Psychometric Properties of the Icelandic Manchester Short Assessment of Quality of Life (MANSA) and its Possible Utility in Iceland

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Preface

Quality of life measures are getting more popular within psychiatric services but no sufficiently reliable and valid instrument is in use in Iceland when it comes to measuring the quality of life amongst people with long-term mental illness such as schizophrenia. This research was aimed to assess the psychometric properties of the Icelandic version of Manchester Short Assessment of Quality of life (MANSA).

This research thesis is a part of a M.Sc. programme in clinical psychology at the University of Reykjavik. The thesis gave 30 credits (ETCS) and was executed on three semesters under the supervision of Baldur Heiðar Sigurðsson, a psychologist at Landspitali - The National University Hospital of Iceland. On the second semester of the programme the thesis was formulated. The literature was reviewed and the introduction to the thesis paper was written. On the third semester I applied for a research permission from the Scientific Ethical Committee of Landspitali and from Reykjavik University. When the permission was granted, the data collection was initiated. The data collection was a joint effort between me and another M.Sc. student, Þorri Snæbjörnsson who was assessing the psychometric properties of Calgary Depression Scale with similar data. On the third semester, the method section of the thesis was drafted. On the fourth semester the data collection was completed in addition to data analysis. Finally, the final draft was written and edited until it was complete.

Part of the reliability data was collected in the University of Reykjavik. All other data was collected at Laugarás, a psychiatric ward specialising in early intervention for psychosis at Landspítali. The data was stored and manipulated at Kleppur, Landspitali.

I am grateful to the staff of Laugarás and Kleppur for their help and for the use of offices and interview rooms. I am also grateful to the teachers in the university of Reykjavík that allowed me to interrupt their class to collect data. These teachers are Brynja Björk Magnúsdóttir, Haukur Örvar Pálmason, Kamilla Rún Jóhannsdóttir, Anna Newton and Hulda

Dóra Styrmisdóttir. A special thanks goes to their students who gave me their valuable time. My sincere gratitude goes to Jón Friðrik Sigurðsson who I consider my mentor. Without Baldur Heiðar Sigurðsson, this thesis would not have been a reality. I value his guidance.

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Abstract

Quality of life measures are getting popular within psychiatric services but no sufficiently reliable and valid instrument is available in Iceland, when it comes to measuring people with long-term mental illness. The need for such an instrument and its possible utility in Iceland is emphasized. This study looks at the psychometric properties of the Icelandic version of Manchester Short Assessment of Quality of life (MANSA) and explores the relationship between the symptoms of schizophrenia and MANSA. Reliability was assessed amongst students (n = 116) and psychiatric patients (n = 31) who were also administered other instruments to assess validity. Results show that MANSA is reliable (α = .84 and .90; r = .82) and has a good construct validity. MANSA shows only a moderate relationship with symptoms of schizophrenia suggesting that symptom-based instruments are not sufficient when measuring beneficial outcomes. It is implicated that MANSA can be a useful outcome measure in the psychiatry wards and special housing programs in Iceland.

Keywords: Quality of life, schizophrenia, outcome mesures

Manchester Short Assessment of Quality of Life (MANSA) is a brief self-report scale intended to measure quality of life (Priebe, Huxley, Knight & Evans, 1999). The original MANSA has a good reliability and validity and so does the Swedish version (Björkman & Svenson, 2005). This current study takes on the psychometric properties of the Icelandic version of MANSA, which was translated from a slightly modified version of the original MANSA. This modified version has not been psychometrically evaluated.

Quality of life (QOL) is an increasingly popular construct for assessing treatment outcomes in the mental health industry. The popularity could possibly be due to increased demand for new approaches regarding recovery from psychiatric disorders (Anthony, 1993). One of those disorders is schizophrenia, which is predominantly treated with drugs. The medical treatment is usually considered successful if the patient's symptoms subsides or if rehospitalization becomes less frequent. But the question is whether those kinds of measurements detect changes that are meaningful to the patient himself. Furthermore it has to be taken into account that the side-effects (i.e., parkinsonism, weight gain and psychic side-effects) of antipsychotics can have negative effects on the individuals QOL (Hofer et al., 2005). It should therefore not come as a surprise that the National Institute for Health and Care Excellence in the United Kingdom recommends QOL measures as a part of the initial schizophrenia and psychosis assessment (NICE Guidelines, 2009).

