length. The proportion of missing data and the rate of missing data across questions suggests that the questionnaire is not too long. However, having the more difficult questions at the start of the questionnaire may have prevented some people from participating.
- **Scales:** The scales were found to have numeric properties and may be treated as interval. The performance scale, which was positively skewed to produce a more normal distribution, achieved its objective.
- **Reliability:** The research found that the LCQ should expect to achieve a moderate level of reliability. It was also found that psychological distress reduced reliability.
- **Comparison to external data:** The workforce participation rate (which includes people employed and those seeking work) was comparable to the to the ABS workforce data.
- **Measuring hours of participation:** There was a relationship between the hours spent in activities and opinion of the adequacy of that time. However, the relationship could be improved.
- **Antecedents and recovery measures:** The analysis demonstrated that there was a relationship between opinion of the level of participation in activities and recovery measures (outcome and self-advocacy questions), but the relationship is strongest when the rating questions are used (rather than the numeric questions).
- **Index:** The data is suitable for the development of an index based on the relationship between opinion of the level of participation in activities and recovery measures.

The report on the psychometric testing of the draft LCQ also recommended some changes to the LCQ, including:

- Simplification of questions requiring numeric data
- Separation of caring and voluntary employment
- Inclusion of an independent variable in the LCQ.

These changes were made to produce the final LCQ. The remainder of the chapter will be report the psychometric testing of that instrument.

Objectives of this research

The objectives of this research were three fold:

- To determine if the changes made to the LCQ improved the reliability of the questionnaire
- To determine if the changes made to the LCQ better reflect the underlying model of social inclusion
- To test changes made to specific questions.

Reading this chapter

In reading this chapter it should be noted that:

- Data presented in this report have been analysed to understand the psychometric properties of the LCQ rather than to report results. Therefore, survey results have not been reported except where necessary as part of an analysis.
- All analyses were conducted using SPSS PASW Statistics 18.
- Reported sample sizes will vary depending on the number of respondents answering each question and the type of analysis being conducted.

Method

As the purpose of this research did not relate specifically to mental health, to ensure access to a sufficient sample within the timeframe and budget, it was decided to test the revised LCQ using a general public sample. AMHOCN conducted a national online panel survey, fielded by MyOpinions, in July 2014 with the general public. The sample size for the survey was n=1001. Quotas were set to provide a nationally representative sample by age and gender within state/ territory. The sample was also administered the K-10 to measure psychological distress. The median duration of the survey (including the k-10) was nearly one minute shorter than the previous survey at 6.77 minutes (Table 4). A sample of n=400 of the general public sample also completed a retest survey.

Table 4: Survey duration (LCQ plus K-10)

Measures of central tendency	General public survey 2013 (n=1,001)	General public survey 2014 (n=1,001)
Median	7.45	6.77
Mean	18.29	13.14
Standard error of the mean	5.00	1.52

Demographic characteristics of the sample were similar in the two administrations (Table 5).

Table 5: Demographics of sample

Question	Response	General public survey 2013 (n=1,001)	General public survey 2014 (n=1,001)
Gender	Male	50%	51%
	Female	50%	49%
Main language	English	95%	95%
	Other	5%	5%
Indigenous status	Not specified	-	
	Yes, Aboriginal	1%	1%
	Yes, Torres Strait Islander	-	-
	Yes, Aboriginal & Torres Strait Islander	-	0%
	No	99%	99%
Age	16 to 24 years	8%	12%
	25 to 34 years	16%	16%
	35 to 44 years	18%	18%
	45 to 54 years	19%	18%
	55 to 64 years	17%	16%
	65 years and over	22%	21%

Findings

Reliability

Reliability of the revised LCQ was measured in several ways:

- Firstly, test retest reliability was used to measure the level of association between two surveys completed by respondents within the same week but at least 48 hours apart
- Secondly, Cohen’s Kappa was used to provide a measure of intra-rater agreement
- Finally, the stability of the results was measured by comparing the level of consistency in the direction of responses between the test and retest surveys.

Test retest reliability

Test retest reliability is used to measure the consistency of scores when a test is repeated under similar conditions. The two tests must be sufficiently spaced apart so that respondents cannot simply recall their earlier response. Using the online panel sample, 400 members of the general public completed the

LCQ twice, spaced a minimum of 48 hours apart. Pearson’s correlation between test and retest groups for both samples shows a high degree of association, ranging from 0.57 to 0.91 (Table 4). All results were significant ($p < .05$). The average correlation was 0.75.

Table 6: Pearson's correlation

Question	Pearson Correlation
Q5 Hours spent studying	0.91
Q7 Hours spent volunteering	0.87
Q13 Hours working	0.86
Q33 Overall well being	0.80
Q28 Hopefulness for the future	0.79
Q10 Hours providing care	0.78
Q29 Happiness with your life	0.78
Q32 Support from family and friends	0.78
Q31 Sense of being part of a group or community	0.74
Q2 Hours spent in social activities	0.73
Q22 Control of your life	0.73
Q30 Ability to achieve the things that are important to you	0.71
Q26 Opinions respected	0.69
Q25 Have your say – family and friends	0.65
Q23 Have your say - community	0.63
Q24 Have your say – person or agency providing care	0.57

Expected reliability for rating scales

Cohen’s kappa test was used to test the intra-rater agreement for paired responses to the social inclusion and outcome questions that used a rating scale. Landis and Koch provide a table interpreting the kappa values:

Kappa	Interpretation	Kappa	Interpretation
< 0	Poor agreement	0.41 – 0.60	Moderate agreement
0.0 – 0.20	Slight agreement	0.61 – 0.80	Substantial agreement
0.21 – 0.40	Fair agreement	0.81 – 1.00	Almost perfect agreement

The kappa values (Table 7) suggest that for most items a moderate level of agreement can be expected.

Table 7: Kappa values

Interpretation	Question	Kappa	SE of Kappa	SE*1.96	Upper limit for Kappa	Lower limit for Kappa
Substantial	Q14 Opinion of time spent employed	0.66	0.03	0.07	0.69	0.62
	Q21 Perception of physical health	0.62	0.03	0.06	0.65	0.59
Moderate	Q8 Opinion of time spent volunteering	0.60	0.04	0.07	0.64	0.57
	Q33 Well-being	0.60	0.03	0.06	0.66	0.53
	Q6 Opinion of time spent in education	0.55	0.04	0.08	0.59	0.51
	Q29 Happiness	0.55	0.03	0.07	0.62	0.49
	Q29 Hopefulness	0.52	0.03	0.07	0.58	0.45
	Q26 Opinions respected	0.52	0.04	0.07	0.58	0.45
	Q11 Opinion of time spent caring for other	0.50	0.05	0.10	0.55	0.45
	Q18 Opinion of current living situation	0.50	0.04	0.07	0.53	0.46
	Q3 Opinion of time spent on social activities	0.49	0.05	0.09	0.53	0.44
	Q22 Control of your life	0.48	0.04	0.07	0.55	0.41
	Q31 Have your say - community	0.48	0.03	0.07	0.55	0.41
	Q30 Ability to achieve	0.47	0.04	0.07	0.54	0.40
	Q31 Sense of belonging	0.47	0.04	0.07	0.54	0.40
	Q32 Ability to get support	0.47	0.03	0.07	0.54	0.40
	Q 25 Have your say - family and friends	0.42	0.04	0.07	0.49	0.35
Fair	Q24 Have your say - person or agency providing care	0.37	0.04	0.07	0.45	0.30

* The confidence level has been calculated as $\text{kappa} \pm 1.96 * \text{S.E.}$

There were minimal changes in kappa score between the two administrations of the survey (Table 8). The largest changes were in physical health and hopefulness and may reflect differences between the two samples.

Table 8: Change in kappa values

Question	Kappa 2014	Kappa 2013	Change in Kappa
Q21 Perception of physical health	0.62	0.535	0.085
Q28 Hopefulness	0.52	0.473	0.047
Q6 Opinion of time spent in education	0.55	0.535	0.015
Q29 Happiness	0.55	0.545	0.005
Q23 Have your say - community	0.48	0.481	-0.001
Q30 Ability to achieve	0.47	0.475	-0.005
Q18 Opinion of current living situation	0.5	0.519	-0.019
Q14 Opinion of time spent employed	0.66	0.68	-0.02
Q25 Have your say - family and friends	0.42	0.446	-0.026
Q3 Opinion of time spent on social activities	0.49	0.535	-0.045
Q22 Control of your life	0.48	0.562	-0.082
Q24 Have your say - person or agency providing care	0.37	0.462	-0.092

Impact of psychological distress on kappa

A possible explanation of differences in test retest reliability is the impact of psychological distress. To measure this effect, respondents were administered the K-10 at the time they completed the first LCQ survey.

The K-10 scores were distributed as follows:

K-10 score 10-14 n=196

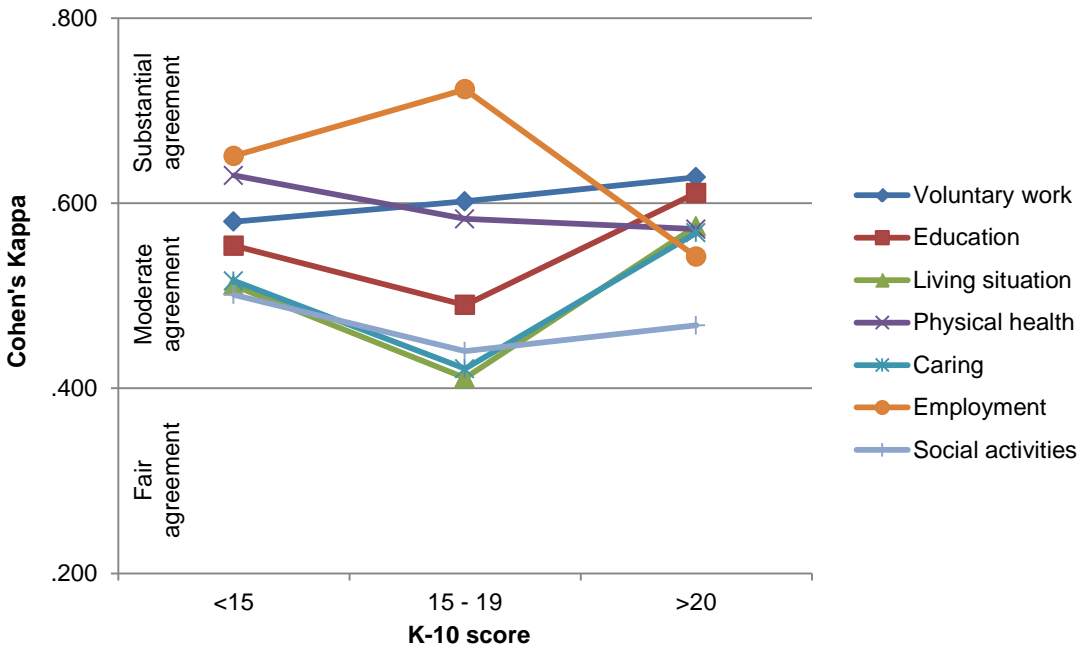
K-10 score 15-19 n=123

K-10 score 20+ n=71

The results (Figures 2 - 3) show psychological distress generally has a positive effect on kappa scores related to the reliability of rating areas of subjective social inclusion but a negative effect on the rating of outcomes and recovery items.

