



# Generic and disease-specific quality of life and its predictors among Chinese inpatients with schizophrenia



Yingchun Zeng<sup>a,\*</sup>, Ying Zhou<sup>b</sup>, Jiankui Lin<sup>c</sup>, Yuqiu Zhou<sup>d</sup>, Jianying Yu<sup>e</sup>

<sup>a</sup> Department of Obstetrics and Gynecology, The Third Affiliated Hospital of Guangzhou Medical University, No 63 DuoBao Road, Liwan District, Guangzhou, Guangdong Province 510150 China

<sup>b</sup> School of Nursing, Guangzhou Medical University, Guangzhou, China

<sup>c</sup> Department of Nursing, Guangzhou Psychiatric Hospital, Guangzhou, China

<sup>d</sup> School of Nursing, Harbin Medical University, Daqing China

<sup>e</sup> Department of Nursing, Hunan Psychiatric Hospital, Changsha, China

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## ABSTRACT

This study aims to describe generic and disease-specific quality of life (QOL) and its predictors among Chinese inpatients with schizophrenia. A total of 209 subjects participated in this study: 121 men and 88 women. Their ages ranged from 18 to 64, with a mean age of 33.85 (S.D.=10.84). The total scores of generic and disease-specific QOL were statistically significant, correlated with patients' total symptom severity scores and social support scores (all *P* values less than 0.01). Multiple regression analysis revealed that monthly household income and subjective social support were statistically significant predictors of generic and disease-specific QOL. Duration of hospitalization, support use degree, negative and general psychopathology symptoms were additional significant predictors of disease-specific QOL. This study suggests the importance of improving subjective social support in order to promote generic and disease-specific QOL. Controlling negative and general psychopathology symptoms and improving support use degree could additionally enhance the disease-specific QOL in patients with schizophrenia.

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## 1. Introduction

Mental health problems are common. The World Health Organization (WHO) estimates that globally, 450 million people suffer from a mental or behavioral disorder, and the number of persons experiencing severe mental illness (e.g. schizophrenia, psychotic disorders) ranges from 1% to 3% (WHO, 2009). In China, it is estimated that approximately 4% of adults, or 16 million people, suffer from severe mental illness (China-CDC, National Centre for Mental Health, 2009). The estimated prevalence of schizophrenia in urban areas of China is 5.7 per 1000 population, with an estimated 6.45 million prevalent cases in total (Xiang et al., 2008). It is increasingly recognized that patients with schizophrenia experience impaired quality of life (QOL) (Ritsner et al., 2012; Adelufosi et al., 2013). QOL measures are considered to be useful information for planning and evaluating clinical interventions (Xiang et al., 2012). Research evidence also shows that QOL is a valid and useful outcome criterion among patients with schizophrenia (Karow et al., 2014).

Determinants of QOL with socio-demographic and clinical factors have been well established (Kao et al., 2011; Hsiao et al., 2012; Ritsner et al., 2012; Adelufosi et al., 2013). Certain socio-demographic factors, such as monthly household income and employment status, were found to be key predictors among Taiwanese community-dwelling schizophrenia patients (Hsiao et al., 2012). In addition, better social support independently predicted higher QOL in all domains among Chinese patients with schizophrenia (Xiang et al., 2012). Furthermore, reduced QOL can be attributed to the side effects of medication (Harvey et al., 2004).

Research also reveals that greater symptom severity of an illness is associated with decreased QOL (Kao et al., 2011). Reducing symptoms (all types) are associated with higher QOL (van de Willige et al., 2005). One study examining the correlates of QOL in an Arab schizophrenia sample found that positive symptoms were a significant correlate of perceived QOL (Zahid et al., 2010). Positive symptoms, such as hallucinations, are more strongly correlated with QOL than negative symptoms, such as fatigue and low creativity (van de Willige et al., 2005). Other major determinants of QOL in people with severe mental illness include psychopathology symptoms (Hansson, 2006), and the severity of negative symptoms (Aki et al., 2008).

