Psychometric Properties of McGill Quality of Life Questionnaire in Recovered Iranian Depressed Patients

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ABSTRACT

Objective: The purposes of this study were to evaluate the psychometric characteristics and perform a factor analysis of McGill Quality of Life Questionnaire (MQOL) in a sample of recovered depressed patients.

Methods: Present study was a cross sectional research. Data were obtained from a sample of recovered depressed patients. A total of 354 participants (67 males, 287 females) were assessed using the structured clinical interview for DSM-IV disorders (SCID) to ensure their full recovery from their most recent episode of depression. Then, they completed a series of self-report measures, including the McGill Quality of Life Questionnaire. Confirmatory factor analysis using LISREL-8.54 and Cronbach's alpha using SPSS-16 were done for analyzing data.

Results: Descriptive statistics for the MQOL were performed, and confirmatory factor analysis was used to assess the fitness of the hypothesized factor structure. The Cronbach α coefficients were calculated for the questionnaire and its each subscale to examine the internal reliability, which was found to be high for the overall questionnaire as well as its each subscale, as α coefficients ranged from 0.58 (for the physical scale) to 0.88 (for the existential scale).

Conclusion: MQOL can be employed as a tool for assessing quality of life in research and practice in these patients.

Keywords:

Quality of life, Instrument, Depression, Factor analysis

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1. Introduction

Quality of life (QoL) is a concept that symbolizes the ideas and meanings associated with an individual's lived experience, and expresses the abstract quality of that experience (Rogers, 2000). In general, higher quality of life associates with mental health and well-being, whereas lower quality of life denotes poor health and negative emotional states. For example, clinical depression leads to a pronounced decrease in QoL, reflected in the subjective well-being and performance of routine activities and social roles. Clinical depression is characterized by disturbances in many or all of these areas, which may explain why QoL is even lower in depression than in medical disorders such as diabetes or arthritis (Schram, Baan, & Pouwer, 2009; Wells et al., 1989).

Research indicates that QoL is influenced by affective states (Corrigan & Buican, 1995; Fera, Cascio, Angelini, Martini, & Guidetti, 2003; Hunt & McKenna, 1992), physical symptoms (Byar, Berger, Bakken, & Cetak, 2006), and satisfaction with daily activities (Goethe & Fischer, 1995; Wells et al., 1989).

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According to McGregor and Sumner (2010), human well-being or life experience can be conceptualized along 3 dimensions of material well-being, subjective well-being, and relational well-being. This definition recognizes that material well-being along with relationships and social standing affect people's perceptions or experiences of life and their overall quality of life. Thus, social development policies should emphasize not only material well-being, but also its proper 3D context. In this regard, the subjective and relational domains of human well-being need more attention and particularly how these domains relate to the spheres of human values, relationships, norms, and behaviors (McGregor, 2007). Deficiencies in any of these dimensions may lead to mental problems such as stress or depression (McGregor & Sumner, 2010).

Recognition of the burden associated with clinical depression has led to increased efforts to assess QoL in research. In addition to clarifying the impact of depression on people's lives, QoL instruments can help determine the value of new and existing therapies, beyond their ability to relieve depressive symptoms. In recent years, new instruments have been developed to assess both general QoL and specific QoL in affective disorders (Dunbar, Stoker, Hodges, & Beaumont, 1992; Hunt & McKenna, 1992; Stoker, Dunbar, & Beaumont, 1992). Other instruments such as the McGill quality of life (MQOL) questionnaire has been translated and validated in various languages (Bentur & Resnizky, 2005; Cohen, Mount, Tomas, & Mount, 1996; Hu, 2003; Kim et al., 2007; Lo et al., 2001) for potential use in different patient samples.