Most areas of social inclusion showed an improved agreement by respondents who scored higher on the K-10 (Figure 1). Across K-10 categories, the ratings provided were at least at the moderate level of agreement.

Figure 1: Impact of psychological distress on rating of subjective social inclusion



The kappa scores for most areas of self-advocacy showed minimal change or an increase as a result of psychological distress (Figure 2). The exception to this was *having your say with family and friends* which show a marked decrease in kappa score. Generally, the self-advocacy questions received lower kappa scores than other areas with several segments receiving just fair levels of agreement. This may relate to a higher frequency of experience of these items and a greater variability in experience.

Figure 2: Impact of psychological distress on self-advocacy questions

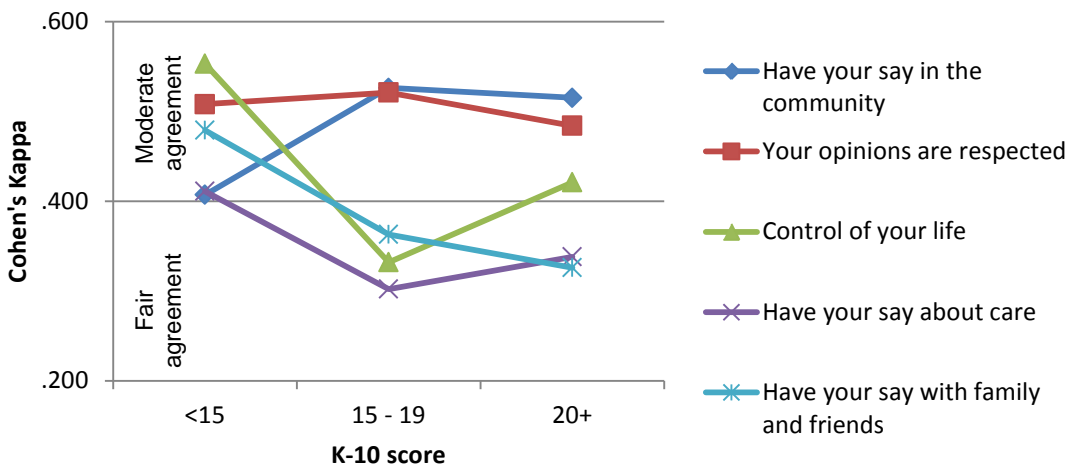
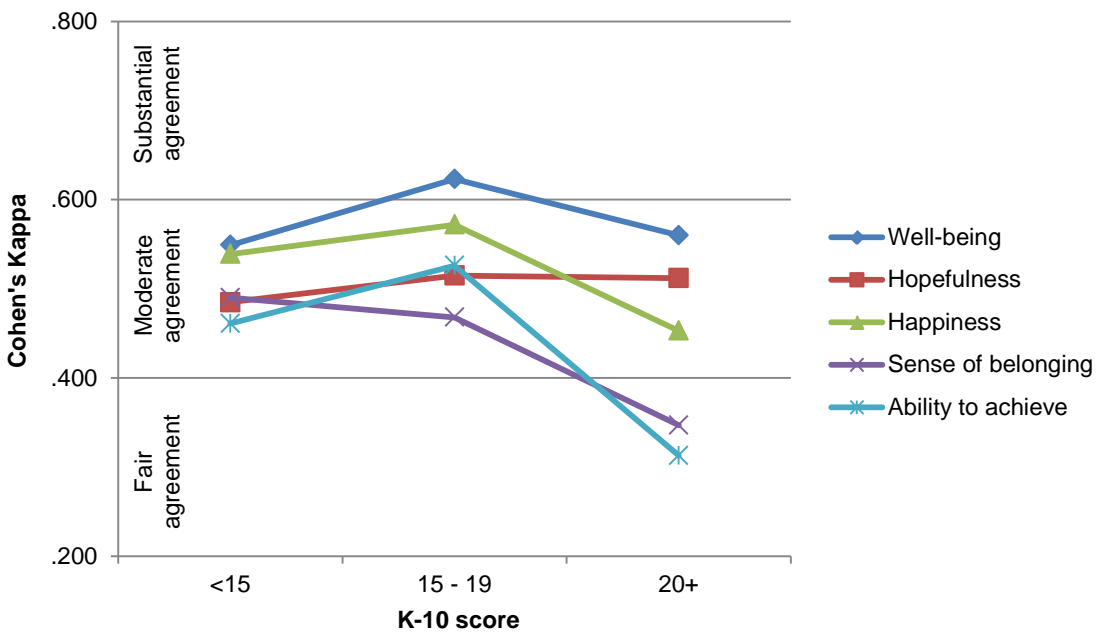


Figure 3: Impact of psychological distress on outcome questions



With the exception of *hopefulness for the future*, all outcome questions showed a decrease kappa scores for respondents with higher levels of psychological distress (Figure 3). This may be because these constructs are more difficult to conceptualise than those questions based on practical experience. Across K-10 categories, the ratings provided were generally at the moderate level of agreement. The exceptions to this were a *sense of belonging* and *ability to achieve the things that are important to you*, both of which fell into the fair level of agreement.

Stability

Stability is a term applied to the level of agreement between test and retest results. The aim of this measure is to predict the *direction* of a response, so categories on the scale are collapsed. Thus, if a respondent gives the same category of response in the test and retest then the stability of the item is high. Dolnicar, Rossiter and Gruin (2012, p. 829) suggest that a measure has good stability if the lower confidence interval limit is 50% or above, or if the average stability is above 70%. Stability was analysed for the subjective measures of social inclusion (perspective of time spent on social activities, education, employment, volunteering and caring for others) that use the 'about right' scale and self-advocacy and outcome questions that use the performance scale.

For the subjective measures of social inclusion, the 'about right' scale was collapsed to measure:

- Stability between the test and retest surveys of the 'far too much' and 'too much' codes combined
- Stability between the test and retest surveys of the 'about right' code
- Stability between the test and retest surveys of the 'far too little and 'too little' codes combined

The results were then averaged to provide a measure of overall stability for each item. The analysis demonstrated that all questions using the 'about right' scale had an average stability above 81% and no questions had a minimum stability below 78% (Table 9). It is therefore concluded that these questions produce highly stable results.

Table 9: Stability of subjective social inclusion questions using the 'about right' scale

Total	Social activities	Education	Unpaid work	Caring for others	Employment
Base	389	386	382	382	384
No. stable	318	321	320	318	331
Average stability	82%	83%	84%	84%	86%
Upper limit	85%	87%	88%	87%	90%
Lower limit	78%	79%	80%	80%	83%

Stability was also analysed for the self-advocacy and outcome questions. These questions used the positively weighted performance scale. The scale was collapsed to measure:

Stability between the test and retest surveys of the negative codes – 'poor' and 'fair'

Stability between the test and retest surveys of the 'positive codes – 'good', 'very good' and 'excellent'

The results were then averaged to provide a measure of overall stability for each item. The analysis demonstrated that the self-advocacy questions using the performance scale had an average stability above 81% and no questions had a minimum stability below 78% (Table 10).

Table 10: Stability of self-advocacy questions using the performance scale

	Control of your life	Have your say - community	Have your say - carer	Have your say - family and friends	Your opinions are respected
Base	387	387	381	388	386
Stable	347	318	323	350	345
Average stability	90%	82%	85%	90%	89%
SD	0.02	0.02	0.02	0.02	0.02
Upper limit	93%	86%	88%	93%	92%
Lower limit	87%	78%	81%	87%	86%

Similarly, the analysis demonstrated that the outcome and recovery questions using the performance scale had an average stability above 84% and no questions had a minimum stability below 80% (Table 11). It is therefore concluded that these questions produce highly stable results.

Table 11: Stability of outcome and recovery questions using the performance scale

	Hopefulness	Happiness	Ability to achieve	Sense of being part of a community	Support from family and friends	Well-being
Base	380	380	377	379	380	380
Stable	344	350	333	321	339	351
Average stability	91%	92%	88%	85%	89%	92%
SD	0.02	0.01	0.02	0.02	0.02	0.01
Upper limit	93%	95%	92%	88%	92%	95%
Lower limit	88%	89%	85%	81%	86%	90%

Impact of psychological distress on stability

To determine if psychological distress impacts on stability, the question stability scores were calculated for each K-10 category. Examining average stability by K-10 category shows that for each question measured on the ‘about right’ scale, all segments achieved average stability of above 74% stability (Figure 4). This suggests the items are stable. Furthermore, across questions the lower confidence level of stability was always above the 70% minimum level of acceptable stability (Table 12).

Figure 4: Impact of psychological distress on stability of subjective social inclusion questions measured on the ‘about right’ scale

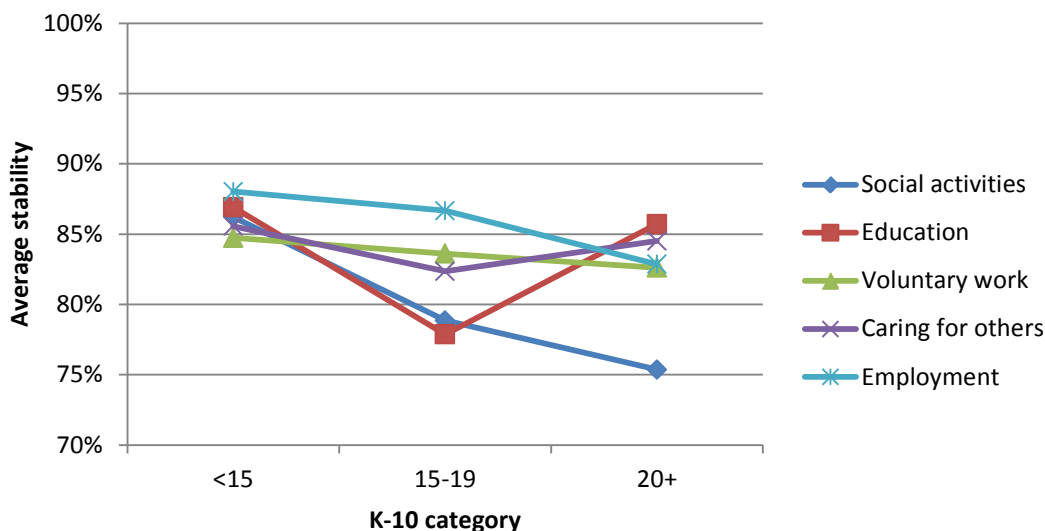
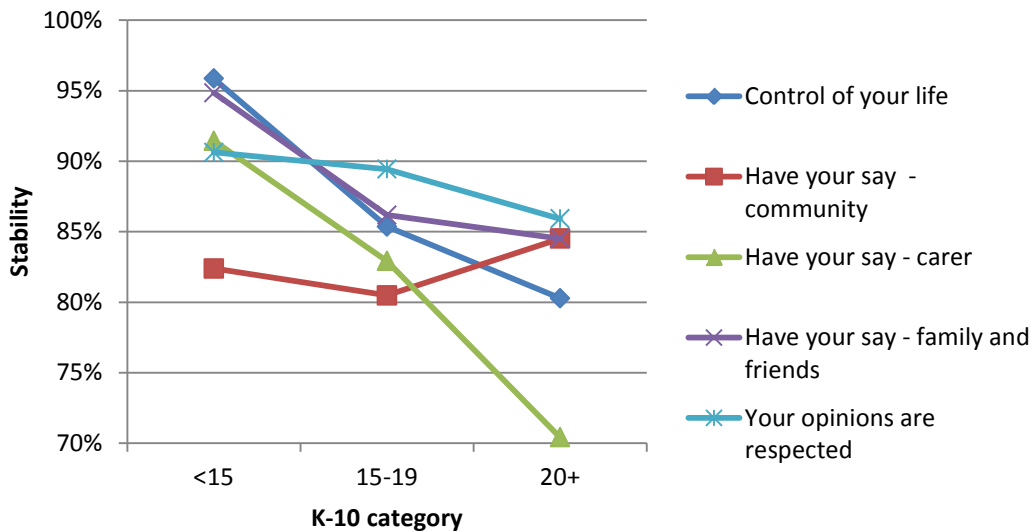