Although a great deal of research has been done regarding the socio-demographic and clinical determinants of QOL in patients

\* Corresponding author. Tel.: +86 2081296257.

E-mail address: [chloezengyc@hotmail.co.uk](mailto:chloezengyc@hotmail.co.uk) (Y. Zeng).

with schizophrenia using generic measures (Xiang et al., 2012; Adelufosi et al., 2013; Lanfredi et al., 2014), few studies have investigated these determinants using disease-specific QOL measures. As schizophrenia is a multidimensional mental illness, taking generic and disease-specific QOL into consideration could provide a clearer understanding of specific disease conditions and treatment effects in patients with schizophrenia (Millier et al., 2014). Therefore, this study's aim was to describe QOL using a generic and disease-specific measure, and to identify QOL predictors in Chinese adults with schizophrenia, one week before discharge from hospital. Understanding the correlations of socio-demographic and clinical factors with generic and disease-specific QOL in schizophrenia could facilitate the development of relevant strategies to improve patients' QOL.

## 2. Methods

### 2.1. Study sample and study setting

Patients with schizophrenia were invited to participate in the study upon their planned discharge: (1) Chinese adults ranging in age from 18 to 65, (2) suffering from schizophrenia or a schizophrenia spectrum disorder using the consensus diagnosis according to DSM-5 (American Psychiatric Association, 2013), confirmed by clinicians, and (3) voluntary consent. Patients excluded from the study were (1) younger than 18 years in age or older than 65 years, (2) suffering from personality disorders, organic brain disease or learning disability, and (3) refusing to give consent. This study was undertaken at Guangzhou Psychiatric Hospital, which has a staff of 1100 and a maximum capacity of 1920 beds. This hospital has nine clinical departments, in schizophrenia, mood disorders, early intervention, geriatric psychiatry, neurology, neurosurgery, forensic psychiatry, traditional Chinese medicine, and rehabilitation (Zhang and Ning, 2010).

### 2.2. Instruments

#### 2.2.1. The socio-demographic sheet

This sheet was used to collect participants' socio-demographic data, such as age, gender, educational level, marital status, employment status, monthly income, illness onset, illness duration, medication taken, information, attitude toward medication taken, and physical health.

#### 2.2.2. QOL on the generic measure

The World Health Organization Quality of Life – Brief Form (WHOQOL-BREF) was used to measure generic QOL in patients with schizophrenia. The WHOQOL-BREF comprises two general items and 24 items in four specific domains: physical (7 items), psychological (6 items), social relationship (3 items) and environment (8 items). Higher scores indicate better QOL. The transformed scores of four specific QOL domains range from 4 to 20 (WHO, 2009). The Chinese version of WHOQOL-BREF reported good internal consistency and construct validity by other studies in China (e.g. Leung et al., 2005; Xiang et al., 2012). Internal consistency estimates have been shown to have an acceptable reliability for the total scale (Cronbach's alpha=0.95).

#### 2.2.3. QOL on the disease-specific measure

The Schizophrenia Quality of Life Scale-Mandarin Chinese version (SQLS) was used to measure disorder-specific QOL in patients with schizophrenia. The Mandarin Chinese version SQLS consists of 30 items and three domains: "(1) 'Psychosocial' (15 items) addresses various emotional problems (e.g. feeling lonely, depressed or hopeless); (2) 'Motivation and energy' (7 items) addresses various problems of motivation and activity (e.g. lacking the will to do things); (3) 'Symptoms and side-effects' (8 items) addresses issues such as sleep disturbance, blurred vision, dizziness, muscle spasms and dry mouth" (Wilkinson et al., 2000). Each scale score is transformed to have a range from 0 (the best status as measured on the SQLS) to 100 (the worst status as measured on the SQLS), with lower scores indicating better QOL. The Chinese version of SQLS has been adopted by major psychiatric hospitals and various psychiatric units in Taiwan and mainland China (e.g. Kuo et al., 2007; Zhou et al., 2012). In this study, internal consistency estimates have been shown to have an acceptable reliability for the total scale (Cronbach's alpha=0.94).