The current study represents a translation and validation of MQOL questionnaire (Cohen, Mount, Strobel, & Bui, 1995; Cohen et al., 1996). MQOL comprises 16 items assessed on a scale of 0 to 10, and a single-item scale to measure global QoL. These items are divided into 4 domains: physical Symptoms and well-being (items 1-4), psychological well-being (items 5-8), existential issues (items 9-14), and support (items 15 and 16). In addition to an overall score for the questionnaire, each of the above domains yields a scale score (Henry, Huang, Ferland, Mitchell, & Cohen, 2008). Previous evaluations of the psychometric properties of MQOL have shown it as a reliable and valid tool to measure the QoL of people with clinical depression in North American samples (Cohen et al., 1997; Cohen et al., 1995; Cohen et al., 1996; Henry et al., 2008; Pratheepawanit, Salek, & Finlay, 1999).

A cross-culturally validated QoL instrument would be a valuable asset for the comparison and evaluation interventions across the world (Lo et al., 2001). Culture has a powerful influence on individual's interpretation of and response to his or her quality of life, and is likely associated with perceptions of health, distress, disorder, and the outcomes of care (Chang et al., 2006; Jackson et al., 2004). Moreover, physical pain, depression, and lifetime achievements may be viewed differently by people from various cultures. Language and cultural communication patterns may also have a crucial role on how an individual assesses his or her quality of life (Navon, 1999). Given that the meaning and significance of quality of life can differ among various cultural groups, it is incumbent upon researchers to assess whether the tool they have chosen is appropriate to the population under study.

The aims of this study were to extend the psychometric evidence related to MQOL and examine its psychometric characteristics in a Farsi version of the scale. Our study sample was a large group of participants who had recovered from major depressive disorder (MDD). Then, the 4-factor structure proposed by the scale originators was examined by confirmatory factor analysis (CFA) (Cohen, 2006).

2. Methods

Present study was a cross sectional research. Data were obtained from a sample of recovered depressed patients who were in a randomized clinical trial via purposive sampling. This trial compared 2 different relapse prevention treatments and treatment as usual. The statistical population was all depressed patients who recovered from depression in several psychological clinics that used psychotherapy treatments for patients with depression. The sample consisted of 354 participants (67 males, 287 females) who were interviewed to ensure their full recovery from their most recent episode of depression.

MQOL is a self-report measure of quality of life, which was developed by Cohen, Mount, Strobel, and Bui (1995) in Canada (the scale can be obtained at http://www.promoting-excellence.org/downloads/measures/mcgill_qol.pdf) (Cohen et al., 1995). This measure has 4 subscales of physical symptoms and well-being, psychological well-being, existential well-being, and support (Cohen et al., 1997; Cohen et al., 1996). All of the response categories are based on a numerical scale from 0 to 10, with verbal anchors at the beginning and end of the scale. The questionnaire also includes a single-item rating scale, which is intended to indicate the overall perceived QoL (Bentur & Resnizky, 2005). MQOL has been demonstrated to have good reliability, validity and responsiveness to change (Cohen & Mount, 2000; Cohen, 2006) in a number of cultures (Table 1).

Forward and backward translations of MQOL were performed by 2 clinical psychologists fluent in both English and Farsi (which is the official language of Iran). Language equivalence was ensured through discussion and reconsideration of the translation, in the event of any mismatches. The final correspondence between the original inventory and the Farsi translation was assessed by an independent clinical psychologist, who agreed with the content of the items in the Farsi version. Study was approved by the directors of the University of Social Welfare and Rehabilitation Sciences (2013). Objectives of the study were fully explained to potential participants, who were provided with informed consents.

Correlations among the MQOL scales were computed, as were the Cronbach α coefficients for the total score and each of its 4 subscales to examine the internal reliability of the scale. A confirmatory factor analysis was also used to assess the fit of the hypothesized factor structure to the data. LISREL version 8.54 (Jöreskog & Sörbom, 2003) was used for confirmatory factor analysis, whereas SPSS version 16.0 was employed for other analyses.