Table 12: Impact of psychological distress on stability of questions using the 'about right' scale

Social activities				Caring for others			
K-10	<15	15-19	20+	K-10	<15	15-19	20+
Base	196	123	69	Base	187	119	71
Stable	169	97	52	Stable	160	98	60
Average stability	86%	79%	75%	Average stability	86%	82%	85%
SD	0.02	0.04	0.05	SD	0.03	0.03	0.04
Upper limit	91%	86%	86%	Upper limit	91%	89%	93%
Lower limit	81%	72%	65%	Lower limit	81%	76%	76%
Education				Employment			
K-10	<15	15-19	20+	K-10	<15	15-19	20+
Base	191	122	70	Base	192	120	70
Stable	166	95	60	Stable	169	104	58
Average stability	87%	78%	86%	Average stability	88%	87%	83%
SD	0.02	0.04	0.04	SD	0.02	0.03	0.05
Upper limit	92%	85%	94%	Upper limit	93%	93%	92%
Lower limit	82%	71%	78%	Lower limit	83%	81%	74%
Voluntary work							
K-10	<15	15-19	20+				
Base	190	122	69				
Stable	161	102	57				
Average stability	85%	84%	83%				
SD	0.03	0.03	0.05				
Upper limit	90%	90%	92%				
Lower limit	80%	77%	74%				

Similarly, examining the results for the self-advocacy questions measured on the performance scale revealed that across k-10 segments the average stability achieved was at or above 70% stability (Figure 5). This suggests these questions are stable at the total sample level.

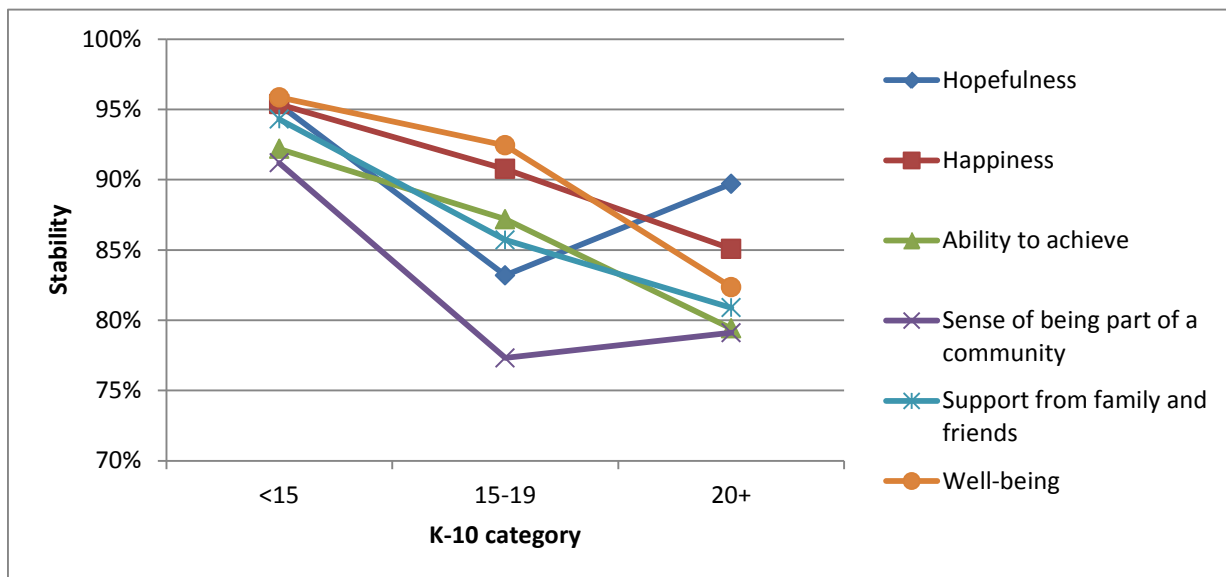
Figure 5: Impact of psychological distress on stability of self-advocacy questions measured on the performance scale



Examining the self-advocacy questions in more detail, revealed that the lower confidence level was always above 70% (Table 13).

Similarly, the stability of the outcome and recovery questions measured on the performance scale was always above 74% (Figure 6). Again, this suggests these questions are stable at the total sample level.

Figure 6: Impact of psychological distress on stability of outcome and recovery questions measured on the performance scale



At the individual question level, the lower confidence level for stability of the outcome and recovery questions was always at or above the 70% mark considered to denote good stability (Table 14).

Table 13: Impact of psychological distress on stability of self-advocacy questions using the performance scale

Control of your life				Have your say – family and friends			
K-10	<15	15-19	20+	K-10	<15	15-19	20+
Base	193	123	71	Base	194	123	71
Stable	185	105	57	Stable	184	106	60
Average stability	96%	85%	80%	Average stability	95%	86%	85%
SD	0.01	0.03	0.05	SD	0.02	0.03	0.04
Upper limit	99%	92%	90%	Upper limit	98%	92%	93%
Lower limit	93%	79%	71%	Lower limit	92%	80%	76%
Have your say - community				Your opinions are respected			
K-10	<15	15-19	20+	K-10	<15	15-19	20+
Base	193	123	71	Base	192	123	71
Stable	159	99	60	Stable	174	110	61
Average stability	82%	80%	85%	Average stability	91%	89%	86%
SD	0.03	0.04	0.04	SD	0.02	0.03	0.04
Upper limit	88%	87%	93%	Upper limit	95%	95%	94%
Lower limit	77%	73%	76%	Lower limit	87%	84%	78%
Have your say - carer							
K-10	<15	15-19	20+				
Base	187	123	71				
Stable	171	102	50				
Average stability	91%	83%	70%				
SD	0.02	0.03	0.05				
Upper limit	95%	90%	81%				
Lower limit	87%	76%	60%				

Table 14: Impact of psychological distress on stability of outcome and recovery questions using the performance scale

Hopefulness				Sense of being part of a community			
K-10	<15	15-19	20+	K-10	<15	15-19	20+
Base	193	119	68	Base	193	119	67
Stable	184	99	61	Stable	176	92	53
Average stability	95%	83%	90%	Average stability	91%	77%	79%
SD	0.02	0.03	0.04	SD	0.02	0.04	0.05
Upper limit	98%	90%	97%	Upper limit	95%	85%	89%
Lower limit	92%	76%	82%	Lower limit	87%	70%	69%
Happiness				Support from family and friends			
K-10	<15	15-19	20+	K-10	<15	15-19	20+
Base	194	119	67	Base	193	119	68
Stable	185	108	57	Stable	182	102	55
Average stability	95%	91%	85%	Average stability	94%	86%	81%
SD	0.02	0.03	0.04	SD	0.02	0.03	0.05
Upper limit	98%	96%	94%	Upper limit	98%	92%	90%
Lower limit	92%	86%	77%	Lower limit	91%	79%	72%
Ability to achieve				Well-being			
K-10	<15	15-19	20+	K-10	<15	15-19	20+
Base	192	117	68	Base	193	119	68
Stable	177	102	54	Stable	185	110	56
Average stability	92%	87%	79%	Average stability	96%	92%	82%
SD	0.02	0.03	0.05	SD	0.01	0.02	0.05
Upper limit	96%	93%	89%	Upper limit	99%	97%	91%
Lower limit	88%	81%	70%	Lower limit	93%	88%	73%

In conclusion, the combination of analysis demonstrate that the LCQ has good reliability with the general population, including people experiencing high levels of psychological distress as measured by the K-10.

Validating the underlying model of social inclusion

The model of social inclusion was validated in several ways. Firstly, a causal model was developed to understand the relationships within the data. Secondly, logistic regression was used to identify the best predictors of social inclusion (and the best dependent variable to be used for that prediction). Finally, correlation was used to identify the associations that result from social inclusion.

Causal model

The structure of the survey is predicated on social activities, education activities, voluntary work, time spent caring for others, employment and living situation and reported physical health being antecedents of consumers' sense of being part of a community or a group (Q31).

The survey also measures general outcomes (e.g. happiness with life and wellbeing) as well as feelings and opinions potentially more directly ancillary to being part of a community or group:

- Q22: Control over your life in general
- Q23: Have your say within the community on issues that are important to you
- Q24: Have your say with the person or agency involved in your care
- Q25: Have your say among family and friends about issues that are important to you
- Q26: Have your opinions respected when having your say
- Q32: Your ability to get support from family or friends when you need it

A formal causal analysis was undertaken to understand the relationship between these measures and respondents' sense of being part of a community or a group (Q31). A bayesian neural network approach was selected for its ability to capture non-linearities (thresholds and or saturation, concave effects) and interactions between variables. Notwithstanding potential psychometric issues of reliability and validity, beysian networks have the ability to establish causality (e.g. $A \rightarrow B$ or $B \rightarrow A$).¹

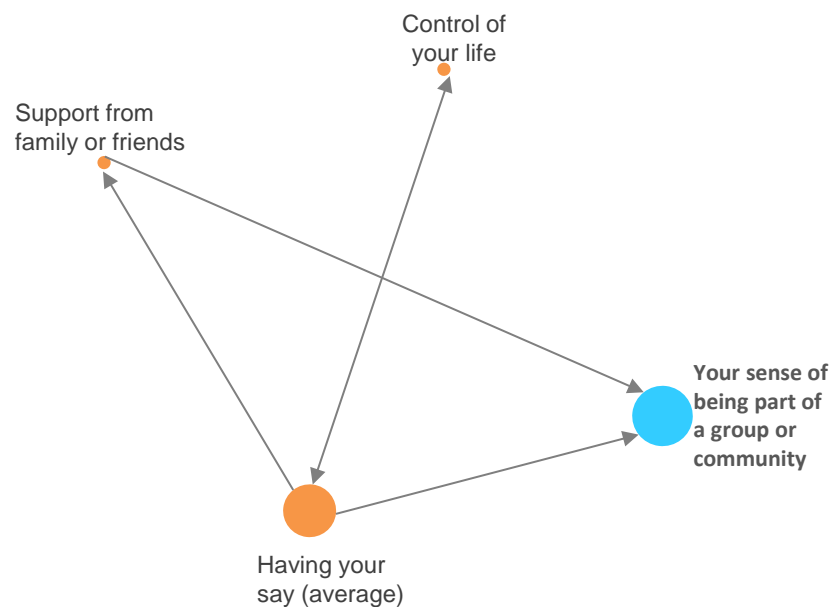
Figure 7 below shows the structure provided by the bayesian network. Q23 to Q26 were averaged into one score of "have your say" to simplify the structure. The blue ball represents the target variable (sense of being part of a community or a group) and the size of each other ball the contribution of each other variable to all other variables for which a causal link is established.