#### 2.2.4. Symptom severity measure by positive and negative syndrome scale (PANSS)

The PANSS is an established rating scale used to measure the symptom reduction of patients with schizophrenia (Kay et al., 1987). The Chinese version of PANSS was translated by He and Zhang (1997). This scale consists of 30 items and three subscales: Positive Symptoms (7 items), Negative Symptoms (7 items), and

General Psychopathology Symptoms (16 items). The measure uses a 7-point Likert scale. Higher scores indicate high levels of symptom severity. In this study, internal consistency estimates have been shown to have an acceptable reliability for the total scale (Cronbach's alpha=0.96).

#### 2.2.5. Social support measure by social support rating scale (SSRS)

The Chinese version of the SSRS was originally developed in China by Xiao (1994). The SSRS is comprised of 10 items and three domains: objective support (3 items), subjective support (4 items) and support use degree (3 items). Higher scores indicate better social support. The SSRS was widely used in assessing psychiatric in-patient and community-dwelling schizophrenia patients (Xiang et al., 2012; Zhou et al., 2012). In this study, Cronbach's alpha for the entire scale was 0.78.

### 2.3. Data collection and analysis

Data were collected from May to July 2014. Trained research nurses collected the data in face-to-face interviews, one week before hospital discharge. A patient's voluntary participation was always observed. All data were coded, and no personal identifier would appear in the computerized data set. Data were analyzed using SPSS for Windows, version 20. Statistical significance was set at 0.05. The findings were summarized by descriptive statistics, correlation and regression analysis. Descriptive analysis was used to present general characteristics of participants; Pearson product-moment correlation analysis was used to identify correlations of clinical variables (e.g. age of mental illness onset, duration of mental illness or hospitalization), and other patient-reported outcomes with generic and disease-specific QOL; and Spearman rank correlation analysis was used to identify socio-demographic variables (e.g. education levels, monthly household income) with QOL. Point biserial correlation analysis was used to identify correlations of nominal level variables (e.g. gender, medication or other treatments taken, co-morbid physical illness) with QOL. Only those variables with statistical significance ( $p < 0.05$ ) will be retained in the regression analysis. In the final regression analyses, all categorical variables were transformed into dummy variables. Hierarchical linear regression was carried out to determine which socio-demographic and clinical variables were the best predictors for generic and disease-specific QOL.

### 2.4. Ethical issues

This study was approved by the Affiliated Psychiatric Hospital of Guangzhou Medical University's Ethics Committee (No. 20140301). Patients, who were informed of the study aims, received a Patient Information Leaflet and signed a consent form for the research.

## 3. Results

Of 300 participants approached, a total of 209 subjects participated in this study, with a response rate of 69.6%. These subjects were suffering from schizophrenia or schizophrenia spectrum disorder. Their ages ranged from 18 to 64, with a mean age of 33.85 (S.D.=10.84). Many were unemployed at the time of the interview (61.7%,  $n = 129$ ). Age of mental illness onset was 26.92 (S.D.=8.63) years, with the duration of illness 6.33 (S.D.=7.56) years. Among them, 84 subjects (40.2%) had a physical illness. Table 1 shows the detailed socio-demographic and clinical characteristics of these patients.

Means of patient-reported outcomes (PRO) was listed in Table 2. With regard to QOL on the generic measure by WHOQOL-BREF, higher scores indicate better generic QOL. Study subjects indicated a higher perceived QOL in the domains of environmental and physical health, compared to psychological health and social relationships. In terms of QOL on the disease-specific measure by SQLS, lower scores indicate better specific QOL. Participants reported better specific QOL in the domain of symptom and side-effects (e.g. dry mouth, blurred vision, muscle spasms, dizziness) than other domains by SQLS. Concerning symptom severity by PANSS, higher scores indicate greater symptom severity. Participants had more severe general psychopathology symptoms than positive or negative symptoms. For social support by SSRS, higher scores indicate better social support. Subjects perceived better subjective support than objective support and support use degree.

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