Determinants of subjective health-related quality of life (HRQoL) for patients with schizophrenia

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ABSTRACT

Purpose: To identify the determinants of schizophrenia-specific HRQoL levels, five types of factors (i.e., sociodemographic, clinical, psychopathological, neurocognitive, and psychosocial factors) were simultaneously investigated in the same cross-sectional sample.
Methods: A total of 120 patients with a diagnosis of schizophrenia but not spectrum conditions were recruited by convenience sampling. Subjective HRQoL levels were measured using the disease-specific S-QoL-C. After sociodemographic and clinical data were collected, psychopathological data were self-rated with the Beck Depression Inventory-II (BDI-II) and were assessed with the Positive and Negative Syndrome Scale (PANSS) by professionally trained raters. Two neurocognitive assessments were conducted by licensed occupational therapists (OTs). Psychosocial factors were assessed using self-reports measures, including the, General Self-Efficacy Scale (GSES), Rosenberg Self-Esteem Scale (RSES), and Social Impact Scale (SIS). All measures were administered in random order. OTs, PANSS raters, and participants were blinded to score computation, and multiple hierarchical regression with the stepwise method was conducted.
Results: The S-QoL-C scores were most strongly affected by psychosocial factors and the psychopathological factors, followed by clinical and sociodemographic factors. Total scores on the BDI-II had the largest contributions to S-QoL-C index scores and seven of eight S-QoL-C subscales. In addition, the GSES, RSES, and SIS showed effects across the S-QoL-C subscales. The BDI-II, GSES, and RSES all influenced the S-QoL-C index scores, in addition to the number of hospitalizations.
Conclusion: Psychosocial factors and psychopathological factors measured by the BDI-II had the greatest impact on schizophrenia-specific HRQoL levels. Psychiatric treatment programs focusing on psychosocial status and depressive symptoms can improve schizophrenia-specific HRQoL levels.

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1. Introduction

Schizophrenia is a heterogeneous disorder comprising psychotic symptoms, cognitive deficits, and daily performance. These multidimensional impairments and patients' perceptions of the disease can be monitored by investigating patients' health-related quality of life (HRQoL) status. Moreover, identifying determinants of schizophrenia-specific HRQoL levels may improve the focus of health care treatment for schizophrenia. Thus, there is a need to identify factors that have a large influence on HRQoL levels in patients with schizophrenia.

Various studies have investigated factors relevant for subjective HRQoL levels in patients with schizophrenia. Factors frequently investigated in these previous studies included sociodemographic, clinical,

psychopathological, neurocognitive, and psychosocial factors. However, these five types of factors have never been simultaneously compared within the same study. Moreover, differences in study design across the enormous number of studies make it difficult to come to a consensus on the most influential factors affecting schizophrenia-specific HRQoL levels.

The types and numbers of factors included in previous studies have affected conclusions regarding key factors affecting schizophrenia-specific HRQoL levels. Although neurocognitive factors are usually reported as significant predictors of schizophrenia-specific HRQoL levels, the inclusion of sociodemographic and clinical factors can cause these neurocognitive factors to become non-significant predictors (Matsui et al., 2008). In studies where neurocognitive and psychopathological factors significantly and independently contributed to HRQoL levels, no psychosocial factors were investigated (Mohamed et al., 2008). Psychosocial variables have been shown to strongly affect schizophrenia-specific HRQoL levels (Ritsner, 2003; Ritsner et al., 2003; Ho et al., 2010), but these variables have seldom been

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systematically investigated alongside sociodemographic, clinical, psychopathological, and neurocognitive factors. Only one study (Ritsner, 2003) has reported on psychopathological, neurocognitive, and psychosocial factors, all of which were significantly related to HRQoL. However, this study did not include demographic or clinical factors, and these variables were investigated using change values between two timepoints, as opposed to the cross-sectional design that is more typical in these studies. Additionally, this study did not include any demographic or clinical factors (Ritsner, 2003). For comprehensive comparison, it is necessary to include sociodemographic, clinical, psychopathological, neurocognitive, and psychosocial factors within the same study.

Another reason for inconclusive studies of schizophrenia-specific HRQoL determinants is the infrequent use of disease-specific HRQoL measures (Ritsner, 2003; Ritsner et al., 2003; Sota and Heinrichs, 2004; Xiang et al., 2007; Gorna et al., 2008). The measure most frequently used in these studies is a generic HRQoL measure, such as the WHOQoL-BREF (Xiang et al., 2007; Gorna et al., 2008). Other studies have used an HRQoL measure not designed specifically for schizophrenia, such as the Quality of Life Scale (Roseman et al., 2008), or even a measure not designed for monitoring HRQoL levels, such as the Sickness Impact Profile (Sota and Heinrichs, 2004). In addition, the identification of significant factors can be influenced by the use of a disease-specific HRQoL measure, rather than objective HRQoL levels measured by interviews (Aki et al., 2008). It is thus essential to use an ideal schizophrenia-specific HRQoL measure such as the S-QoL(-C) (Auquier et al., 2003; Chou et al., 2011).

