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The multicultural quality of life index in Argentina: a validation study

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Introduction. Evaluation of innovative instruments is important prior to its use in different settings; particularly, when they involve the assessment of concepts like quality of life (QOL).

Objective. To evaluate the internal structure (IS), factorial structure (FE), discriminant validity (DV), and time required for completion and ease of use of the Multicultural Quality of Life (MQLI) in Argentina.

Method. The sample included 100 subjects divided into two groups with presumed different levels of QOL. The Cronbach's alpha was calculated for the IC and the FE was analyzed in the total sample. The DV was studied comparing statistically the average score in a group of psychiatric patients (presumed «lower» QOL, n = 50) with a group of heath professionals and students (presumed «higher» QOL, n = 50). Data on the time and ease of use was compiled.

Results. A high Cronbach's α (0.88) was documented. The factorial analysis showed two feasible solutions, one extracting one component with an explained variance of 46.7%, and another one with two components, increasing the explained variance to 57.2%. A significant difference between mean total scores was found for the groups with different levels of QOL. The time to complete the MQLI was less than 5 minutes and was reported by the majority of subjects (84%) and the interviewers (90%) as of easy application.

Conclusions. The results showed that the MQLI has a high internal consistency, adequate factorial structure, and is capable of discriminating groups with different QOL levels; it is concise, and easy to use.

Key words: Quality of life. Validation studies. Scales. Psychometrics.

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El Índice Multicultural de Calidad de Vida en Argentina: un estudio de validación

Introducción. El Índice Multicultural de Calidad de Vida (MQLI) es un instrumento de 10 ítems para la autoevaluación de calidad de vida (CV). Cada ítem se califica con puntuación de 1 a 10.

Objetivo. Evaluar la estructura interna (EI), validez factorial (VF), validez discriminativa (VD), tiempo y facilidad de aplicación del MQLI en Argentina.

Método. La muestra incluyó a 100 sujetos divididos en dos grupos con supuestos diferentes niveles de CV. Se evaluó la EI con el alfa de Cronbach y se analizó su VF en la muestra total. Se estudió la VD comparando estadísticamente las puntuaciones medias en un grupo de pacientes psiquiátricos (supuesta «menor» CV, n = 50) y estudiantes y profesionales de salud (supuesta «mayor» CV, n = 50). Se recopilaron datos sobre el tiempo necesario y su facilidad de uso.

Resultados. Se encontró un alfa de Cronbach de 0,85. El análisis factorial mostró dos soluciones: una con extracción de un solo componente, con una varianza explicada del 46,7 %, y otra con dos componentes, aumentando la varianza explicada al 57,2 %. Se encontró una diferencia estadísticamente significativa para las puntuaciones totales medias entre ambos grupos con diferentes niveles de calidad de vida. El tiempo requerido para completar el MQLI fue menor de 5 min y la mayoría de sujetos (84 %) y entrevistadores (90 %) calificó el instrumento como fácil de usar.

Conclusiones. Los resultados demuestran que el MQLI tiene una alta consistencia interna, adecuada estructura factorial, es capaz de discriminar entre grupos con diferentes niveles de CV, es breve y fácil de usar.

Palabras clave: Calidad de vida. Estudios de validación. Escalas. Psicometría.

INTRODUCTION

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In 1993, the World Health Organization defined the concept of Quality of Life (QOL) as «the individual's perception

of their position in life in the context of the culture and value system where they live, and in relationship to their goals, expectations, standards and concerns»¹. Over the last two decades, attention has been placed on the concept of quality of life (QOL), making it an essential dimension in therapeutic decision making, and on improving clinical treatment, asking the patient about his/her own opinion on his/her condition and stressing aspects of their experience, including their limitations². This current model of the medical practice that is not only based on the elimination of the symptoms, reinforces the need to introduce a humanistic element in which the patient's well being is the primary objective³. In recent years, the concept of QOL has taken on such relevance that it has been proposed as an additional axis in the format of multiaxial diagnosis and it is considered as a health state descriptor, in addition to being a measure of the effect of the clinical treatment^{4,5}.

QOL related to heath, this being a measure that is increasingly being used to demonstrate therapeutic effectiveness, it is important for clinicians to seek evidence on the validity of instruments to measure QOL in scientific works where investigators try to demonstrate the impact of QOL secondary to the treatment proposed². Thus, the need to develop reliable instruments that are easy to use should be connected to the development of the general medical and mental health field. These instruments should be studied and put into operation under different conditions and in different geographic areas so that the results of their application are useful, legitimate, regional and multicultural.