Recovery and quality of life

Schizophrenia has long been considered an illness that one does not recover from (e.g. Andreasen, Ehrhardt, Swayze, Alliger, Yuh, Cohen & Ziebell, 1990). But in the last few decades there has been a growing interest in the recovery model that puts emphasis on a broader definition of recovery (Warner, 2009). Recovery is not deemed the same as a cure. It can be thought of as learning to cope with the disorder and gain control over ones life and according to Deegan (1997); reducing internalized stigma is a big part of it. Internalized

stigma cannot be measured directly since it is a subjective experience and most quality of life scales focus on subjective experiences (Bobes, García-Portilla, Sáiz, Bascarán & Bousono, 2005). The subjectivity of such measures increases the possibility that the outcome has more meaning to the individual himself.

The recovery model puts emphasis on empowerment, which is usually defined as increased control over the individual's own decisions regarding all domains of life. The recovery approach is also based on the service users themselves, which in traditional terms are called patients (Warner, 2009). Just by acknowledging the difference between service users and patients is in a way an empowering action. For that reason recovery is defined as a subjective experience and therefore quality of life scales should be a useful outcome measure. If this conceptual shift is used to define recovery, it can be said that around 50% of people with schizophrenia have good prognosis (Bellack, 2006).

Recovery and QOL are related constructs. Most people would probably agree that we should increase peoples QOL one way or another when they get physically ill. Therefore, it is important to think of all long-term mental illness the same way we perceive long term physical illness. We would not wait for a blind man to see or for a paraplegic to start walking before we would focus on increasing the quality of their lives by improving access to auditory information or by building ramps to official buildings. In other words, recovery should not just be linked with the level of impairment but also dysfunction (e.g. work adjustment and social skills), disability (e.g. unemployment and homelessness) and disadvantage (e.g. discrimination and poverty; Anthony, 1993). MANSA measures satisfactions toward most of those categories. Furthermore, the positive symptoms of schizophrenia could be classified under impairment (e.g. cognitive difficulties) while the negative symptoms could be classified under dysfunction (e.g. asocialty) and disability (e.g. avolition that leads to job difficulties). Therefore, a QOL scale such as MANSA is speculated

to yield a more meaningful way to assess treatment outcomes generically along with the more specific outcome measures that target symptoms.

Even though the recovery model still requires more scientific research (Silverstein & Bellack, 2008) it is still useful to have a reliable and valid QOL scale to use alongside those studies to better understand the recovery process and the factors that contribute to it.

Measuring quality of life

Quality of life can be hard to conceptualize. There is no clear consensus on the definition of QOL but the World Health Organization (The WHOQOL Group, 1998) defines QOL as:

> ...individual's perception of their position in life in the context of the culture and value systems in which they live and in relation to their goals, expectations, standards, and concerns. It is a broad ranging concept affected in a complex way by the persons' physical health, psychological state, level of independence, social relationships and, their relationship to salient features of their environment. (p. 1570).

This definition is in line with the dysfunction and disabilities categories of recovery but not necessarily the impairment category. This definition also states the quality of life as a subjective experience.

There are few scales that have been developed specifically to measure quality of life amongst individuals with long-term mental illness like schizophrenia (Lehman, 1996). One of those scales is Lancashire Quality of Life Profile or LQOLP (Oliver, Huxley, Priebe & Kaiser, 1997), which has been translated into several languages and researched originally in England but also in North America and elsewhere in Europe (Gaite et al., 2000). According to Oliver et al. (1997) LQOLP is an easy to use and reliable measure of QOL for severely mentally ill people. However, it´s shortcomings are that it can take very long to administer among other things (Priebe, et al., 1999). With those shortcomings in mind Priebe et al.

(1999) came up with a brief version of the LQOLP called Manchester Short Assessment of Quality of Life or simply MANSA. In the original study, MANSA had high correlation with LQOLP suggesting the convergent validity of the scale. MANSA is mainly measuring the subjective quality of life but there are four questions that measure objective QOL. Example of a subjective question is "*How satisfied are you with your mental health?"* and an example of an objective question is "*Do you have anyone who you would call a close friend?"*. The objective factors in QOL are usually harder to change and hence not as sensitive to change (Priebe, 2007).

