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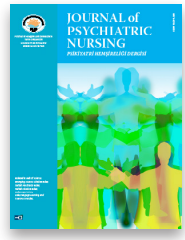

Original Article

Psychometric properties of the Turkish Version of the Brief Quality of Life in Bipolar Disorder (Brief QoL.BD) Scale

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Abstract

Objectives: The aim of this study was to determine the reliability and validity of the Turkish version of the Brief Quality of Life in Bipolar Disorder Scale [QoL.BD].

Methods: Conducted using a methodological and identifying design, this study included 76 patients who had been diagnosed with bipolar disorder and from whom the data was obtained in 2013. Patients from the mood disorders centers of two different psychiatry clinics constituted the population of the study. The Turkish version of the Brief QoL. BD was assessed in terms of language, content, and structure in the sample of 76 patients diagnosed with bipolar disorder. Lawshe's methods were used to assess content validity; exploratory factor analysis was used to determine latent structure; and Cronbach's internal consistency coefficient was used to test internal reliability.

Results: The study included 76 patients diagnosed as bipolar I and II. Content validity of the 12-item scale was found to be strong (Lawshe index =.82), as was the internal reliability of the scale [alpha =.86]. Factorability of the correlation matrix was confirmed, and a single factor extraction was suggested on the basis of the scree plot and Velicer's minimum average partial test. This single factor explained 36.05% of the variance, with all items having positive loadings and six items having factor loadings >.3.

Conclusion: The Turkish version of the Brief QoL.BD was concluded to have adequate internal reliability and validity for assessing disorder-specific quality of life in euthymic patients with bipolar disorders.

Keywords: Bipolar disorder; quality of life; reliability; Turkish; validity.

Bipolar disorder (BD) is frequently associated with decreased quality of life (QoL) and impaired psychosocial functioning on account of its high rates of relapse and hospital admissions.[1–4] Outcomes for BD have traditionally been evaluated by objectively assessed clinical measures, such as rates of relapse, hospital admissions, and symptomatic or syndromal recovery.[5] Over the past decade, however, the concept of QoL has become more prominent,[6,7] as witnessed by the exponential increase in the proportion of BD publications referencing QoL[8] and the rise in the number of systematic reviews of the respective literature.[5,9–12] Yet, for some time there was a conspicuous absence of a condition-specific QoL scale in this field. While the recent development of the Quality of Life in BD (QoL.BD)[13] measure filled this specific gap, work remains to facilitate the assessment of condition-specific QoL across contexts and cultures.

Aim of the Study

The present study was conducted to research the validity and reliability of the Turkish version of the Brief Quality of Life in

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Bipolar Disorder Scale, which is easy to apply and capable of providing important contributions to the treatment of bipolar disorder in Turkey.

Materials and Method

Measurements

Personal Information Form: This form is applied to collect data on the characteristics of patients constituting study samples. Questions about the patients' personal characteristics, such as their age, sex, marital status, educational status, and employment status, and information related to the illness, such as the type of illness and health insurance, are included on this form.

Brief QoL.BD: The original Brief QoL.BD was developed in Canada and contains 12 items (corresponding to 12 core QoL domains in the full 56-item instrument), each addressing satisfaction with QoL over the last 7 days, via a Likert-type response scale ('Strongly disagree' (1) – 'Strongly agree' (5).[5] Total scale scores range between 12-60, with higher scores indicating better QoL. In the original validation sample, the Cronbach's alpha for the Brief QoL.BD was .87 (Table 1).[13]

Translation Procedure

Permission was obtained from the original developers of the QoL.BD to translate the English version into Turkish. The translation was performed via standard forward and backward translation methods by four independent translators (Table 1).[14]

Sample Size Considerations

There are separate guidelines on determining appropriate sample size parameters for factor analyses.[15–17] The present study determined that a sample size of 5-10x the number of items on the Brief QoL.BD would be acceptable (i.e. minimum n=72).