Most of the instruments used to evaluate quality of life related with health have been created in English speaking countries. Given that the cost of creating this type of instrument from its initiation is high and it takes time to evaluate them, transcultural adaptation of existing instruments for their use in populations other than those of the original study offer several advantages. Among these are that they reduce cost of the investigation and simultaneously make it possible to obtain measurements that may be as valid and reliable as those of the original instrument. They make national and international comparisons possible and also make it possible to use aggregated data and to compare the experience of the original authors and other users⁶.

The objective of the adaptation of a questionnaire to another culture implies assuring a linguistic equivalence with the original idiomatic version and the replication of its psychometric properties as much as possible with a systematic methodology that begins with the translation to the pertinent language. Linguistic validation implies several aspects: that the items are semantically equivalent, both in meaning (the meaning of the word) and connotatively (the emotional meaning of the word), that they are conceptually equivalent (the questions are based on the same concept in the different idiomatic versions), and technically equivalent, that the expressions used are acceptable and relevant to the socio-cultural context in both, the original and target culture³. The validation process continues with the evaluation of the properties of the instrument in the study population, including measurements such as reliability (test-retest, internal consistency) and validity (content, construct, convergent, predictive, etc.)⁷.

One of the most used instruments for evaluation of QOL in different cultures is that developed by the World Health Organization, the WHOQOL^{8,9}. This instrument was initially proposed with a number of 236 questions, which were reduced to 100 items (WHOQOL-100) and then studied in different sites¹⁰. Subsequent studies, including the collaboration of the Argentina Republic, produced an even shorter instrument, the WHOQOL-BREF, which had 26 question^{11,12}. The psychometric properties of the WHOQOL-100 and WHOQOL-BREF in the Argentina samples have been presented in the scientific literature^{13,14}. The instruments have been used subsequently to evaluate the impact of depression in the quality of life in subjects with this diagnosis in comparison with healthy subjects and individuals with chronic medical diseases¹⁵.

Based on the revision of multiple instruments presented in the literature for the evaluation of QOL, Mezzich et al. developed a short scale, which was multidimensional and culturally sensitive, called the Multicultural of Quality of Life Index (MQLI). The index includes 10 items or domains: physical well-being, psychological/emotional well-being, self-care and independent functioning, occupational functioning, interpersonal functioning, social-emotional support, community and services support, personal fulfillment, spiritual fulfillment, and overall quality of life¹⁶. This instrument has been developed and validated in four languages: Spanish¹⁷, English¹⁸, Chinese¹⁹ and Korean²⁰ in New York City. The Spanish version (MQLI-Sp) has been studied in other countries, such as Spain²¹, Peru²², Chile²³ and Venezuela²⁴. Another version in Portuguese has also been studied in Brazil²⁵.

This document presents the validation study of the Spanish version of the Multicultural of Quality of Life Index in Buenos Aires, Argentina, an instrument made up of only 10 items for the evaluation of QOL. The results of this validation study, including data on its ease of application and time required, its discriminative and factorial validity and internal consistency are presented in the following.

MATERIAL AND METHODS

The study was conducted in 2004 in the out-patient services of the Integral Psychopathology Care Institute (API) in collaboration with the professional staff and students of the University of Belgrano.

The sample included a total of 100 individuals, assigned to two groups described in the following. One sample (n=50) was made up of advanced university students of the University of Belgrano and health care professionals working in the out-patient clinic of API. Another sample (n=50) was made up of psychiatric out-patients who fulfilled diagnostic criteria of DSM IV axis I, enrolled by the main author in his private practice and in the out-patient service of API. It included subjects between 18 and 60 years of age, of both genders, who were capable of signing the informed consent developed for participation in this study. Those individuals who were not capable of giving consent due to extreme disease, who had cognitive deficits or were illiterate, were excluded from the study.

One psychiatrist and two clinical psychologists presented the following instruments to the study subjects:

- A questionnaire to collect demographic data.
- The MQLI-Sp¹³: self-administrable instrument, made up of 10 dimensions to evaluate QOL. Each dimension is graded from 1 to 10 by the person being surveyed. The total score is given as the sum of the items divided by the number of items answered.
- A format for the evaluation of time required and ease/ difficulty to answer the MQLI-Sp.