¹ Bayesian networks are pairs of G a directed acyclic graph (DAG) and a probability density P so that each variable of G does not depend on variables that are neither its "descendants" or its "parents". A is said to be a direct cause of B relative to other variables in the DAG when there exists two manipulations of all variables (except B) that differ only in the value assigned to A and produce different probabilities of B. For examples of manipulated probabilities (in an experimental setting like a randomised trial or samples from a population) (see: Spirtes, 2010)

The arrows show the direction of causality:

- *Control over your life* seems to have some impact over *have your say* but is not directly causative of *sense of being part of a group* or community and therefore is not considered to be an antecedent of the target variable.
- Have your say is identified as a clear antecedent of sense of being part of a group or community
- Have your say is also identified as impacting on the ability to get support from family and friends which in turn weakly impacts on sense of being part of a group or community

Figure 7: Causal model



Logistic regression

Subsequently, a logistic regression was conducted using SPSS to identify which variables are linked to Q31 using:

- The hours and activities questions (social, education, volunteering, caring for others, employment and living situation, physical health)
- Ability to get support from families and friends (Q32)
- Have your say (average of Q23-26)
- Socio demographics like age, gender, location (rural or urban), Aboriginal or Torres Strait Islander origin, etc.

To reduce the depend variable to binary code, respondents were classified as either having a strong sense of belonging to a group or community (excellent or very good) or not (good, fair poor) (respectively 24% vs 76%).

The model is able to reclassify respondents as excellent or very good correctly 62% of the time. Other answers are correctly reclassified 93% of the time (Table 15).

Table 15: Classification table and model summary statistics

Observed (from sample frequencies)			Predicted (from model)		
			Q31_VG_EXC		Percentage Correct
			Other	Very good/Excellent	
Step 1	Q31_VG_EXC	Other	630	50	92.6
		Very good /Excellent	91	149	62.1
	Overall Percentage				84.7

a. The cut value is .500

Model Summary

Step	-2 Log likelihood	Cox & Snell R Square	Nagelkerke R Square
1	639.319 ^a	0.364	0.534

The variables impact respondents' sense of belonging to a group or community are:

Positive impacts

- Activities away from home
- Other (unspecified) social activities
- Time spent volunteering through an organisation or group
- General health
- Ability to have your say (average)
- Your ability to get support from family or friends when you need it

Negative impacts

- Seen a psychologist in the last 12 months

In this model, of the scaled variables only physical health was significant (Table 16). This model emphasises the importance of activities at home AND activities away from home with friends or family. It also demonstrates the positive contribution of hours volunteering and physical health on the sense of being part of a group or community. The only variable identified as having a negative impact on the sense of being part of a group or community was seeing a psychologist in the last 12 months (clearly psychologist visit picks up on an underlying mental health component). Physical health also made a positive contribution (as a disabler or enabler of feeling part of a group or community).

Table 16: Variables in the equation

Variable	B	S.E.	Wald	df	Sig.	Exp(B)	95% C.I. for EXP(B)	
							Lower	Upper
Q1(3) Activities away from home	.789	.255	9.579	1	.002	2.202	1.336	3.630
Q1(5) Other (unspecified) social activities	.564	.244	5.329	1	.021	1.757	1.089	2.835
Q7 Time spent volunteering through an organisation or group	.051	.019	7.277	1	.007	1.052	1.014	1.092
Q20(2) Seen a psychologist in the last 12 months	-.947	.465	4.148	1	.042	.388	.156	.965
Q21 General health	.413	.118	12.231	1	.000	1.511	1.199	1.904
Q23 – Q26 (average) Have your say	.421	.045	86.939	1	.000	1.523	1.394	1.664
Q32 Your ability to get support from family or friends when you need it	.899	.130	47.517	1	.000	2.457	1.903	3.172
Constant	-11.685	.872	179.429	1	.000	.000		

Employment was not found to be a contributing factor to social inclusion. This is interesting because employment has consistently figured in the literature as an important indicator of objective social inclusion. In the LCQ, the employment questions relate to the hours or work and satisfaction with the hours worked. It may be that it is some other feature of work, such as the quality of relationships or the social environment, which contributes to social inclusion rather than the hours of participation.

Correlations

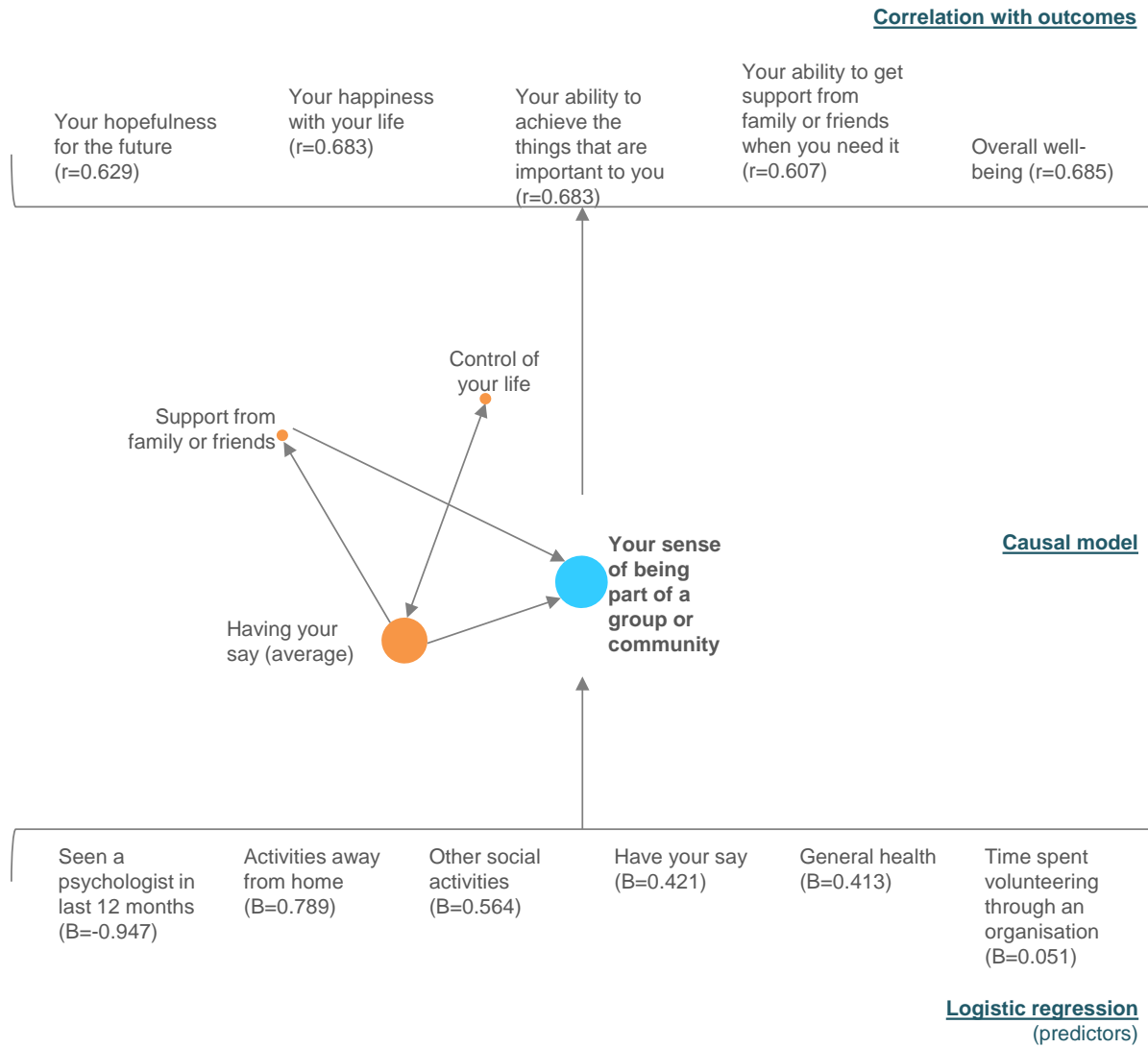
Finally, outcome and recovery questions were correlated with your *sense of being part of a group or community*. All questions had a strong, significant ($p < .05$) correlation with the target variable (Table 17).

Table 17: Correlation of outcome and recovery questions with sense of being part of a group or community

Question	Pearson's correlation
Q28 Your hopefulness for the future	0.629
Q29 Your happiness with your life	0.683
Q30 Your ability to achieve the things that are important to you	0.683
Q32 Your ability to get support from family or friends when you need it	0.607
Q33 Your overall well-being	0.685

The findings of the modelling are summarised in Figure 8. This Figure shows those questions that predict *sense of belonging to a group or community* at the bottom model, causal relationships in the middle of the model then the outcomes of *sense of belonging to a group or community* at the top of the model.

Figure 8: Summary of model of social inclusion (sense of being part of a group or community)



Impact of changes to the LCQ

Missing data

The overall rate of missing data was very low at an average of 1%. As with the previous administration of the LCQ in 2013, the online panel may have artificially increased the item completion rate as panel surveys usually employ forced completion of questions. However, the rating of missing data is still lower than the 2013 administration (2% in 2013, 1% in 2014).

Furthermore, in 2013 administration of the LCQ, the rating of missing data ranged from 0% to 5%. In the 2014 administration, the rate of missing data ranged from 0% to 2%.

Changes to social activity question

The activity questions were changed so that respondents had to identify all of the activities in which they participated through a multiple choice question, then provided an estimate of the total hours of participation.

The correlation of test and retest results show quite strong correlations (Table 18). This compares favourably to the previous questions, where the average correlation in hours between the test and retest for the online sample was 0.618 (compared to 0.728 for the revised question).

Table 18: Pearson's correlation for activity items

Item	Correlation between pre and post test
Activities at home with friends or family (having a chat, watching TV, having a meal, playing a game)	0.650
Telephone or online interactions with friends or family (including talking, texting, Twitter, Facebook, Skype, online dating)	0.708
Activities away from home with friends or family (to see a movie, have dinner, go shopping, go to a sports game, watch TV, have a chat, playing sport on a team, go to church or other religious service or an organised event or activity)	0.577
Going out on your own (to see a movie, have dinner, go shopping, go to a sports game, going to a church or other religious service or an organised event or activity)	0.609
Other social activities	0.437
None of these	0.405
Hours last week	0.728

Furthermore, the rating of missing data was 0% for the categorical activities question and 1% for the numeric questions (compared to 4% in the previous version of the questionnaire for the same population.)

Education questions

The education questions were changed so that respondents had to identify all of the educational courses in which they are enrolled through a multiple choice question, then provide an estimate of the total hours of participation.

The revised education questions performed well. The test and retest results showed a high level of correlation between items (Table 19). The correlation of hours spent studying between the test and retest surveys was similar between 2013 and 2014 (0.911 and 0.908 respectively) despite the streamlined approach to completion in 2014. The rate of missing data dropped from 2% to 0%.