The MANSA has not been as widely translated and researched as its predecessor LQOLP, but the psychometric properties of the Swedish version of the original MANSA has a good reliability and validity (Björkman & Svenson, 2005).

The utility of MANSA in Iceland

There are a number of ways that a QOL scale could be useful in Iceland but the main interest would be to use it alongside other outcome measures in the healthcare system and to use it to measure results of a special housing program. This special housing program for individuals with schizophrenia and other long-term mental illnesses has been available in Reykjavík, Iceland, since 2006. The outcome of the housing program is mainly measured in numbers of hospitalizations of the residents but an interdisciplinary community support team in Reykjavik suggested using MANSA to measure the outcome of the housing program (Reykjavíkurborg, 2013). One of the main goals of the program is to empower the residents and according to Björkman and Svenson (2005) the Swedish MANSA has a positive correlation to empowerment. Recently, the city of Reykjavik decided to operate the housing program under the ideology of the recovery model. MANSA was translated to Icelandic in 2013 but the community support team has not started using the scale since the psychometric properties in the Icelandic version are not known.

The aim of the study

The main purpose of this study is to evaluate the reliability and validity of MANSA for psychiatric patients. Test-retest reliability will be assessed with students. Furthermore, the relationship between the symptoms of schizophrenia and quality of life will in particular be explored. Lastly, the relationship between the first and the last item (item one and item 43 respectively) of MANSA will be explored in both samples since those questions are essentially the same and ask about the general satisfaction with life in whole. This is done to see if reflecting on ones quality of life while answering the domain specific items can alter the perception on the satisfaction with ones overall QOL.

Method

Participants

Participants consisted of a student sample and a clinical sample. The student sample counted 116 undergratuade students of Reykjavik University. The clinical sample consisted of 31 patients at Laugarás, a psychiatric ward specialising in early intervention for psychosis at Landspítali, University hospital. The total number of available patients in Laugarás were around 80 so that makes about 39% of the patients who agreed to participate.

The student sample had the mean age of 23.55 (SD = 3.67) and thereof 41 males and 74 females. The students who completed the retest administration were 58 (19 males and 39 females) and had the mean age of 23.96 (SD = 4.51).

The clinical sample had a mean age of 24.36 (SD = 3.66) and thereof 23 males and eight females. The clinical sample was assessed with The Mini International Neuropsychiatric Interview (MINI;Lecrubier et al., 1997) to evaluate their psychiatric diagnosis. It was confirmed that 25 of 31(81%) of the patients had a history of psychosis and another nine (30%) were currently in a psychotic state. Eight participants or 26% had a

current episode of major depression. 68% had risk of suicidality, 26% had alchol dependence and 16% had substance dependence. Frequency for each disorder can be seen figure 1.

