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Toward an understanding of the quality of life construct: Validity and reliability of the WHOQOL-Bref in a psychiatric sample

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ABSTRACT

This study tested the psychometric properties of the WHOQOL-Bref by examining its construct validity, predictive validity and reliability in a psychiatric sample. The sample consisted of 403 participants recruited from mental health care facilities. Construct validity was assessed through confirmatory factor analysis (CFA) and item-domains correlations. Predictive validity was evaluated via multiple regressions. Internal consistency was analyzed by using Cronbach's alpha. Results from CFA second-order hierarchical model and item-domain correlational analyses supported the construct validity of the WHOQOL-Bref. A 5-domain model (psychological, physical, social relationships, environment and level of independence) demonstrated good-fit and adequate internal consistency. Multiple regression analyses of the domains with overall quality of life (QOL), general health and general QOL were supportive of predictive validity. This study found support for the multidimensionality of the WHOQOL-Bref which demonstrated appropriate properties for the assessment of QOL in psychiatric inpatients and outpatients. Thus, a valuable tool to be incorporated as part of the routine clinical evaluation, monitoring and an important indicator of treatment outcome and research. Our findings suggest a conceptual distinction between the physical domain and level of independence domain in this short version of the WHOQOL, as proposed by the WHOQOL-100.

1. Introduction

Improving the quality of life (QOL) of people with severe mental illness has become a major goal in the context of deinstitutionalization (Sartorius, 2006) and increasingly acknowledged as an important measure of treatment outcome. In fact, since the provision of mental health care has shifted from long-stay residence in psychiatric institutions to community-based services, there has been a growing concern with improving the patients' QOL, as well as evaluating the impact of healthcare interventions on patients' well-being, rather than focusing solely on symptom reduction.

Besides taking into account the psychosocial implications of diseases, current conceptualizations of QOL highlight the need to take into account the subjective experience of the individual's satisfaction with life (Katschnig, 2006). According to this rationale, assessing the QOL of people with mental illness may contribute to gaining a better understanding of the consequences of a psychiatric disorder for everyday life, as well as evaluating patient outcome and change in QOL over time. This perspective has become central along with the recognition of the requirement to achieve a cross-cultural QOL self-report measure, allowing valid comparisons of results from different populations, cultural settings and countries as an influential factor of subjective well-being (Hawthorne et al., 2006).

The WHOQOL Group defined QOL as *an individuals' 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* (WHOQOL Group, 1995, p. 1405).

The World Health Organization Quality of Life assessment (WHOQOL-100) resulted in a multilingual, multicultural, cross-culturally sensitive and generic QOL instrument enabling to assess variations in QOL across cultures and to compare groups within the same culture (WHOQOL Group, 1998). Using the same rationale as the WHOQOL-100, the WHOQOL-Bref, is an abbreviated version, which was developed simultaneously in 15 international centers. Additionally it was found to be an adequate alternative and particularly useful in situations where there is a need to minimize respondent burden, the facet-level detail is dispensable and, when time is limited (Skevington et al., 2004; WHOQOL

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Group, 1995).

The WHOQOL-Bref has been widely field-tested in various countries and its psychometric properties have demonstrated to be adequate for use in different cultures and with a variety of population groups including young people (Li et al., 2009), adults (Fleck et al., 2000) and the elderly (von Steinbüchel, et al., 2006). It has been also used in groups with particular medical conditions such as patients with cancer (Michelone and Santos, 2004), epilepsy (Liou et al., 2005), and mental disorders (Trompenaars et al., 2005) such as depression (Berlim et al., 2005), bipolar disorders (Chand et al., 2004), psychosis (Herrman et al., 2002), schizophrenia (Mas-Expósito et al., 2011), and alcohol abuse (Da Silva Lima et al., 2005). It is a 4-domain model derived from the 6-domain model of the WHOQOL-100, in which the level of independence domain was included in the physical domain, while the spirituality domain has been merged with the psychological domain.

Although the study of the construct validity and the model fit of the WHOQOL-Bref among psychiatric samples demonstrate to be highly relevant, research on this particular group remains scarce. Simultaneously, while most of research has not explored alternative factorial solutions of the 4-domain model proposed by the WHO, the few existing studies investigating the factor structure of the WHOQOL-Bref have found some inconsistencies for the support of its dimensionality. For instance, in a Nigerian study, an eight-domain factor structure provided a better explanation of the data than the WHOQOL-Brief's four and six-domain models (Ohaeri et al., 2004). In another study with patients with tuberculosis and healthy referents in Taiwan, Chung and colleagues (2012) found that while results from exploratory factor analysis (EFA) on the healthy referents displayed a 4-domain model, the factor structure generated a 6-domain model for the patient group. Differences regarding the dimensionality of the WHOQOL-Bref were also reported by Ohaeri and collaborators (2007) in a factor analytical study with general population and psychiatric samples.