Table 19: Pearson's correlation for education items

Item	Correlation between pre and post test
Secondary school	0.727
University / Other higher education	0.701
TAFE / Technical / Vocational / Registered training organisation	0.581
Other courses (job preparation, adult education, hobby courses)	0.694
None of the above	0.685
Hours last week	0.908

Voluntary work and caring for others questions

The voluntary work and caring for others questions were separated to better distinguish between formal volunteering through an organisation (which may be a replacement for, or pathways to, paid employment) and unpaid caring for minors and people with a disability or long term medical condition.

The new formal volunteering question worked well with just 3% of data missing. The maximum hours volunteered through a group or organisation last week was 55 hours and the mean participation last week was 1.32 hours. The test and retest results showed a high level of correlation ($r=0.868$).

The new caring for others question also worked reasonably well with just 1% of data missing. The maximum hours spent caring for a minor, or friend/ family member with a disability or long term illness was 160 hours with a mean of 6.82 hours. Just 1% of respondents estimated that they spent 100 hours

or more caring for others last week. Most respondents (75%) spent no time caring for others last week. The test and retest results showed a high level of correlation ($r=0.782$). Given that infants and others may require care that is technically '24/7' in that they may not be left unattended, the small number of exceptionally high hours is considered to be within an acceptable range.

Employment question

The employment status question in the LCQ was changed to match the ABS single question model. The test and retest results were highly correlated ($r=0.988$). The results were also compared to the ABS results. Testing the total employed and total unemployed revealed that the results were significantly different ($p>.001$). This was to be expected as the LCQ sample is drawn from the population of panel members which would be expected to include above average rates of unemployed persons. The proportion for those not in the workforce was not significantly different between the two samples (Table 20).

Table 20: Comparison of results for the LCQ and ABS employment questions

(Base)	2014 LCQ (954)	2011 census (16,387,766)
Full-Time employee	33.6	38.9
Part-Time employee	16.5	18.7
Self-employed - not employing others	5.4	NA
Self-employed - employing others	.7	NA
Employed - unpaid worker in a family business	.2	NA
Away from work	NA	3.8
Total employed	56.3	61.4
Unemployed - seeking full-time work	2.9	2.2
Unemployed - seeking part-time work	5.8	1.5
Total unemployed	8.7	3.7
Not in the workforce (not employed - not seeking employment)	34.9	35.0

Inclusion of dependent variables

Two additional questions were included in the LCQ for potential use as dependent variables in the modelling:

31. Your sense of being part of a group or community
32. Your ability to get support from family or friends when you need it

The *sense of being part of a community* worked well as a dependent variable. *Ability to get support from family and friends* was found to have a causal relationship with the *sense of being part of a community*. This validates the continued inclusion of both of these questions. Furthermore, the questions had low rates of missing data (both 1%) and high significant correlations between test and retest results (.735 for *sense of being part of a community* and .780 for *ability to get support from family and friends*)

Discussion

Overall, the LCQ performed well in the psychometric testing. The instrument met the minimum requirements for reliability and the changes made to the questionnaire worked as intended.

- **Administrative:** Rate of missing data and completion time were both reduced.
- **Reliability:** The questionnaire was found to have high levels of correlation between the test and retest scores, with moderate levels of intra-rater agreement. The stability of the results (that is, the consistency of the direction of rating between test and retest) was found to be high.
- **Modelling:** The research was able to validate the underlying model of social inclusion. Causal modelling demonstrate that *sense of being part of a group or community* worked well as a dependent variable, being predicted by logical subjective social inclusion questions and strongly correlating with outcome and recovery questions.
- **Changes to individual question:** All changes to individual questions worked well with the rates of missing data declining and high correlations between test and retest results and at least moderate kappa scores for retest reliability on rating questions.

Conclusion

The LCQ works well and is ready for full implementation. No further changes are recommended to the questions or structure of the measure.

Chapter 5: Development of a social inclusion index

One of the requirements of the LCQ was the potential to use the data to construct a meaningful index of social inclusion. This chapter compares several methods to developing an index. The methods are tested using data from an online survey of the general public.

Introduction

The MHISSC requested that the LCQ data be investigated to identify the possibilities for developing an index of social inclusion for an individual. An index can provide a simple way to measure change in an individual's social inclusion over time. To do this, the index needs to be sensitive to changes in the individual's experience of social inclusion.

Method

Three approaches were used to develop indexes of social inclusion:

- Firstly, the key dependent variable, *Q31 Sense of belonging to a group or community*, was used as a simple index. As this variable has five categories organised into an ordinal scale, there are only five potential points to the index.
- Secondly, a policy index was developed that uses those questions in the LCQ that measure indicators of the Fourth Plan.
- Finally, an index was developed using the three variables that were identified in the causal model as driving social inclusion.

These options were explored using descriptive analysis and tested for the ability of index scores to discriminate between results for the outcome and recovery variables included in the LCQ. Where these variables were involved in the construct of the indexes they have not been used to test the outcomes of the indexes.

To ensure that the indexes developed from the online survey of the general public were as relevant to the mental health sector as possible, only those respondents with a K-10 score of 15 or above were included in the analysis. This reduced the sample size to 532 respondents.

Findings

Simple index

Using the dependent variable, *Q31 Sense of belonging to a group or community*, as a discrete index provides five possible positions on the index (poor, fair, good, very good, excellent). As the data is discrete, only jumps from one category to the next are measurable. This reduces the variance in the index (Table 21).

Table 21: Simple index descriptives

Topic	Statistic (528)
Mean	2.57
Standard error of the mean	.044
Standard deviation	1.014
Variance	1.028
Maximum possible score	5

Policy index

The Fourth Plan identifies indicators to be monitored in relation to social inclusion objectives. These indicators were mapped against the LCQ to identify questions to be included in the policy index (Table 22).

Table 22: Relationship between key Fourth Plan indicators and LCQ questions

Policy objective	LCQ question
Participation in education and employment	Q6 In your opinion, was the amount of time you spent in education last week...? Q8 In your opinion, was the amount of time you spent doing voluntary or unpaid work last week...? Q14 In your opinion, was the amount of time you spent employed last week...?
Community participation more broadly	Q3 In your opinion, was the amount of time you spent doing social activities last week...? Mean of <i>have your say</i> questions (Q23-Q26)
Stability of housing	Q18 How would you rate your current living situation overall (thinking about cost, location, security and space?)
Access to a GP	Q19 In the last 12 months , how many times did you see a general practitioner?

To produce the index some questions were rescaled. For GP visits, to ensure that this question had equal weight with scaled questions, any number of GP visits above zero were scored as 5. For the *about right* scales, where the desired state is the midpoint, these scales were transformed as shown in Table 23.

The policy index was constructed as an average of values where the maximum score possible was 35. The results reveal the index has good variance (Table 24).

Table 23: Change in values for *about right* scale

Label	Original value	Converted value
Far too little	1	1
Too little	2	3
About right	3	5
Too much	4	3
Far too much	5	1

Table 24: Policy index descriptives

Topic	Statistic (438)
Mean	20.69
Standard error of the mean	.148
Standard deviation	3.10
Variance	9.589
Maximum score possible	35

Causal index

The causal index was conducted using those variables identify in the model (Figure 8) as important drivers of a person's *sense of belong to a community or group*. These were:

- Mean of *have your say* questions (Q23-Q26)
- Q22 *Control of your life in general*
- Q32 *Your ability to get support from family and friends when you need it*

Table 25: Causal index descriptives

Topic	Statistic (438)
Mean	11.68
Standard error of the mean	.137
Standard deviation	3.15
Variance	9.912
Maximum score possible	20

Consistent with its weight in driving the model, the mean of the *have your say* questions was given a weight of x2. This produced an index with a maximum possible score of 20 points. As with the policy index, this index had better variance than the simple index.

Outcome variables

The mean score for each index was tabulated for the outcome questions included in the LCQ. This revealed that each index had a linear relationship with the outcome variables, that is, the indexes increase as better outcomes are achieved. This suggests that each scale has construct validity. The differences reached significance (.05) in many cases (Table 26). Both the simple and causal indices had a higher level of significant results than did the policy index.

Table 26: Means outcome scores by index²

Index	Q21 In general, how is your physical health?					Q28 Your hopefulness for the future				
	Poor	Fair	Good	Very good	Excellent	Poor	Fair	Good	Very good	Excellent
	(A)	(B)	(C)	(D)	(E)	(A)	(B)	(C)	(D)	(E)
	Mean	Mean	Mean	Mean	Mean	Mean	Mean	Mean	Mean	Mean
Simple	2.1	2.2	2.7 ^{AB}	3.2 ^{ABC}	4.0 ^{ABCD}	1.6	2.1 ^A	2.7 ^{AB}	3.3 ^{ABC}	4.1 ^{ABCD}
Policy	19.3	19.9	21.3 ^{AB}	22.1 ^{AB}	22.2	18.6	20.3 ^A	21.0 ^A	21.8 ^{AB}	22.5 ^A
Causal	9.8	10.5	12.3 ^{AB}	14.0 ^{ABC}	15.7 ^{ABC}	8.5	9.9 ^A	12.2 ^{AB}	14.1 ^{ABC}	16.0 ^{ABCD}
Index	Q29 Your happiness with your life					Q30 Your ability to achieve the things that are important to you				
	Poor	Fair	Good	Very good	Excellent	Poor	Fair	Good	Very good	Excellent
	(A)	(B)	(C)	(D)	(E)	(A)	(B)	(C)	(D)	(E)
	Mean	Mean	Mean	Mean	Mean	Mean	Mean	Mean	Mean	Mean
Simple	1.4	2.0 ^A	2.7 ^{AB}	3.3 ^{ABC}	4.2 ^{ABCD}	1.4	2.1 ^A	2.7 ^{AB}	3.4 ^{ABC}	4 ^{ABCD}
Policy	18.6	19.9	21.0 ^{AB}	22.2 ^{ABC}	23.3 ^{ABC}	18.6	20.0 ^A	21.1 ^{AB}	21.9 ^{AB}	23.37 ^{ABC}
Causal	7.5	10.0 ^A	12.3 ^{AB}	14.4 ^{ABC}	16.9 ^{ABCD}	8.1	10.0 ^A	12.4 ^{AB}	14.2 ^{ABC}	16.2 ^{ABCD}

² Results are based on two-sided tests assuming equal variances with significance level .05. For each significant pair, the key of the smaller category appears under the category with larger mean. Tests are adjusted for all pairwise comparisons within a row of each innermost subtable using the Bonferroni correction.