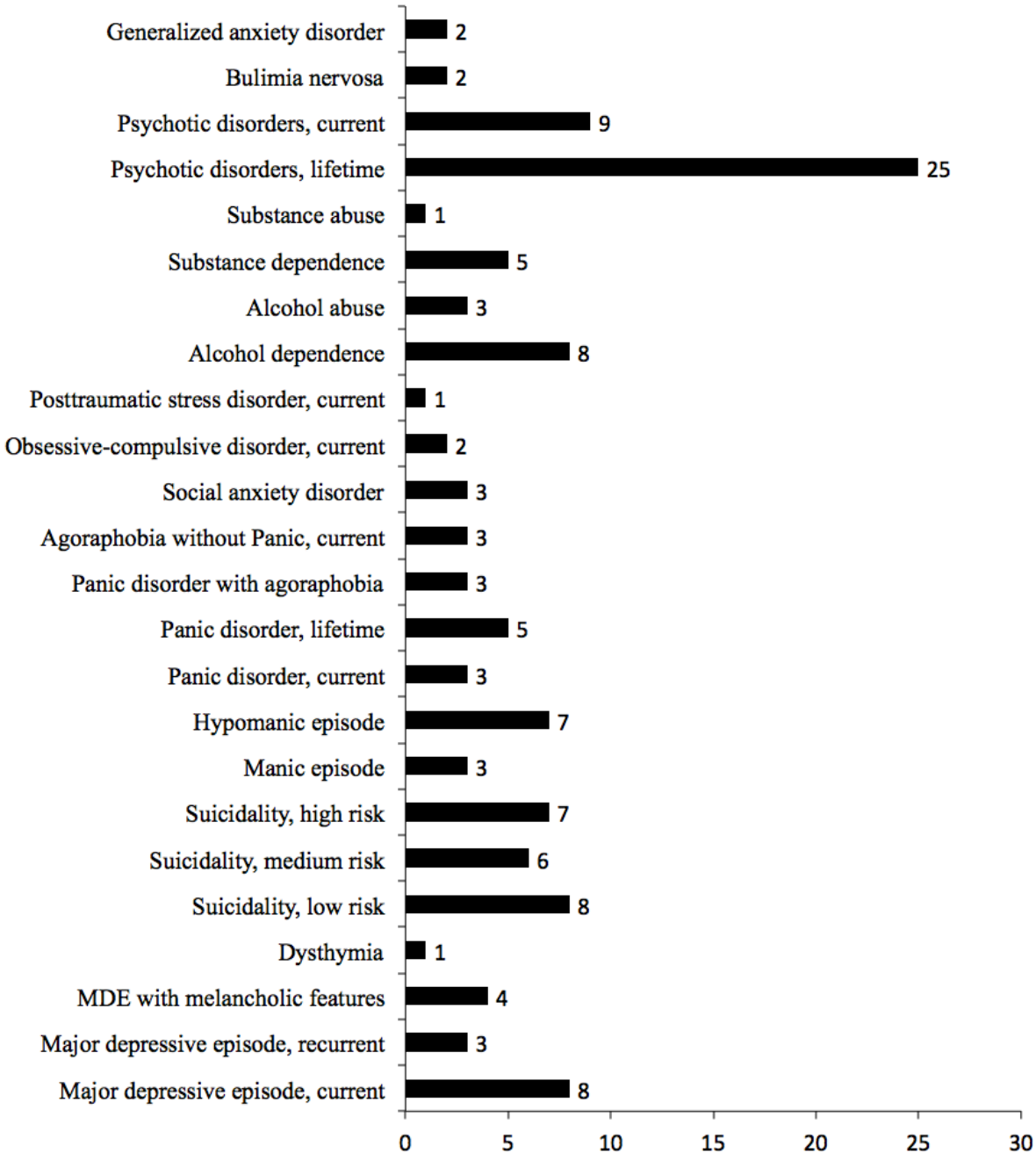

Figure 1. Frequencies of diagnoses in the clinical sample according to MINI .

Measures

The original MANSA is a brief self-report quality of life scale with good psychometric properties (Priebe et al., 1999) and so has the Swedish version (Björkman & Svenson, 2005). The Icelandic version of MANSA consists of 43 items and thereof 13

subjective questions, which are used to measure overall quality of life. Those 13 subjective items assess feelings towards various aspects that fall on seven domains (health, finance, leisure, social status, safety, living situation, and family. Those items are measured on a Likert scale that has seven options wereas one signifies most dissatisfaction toward the item and seven signifies most satisfaction. Highest possible total score is 91 and lowest possible is 13. Higher total score signifies higher QOL. The remaining items do not contribute to the scale but serve the purpose of informing clinicians on how best to improve quality of life regarding each domain. Those remaining items are e.g objective questions like "*Have you worked continuously over the past 3 months*" with the possible answers *"yes"* or *"no"* or they are open questions about how one think they could better their situation regarding some domains. Those items are placed before and after the subjective items in the relevant domain. That information is valuable in clinical perspective but not necessarily regarding MANSA's psychometric properties.

The Quality of Life Scale (QOLS;Flanagan, 1978; Flanagan, 1982) is a self-report questionnaire that is mainly used to assess the subjective quality of life amongst people with physical illness and in particular people with chronic diseases (Burckhardt & Anderson, 2003). The scale has 16 items in five domains: (a) Material and physical well-being, (b) relationship with other people, (c) social, community and civic activities, (d) personal development and fulfillment, and (e) recreation. It uses a seven point Likert scale to assess people's attitude toward each item. The Icelandic version of QOLS has a good internal consistency (Cronbach's alpha = .82 - .89) and a good convergent validity (Hrafnsson & Guðmundsson, 2007). The QOLS was administered in order to evaluate convergant validity of the MANSA since both scales assess similar aspects of quality of life.