Participants and Procedure

The study participants, who were recruited between August and October of 2013, were outpatients between the ages of 18 and 65 from two mental health outpatient clinics in Istanbul. All participants had been diagnosed with BD type I (BD I) or type II (BD II) according to DSM-IV-TR criteria, were undergoing standard medical treatment [mood stabilizers, antipsychotic and antidepressant medication], were subjected to standard monitoring process, and were mentally capable of meeting the requirements of the research (no auditory, comprehension, or sight problems, or cognitive deficiencies). Furthermore, all participants were euthymic (had Young Mania Rating Scale–YMRS[18] and Hamilton Depression Rating Scale-HAM-D[19] total scores of below 6 and 8, respectively) at the time of their participation in the study. Potential participants were identified by the treating physician, and written informed consent was obtained from all participating patients. Patients who did not meet these criteria were excluded from the study.

Ethical Considerations

Before conducting the study, written approval was received from both institutions, the authors who developed the scale,

Table 1. Bipolar Bozuklukta Yaşam Kalitesi Ölçeği Kısa Formu - (BBYKÖ-KF) Türkçe Versiyon

Aşağıdaki maddeler yaşam kalitesiyle ilgili deneyimleri davranışları ve duyguları sorgulamaktadır. Yaşam kalitenizle ilgili her bir maddeye ne kadar katıldığınızı lütfen belirtiniz. Son 7 günde deneyimlerinizi en iyi tanımlayan puanı seçiniz. Maddeler için çok zaman harcamayınız ve aklınıza ilk geleni işaretleyiniz.

Son 7 günde ben	Kesinlikle katılmıyorum	Katılmıyorum	Kararsızım	Katılıyorum	Kesinlikle katılıyorum
1. Kendimi fiziksel olarak iyi hissettim.	1	2	3	4	5
2. Sabahları dinlenmiş olarak uyandım.	1	2	3	4	5
3. Yaptığım şeylerden her zamanki kadar keyif aldım.	1	2	3	4	5
4. Konsantrasyonum (dikkatim/odaklanabilmem) iyiydi.	1	2	3	4	5
5. Boş zamanlarımda hobilerimle/uğraşlarımla ilgilendim.	1	2	3	4	5
6. Sosyal ilişkilerimle ilgilendim.	1	2	3	4	5
7. İnançlarımın gereğini dilediğim gibi yaptım.	1	2	3	4	5
8. Temel ihtiyaçlarımı karşıladıktan sonra da geriye param kaldı.	1	2	3	4	5
9. Evimi düzenli tuttum.	1	2	3	4	5
10. Diğerleri tarafından kabul edildiğimi hissettim.	1	2	3	4	5
11. İstediğim yere özgürce gidebildim (Araba/Toplu taşıma, araç kullanarak. vb.).	1	2	3	4	5
12. Ne isteyip ne istemediğim konusunda düşüncelerim netti.	1	2	3	4	5

and the patients, after permission had been granted by the Ethics Committee for Scientific Research of the Istanbul Faculty of Medicine of Istanbul University (07.01.2013/27).

Content Validity Analyses

Content validity was assessed using Lawshe's method, a qualitative approach which requires consensus between experts regarding the applicability and intelligibility of scale items.[20] With this method, experts rate each item on a 3-point scale (0 = 'not necessary', 1 = 'useful', 2 = 'essential'). The content validity of each item is then quantified as a ratio (Content Validity Ratio (CVR)) based on the number of experts (N) and the number of experts who rated the item as 'essential' ((n): CVR = (n – N/2)/N/2). The CVR ranges between -1 (perfect disagreement between experts) and +1 (perfect agreement); critical values for CVR have been published.[21] The Content Validity Index (CVI) represents the mean CVR for all retained items.

Lawshe's method requires 5 to 40 expert opinions on the necessity of each item. For this study, 11 Turkish experts were recruited: four psychiatrists with specialist BD expertise, four mental health and psychiatric nursing instructors, one administrative nursing instructor, and two community health nursing instructors.

Latent Structure And Internal Reliability Analyses

The latent structure of the 12-item scale was investigated using exploratory factor analysis (EFA, maximum likelihood extraction with oblique rotation). The number of factors to extract was determined using Kaiser's technique, scree plot, and Velicer's minimum average partial (MAP) test.[22] Factorability was assessed using the Kaiser-Meyer-Olkin measure of sampling adequacy and Bartlett's test of sphericity. The quality of the resulting models was compared by inspection of their factor loadings, residual correlations, final communalities and squared multiple correlations. Finally, internal reliability was assessed using Cronbach's alpha (against the criterion level of .7) and item-total correlations.

