Validation of the Schizophrenia Quality of Life Scale Revision 4 among Chronic Schizophrenia Patients in Malaysia

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ABSTRACT

Objectives: To explore the validity and reliability of a disease-specific health-related quality-of-life questionnaire—the Schizophrenia Quality of Life Scale Revision 4 (SQLS-R4)—in patients with schizophrenia in Malaysia. **Methods:** A total of 222 outpatients with schizophrenia receiving treatment at the Universiti Kebangsaan Malaysia Medical Centre completed the SQLS-R4 in either the Malay or the English language. A generic self-report health-related quality-of-life measure—the EuroQoL group EuroQol five-dimensional questionnaire—and a measure of symptom severity—the Clinical Global Impression-Schizophrenia scale—were also administered to assess validity. **Results:** Good internal consistency reliability was found for both the psychosocial and vitality domains (Cronbach's $\alpha = 0.95$ and 0.85, respectively). Most items were also significantly correlated with their own scale score (r_s ranging from 0.29 to 0.74). There was a moderate correlation between the SQLS-R4 "vitality" domain and the EuroQol five-dimensional ques-

tionnaire "usual activities" domain ($r_s = 0.44$) and a large correlation between the SQLS-R4 "psychosocial" domain and the EuroQol five-dimensional questionnaire "anxiety/depression" domain ($r_s = 0.44$–0.57). Most of the symptom dimensions of the Clinical Global Impression-Schizophrenia scale were also moderately correlated with the SQLS-R4 subscale scores. **Conclusions:** The SQLS-R4 is a valid and reliable health-related quality-of-life instrument for use in minimally ill patients with schizophrenia in Malaysia, but some of the items may be redundant and irrelevant. Validation of SQLS-R4 in different types of patients and various levels of illness severity is required to further verify its application.

Keywords: health-related quality of life, reliability, schizophrenia, validity.

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Introduction

For the past two decades, health-related quality of life (HRQOL) has increasingly become an important outcome measure in clinical trials, health services research, patient management, and resource allocation [1]. Similarly, the development of new antipsychotic medications has resulted in HRQOL being an essential measure of treatment success in schizophrenia [2]. Internationally defined as the patient's self-reported health and ability to function physically, mentally, and socially, HRQOL described an array of life dimensions affected by disease and treatment interventions [3]. Thus, it is a significant outcome in schizophrenia, a debilitating psychiatric disorder that causes profound disruptions in many areas of patients' life functioning [4].

Many instruments have been developed to measure HRQOL, but there is no consensus on the most appropriate scale for measuring HRQOL in schizophrenia [5]. The instrument of choice for HRQOL measurement depends on the assessment purposes [6]. Generic instruments designed to be applicable across all diseases or conditions are likely to be useful in comparing different group of

patients, while disease-specific measures have more potential in detecting treatment effects [7]. Schizophrenia-specific questionnaires such as the Heinrichs-Carpenter Quality of Life Scale, the Drug Attitude Inventory, and the Subjective Well-being under Neuroleptics have been used to evaluate the effectiveness of antipsychotic medications on HRQOL. The predominantly used scale is the Heinrichs-Carpenter Quality of Life Scale [7]. Although the Heinrichs-Carpenter Quality of Life Scale has historical values, it is an observer-rated instrument primarily designed to address negative symptoms in schizophrenia [6].

One of the essential features of a schizophrenia-specific HRQOL instrument includes incorporation of life domains highly relevant to individuals with schizophrenia [8]. One such measure is the Schizophrenia Quality of Life Scale by Wilkinson et al. [9], a brief self-report scale that has been translated into 52 languages including the Malay language through standardized procedures and validated in several East Asian countries such as Japan, Korea, and Taiwan [10–12]. Currently available in its most recent revised form, the Schizophrenia Quality of Life Scale Revision 4 (SQLS-R4) comprises items that concern those

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suffering from schizophrenia and is thus of potential use in clinical trials and evaluation of clinical interventions such as drug treatments [10].

Patients with schizophrenia in Malaysia have been living in the community since community-based psychiatric services were established in numerous hospitals [13]. Although several studies have been conducted to examine their life qualities, none has reported the use of the SQLS-R4. The effect of antipsychotics in patients with schizophrenia is substantial because of not only their potential to alleviate symptoms but also the impact of side effects on patients' functioning and well-being [14]. Partly designed to assess the effect of antipsychotic medications on HRQOL, the SQLS-R4 has prior evidence of excellent psychometric properties [15], thus rendering it a potential tool for determining HRQOL among patients with schizophrenia in Malaysia, primarily managed by pharmacological treatment. The objective of this study therefore was to evaluate the validity and reliability of the SQLS-R4 as an outcome measure of HRQOL among patients with schizophrenia in Malaysia.