The Patient Health Questionnaire (PHQ) is based on the Primary Care Evaluation of Mental Disorders (PRIME-MD) and is used to screen for psychiatric problems. PHQ has a

high correlation with results from specialists who use PRIME-MD and is also considered specific and sensitive (Spitzer, Kroenke & Williams, 1999). Icelandic PHQ also seems to have good psychometric properties (Pálsdóttir, 2007; Sigurðsson, 2008). PHQ consists of 58 items (with two - four answer options) and screens for eight types of mental disorders, which are somatization disorder, depression, dysthymic disorder, panic attacks, generalized anxiety disorder, bulimia, binge eating disorder, and alcohol abuse. PHQ was administered along MANSA to evaluate discriminant validity.

Depression Anxiety Stress Scales (DASS) is a self report instrument designed to measure the negative emotional states of depression, anxiety and stress (Lovibond & Lovibond, 1995) and was also administered to assess discriminant validly of MANSA. DASS 21 was used in this current study and it has 21 items instead of 42 as in the original DASS. Each item is scored from zero to four (never, sometimes, often, almost always). The Icelandic version of DASS 42 has satisfactory psychometric properties (Ingimarsson, 2010) but the 21 item version has not to our knowledge been psychometrically evaluated. It was used as a secondary measure of construct validity (PHQ being the primary measure) and the 21 item version chosen to lessen the load on the patients as well as to get some idea of it´s internal reliability.

Positive and Negative Syndrome Scale (PANSS) is a scale used to measure the symptoms of schizophrenia (Kay, Fiszbein & Opfer, 1987). It consists of the negative syndrome scale, the positive syndrome scale and a general psychopathology scale. PANSS is a common measure to assess outcomes of antipsychotic treatments (e.g. Leucht et al., 2009). It has shown to be valid and reliable and research has also shown that PANSS treats negative and positive syndromes as separate constructs (Peralta & Cuesta, 1994). The rating of PANSS is based on information from the past week. That information is usally based mostly

on interview with the patient, but also from family members, psychiatric ward staff and other available means.

The patients were administered The Mini International Neuropsychiatric Interview (MINI; Lecrubier et al, 1997) to evaluate their psychiatric diagnosis. MINI uses the diagnostic criteria from DSM-IV and/or ICD-10 and is based on disorders with 0.5% prevalence or symptoms from more than 12 months. It uses the 19 most common problems. It has a good to very good psychometric properties but is not sensitive or specific for generalized anxiety disorder (kappa = .36), agoraphobia (sensitivity = .59), and bulimia (kappa = .53; Lecrubier et al, 1997).

Procedure

The students answered MANSA with a two-week interval using randomly generated ID, during class hours in Reykjavik University. They were asked if they wanted to participate and received a brief introduction to the research, during the end of their class. Participants in the clinical sample were approached at Laugarásinn by one of two M.Sc. students in clinical psychology and asked to participate. After signing a form for informed consent they then answered the self report scales and were interviewed with PANSS and MINI. All data collection took place in Laugarás and Kleppur, Psychiatric Departments in Landspitali and were administered by the two M.Sc. students along with case managers at Laugarás. The data for each participant was collected within the same week. All interviewers had training in using MINI and PANSS. The study had been granted permission from the Scientific Ethical Committee of Landspitali - The National University Hospital of Iceland (Permission 30/2015) and from Reykjavik University.

Statistical analysis

All calculations were made using IBM SPSS Statistics 22 for MAC. To assess the test-retest reliability for the student group, the Pearson's correlation coefficient was

calculated. A paired sample t-test was also conducted to assess whether the difference between test-retest measures was significant. To assess the internal consistency, the Cronbach's alpha was calculated in both the clinical sample and the first administration to the student sample. The discriminant validity was evaluated in the patient group with the Pearson's correlation coefficient between MANSA and PHQ; MANSA and DASS; and MANSA and PANSS. The convergent validity was assessed in the clinical sample by calculating the Pearson's correlation coefficient between MANSA and QOLS. The MANSA general QOL (measured as the mean of item one and 43 in MANSA) and MANSA domain specific QOL (measured as the sum of all items excluding item one and 43) was also used to analyse construct valdity with Pearson's correlation between other instruments used in the study. A mixed ANOVA with repeated mesures was conducted to see if there was a difference between item one and item 43 (within subject) in both samples (between subject). Finally a t-test was executed to assess the diffrence between the different means of MANSA in both samples.