Discussion

While each of the three indexes developed performed well , they had different strengths and weaknesses (Table 27)

Table 27: Advantages and disadvantages of the indexes

Index	Advantages	Disadvantages
Simple	<p>The simple index is easy to construct and interpret. It uses the depend variable that is the core construct of social inclusion in the LCQ. It produced a normal distribution of results.</p> <p>The index had a linear relationship with the outcome variables. It outperformed the policy index in the number of significant differences between scores on outcome variables.</p> <p>The simple index is the only index that has a built in measure of quality (its scale). For the other indexes some external notion of quality has to be applied to give meaning to the value.</p>	<p>As this variable is measured on a 5-point scale, the data lacks variance and there may be a lag before change is registered.</p>
Policy	<p>The policy index is relatively easy to construct and interpret. It can be easily changed to measure new, or refocussed, policy directions.</p> <p>It produced a normal distribution of results and greater variance than the simple scale. The index had a linear relationship with the outcome variables.</p>	<p>The policy index requires some level of statistical understand to construct.</p> <p>It produced the least number of significant differences between scores on outcome variable.</p>
Causal	<p>The causal model is based on the variables that predict social inclusion. The distribution produced was normally distributed and has good variance. The index performed as well as the simple index in the number of significant differences produced in outcome variables. The index had a linear relationship with the outcome variables.</p>	<p>The causal index is based on complex modelling, although the modelling could be updated annually or biennially to recalibrate the index.</p>

Conclusion

Each index is fit for purpose and has a number of features to recommend it. As the causal index relies on ongoing statistical analysis to update the variables and weights used to construct it, either the simple or policy indexes present a more practical direction.

Chapter 6: Short Form LCQ (SF-LCQ)

This chapter provides an outline of the approach used to develop the Short Form LCQ (SF-LCQ).

Introduction

While the LCQ is a short questionnaire, to ensure the greatest application of the LCQ it was considered advantageous to identify any further reduction in the questionnaire that could produce a short form without impacting on the ability to develop an index from the data. The intent is that the SF-LCQ provides an opportunity to review an individual's social inclusion between (say annual) administrations of the LCQ.

Method

To develop the SF-LCQ, the extent to which each question in the LCQ contributed to the following areas was considered:

- Index – to ensure that the SF-LCQ could be used to generate an index in the same way as the LCQ, those questions potentially used to develop the index must be included
- Model of social inclusion – to ensure that the SF-LCQ was still measuring the same social construct as the LCQ, those questions that were found to be driving the model of social inclusion need to be retained
- Policy measurement – the SF-LCQ must retain those questions that were developed to measure the achievements of the Fourth Mental Health Plan in areas of social inclusion.

These factors were collated and are presented in the accompanying table (Table 29).

Table 28: LCQ short form selection matrix

Question	Used in model	Maybe used in index	Policy relevant
1. In the last week, did you do any of these social activities?	Yes	No	Yes
2. In the <u>last week</u> , about how much time did you spend doing all of these social activities?	Yes	No	No
3. In your opinion, was the amount of time you spent doing social activities last week...?	Yes	Yes	Yes
4. Are you currently enrolled in any of the following courses of study?	No	No	Yes
5. In the last week, in total how many hours did you spend in class or studying for these courses?	No	No	No
6. In your opinion, was the amount of time you spent in education in the	Yes	Yes	Yes

Question	Used in model	Maybe used in index	Policy relevant
last week...?			
7. In the last week, how much time did you spend doing voluntary or unpaid work through an organisation or group?	Yes	No	No
8. In your opinion, was the amount of time you spent in voluntary or unpaid work in the last week...?	Yes	Yes	Yes
9. In the last week, were you providing unpaid care (such as personal care, support or assistance) to a family member or friend? This includes work for which you may have received a Carer Allowance or Carer Payment.	Yes	Yes	Yes
10. In the last week, how many hours in total did you spend providing this care?	No	No	No
11. In your opinion, was the amount of time you spent caring for others in the <u>last week</u> ...?	Yes	Yes	Yes
12. Of the following employment categories, which best describes your current employment?	No	No	Yes
13. Last week, how many hours did you work in total in these jobs?	No	No	Yes
14. In your opinion, was the amount of time you spent employed last week..?	Yes	Yes	Yes
15. In the last four weeks, were you actively looking for paid work at any time?	No	No	Yes
16. In the last four weeks, in what type of accommodation were you living?	No	No	Yes
17. Who were you living with in the last four weeks?	No	No	Yes
18. How would you rate your current living situation overall (thinking about cost, location, security and space?)	Yes	Yes	Yes
19. In the last 12 months, how many times did you see a general practitioner?	No	No	Yes
20. In the last 12 months, did you see any of the following health professionals?	Yes	Yes	No
21. In general, how is your physical health?	Yes	Yes	No
22. Control your life in general	Yes	Yes	No
23. Have your say within the community on issues that are important to you	Yes	Yes	Yes
24. Have your say with the person or agency involved in your care	Yes	Yes	Yes
25. Have your say among family and friends about issues that are important to you	Yes	Yes	Yes
26. Have your opinions respected when having your say	Yes	Yes	Yes
27. Would you like some help from this service with any of the things asked about in this questionnaire? This includes with social activities, education, volunteering, work, housing and physical health	No	No	Yes

Question	Used in model	Maybe used in index	Policy relevant
28. Your hopefulness for the future	No	No	No
29. Your happiness with your life	No	No	No
30. Your ability to achieve the things that are important to you	No	No	No
31. Your sense of being part of a group or community	Yes	Yes	Yes
32. Your ability to get support from family or friends when you need it	Yes	No	Yes
33. Your overall well-being	No	No	No
34. What is your gender?	No	No	No
35. What is the main language you speak at home?	No	No	No
36. Are you of Aboriginal and/or Torres Strait Island origin?	No	No	Yes
37. What is your age?	No	No	Yes
38. Where do you live?	Yes	No	No

Findings

Using this approach to identify questions that are of least importance to the LCQ identified the following eight questions as potentially removable to create the SF-LCQ:

- 5. In the last week, in total how many hours did you spend in class or studying for these courses?
- 10. In the last week, how many hours in total did you spend providing this care?
- 28. Your hopefulness for the future
- 29. Your happiness with your life
- 30. Your ability to achieve the things that are important to you
- 33. Your overall well-being
- 34. What is your gender?
- 35. What is the main language you speak at home?

Discussion

Eight questions were identified as potentially removable from the LCQ to create a short form questionnaire. These questions account for 21% of questions in the LCQ. Assuming it takes equal time to complete all questions, this would reduce the length of the questionnaire by 1.42 minutes (from 6.77 minutes to 5.35 minutes).

Conclusion

The SF-LCQ can be made available for use by the sector between administrations of the LCQ. The focus of the SF-LCQ should be on providing clinicians and consumers with ongoing information on an individual's experience of social inclusion as part of routine clinical review of progress.

Appendix A: Individual-level measures of social inclusion and related constructs

Measure	Domains	Types of participation/factors	Number of Items/Time to complete	Source of items	Scoring	Administration	Usage
Huxley et al (2012) Social and Community Opportunities Profile (SCOPE)	Perceived opportunities Satisfaction with opportunities Subjective well-being	Leisure and participation Housing and accommodation Safety Work Financial situation Self-reported health Education Family and social relationships	Long version 121 items (average time 37 minutes for mental health service users SD=16) Short version 48 items (<20 minutes used as guide, average 8.7 minutes in university students)	Centre for Applied Social Surveys (CASS) Question Bank (UK) and UK Data Archive.	Five-point Likert scale from 1 – plentiful opportunities to 5- opportunities extremely restricted, 7-point Likert scale from 1-feeling terrible to 7 – feeling delighted and free-response . Responses should be compared to national averages rather than aggregated to measure inclusion	Self-report or interview (training not necessary)	For use in general population, mental health service research and as an outcome measure in mental health services.
Harris et al (2011) Socially Valued Role Classification Scale (Although not strictly a measure of social inclusion, this measure is included here as further information at is used in the composite measure	Socially valued role functioning in roles other than as a patient with mental health disorders or welfare recipient	Home duties and self-care Personal development and rehabilitation Caring for others Formal education and training Competitive employment	25 items	SRCS	Domain scores for 5 domains SRCS role status within each domain classified on scale from 1=lowest level status to 15=highest (calculated using hours of participation, whether support was needed, standard of performance and whether there were	20 minute telephone interview	Used for research purposes.

Measure	Domains	Types of participation/ factors	Number of Items/Time to complete	Source of items	Scoring	Administration	Usage
of Lloyd et al (2008).)					multiple roles)		
Boutillier & Croucher (2010)	Physical Social Psychological Occupational	Housing Finances Medication Services Health No. hours engaged in community activity Transport Family Friends Neighbourhood Culture Spirituality Intimate relationships Self-identity Sense of belonging Quality/meaning of life Positive risk taking Stigma Personal recovery Coping mechanisms Self-care Leisure Productivity Occupational deprivation Occupational balance Habits, roles, routines Occupational performance	Four primary questions explored using prompts from factors shown to left.	Created specifically but partly uses theoretical foundation of Pinfold (2000; shown on p.137).	Planning tool aimed to facilitate client-centred discussion, not a ‘scorable’ measure.	Discussion between service user and clinician	Clinical tool designed to facilitate discussion of what ‘helps and what hinders a person’s social inclusion’ (p.137)

Measure	Domains	Types of participation/factors	Number of Items/Time to complete	Source of items	Scoring	Administration	Usage
Marino-Francis & Worrall-Davies (2010) Social Inclusion Questionnaire	Social relationships Sense of community Mental health services used	The following four factors emerged as most stable from factor analysis, with weaker additional factors also found, but not specified: Feeling accepted by neighbours and community Seeking and being involved in groups outside mental health Feeling accepted by and involved in leisure activities Feeling accepted by and satisfied with friends and mental health workers	23 items on 5-point Likert scale ('not at all' to 'all the time')	Specifically created but referred to previous measures to determine key areas of social inclusion (see p.38)	One reverse-scored item. Sub-scales not yet determined as paper carried out initial factor analysis.	30 minutes for self-report Up to one hour if clinician required to read questions to the consumer.	The measure is designed to assess the level of social inclusion of mental health service users in order to determine the effect of changes made to a mental health day service with the aim of integrating service users into the community.
Stewart et al (2010) Activity and Participation Questionnaire (APQ)	Report actual activity Satisfaction with activities Participation goals Desire to change level of activity	Employment Seeking employment Unpaid work Education and training Social and community participation Readiness to change	6 questions including 14 possible items (some items may be skipped depending on response to initial questions)	Australian Bureau of Statistics (ABS) surveys: the Australian Census 2006; Survey of Disability, Ageing and Carers 2003; General Social Survey 2006 and the continuous Labour Force Survey. Stages of change (Prochaska & DiClemente, 1992): measure developed	Participation in work (paid and unpaid), education, and community activities measured using hours. 'Seeking employment' characterised as 'employed', 'looking for work' or 'not participating in the labour force'. Readiness to change allocated to a stage of change based on response.	Self report Telephone or face-to-face interview <10 minutes	"to complement clinical assessment, to support dialogue between consumers and clinicians about recovery goals" (p.259)

Measure	Domains	Types of participation/factors	Number of Items/Time to complete	Source of items	Scoring	Administration	Usage
				by Stewart.			
Dorer et al. (2009) A staff survey of mental health users' participation in community occupations	Employment Education Volunteering Arts Faith and Culture Activities Sport and exercise Local neighbourhoods Day centres Contact with family and friends	Education Employment Day Centres Sports Faith Arts Local facilities Family and Friends	Staff estimation of time spent in activities over a 7-day period. Allocate each activity a level of social inclusion	Specifically created for the study. Based on Bates and Butler's 'Life Domains' as framework. Combines Bates's 'Traffic Light System' with time estimates	Consumer activities over 7-day period allocated to the 8 occupation domains and total time spent in each domain calculated. Each activity coded 1-3 based on level of social inclusion as in Bates (2002b). Red =1, Amber=2, Green=3.	Staff completed. Staff (who had extensive contact with service users) estimated the amount of time a service user spent in occupations over a 7-day period. Then coded level of inclusion offered by each activity.	Survey tool that assesses the type and amount of community engagement undertaken by mental health service users and the level of social inclusiveness of that engagement. Results could be used at individual or service level.
Ramon et al (2009) EMILIA Project	Education Training Employment Meaningful unpaid activities Social networks	As reported on left	10 questions that promote reflection on consumers' life over the past year and the coming year	Specifically created	Not scored. Designed for qualitative study and responses analysed using thematic analysis	Consumer self-report either written or verbally tape-recorded.	Designed for research use to assess the effects of lifelong learning interventions on social inclusion. Could have clinical utility.
Secker et al (2009) Social Inclusion for arts project participants	Social isolation Social relations Social acceptance	Building social capital Social acceptance Neighbourhood cohesion Security of housing tenure Leisure and cultural activities Citizenship	19 items 4 -point Likert scale (not at all, not particularly, yes a bit, yes definitely) Applies to last 3 months	Mixed: specifically created and adapted from other arts project outcome measures and the UK National Labour Force Survey	Total: Sum of items Subscale scores: Social isolation, social relations and social acceptance.	15 minutes Administration method not specified but probably self-report.	Use as outcome measure for arts project to determine if participation in arts projects facilitates social inclusion.