Methods

Subjects

A convenience sample of 222 outpatients with schizophrenia attending the Psychiatry Clinic at Universiti Kebangsaan Malaysia Medical Centre was enrolled in the study. Inclusion criteria for subject selection were 1) a diagnosis of schizophrenia according to the *Diagnostic and Statistical Manual of Mental Disorders, Fourth Edition*, American Psychiatric Association 1994, 2) age between 18 and 65 years, 3) clinically stable (not acutely ill or has not been recently hospitalized at least for the past 3 months), 4) has fair understanding of the illness, 5) understands Malay or English language, and 6) provided consent to participate in the study. Patients who were pregnant or those who had an associated diagnosis of mental retardation, organic brain diseases, or substance abuse were excluded.

Measure

The SQLS-R4 was developed by Wilkinson et al. [9] for the measurement of HRQOL in people with schizophrenia. It comprises 33 items incorporated in two domains: psychosocial feelings (22 items) and cognition and vitality (11 items). All except four items are scored on a five-point Likert-type scale (0 = never, 1 = rarely, 2 = sometimes, 3 = often, 4 = always), with the exceptional four items being reverse coded (0 = always, 1 = often, 2 = sometimes, 3 = rarely, 4 = never). Individual domain and total scores are standardized by scoring algorithm to a 0 to 100 scale, with higher scores indicating comparatively lower quality of life. Its factor structure and internal reliability have been verified in schizophrenic patients in the Netherlands and further replicated in a group of patients with schizophrenia in the United Kingdom and Taiwan [12,15].

The EuroQol Group EuroQol five-dimensional (EQ-5D) questionnaire is a simple generic instrument that generates a health profile and preference-based index scores of HRQOL [16]. The first part is a descriptive system (EQ-5D self-classifier) that facilitates individuals to categorize their health condition in five dimensions, mobility, self-care, usual activities, pain/discomfort, and anxiety/depression, with each dimension divided into three levels of severity ranging from 1 (no problem) to 3 (many problems). The second section consists of a vertical visual analogue scale (VAS), with end points of 0 and 100 indicating "worst" and "best" imaginable health state, respectively. The third section is the EQ-index, which represents a series of societal preferential values for the full set of 243 health states, with

the states of perfect health and death usually being assigned values of 1 and 0, respectively. Only the EQ-5D self-classifier and the EQ-VAS were used for the present study.

The Clinical Global Impression-Schizophrenia (CGI-SCH) scale is a simple and brief scale adapted from the Clinical Global Impression scale that has a widespread application in rating the overall severity of any mental disorder [17]. The CGI-SCH scale specifically measures the severity of illness and degree of change in schizophrenia in four symptom dimensions, positive, negative, depressive, and cognitive, as well as overall severity rated on a seven-point scale ranging from 1 (no illness) to 7 (most severe possible) [18]. For the purpose of the present study, only the CGI-SCH Severity of Illness scale was used.

Procedure

Patients' case notes were screened to identify eligible subjects for the study. Patients who fulfilled all the inclusion criteria were invited to participate and given an explanation about the study. Patients who provided written informed consent were then asked to complete the self-administered SQLS-R4, the EQ-5D self classifier, and EQ-VAS, which were available in two languages: the Malay language and the English version for Malaysia. Demographic and clinical data were compiled by case-note review and patients' interviews. Patients' clinical status was assessed via the CGI-SCH Severity of Illness scale by the attending clinician. The research protocol of the study was approved by the Medical Research and Ethics Committee of the Universiti Kebangsaan Malaysia Medical Centre.

Statistical analysis

Patient characteristics were presented by using descriptive statistics. The internal consistency of the SQLS-R4 was determined by item to total correlations and Cronbach's alpha coefficients. It was hypothesized that the EQ-5D "anxiety/depression" domain would be addressing issues related to those of the SQLS-R4 "psychosocial" domain and the "cognition/vitality" domain would be associated with the "usual activities" domain. Correlations of items with their scale totals of at least 0.40 and a value of Cronbach's alpha between 0.70 and 0.90 are highly suggested for a robust scale [19]. The construct validity and clinical validity was established by comparing scores of the SQLS-R4 subscales with those of the EQ-5D self-classifier and the CGI-SCH scale, respectively, by means of Spearman's rank correlations. Correlation was considered large for $|r_s| \geq 0.5$, moderate for $0.3 \leq |r_s| \leq 0.5$, and small for $0.1 \leq |r_s| \leq 0.3$ [20]. For all analyses, the level of statistical significance was defined as alpha less than 0.05. The statistical analyses were performed by using the Statistical Package for the Social Sciences, version 16.0 (SPSS, Inc., Chicago, IL).

Results

Of the 222 subjects, 192 (86.5%) completed the SQLS-R4 in Malay and 30 (13.5%) completed the SQLS-R4 in English. The subjects comprised nearly equal number of men and women with minimal symptoms severity. The ethnic group composition of the study subjects was reflective of a Malaysian population, with the majority of the patients being Malay followed by Chinese and Indian. Most other background characteristics of the subjects were also comparable with those of schizophrenic outpatients found in other catchment area in Malaysia [13,21]. Table 1 shows the demographic characteristics of the subjects. The baseline scores of SQLS-R4 subscales and the distribution of the scores are shown in Table 2. A broad range of scores was observed for both the psychosocial and vitality subscales. For both the subscales, floor effects (the percentage of patients acquiring the lowest score) and ceiling