Results

Descriptive statistics and reliability

The means, standard deviation and Cronbach's alpha along with it's confidence interval can be seen in table 1. The table also shows the Person's r in the test-retest reliability analysis amongst the student sample. In the clinical sample, the internal reliability for MANSA in whole was .90 and .94 for MANSAgen. The internal reliabilty of MANSAdom was .86. In the student sample the internal reliability was .84, .88 and .79 respectivly for MANSA in whole, MANSAgen and MANSAdom. The test-retest reliability for MANSA in whole was .82. The null hypothesis that there is no difference between the pretest and the posttest results was confirmed using a paired t-test ($t(57) = .25$, $p = .805$) and therefore confirming the test-retest stability of MANSA.

Table 1.
Descriptive statistics and reliability

		Mean (SD)	α	CI 95%	Test-Retest
Clinical sample	MANSA	61.83 (14.02)	.90	.83 - .95	-
	MANSAgen	4.35 (1.80)	.94	.87 - .97	-
	MANSAdom	50.03 (12.08)	.86	.77 - .93	-
	QOLS	73.30 (12.84)	.87	.79 - .93	-
	PANSSp	10.17 (4.47)	.65	.42 - .81	-
	PANSSn	11.53 (4.40)	.71	.51 - .85	-
	PANSSg	23.30 (5.93)	.68	.49 - .83	-
	DASSd	7.07 (7.03)	.95	.91 - .97	-
	DASSa	3.47 (3.74)	.79	.64 - .87	-
	DASSs	4.67 (4.25)	.87	.78 - .93	-
	PHQsom	18.13 (4.02)	.81	.68 - .89	-
	PHQdd	17.52 (6.54)	.88	.81 - .94	-
	PHQpan	8.87 (10.67)	.90	.78 - .97	-
	PHQgad	9.26 (6.36)	.79	.62 - .90	-
	PHQed	4.58 (3.69)	.60	-.50 - .95	-
	PHQaa	5.65 (1.46)	.29	-.38 - .69	-
Student sample	MANSA	75.61 (8.22)	.84	.78 - .89	.82*
	MANSAgen	11.77 (1.86)	.88	.82 - .92	.63*
	MANSAdom	63.00 (7.33)	.79	.73 - .85	.82*

Note. MANSAgen = MANSA general quality of life; MANSAdom = MANSA domain specific quality of life; QOLS = Quality of Life Scale; PANSSp = Positive symptoms of PANSS; PANSSn = Negative symptoms of PANSS; PANSSg = General psychopathology symptoms of PANSS; DASSd = Depression items on DASS; DASSa = Anxiety items on DASS; DASSs = Stress items on DASS; PHQsom = Somatization items of PHQ; PHQdd = Depression and dysthymia items of PHQ; PHQpan = Panic attack items of PHQ; PHQgad = general anxiety items of PHQ; PHQed = Bulemia and binge eating items of PHQ; PHQaa = Alcohol abuse items of PHQ.
* Pearson's r. Correlation is significant at the 0.01 level (2-tailed)

Table 2 shows the descriptive statistics for each item of MANSA, item-total correlations and alpha if item deleted. In no instance would the internal reliability improve significantly if the item was deleted.

Table 2
Internal Reliabilty of Items in MANSA by Group

Item	Students[a]			Patients[b]		
	M (SD)	Item-Total *r*	α Without Item	M (SD)	Item-Total *r*	α Without Item
Satisfaction with life today	5.84 (0.96)	.67	.82	4.46 (1.91)	.73	.88
Satisfaction with physical health	5.28 (1.14)	.48	.84	4.23 (1.60)	.63	.89
Satisfaction with mental health	5.46 (1.15)	.61	.83	3.92 (1.67)	.53	.89
Satisfaction with job/education	5.77 (0.86)	.44	.84	4.79 (1.72)	.53	.89
Satisfaction with finance	4.31 (1.44)	.32	.85	3.58 (1.82)	.22	.91
Satisfaction with leisure	5.55 (1.31)	.31	.85	4.96 (1.63)	.77	.88
Satisfaction with number of friends	6.41 (0.93)	.51	.83	5.54 (1.59)	.56	.89
Satisfaction with quality of friendships	6.36 (0.94)	.42	.84	5.21 (1.44)	.59	.89
Satisfaction with safety	6.23 (0.88)	.49	.83	5.54 (1.18)	.66	.89
Satisfaction with accommodation	5.91 (1.18)	.46	.84	4.83 (1.58)	.64	.89
Satisfaction with living arrangements	6.28 (0.96)	.58	.83	5.13 (1.36)	.68	.89
Satisfaction with family	6.10 (1.08)	.61	.83	5.25 (1.11)	.64	.89
Satisfaction with life in whole	6.06 (0.93)	.78	.82	4.33 (2.06)	.79	.88