Measure	Domains	Types of participation/factors	Number of Items/Time to complete	Source of items	Scoring	Administration	Usage
Hacking & Bates (2008) The Inclusion Web	People (personal relationships) Places (Institutions that matter to the individual)	Employment Education Volunteering Arts and Culture Faith and Meaning Family and neighbourhood Sport and exercise Services	Information about participation in 16 areas (left) charted visually	Specifically created	Count of activities Total People Total places 'Clockspread' total Scoring Software Available. Trained administrator converts visual map to summary score above.	Clinician and consumer discussion. Clinician uses standard questions as prompts. Map of person's network of 'places' and 'people' is developed. Repetition at intervals allows monitoring of change.	Specifically designed to facilitate collaboration between consumer and clinician to develop a plan for consumer activity to increase their social inclusion in chosen areas.
Lloyd et al (2008)	Socially valued role functioning in roles other than as a patient with mental health disorders or welfare recipient Social support An absence of stigma experiences Integration in the rehabilitation community Integration in	Home duties and self-care Caring for others Engagement in rehabilitation Formal study or approved training Competitive employment	5 domains by 15 levels 9 items stigma experiences rated on 5-point Likert scale (never – very often) 20 items community integration	Socially Valued Role Classification Scale (SRCS) (Waghorn, Chant & King, 2007) Consumers' interpersonal experiences (Wahl, 1999) Community Integration Questionnaire (McColl et al., 2001)	Classification Table used to create a SRCS role classification score (uses weekly hours of participation, performance standard, support needed to perform role).	Face-to-face interview First interview: 42 mins (SD 18) Second interview: 33 min (SD 7)	Better assessment supports practice

Measure	Domains	Types of participation/ factors	Number of Items/Time to complete	Source of items	Scoring	Administration	Usage
	the wider community beyond the psychosocial rehabilitation community.						
Berry et al (2007) Australian Community Participation Questionnaire	Informal social connectedness Civic engagement Political participation	Contact with: - immediate household* - extended family* - friends* - neighbours* Social contact with workmates Organised community activities* Giving money to charity Voluntary sector activity Adult learning Religious observance* Active interest in current affairs* Expressing opinions publicly Community activism Political protest (*only types of participation relating to lower levels of distress)	67 items. 7-point Likert scale from 1=never or almost never to 7=always or almost always.	Specifically created	Not specified	Self-report	Not designed for clinical use. Developed for use with general population and not tested with people with a mental illness.

Appendix B: Psychometric testing and properties, advantages and disadvantages of each social inclusion measure

Measure	Advantage and Disadvantages	Validity	Reliability	Sensitivity to change	Testing sample, Feasibility/ Utility
Huxley et al (2012) Social and Community Opportunities Profile (SCOPE) – Short version	Advantages: short form of acceptable length, based on extensive examination of the social inclusion and related literature; a range of psychometric properties examined (most extensive testing of all identified measures); easy to administer. Disadvantages: some psychometric properties still to be established and/or improved; tested in UK sample and would require adaptation and testing with Australian sample as the items are very UK-centric in content and language.	Discriminant validity – used scores on SCOPE – short version to discriminate between 3 test groups – results mixed. Construct validity tested SCOPE-short version against measures of social capital and participation – higher correlation between SCOPE scales than between measures of participation and social capital.	Internal consistency – Cronbach’s alpha: Satisfaction with opportunities (SatOpps)=0.77 (acceptable) and Perceived opps=0.62 (below acceptable. Inter-item correlation for scales with small number of items – Perceived Opps = 0.251 (acceptable). Acceptable correlations with longer version of the questionnaire- SatOpps $r=.918$ and Perceived Opps $r=.881$. Test-retest reliability (2-weeks) for student sample: for all items $\kappa=.663-.965$ and $r=.618-.999$ (strong with few exceptions)	Testing underway but not yet complete	Tested in three samples: Mental Health Service Users, Mental Health Community Sample, and Common mental disorder group, allowing comparisons between groups. Developed in stages with users and other groups. Generally acceptable to users – showed face validity and time taken for shorter version was acceptable to users.
Harris et al (2011) Socially Valued Role Classification Scale ^a (Included only as further psychometric	Advantages: Assesses several domains, acceptable test-retest reliability and concurrent validity for many items; largely acceptable to	Concurrent validity assessed by examining associations with items from the Activity and Participation Questionnaire-6, the Work-related	Test-retest scores for all domain scores were good or very good (interclass correlations = .79-.89). Test-retest reliability for most	None reported	60 pairs of interviews with prior research participants with schizophrenia or schizoaffective disorder. Phone interviews. Administration by

^a While a measure of role functioning and not social inclusion, this measure is included as further evidence for that outlined by Lloyd et al (2008) who used the SRCS in a composite measure of social inclusion.

Measure	Advantage and Disadvantages	Validity	Reliability	Sensitivity to change	Testing sample, Feasibility/ Utility
evidence for inclusion in the Lloyd et al (2008) composite measure.	service users and administrator although phone interview sometimes seen as long. Disadvantages: Measure of role functioning and not social inclusion. But used in social inclusion composite measure of Lloyd et al (2008).	Self-efficacy Scale-37 and the Education-related Self-efficacy Scale-40. The majority of expected pairs had a moderate to very good association. Clinicians reported no concerns with face validity.	items was also good or very good (.67-.95) with exceptions for items assessing assistance received with caring for others (K=.49), assistance with formal education and training (K=.40), and standard of performance in formal education and training (K=.49).		phone was noted as long and repetitive by phone. However, these comments referred to a battery of tests and not just the SRCS. Some participants were concerned about the use of their data and found recalling some previous work experiences unpleasant.
Boutillier & Croucher (2010)	This is a clinical tool to facilitate discussion around social inclusion and not a psychometric scale.	Not applicable	Not applicable	Not applicable	Clinical use only.
Marino-Francis & Worrall-Davies (2010) Social Inclusion Questionnaire	Advantages: identified four strong factors, measures the subjective component of feelings of social inclusion rather than just participation, developed and tested with service users, relatively stable over time. Disadvantages: requires refinement to enhance validity, currently takes 30 minutes for self-completion – further refinement could reduce number of items, requires further establishment of psychometric	Factor analysis identified four strong factors, one unstable factor and two other, weaker factors. Authors identify need for removal of items that do not load onto factors and possible reduction of factors from 7 to 3 or 4.	Test-retest (2 weeks) across items (Kappa coefficient) was acceptable (>.4 for most items) to good (>.6). Internal consistency high (Cronbach's alpha = .80)	None reported	5 focus groups with service users to obtain final version. Acceptability questionnaire used in pilot stage indicated questions easy to complete and understand for most. Psychometrics tested with 7 mental health day services in Leeds (UK). 51 participants completed questionnaire twice with 2-week gap. 69 completed it once along with the acceptability questionnaire.

Measure	Advantage and Disadvantages	Validity	Reliability	Sensitivity to change	Testing sample, Feasibility/ Utility
	properties needed.				
Stewart et al. (2010) Activity and Participation Questionnaire	Advantages: measures both activity and satisfaction, measures range of domains, tested with service users, short. Disadvantages: requires further demonstration of psychometric properties.	None reported	<6 days: moderate to very good across items. Best for work and education items but lower for social participation and readiness to change.	None reported	Test-retest with 69 participants from NSW metropolitan and regional psychiatric rehabilitation and community mental health services. 62 participants with schizophrenia or schizoaffective disorders from Greater Brisbane. Acceptability testing showed items easy to answer and users confident in responses. Readiness to change questions most difficult and since been altered. Able to complete by self-report although missing data common.
Dorer et al (2009) A staff survey of mental health users' participation in community occupations	Advantages: combines measure of time spent in community activities with the level of social inclusion that each activity promotes. Disadvantages: staff estimates may be inaccurate and require intimate knowledge of each consumer, no attempt to measure subjective perceptions of social inclusion of consumer.	None reported	None reported	None reported	No psychometric testing. Acceptable to clinicians completing measures.
Ramon et al (2009) The EMILIA Project	None. Designed for use in a qualitative study and not as a	Not applicable.	Not applicable.	Not applicable.	Designed for research use but could have clinical

Measure	Advantage and Disadvantages	Validity	Reliability	Sensitivity to change	Testing sample, Feasibility/ Utility
	psychometric scale.				utility.
Secker et al., (2009) Social Inclusion for arts project participants	Advantages: questions based on subjective perceptions of social inclusion as well as objective participation in activities that may promote social inclusion, good internal consistency and showed emergence of three sub-scales, developed and tested with service users, measures range of domains, relatively short. Disadvantages: additional psychometric properties need to be reported.	After excluding three items the overall measure showed good internal consistency (alpha = .85) and three sub-scales with acceptable internal consistency: social isolation (alpha=.76), social acceptance (.76) and social relations (.70). Pearson correlations between scales, and between scales and the overall measure were moderate to very high, indicating they scales were measuring different aspects of the same construct. The measure also showed predictive validity by correlating highly with measures of mental health and empowerment.	None reported	None reported	Tested with 15 arts and mental health project participants and 8 members of service user research group for acceptability. Items and response scales revised accordingly. Psychometric testing with 88 participants from 22 arts projects across England. All participants reported a mental illness, which were of varying severity.
Lloyd et al (2008) Composite measure of social inclusion	Advantages: covers several domains of social inclusion, acceptable to consumers, promising reliability but may require further refinement. Disadvantages: interview format difficult to roll out	None reported	Short-cycle test-retest reliability (24-96 hours) for SCRS tested for home duties and self-care, rehabilitation and employment domains only. Test-retest reliability for items ranged from low to excellent (Pearson r=0.36-0.96) across the 3	None reported.	Service users involved in design of measures and training phase. Feedback indicated general satisfaction from consumers with the interview. No breaks required and no negative effects reported.