As for the European Portuguese versions of the WHOQOL-100 and WHQOL-Bref, both instruments have shown good psychometric properties (internal consistency, test–retest stability, convergent validity, discriminant validity). Interestingly, in the national version psychiatric patients (around 20.4% of the sample, N=604) reported the worst results in QOL scores, except in the physical domain in the 4-domain WHOQOL-Bref (Canavarro et al., 2007; Vaz Serra el al, 2006) and in the physical and the level of independence domains in the six-domain WHOQOL-100 (Canavarro et al., 2009). Also, as in the original validation study of the WHOQOL-Bref (Skevington et al., 2004), while in the Portuguese sample higher correlations (>0.50) were found not just in the intended domain, but also for some items within other domains. For instance, two items of the physical domain belonging to the level of independent domain on the WHOQOL-100 (activities related to daily living and work capacity) had strong correlations with the psychological domain (Canavarro et al., 2007). Besides the 'cross-domain' correlations, in the European Portuguese validation studies discriminant validity was best demonstrated in the physical domain in the WHOQOL-Bref and in the physical and in the level of independence domains in the WHOQOL-100. These results suggest that associations between the WHOQOL-Bref facets might differ between the different populations whereby reducing the 24 items to four domain scores might lead to a loss of relevant information (von Steinbüchel, et al., 2006). Therefore, due to the scarcity of studies with psychiatric samples, the fact that some findings with this population group suggest structural differences in the short version of the WHOQOL instrument (which may be partly due to group-specific influences on some items) and also because psychiatric patients may reveal some difficulties in completing the long form (WHOQOL-100), addressing the psychometric properties of the WHOQOL-Bref may open up new avenues for its rationale.

The purpose of this study was to examine the psychometric properties of the WHOQOL-Bref by testing its dimensionality, construct validity, predictive validity and reliability in a Portuguese psychiatric sample of inpatients and outpatients.

Information on the WHOQOL-Bref factor structure in psychiatric samples may contribute to improve knowledge on the subjective experience of people with mental illness regarding their QOL, which, in turn, may stimulate the use of standardized measures as a routine multidimensional assessment aimed at improving QOL outcomes in the context of the mental health care system.

2. Methods

2.1. Participants and procedure

Data was collected after approval by the ethical review boards of the institutions. The participants were recruited from inpatient and outpatient Portuguese mental health facilities: three general hospitals, two community-based facilities, a psychiatric hospital, and a psychiatric institution run by a religious order. The aim of the study was explained by the researcher and all participants signed informed consent. Participants were referred to the study by the psychiatrist according the following inclusion criteria: (1) adults with a clinical diagnosis based on the Diagnostic and Statistical Manual of Mental Disorders (DSM-IV, American Psychiatric Association, 1994); (2) without neurological disorders or severe cognitive impairments or intellectual disabilities, and (3) medically stabilized while under psychiatric treatment. Based on these criteria, 15 individuals were excluded because they failed to complete all the questionnaires and twenty-eight were excluded owing to low comprehension skills. The final sample consisted of 403 adults, 231 males (57.3%) aged between 19 and 79 years ($M=43.15$, $SD=12.38$ and $M=45.08$, $SD=13.67$, for male and female participants respectively). Most participants were single (58.3%), on a disability retirement (49.6%) and diagnosed with schizophrenia (36.5%). Socio-demographic and clinical characteristics of participants are presented in Table 1.

2.2. Measure

The participants were administered the WHOQOL-Bref (WHOQOL Group, 1998) a 26-item questionnaire rated on a five-point Likert scale with four domains measuring: psychological health, physical health, social relationships and environment, plus 2 items representing the general QOL (overall QOL and general health). Since items 3, 4 and 26 were negatively formulated, they were reversed before the analysis so that higher scores refer to high QOL. For the purpose of our study, we used the Portuguese version of the WHOQOL-Bref that has demonstrated adequate psychometric properties, discriminating between healthy subjects and patients with different medical conditions (Vaz Serra et al., 2006). We followed the WHOQOL-Bref guidelines regarding administration, scoring, analyses and interpretation of the results (WHO, 1996).

2.3. Statistical analysis

Descriptive statistical analysis (Mean, SD and range) was carried out through the examination of item-response distribution. Skewness and kurtosis coefficients and respective standard errors were examined and box-plots checked. In this study with a psychiatric sample we started with exploratory factor analyses (EFA)