3. Results

Descriptive statistics

Participants were on average 39.1 years old, with an average of 2.19 previous episodes of depression. Just over half of the sample was married (50.8%), while 41.0% were single. Most were either university students or unemployed (60.7%), and had either completed high school (35.6%) or at least some post-secondary education (51.1%). Recovery was defined as the absence of a diagnosable MDD within at least the last 2 weeks. Thus, the length of time since the most recent index episode varied, with an average of 6.92 months since the last episode, as did the number of remaining symptoms (an average of 3.17) experienced by the participants. The diagnostic interviews were conducted in Farsi by trained interviewers and all interviews, except 2, were reconfirmed by a second interviewer. Differences between the males and females were evaluated with a series of 1-way ANOVA, but none of these gender differences was significant at $P<0.05$

Psychometric characteristics of McGill quality of life scales

Correlations of the MQOL scales, and with the total score, are presented in Table 3. Correlations among the MQOL subscales were moderate to high, and all were significant at $P<0.01$. Similarly, the Cronbach α for each subscale showed high internal reliability, with the following α coefficients: physical (a=0.58), psychological (a=0.85), existential (a=0.88), and support (a=0.80).

Construct validity: Confirmatory factor analysis

A confirmatory factor analysis was conducted to assess how well the interrelationships among the MQOL scales matched the interrelationships between the observed ones. Four subscales of the MQOL were treated as indicator variables and matched with 2 hypothetical models, which either included all 4 factors, or a model with a single underlying factor. The models were evaluated with LISREL version 8.54.

The Chi-square (x^2) statistic is a fit index which tests the difference between the predicted and the observed relationships. Because a close fit between the 2 sets of relationships was predicted, a non-significant x^2 was sought. The x^2 test is sensitive to sample size increases, and with larger samples, power increases, and the x^2 can be statistically significant

Table 1. Internal consistency of the McGill quality of life (MQOL) questionnaire.

Citation	Sample characteristics				Internal consistency
	Country	Population	n	Mean age, y	
Cohen et al., 1996	Canada	Life threatening illness	-	-	0.83 to 0.86
Pratheepawanit et al., 1999	U.S.A.	Palliative care	38	42.83	0.73 to 0.89
Lo et al., 2001	Hong Kong	Palliative care	462	61.5	0.68 to 0.85
Patel et al., 2002	Korea	Hemodialysis	53	-	0.62 to 0.90
Kimmel et al., 2003	Korea	Hemodialysis	-	-	0.62 to 0.90
Tang et al., 2004	U.S.A.	Hospice	60	73	0.70 to 0.88
Lua et al., 2005	Wales	Palliative care	86	60	0.64 to 0.88
Bentur & Resnizky, 2005	Israel	Home hospice	261	66.8	0.60 to 0.72
Kim et al., 2007	Korea	Palliative care	140	56.7	0.62 to 0.90
Henry et al., 2008	Canada	Palliative care	205	65	0.58 to 0.90
Tsujikawa et al., 2009	Japan	Palliative care	83	56.7	0.58 to 0.86

Table 2. Means and standard deviations by gender for the Farsi version of MQOL.

Scale	Total (n=354)		Male (n=67)		Female (n=287)	
	M	SD	M	SD	M	SD
Existential	26.91	13.28	27.64	10.53	26.73	13.86
Psychological	18.95	7.29	18.49	6.95	19.06	7.37
Physical	4.21	2.78	4.27	2.32	4.20	2.88
Support	9.28	5.62	9.28	4.78	9.28	5.80
Total MQOL	72.45	17.20	72.81	16.21	72.36	17.45

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Table 3. Correlations among the subscales of the McGill quality of life (MQOL) questionnaire.

Scales	Existential	Psychological	Physical	Support
Psychological	0.60	--	--	--
Physical	0.66	0.35	--	--
Support	0.70	0.51	0.20	--
Total MQOL	0.56	0.20	0.54	0.39

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even when the model fits the data reasonably well. With a sample size of more than 200, the x^2 statistic will usually be statistically significant, even when there are trivial differences between the model and the data. Because of this consideration, the model with the lower x^2 value is considered to be the preferred model (Meyers, Gamst, & Guarino, 2006). Results supported the proposed 4-factor model. In the current study, the x^2 value for the 4-factor model was 178.32 (df=86, n=354), $P<0.01$.