Measure	Advantage and Disadvantages	Validity	Reliability	Sensitivity to change	Testing sample, Feasibility/ Utility
	<p>on a large scale, requires establishment of other psychometric properties, long.</p>		<p>domains, but excellent for total SRCS score. Test-retest for other items in scales: social Support low to excellent ($r=.43-.79$), 'Other functioning' good to excellent ($r=.54-1.0$), Stigma Experiences low to excellent ($r=.20-.89$) but when least reliable items removed, scale test-retest reliability was .89 (excellent); Community Integration low ($r=0.15$) to excellent ($r=.93$) across both rehabilitation community and wider community scales. When individual items with low reliability removed, test-retest reliability improved for both overall scales ($r=.93$ and $.88$ respectively). Interrater reliability: Excellent ($r>.75$) for role classification score. Initial internal consistency for all scales was acceptable (Cronbach's Alpha = $.75-.85$) but improved for community integration scales</p>		<p>Psychometric testing with 26 participants (22 male) with psychiatric diagnosis attending psychosocial rehabilitation in Brisbane. Completed interview twice within 24-96 hours.</p>

Measure	Advantage and Disadvantages	Validity	Reliability	Sensitivity to change	Testing sample, Feasibility/ Utility
			by removal of items with low reliability (alpha >.80).		
Hacking & Bates (2008) The Inclusion Web	Advantages: visual mapping does not require literacy, covers number of life domains, allows individual to reflect what types of community participation are most Important to them rather than assuming a standard model. Disadvantages: no assessment of consumer perceptions of level of social inclusion, requires extensive training of staff for administration, further psychometric properties need to be established, administration time long.	Correlations between the 'places' and 'people' scales of the Inclusion Web suggest that increasing the number of places visited did also increase the number of people contacted (except in the domains of art and culture, and faith).	None reported	Significant increases in total and sub-scale scores over a period of participation in the inclusion project.	100 service users from Mainstream project in Liverpool: sample representative of service users.
Berry et al (2007) Australian Community Participation Questionnaire	Gained feedback on original items before use with 963 residents in rural Australia ages 19-97. Advantages: demonstration of validity by factor analysis, use of the 7 types of participation that related to reduced psychological distress may be	Factor analysis identified 14 factors relating to 14 types of community participation. Analysed association between participation and psychological distress and found that only 7 types of participation (of the 14 factors measures by the scale) related to reduced	None reported	None reported	Initial testing of items led to development of larger number of items. Use with general population and not mental health service users.

Measure	Advantage and Disadvantages	Validity	Reliability	Sensitivity to change	Testing sample, Feasibility/ Utility
	<p>useful for development of social inclusion measure.</p> <p>Disadvantages: designed for use and tested with general population and not mental health service users, a measure of community participation and not specifically of social inclusion, long questionnaire.</p>	<p>psychological distress.</p>			

Appendix C: Final LCQ

This questionnaire is designed to explore aspects of your life in the community including your social activities, participation in employment or study, your living situation and your physical health care.

The questionnaire is to be completed by all people aged 16 years and older.

Completion of the questionnaire is voluntary. Your personal information, including answers to this questionnaire, is covered by the privacy laws in your state or territory.

LAST WEEK

This section asks about some of the activities you did in the last week.

Social Activities

1. In the **last week**, did you do any of these social activities?
(Please tick all that apply)

- | | |
|--|--------------------------|
| Activities at home with friends or family (having a chat, watching TV, having a meal, playing a game) | <input type="checkbox"/> |
| Telephone or online interactions with friends or family
(including talking, texting, Twitter, Facebook, Skype, online dating) | <input type="checkbox"/> |
| Activities away from home with friends or family
(to see a movie, have dinner, go shopping, go to a sports game, watch TV, have a chat, playing sport on a team, go to church or other religious service or an organised event or activity) | <input type="checkbox"/> |
| Going out on your own
(to see a movie, have dinner, go shopping, go to a sports game, going to a church or other religious service or an organised event or activity) | <input type="checkbox"/> |
| Other social activities | <input type="checkbox"/> |
| None of the above | <input type="checkbox"/> |

2. In the **last week**, about how much time did you spend doing all of these social activities?

Please provide your best estimate of the total number of hours you spent on these _____ hours in total activities

Please tick if no hours spent in social activities

3. In your opinion, was the amount of time you spent doing social activities **last week...**?
(Please tick one box only)

Far too little	Too little	About right	Too much	Far too much
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Education

4. Are you currently enrolled in any of the following courses of study? (Please tick all that apply)

- Secondary school
- University / Other higher education
- TAFE / Technical / Vocational / Registered training organisation
- Other courses (job preparation, adult education, hobby courses)
- None of the above

5. In the **last week**, in total how many hours did you spend in class or studying for these courses? (Please tick all that apply)

Please write the approximate number of hours spent in class or studying last week _____ hours in total

Please tick if no hours spent studying for these courses

6. In your opinion, was the amount of time you spent in education in the **last week...**?
(Please tick one box only)

Far too little	Too little	About right	Too much	Far too much
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Voluntary or Unpaid Work

7. In the **last week**, how much time did you spend doing voluntary or unpaid work through an organisation or group? _____ hours in total

Please tick if you did not do any voluntary work

8. In your opinion, was the amount of time you spent in voluntary or unpaid work in the **last week**...?
(Please tick one box only)

Far too little	Too little	About right	Too much	Far too much
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Caring for others

9. In the **last week**, were you providing unpaid care (such as personal care, support or assistance) to a family member or friend? This includes work for which you may have received a Carer Allowance or Carer Payment.
(Please tick all the boxes that apply)

- A family or friend because of disability, long term illness or old age
- A child under 15 years of age
- Other caring. Please describe the care provided _____
- None of the above

10. In the last week, how many hours in total did you spend providing this care? (Please write in the approximate number of hours)

Please write the approximate number of hours spent providing care last week _____ hours in total

Please tick if no hours spent providing care

11. In your opinion, was the amount of time you spent caring for others in the **last week**...?
(Please tick one box only)

Far too little	Too little	About right	Too much	Far too much
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Employment

12. Of the following employment categories, which best describes your current employment?

(Please tick one box)

- Full-Time employee
- Part-Time employee
- Self-employed - not employing others
- Self-employed - employing others
- Employed - unpaid worker in a family business
- Unemployed - seeking full-time work **(Please go to question 14)**
- Unemployed - seeking part-time work **(Please go to question 14)**
- Not employed - not seeking employment **(Please go to question 14)**

13. **Last week**, how many hours did you work in total in these jobs?

(Please write in actual hours worked, subtract any time off, add any overtime or extra time worked)

_____ hours

14. In your opinion, was the amount of time you spent employed **last week..?**

(Please tick one box only)

Far too little	Too little	About right	Too much	Far too much
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

LAST 4 WEEKS

This section asks about some of the activities you did in the last four weeks.

Looking for work

15. In the **last four weeks**, were you actively looking for paid work at any time? This includes looking to change jobs or retired people looking for additional income. (For example, being registered with Centrelink as a job seeker; checking or registering with an employment agency; writing, telephoning or applying in person for paid employment; or advertising for employment).

(Please tick all the boxes that apply)

- No, I did not look for work
- Yes, I looked for full-time work
- Yes, I looked for part-time work

Living situation

16. In the **last four weeks**, in what type of accommodation were you living?
(Please tick all the boxes that apply)

- Public rented house or unit
- Privately rented house or unit
- Own home or unit (with or without mortgage)
- Family home or unit (with or without board)
- Group home / Supported accommodation
- Boarding house / Rooming house / Hostel
- Caravan
- Hospital / Rehabilitation / Other health services
- Residential aged care facility / Nursing home
- Crisis accommodation / Shelter / Refuge
- Homeless
- Other (Please specify) _____

17. Who were you living with in the **last four weeks**?
(Please tick all the boxes that apply)

- By yourself
- Family (including wife, husband, son, daughter, brother or sister)
- Friends
- Share house
- Other (please specify) _____

18. How would you rate your current living situation overall (thinking about cost, location, security and space?)
(Please tick one box only)

Poor	Fair	Good	Very good	Excellent
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

LAST 12 MONTHS

This section asks about some things about services you have used in the last 12 months.

Seeing a GP

19. In the **last 12 months**, how many times did you see a general practitioner?
(Please write your best estimate)

_____ Number of times you saw a general practitioner

Other health professionals

20. In the **last 12 months**, did you see any of the following health professionals?
(Please tick all that apply)

- Psychiatrist (public or private)
- Psychologist (public / private)
- Mental health nurse
- Social worker or occupational therapist
- Complementary or alternative therapist
- Case worker / Support worker
- Other (*please specify*) _____
- No, none

Now

This section asks about some things that you are feeling or experiencing now.

Physical health

21. In general, how is your physical health?
(Please tick one box only)

Poor	Fair	Good	Very good	Excellent
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Having your say

How would you rate your confidence to do the following?
(Please tick one box for each statement)

	Poor	Fair	Good	Very good	Excellent
22. Control your life in general	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
23. Have your say within the community on issues that are important to you	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
24. Have your say with the person or agency involved in your care	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
25. Have your say among family and friends about issues that are important to you	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
26. Have your opinions respected when having your say	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

27. Would you like some help from this service with any of the things asked about in this questionnaire?
This includes with social activities, education, volunteering, work, housing and physical health?

No

Yes (Please specify) _____

Overall

Please rate the following how you feel in each of the following areas.
(Please tick one box for each statement)

	Poor	Fair	Good	Very good	Excellent
28. Your hopefulness for the future	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
29. Your happiness with your life	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
30. Your ability to achieve the things that are important to you	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
31. Your sense of being part of a group or community	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
32. Your ability to get support from family or friends when you need it	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
33. Your overall well-being	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Demographics

34.	What is your gender? (Please select one box)	<input type="checkbox"/> Male <input type="checkbox"/> Female <input type="checkbox"/> Other
35.	What is the main language you speak at home? (Please select one box)	<input type="checkbox"/> English <input type="checkbox"/> Other (<i>Please specify</i>) _____
36.	Are you of Aboriginal and/or Torres Strait Island origin? (Please select one box)	<input type="checkbox"/> Yes, Aboriginal <input type="checkbox"/> Yes, Torres Strait Islander <input type="checkbox"/> Yes, Aboriginal and Torres Strait Islander <input type="checkbox"/> No
37.	What is your age? (Please select one box)	<input type="checkbox"/> 16 to 24 years <input type="checkbox"/> 45 to 54 years <input type="checkbox"/> 25 to 34 years <input type="checkbox"/> 55 to 64 years <input type="checkbox"/> 35 to 44 years <input type="checkbox"/> 65 years and over
38.	Where do you live? (Please select one box)	<input type="checkbox"/> Melbourne <input type="checkbox"/> Rural Victoria <input type="checkbox"/> Sydney <input type="checkbox"/> Rural NSW <input type="checkbox"/> Brisbane <input type="checkbox"/> Rural Queensland <input type="checkbox"/> Adelaide <input type="checkbox"/> Rural South Australia <input type="checkbox"/> Hobart <input type="checkbox"/> Rural Tasmania <input type="checkbox"/> Canberra <input type="checkbox"/> Rural ACT <input type="checkbox"/> Perth <input type="checkbox"/> Rural Western Australia <input type="checkbox"/> Darwin <input type="checkbox"/> Rural Northern Territory

Appendix D: References

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