The following parameters were evaluated and analyzed statistically:

- Time required and applicability.
- Internal consistency: it was analyzed with Cronbach's alpha coefficient for the 10 items in the total sample.
- Factorial validity: factorial analysis of the 10 items of the MQLI-Sp was done using the analysis of the principal components as extraction method and varimax with Kaiser normalization as rotation method.
- Discriminative validity: capacity of MQLI-Sp to discriminate between two samples with supposed different level of quality of life (professionals and students versus psychiatric patients) was studied, determining the difference between the measure of the total average points obtained in both samples and for each one of the items.

The data obtained were processed with the SPSS/PC version 12.1 statistical program.

RESULTS

The sample of patients enrolled for the study (n = 50) was made up of 36% men and 64% women, with average age 42.40 years (Standard deviation [SD]: 14.22). Distribution in the health care professional and student sample was 28% men and 72% women, average age was 33.66 years (SD: 9.94). Demographic data of both samples are shown in table 1.

Table 1	Demographic characteristics of the samples studied			
Demographic characteristics		Students and professionals n (%)	Psychiatric patients n (%)	
Gender				
Female Male		36 (72) 14 (28)	32 (64) 18 (36)	
Civil status				
Single Married/living together Widow(er) Divorced/separated		25 (50) 17 (34) 2 (4) 6 (12)	14 (28) 23 (46) 3 (6) 10 (20)	
Education				
Incomplete primary Complete primary Incomplete secodary Complete secondary Technical University		 50 (100)	2 (4) 3 (6) 9 (18) 15 (30) 5 (10) 16 (32)	
Occupation				
Professional/executive Employee/technical work/		27 (54)	8 (16)	
worker Student Housewife/househusband		_ 23 (46) _	14 (28) 3 (6) 7 (14)	
Unemployed		-	13 (26)	
Uther Total		- n = 50 (100 %)	5 (10) n = 50 (100 %)	

Time required and ease of use

Average time to fill out the MQLI was 5.68 minutes (SD: 1.78) for the patient sample and 2.79 minutes (SD: 1.86) for control sample, and 4.24 minutes (SD: 2.32) for the combined sample.

Most of the subjects interviewed and the interviewers perceived the MQLI-Sp as a «very easy» or «somewhat easy» instrument to answer. The results of ease of use are shown in table 2.

Internal consistency and factorial validity

Internal consistency of an instrument is the degree of measurement in which the items on the instrument measure the same concept. The methods used to evaluate the instrument consistency are Cronbach's alpha index and multifactorial analysis.

Table 2	Ease	Ease of use of the MQLI, according to perception of subject and interviewer			
Grading of	As perceived by the subject		As perceived by the interviewer		
ease of use	Patients (n = 50)	Controls (n = 50)	Patients (n = 50)	Controls (n = 50)	
Very easy Somewhat	52%	72%	58%	68%	
easy	32%	24%	32%	30%	
Somewhat					
difficult	13%	4%	8%	2%	
Very difficult	3%	0%	2%	0%	
MQLI: Multicultural Quality of Life.					

Cronbach's alpha of the sample was 0.85 (the maximum value being 1).

The factorial analysis (analysis of principal components) of the ten items analyzed in the complete sample and the results of the factorial structure found in two solutions studied are shown in table 3. The first solution, with a single factor, explains 46.7% of the variance and is significantly associated with the 10 items of the index. In the second solution, with two components, it is shown that the accumulated variance increases to 57.23% and most of the items are represented in the first component. However, this analysis showed one item (community support) without major representation in the two components and another item (spiritual fulfillment) with greater representation in the second component.

Discriminative validity

The results are presented in table 4. A statistically significant difference for the mean of the total scores (p < 0.05) and for most of the individual items, except items 1, 7 and 9, between both samples in which it was assumed that they had different levels of quality of life, was found.

DISCUSSION

The MQLI-Sp was conceived in a multicultural and multilinguistic matrix generated by a culturally diverse research team in New York, with the objective of being used in different languages and different ethnic groups. Its successful use in samples of different ethnic groups in New York has been documented in previous studies^{18,19,20} and in a version in Portuguese in Brazil²⁵. Specifically, the Spanish version has been studied in New York¹⁷, Spain²¹, Peru²², Chile²³ and Venezuela²⁴.