a. $N = 104$
b. $N = 24$

Validity

The t-test between the mean QOL, according to MANSA, of the student sample (M = 74.77, SD = 8.56) and the patient sample (M = 58.55, SD = 14.53) was significant (t (145) = 7.95, $p<0.05$), indicating the ability of MANSA to discriminate between groups.

The relationship between MANSA and QOLS; MANSAgen and QOLS; and MANSAdom and QOLS was strong (r = .70 - .85), suggesting convergent validty. The MANSA and MANSAdom both showed better overall discriminant validity than MANSAgen compared with the subscales of DASS, PHQ and PANSS. The relationship between MANSA and PANSSn (negative syndromes on the PANSS) was negative and moderate (r = -.39). The relationship between MANSA and the PANSSp (positive syndrome scale of PANSS) was negative and moderate (r = -.31). Those relationship were even lower in MANSAdom: PANSSp was r = -26 and PANSSn was r = -34 and thus suggesting weak relationship between domain specific quality of life and symptoms of schizophrenia. All relationships between all measurements used in the reasearch can be seen in table 3.

Table 3
Summary of Intercorrelations for Scores on the Instruments Used in the Study

Measure	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
1. MANSA	1	.75**	.98**	.85**	-.31	-.39*	-.40*	-.65**	-.44*	-.55**	-.20	-.52**	-.19	-.43*	-.30	-.04
2. MANSAgen	-	1	.62**	.70**	-.40*	-.45*	-.51**	-.82**	-.47**	-.49**	-.39*	-.73**	-.17	-.33	-.32	-.19
3. MANSAdom	-	-	1	.82**	-.26	-.34	-.35	-.56**	-.41*	-.53**	-.13	-.42*	-.19	-.41*	-.28	.04
4. QOLS	-	-	-	1	-.20	-.30	-.35	-.62**	-.57**	-.45*	-.35	-.53**	-.30	-.38*	-.34	.14
5. PANSSp	-	-	-	-	1	.46*	.60**	.46*	.23	.27	-.05	.38*	.27	.09	-.14	.10
6. PANSSn	-	-	-	-	-	1	.50**	.31	.16	.14	-.19	.15	.05	.01	.23	.37
7. PANSSg	-	-	-	-	-	-	1	.36	.45*	.42*	.12	.32	.28	.32	.18	.21
8. DASSd	-	-	-	-	-	-	-	1	.63**	.67**	.39*	.77**	.22	.33	.18	.11
9. DASSa	-	-	-	-	-	-	-	-	1	.71**	.69**	.59**	.51**	.54**	.12	.22
10. DASSs	-	-	-	-	-	-	-	-	-	1	.46*	.68**	.38*	.62**	.25	.06
11. PHQsom	-	-	-	-	-	-	-	-	-	-	1	.57**	.41*	.40*	-.01	.26
12. PHQdd	-	-	-	-	-	-	-	-	-	-	-	1	.36*	.64**	.33	.13
13. PHQpan	-	-	-	-	-	-	-	-	-	-	-	-	1	.48**	-.21	-.08
14. PHQgad	-	-	-	-	-	-	-	-	-	-	-	-	-	1	.36*	-.05
15. PHQed	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-.04
16. PHQaa	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1