Results

Descriptive Findings

A total of 76 participants were recruited, of whom 62 (81.6%) were diagnosed with BD I and 14 (18.4%) with BD II. The mean age of the participants was 41.17 (SD = 1.38), and 51 (67.1%) were female (Table 2).

Distributions of ratings on the 12 individual scale items were mostly normal. A mild negative skew was seen on 11 items (range -.19 to -1.92), and kurtosis ranged from -1.46 to 2.76. Distribution of total scores (sum of 12 items) was also mostly normal (skew = -.58, kurtosis = .20), with a mean of 43.83 (SD = 9.91) and no evidence of floor or ceiling effects. This distribution of total scores was comparable to that found in the original validation sample (M = 40.25, SD = 8.76).

Table 2. Sample demographic and clinical characteristics (n=76)

	n	%
Gender		
Female	51	67.1
Male	25	32.9
Marital status		
Single/divorced/widowed	30	39.5
Married	46	60.5
Education level		
Literate	5	6.6
Primary school graduate	17	22.3
Secondary school graduate	5	6.6
High school graduate	24	31.6
University / college graduate/ Yüksekokul mezunu / Graduate education degree	25	32.9
Employment status		
Employed	25	32.89
Unemployed	51	67.11
Diagnosis		
Bipolar I disorder	62	81.6
Bipolar II disorder	14	18.4
Age (years) [Mean±SD]	41.17±1.38	

SD: Standard deviation.

Content Validity

Content validity of the 12-item scale was strong: Individual item CVRs ranged from .64 to 1.00, all exceeding the critical level of .636 for a panel of 11 (single-sided p<.033). The CVI for the 12-item scale was .82.

Latent Structure and Internal Reliability

Factorability of the correlation matrix was confirmed by the numerous correlations > .3 and the value of .84 for the Kaiser-Meyer-Olkin measure. Bartlett's test of sphericity rejected the hypothesis that the correlation matrix was an identity matrix ($\chi^2 = 352.60$, p<.001). Examination of the scree plot (Fig. 1) and results of Velicer's MAP test suggested the extraction of one factor [explaining 36.05% of the variance), while Kaiser's criterion suggested the extraction of three (explaining 50.98%). The three-factor solution was difficult to interpret on theoretical grounds, and Kaiser's technique can overestimate the number of factors in a small sample,[23] so a conservative decision was made to extract only one factor.

In the one factor solution, 37 (56.0%) non-redundant residuals exceeded the criterion of |.05|. As indicated by the squared multiple correlation (SMC), all factors were internally consistent and well-defined by the variables; the lowest SMC for factors from variables was .70. Communality values were generally large, with the exception of item 11 (Item 11: 'travel around freely' = .08) and item 8 (Item 8: 'enough money for

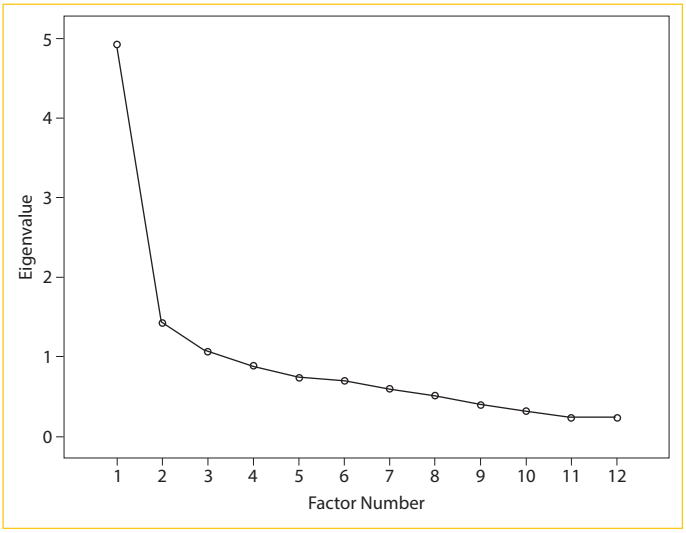

Figure 1. Scree plot of exploratory factor analysis (maximum likelihood analysis with oblique rotation) of the Turkish version of the 12-item Brief QoL.BD (n=76).

extras' = .12), suggesting that variables were generally well-defined by the solution.