Another limitation of previous research is the choice of inclusion criteria, which while somewhat diverse do not adequately reflect the heterogeneous characteristics of schizophrenia. Inclusion criteria sometimes restrict samples to middle-aged subjects (Roseman et al., 2008), outpatients (Xiang et al., 2007; Aki et al., 2008), first-episode patients (Bodén et al., 2009), or patients with a combination of schizophrenic and depressive symptoms (Roseman et al., 2008). Additionally, samples do not always involve a single population of patients with schizophrenia (Ritsner, 2003).

The current study simultaneously investigated the five types of factors most influential for HRQoL levels using a schizophrenia-specific HRQoL measure. This investigation reflected the heterogeneous characteristics of schizophrenia by including a diverse group of adult inpatients and outpatients across a broad age range, all of whom had a diagnosis of schizophrenia only. Individuals in this study also differed with regard to the number of episodes and hospitalizations and the type and severity of schizophrenia symptoms.

2. Methods

2.1. Participants

All participants in this cross-sectional study were recruited using convenience sampling in a hospital and a nearby psychiatric daycare center located in central Taiwan. The inclusion criteria were as follows: (1) diagnosis of schizophrenia based on the DSM-IV (1994), (2) age between 18 and 65 years, (3) reading or listening comprehension and ability to complete self-reports of HRQoL levels, and (4) willingness to complete informed consent.

2.2. Measures

Based on the focus on client-centered medicine, this study primarily used self-report measures that captured participants' perspectives. High priority was given to instruments designed specifically for schizophrenia, as well as measures that are available in Chinese and those that are frequently used. Factors that were of the greatest clinical importance were also prioritized when selecting measures for this investigation.

2.2.1. The HRQoL measure

The S-QoL-C, a disease-specific HRQoL self-report with eight domains and 41 items rated on a five-point Likert scale, was used to monitor HRQoL levels. The index score was computed by summing the score of all items and was then transformed to a scale from 0 to 100. The unidimensionality of each domain of the S-QoL-C has been demonstrated (Auquier et al., 2003), and the Chinese translation of this measure has been psychometrically validated (Chou et al., 2011).

2.2.2. Evaluation of sociodemographic factors

Basic sociodemographic information was collected using primarily self-developed forms. This information included gender, age, education level (at least higher than senior high school or not), marital status, and employment status.

2.2.3. Evaluation of clinical factors

The clinical factors investigated were those related to the characteristics of the disease but not behavioral or distress states resulting from the disease, as opposed to a broader scope of psychopathological factors (Lemma, 1996). These factors included data on prescription medication usage, duration of illness, number of episodes and hospitalizations, presence of a paranoid subtype diagnosis, and recruitment from the hospital or from the psychiatric daycare center.

2.2.4. Evaluation of psychopathological factors

Psychopathological factors were defined as patterns of maladaptive behavior and states of distress (Lemma, 1996). These factors were assessed using subscales of positive symptoms, negative symptoms, general psychopathological symptoms, and the total score of the Positive and Negative Syndrome Scale (PANSS) Taiwan version (Zheng et al., 1996). The PANSS Taiwan version comprises 30 items on a seven-point scale and has been shown to have acceptable psychometric properties (Zheng et al., 1996).

The evaluations of the psychopathological factors also included the BDI-II (Beck et al., 1996) which was developed to measure depressive levels in people older than 12 years of age. This measure reflects self-reported depressive symptoms from patients' subjective perspectives, as opposed to a formal diagnosis of depression that requires assessment by medical professionals. The BDI-II contains 21 items on a 0–3 point Likert scale, and total scores can range from 0 to 63. The use of the BDI-II to identify depressive symptoms in chronic schizophrenia has been supported by past research (Heald et al., 2008), even though it is not a schizophrenia-specific instrument. Although depressive levels can be assessed along with other negative symptoms of schizophrenia, these levels are more completely assessed using both the self-reported BDI-II as well as the professionally administered PANSS.

2.2.5. Evaluation of neurocognitive factors

Neurocognitive factors are sometimes interchangeably referred to as cognitive function or neuropsychological factors by different researchers. Measures used in this study included total scores on the Mini-Mental State Examination (MMSE) (Teng et al., 1987; Moore et al., 2004) and the Loewenstein Occupational Therapy Cognitive Assessment (LOTCA) (Katz et al., 1989). The LOTCA is a measure developed by occupational therapists that provides an initial profile of cognitive abilities relevant for daily living activities, and can be used as a starting point for occupational therapy interventions or as a screening test for further assessment. The LOTCA Taiwan version (Su et al., 2007) was used to measure basic and comparatively higher levels of cognitive function. Because previous studies investigated verbal and working memory, letter sequencing, and card-sorting classification (Mohamed et al., 2008), subscales investigated in the current study included the MMSE 3rd item ('remember three objects'), the MMSE 4th item ('number sequencing'), the LOTCA sequencing task, and the LOTCA categorization task. In addition, the G12 item from the PANSS was used to index patients' level of insight.