Note. MANSA = Manchester Short Assesment of Quality of Life Scale; MANSAgen = MANSA general quality of life; MANSAdom = MANSA domain specific quality of life; QOLS = Quality of Life Scale; PANSSp = Positive symptoms of Positive and Negative Syndrome Scale; PANSSn = Negative symptoms of Positive and Negative Syndrome Scale; PANSSg = General psychopathology symptoms of Positive and Negative Syndrome Scale; DASSd = Depression items on Depression Anxiety Stress Scales; DASSa = Anxiety items on Depression Anxiety Stress Scales; DASSs = Stress items on Depression Anxiety Stress Scales; PHQsom = Somatization items of The Patient Health Questionnaire; PHQdd = Depression and dysthymia items of The Patient Health Questionnaire; PHQpan = Panic attack items of The Patient Health Questionnaire; PHQgad = general anxiety items of The Patient Health Questionnaire; PHQed = Bulemia and binge eating items of The Patient Health Questionnaire; PHQaa = Alcohol abuse items of The Patient Health Questionnaire.
**. Correlation is significant at the 0.01 level (2-tailed).
*. Correlation is significant at the 0.05 level (2-tailed).

Results from the mixed ANOVA with repeated mesures yielded a significant interaction effect between item and group ($F(1,142) = 4.67$, $p < 0.05$) and an examination of the descriptive statistics presented in table 4 indicates that this interaction means that students alter their perception of their overall quality of life (possibly as a result of answering the domain specific items) while the patients perception of their over all quality of life stayed the same.

Table 4
Descriptive Statistics for the Mixed ANOVA

	Group	Mean	SD	N
Item 1	Students	5.80	0.95	114
	Patients	4.33	1.82	30
	Total	5.50	1.32	144
Item 43	Students	6.04	0.92	114
	Patients	4.27	1.91	30
	Total	5.67	1.39	144

Discussion

The aim of this study was to evaluate psychometric properties of the Icelandic version of the Manchester short assessment of quality of life (MANSA) in patients and in normal controls. The measure showed a good reliability in both samples and it proved valid on all counts. There was a significant difference between the quality of life amongst the students and the patients supporting MANSA's ability to discriminate clinical samples from normal and it correlated highly with QOLS supporting its convergent validity. Finally, it correlated much lower with all the symptom measures supporting its discriminant validity.

The correlation between MANSA and negative scale of PANSS was moderate and negative and the correlation between MANSA and the positive scale of PANSS was barely moderate. Furthermore, the domain specific items of MANSA (MANSAdom) showed weak relationship with both the negative and postive syndrome scale of PANSS. Those results are

(a) an indicator of the discriminant validity of MANSA and (b) in accordance with the assumptions that symptom reduction does not by it self automaticly increase QOL.

Both the total score of MANSA and the total score of MANSA's domain specific items show good construct validty and good reliability. As an outcome measure, both MANSA and MANSAdom can be used jointly or just the total outcome of MANSA alone.

Item one and item 43 are essentially the same items with different wording, where the participant is asked to rate his satisfactions with life in general. The patients tend to answer the later item mostly the same as the first. However, the students tend to answer the later item with slightly more satisfaction. Since this is the first and the last item of the questionnaire it can be speculated that a reflection on ones quality of life during the assessment of satisfaction with specific domains can alter the perception of general quality of life when the last item is answered. Although it should be noted that the sample sizes were very different. This difference between the groups could have implications regarding the meaning of the total score and should be studied further.

This study lacks factor analysis since the patient sample was too small. It also lacks an evaluation of sensitivity to change. Future studies could address these limitations as well as assessing a bigger and/or a more diverse sample.

Since the psychometric properties of MANSA are shown to be good it can be argueed that it should be used as an adjunctive outcome measure when treating schizophrenia in both clinical settings and in randomized controlled trials, as well as when assessing benefits of rehabilitiation such as housing programs in Iceland.

Applications of MANSA in Iceland could also be as a measurement for outcomes when researching new treatments for schizophrenia. Cognitive behavioural therapy (CBT) has proved effective in treating schizophrenia when using conventional outcome measures (Morrison et al, 2014; Kane et al, 2015). Using quality of life scales along with other

outcome measure could possibly even further the rational of using treatments like CBT alongside or even instead of antipsychotics because one of the main symptoms of schizophrenia (hearing voices) is not always a sign of a disorder (Escher, Romme, Buiks, Delespaul & van Os, 2002). Therefore it is unsound to rely only on a symptom specific outcome measure to assess if patients benefit from treatment.

To conclude, the general results indicate that the Icelandic version of MANSA has good psychometric properties and could be a valuable tool both when it comes to studying schizophrenia and when it comes to expanding outcome measures.

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