The root mean square error of approximation (RMSEA) is the average of the residuals between the observed correlation/covariance matrix from the sample and the expected model estimated from the population. Conceptually, the goal is to reduce the divergence between the sample and expected models, so the values closer to zero indicate a good-fitting model. Loehlin (2004) proposed that an RMSEA of less than 0.08 indicates good fit, whereas 0.08 to 0.1 indicates a moderate fit, and greater than 0.1 indicates poor fit. The RMSEA was 0.002 for the 4-factor model, which indicated a very good fit (Loehlin, 2004).

The comparative fit index (CFI), normed fit index (NFI), relative fit index (RFI), and the incremental fit index (IFI) are measures of the relative fit between the hypothesized models with a null or non-significant model (Meyers et al., 2006). Values that equal or exceed 0.95 for the CFI indicate an excellent fit of the model, and in the current sample, the CFI for the 4-factor model was 0.92, which indicated a very good fit. Finally, the adjusted goodness of fit index (AGFI), and parsimony goodness of fit index (PGFI) were evaluated. These fit measures can be used to compare models with different number of parameters, to determine the effect of additional parameters to the model. Parsimonious fit measures are recommended to compare competing models, and the model with the higher fit index is generally deemed to be superior to the other (Meyers et al., 2006). The AGFI and PGFI were 0.91 and 0.94, respectively in the current sample for the 4 factor solution, which again indicate very good fit of the data to the 4-factor model.

4. Discussion

McGill quality of life questionnaire was developed as a generic and balanced measure of quality of life (Kutner, Bryant, Beaty, & Fairclough, 2006; Sherman, Norman, & McSherry, 2010). This study evaluated the psychometric properties of MQOL, and in particular its reliability and validity through a series of statistical analyses.

This study is the first research to measure internal consistency of MQOL in a formerly depressed sample in Iran. The obtained reliability coefficients were consistently high, and ranged from 0.58 (for the physical scale) to 0.88 (for the existential scale). Confirmatory factor analysis was also employed to evaluate the adequacy of the 4 proposed factors of the MQOL (Cohen et al., 1997; Cohen et al., 1996; Henry et al., 2008). Several goodness of fit indexes showed the adequacy of the 4-factor structure hypothesized by the authors. The results indicate that this tool can be used to assess QoL in this population.

On closer examination, 2 of the 4 physical problems are clustered into the physical subscale. However, this result contrasts with studies in Canada and Israel (Bentur & Resnizky, 2005; Cohen et al., 1997). The "physical well-being" item fell into the existential domain in Farsi version, which differed from the results of the original version of MQOL. This study suggests that the concept of "well-being" is somewhat different from "physical symptoms" directly related to the disease, such that "well-being" involves existential concerns as in previous studies (Bentur & Resnizky, 2005; Cohen et al., 1997; Hu, 2003; Lo et al., 2001). Unlike the original version, the items of physical problem (Q1), depressed (Q5), existence meaningful (Q9), and support (Q15) did not fit into the physical symptom, psychological, existential, and support subscale in this study. The results indicate that MQOL can be administered in clinical settings to evaluate the psychopathological states of clients and patients. In addition, the results support the use of MQOL as a multidimensional assessment instrument.

The current study contributes to other studies that have evaluated the reliability, validity and utility of MQOL in patients MDD. Leombruni et al. (2009) suggested that their study contributed to building evidence of reliability and validity for MQOL questionnaire, which may be particularly useful to assess the so-called "existential" aspects of QoL. Aspects that may be of particular relevance for patients infected with HIV (Leombruni et al., 2009).

Researchers who study quality of life need to understand how QoL is evaluated, experienced, and perceived in different populations (Bush et al., 2010; Husain et al., 2007; Lowe, Watanabe, Baracos, & Courneya, 2009; Schroecksnadel et al., 2008). Although, the current study provides an initial evaluation of MQOL in an Iranian depressed population, additional research with different samples is necessary to document the validity and internal structure of this scale. Research with a currently distressed sample would help to evaluate the scale's specificity for different clinical conditions. Also, studies that examine the test-retest reliability of MQOL would help to evaluate its sensitivity to change. To evaluate the concurrent validity of the MQOL, studies that simultaneously employ MQOL and other measures of QoL or psychopathology will also help.

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