Cronbach's alpha for the 12-item scale was .86, exceeding the accepted .7 cut-off and suggesting strong internal reliability. The repeated-measures ANOVA for internal reliability was also highly significant (F (9.684) = 14.34, p<.001). Item-total correlations for the two items with low communality values (Items 11 and 8) were relatively low (.27 and .33, respectively). However, Cronbach's alpha was not markedly improved by removal of either item 11 (.87) or item 8 (.86).

Discussion

The present psychometric investigation of the Turkish Brief QoL.BD broadly supports the 12-item scale's content validity, unitary factor structure, and internal reliability.

Results of the investigation of content validity using Lawshe's method showed that all items met the minimum criterion for inclusion. EFA identified a satisfactory one-factor solution, consistent with the latent structure of the English Brief QoL. BD. Interestingly, for this cross-cultural exercise, two items exhibited relatively low communalities and item-total correlations – namely, 'Had enough money for extras' and 'Travelled around freely'– and stood out as having relatively weak associations with the item set. In prior Turkish research involving patients with BD I (n=584), unemployment rates were reported as 68.4% (with no unemployment benefits).[24] Consequently, it is a hard reality for many BD patients in Turkey that they have no secure income and therefore little capacity for financial "extras" or to travel around freely. However, it was deemed inappropriate to remove these two items, as they measure important contributors to QoL. It is recommended, however, that their influence be further evaluated by future cross-cultural research conducted in different countries and with different populations. Cronbach's alpha of .86 for the newly translated 12-item scale constitutes evidence for strong internal reliability, comparable to that of the original scale (alpha = .87). Investigation of 'alpha if removed' found no grounds for removing the two items with relatively low item-total correlations, and given the adequate construct validity of these two items (above), they were retained in the final version.

This study had three significant limitations. First, it involved only participants who were euthymic, preventing generalizations from being applied to individuals experiencing manic or depressive mood episodes. Given that problems such as job loss, divorce, family conflicts, and social adjustment disorder are more often seen in manic and depressive mood episodes experienced by patients with bipolar disorder,[25] and that the quality of life of patients who have depressive, mixed and manic episodes is reported to be lower than that of patients who are euthymic,[26–28] it can be suggested that measurements on the quality of life not be made for patients experiencing these attack episodes but rather, for patients who are euthymic. If the quality of life is determined systematically and the measurements related to quality of life are well understood, the specific features of the disease will be better understood and lead to significant progress in the regulation of treatment studies.[29] It was for these reasons that in this study the scale was applied only on euthymic patients. As the scale was originally conducted with patients experiencing attack episodes, it was believed that it would applicable to both types of bipolar patients – that is, patients experiencing attack episodes and patients in a euthymic state.

As a second limitation, the external validity of the Turkish Brief QoL.BD was not tested in this study. Lastly, the Lawshe approach to content validity does not encourage consideration of additional items that could be added to the scale. The present study generated some evidence [low commonality values on two items] that the QoL construct in the Turkish context is not isomorphic with the construct in the culture where the original scale was developed. Further research into the lived experience of QoL in the Turkish context is strongly encouraged.

Conclusion

The new Turkish translation of the Brief QoL.BD is psychometrically sound and should be disseminated to people with BD in Turkish-speaking communities to encourage the measurement of QoL for research and clinical purposes.

Acknowledgments

Co-authors Michalak and Murray are the developers of the English version of the QoL.BD

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Authorship contributions: Concept – F.G., S.Ç.; Design – F.G., S.Ç.; Supervision – F.G., S.Ç., S.K., E.M., G.M.; Fundings - F.G., S.Ç., S.K., E.M., G.M.; Data collection &/or processing – F.G., S.Ç., S.K.; Analysis and/or interpretation – F.G., G.M.; Literature search – F.G., S.Ç., S.K., E.M., G.M.; Writing – F.G., S.Ç., S.K., E.M., G.M.; Critical review – F.G., S.Ç., S.K., E.M., G.M.

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