Table 3	Factorial analysis of the MQLI items (two solutions studied)			
Items		Analysis with 1 component ^A	Analysis with 2 component ^B	
		Factor 1	Factor 1	Factor 2
Physical well-being*			0.627	0.634
Psychological/social well-being		0.740	0.728	
Self-care and independent				
functioning			0.813	0.822
Occupational functioning		0.732	0.791	
Interpersonal functioning		0.658	0.659	
Social/emotional support		0.562	0.501	0.270
Community and services support		0.395	0.328	0.259
Personal fulfillment		0.894	0.878	
Spiritual fulfillment		0.352		0.985
Overall perception	n of quality			
of life		0.838	0.755	0.381
Percentage of variance				
explained by the	ne factors	46.70%	43.69% Accumulate	13.54% ed: 57.23%

KMO: method of sampling sufficiency: 0.841. Bartlett Spericiety Test: sig. < 0.001. ^A Extraction method: analysis of principal components, limiting to a single component. ^B Extraction method: analysis of principal components. Rotation method: varimax with normalization of Kaiser. *Values under 0.2 were eliminated from the table.

This study documents the ease of application of the index, finding that most of the subjects interviewed (84%) find the instrument as «somewhat» or «very easy» to use. Thus, in most of the cases (96%), the interviewers consider the index easy to use. In addition, it was found that the average time required for its application is less than 5 minutes. Other studies also document its briefness, generally finding average application times less than 4 minutes in most of the samples in New York, Spain and Lima¹⁷⁻²² except for the sample in Venezuela²⁴ and in the subgroup of patients hospitalized due to general medical conditions in Lima (Peru)²², in which higher times, although less than 6 minutes, were found.

The internal structure of the MQLI-Sp showed a high Cronbach's alpha (0.85). This demonstrates the coherence of the instrument items around the quality of life concept. The results of the previously mentioned studies provide alpha values from 0.83 to 0.97¹⁷⁻²⁴. Studies with the Argentina versions of WHOQOL-100 and WHOQOL-BREF show alpha values of 0.87 and 0.92 for their total scores, respectively, both questionnaires being much more extensive^{13,14}. The factorial analysis (principal components) of the 10 items of the MQLI provided two possible solutions. The first, with a single factor, is similar to the previous reports¹⁷. The second one, with two factors, increases the variance explained a lit-

Table 4Discriminative validity of the MQLI.Statistical differences between groups for the means of each individual item and total scores of MQLI obtained from the psychiatric patients and health care students and professionals

ltems	Psychiatric patiens (n = 50)	Students and professionals (n = 50)
Physical well-being*	6.80	7.24
Psychological/social		
well-being	6.04	7.24
Self-care and independent		
functioning	6.72	8.00
Occupational functioning	6.52	8.38
Interpersonal functioning	6.64	7.86
Social/emotional support	6.76	7.76
Community and services		
support*	7.40	7.40
Personal fulfillment	6.14	7.68
Spiritual fulfillment*	6.98	6.18
Overall perception of quality		
of life	6.80	7.56
Total average score	6.68	7.53

* p < 0.05, for the total average score and for most of the individual items, except items 1, 7 and 9. MQLI: Multicultural Quality of Life.

tle more, most of the items also being represented in the first component.

To study the discriminative validity of MQLI-Sp in Argentina, a group of psychiatric patients were included in the sample, presuming that their QOL level was somewhat affected and this group was compared with a group of students and health care professionals who were assumed to have a higher QOL level. The present study showed its capacity to discriminate both groups and the results are similar to those found in New York¹⁷⁻²⁰, that also included samples of psychiatric patients and health care professionals. Similar designs were used in South America, including psychiatric patients in Venezuela²⁴ and AIDS patients in Peru²², documenting similar results in regards to its discriminative capacity.

CONCLUSIONS

The Spanish version of MQLI became the first instrument to evaluate quality of life in the Argentina Republic. The results suggest that this multidimensional instrument is efficient, easy to use, short (less than 5 minutes to fill out), capable of discriminating between the samples in which different levels of quality of life are presumed and that it has high internal consistency.

The results documented in the validation of this instrument lead to its proposal for the measurement of quality of life in clinical care and research and in epidemiological research in the Argentina Republic.

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