Original Research

Factors affecting the quality of life among Chinese rural general residents: a cross-sectional study

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ABSTRACT

Objectives: The brief version of the World Health Organization's Quality of Life Instrument (WHOQOL-BREF) is widely used for evaluating the personal subjective quality of life (QOL) of patients and particular populations. However, in the absence of sufficient studies among the general population, normative data for WHOQOL-BREF remain scarce. To fill this gap, the present study explored more sociodemographic and health-related factors affecting the QOL.

Study design: In total, 11,351 participants aged ≥35 years in rural areas of Liaoning Province were screened with a stratified cluster multistage sampling scheme in 2012—2013. Anthropometric measurements, laboratory examinations, and self-reported information on disease history were collected by trained personnel. Depression symptoms were assessed using the Patient Health Questionnaire-9.

Methods: Stepwise multiple linear regression was used to explore the association between multiple factors and QOL.

Results: Females and single/widowed subjects had lower QOL scores than males and married/cohabiting subjects, respectively. Total QOL scores and scores for each domain decreased as age increased, but a positive correlation was found between age and the environmental domain score. Participants with higher annual incomes, education levels, and activity levels had higher QOL scores. In the regression model, the coefficient for stroke was −2.17 (95% confidence interval [CI] −2.64, −1.71) for the total QOL score. For a one-level increase in depression level, the total QOL score decreased by 5.62 (95% CI −5.83 to −5.42), physical domain score decreased by 1.63 (95% CI −1.69 to −1.58), and psychological domain score decreased by 1.81 (95% CI −1.87 to −1.75).

Conclusions: Socio-economic status including marital status is highly related to QOL. Regarding chronic diseases, stroke is an important factor of QOL and depressive symptoms have a strong negative relationship with QOL.

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Introduction

The World Health Organization (WHO) defines health as 'a state of complete physical, mental and social well-being, not merely the absence of disease or infirmity'.[1] A really healthy person has a high quality of life (QOL) level. The QOL is affected by comprehensive factors in many aspects including physical health, psychological state, ability to be independent, social interpersonal relationships, and environmental adaptability, which reflects the individual's evaluation of themselves in the context of the culture and value systems, and in relation to personal goals, attitude to life, and values.[2] A QOL measure is needed for the appropriate evaluation of population health or healthcare interventions. The World Health Organization Quality of Life (WHOQOL) Group designed an instrument to measure QOL (WHOQOL-100) and an abbreviated version (WHOQOL-BREF), but the specific questions have developed over the past three decades to be suitable for respondents with diverse cultural contexts; therefore, it has been promoted to all over the world.[3,4] There are 26 items in the WHOQOL-BREF, which is more convenient to use and valid across cultures.[3] Thus, many large-scale epidemiological investigations use the WHOQOL-BREF instrument to evaluate QOL.

Since 2000, Chinese researchers have used the Chinese version of WHOQOL-100 and WHOQOL-BREF.[5] Although many studies on QOL have been conducted around the world, few studies have evaluated QOL among large Chinese populations using WHOQOL-BREF, especially among the general population in mainland China. Previous Chinese studies have evaluated QOL in more vulnerable groups, patients and particular minority populations.[5–11] No uniform cut-off value to define a high level of QOL has been set to date. To compare different populations around the world, there is a need for reference values from general populations.[12] However, in the absence of sufficient studies among general populations, normative data for WHOQOL-BREF remain scarce. There is a need to study the QOL of the general population using WHOQOL-BREF to provide useful reference values to compare the results of diverse groups.[12] Another Chinese study focused on an urban population, but the sample only included 1052 subjects.[5] To fill this gap, the present study investigated a large sample of the general rural population in mainland China to provide more results regarding the sociodemographic and health-related factors affecting QOL. In addition to the QOL of patients and particular populations, there is a need to study QOL among the general population to help the national public health departments with the formulation and implementation of culture-specific policies and support.

Methods

Study population

Between July 2012 and August 2013, a representative general sample aged ≥35 years was selected from the rural areas of Liaoning Province in Northeast China. The study adopted a multistage, stratified random cluster sampling scheme. In the first stage, three counties (Dawa, Zhangwu, and Liaoyang) were selected from the eastern, southern, and northern regions of Liaoning Province, which has 44 counties in total. Dawa, Zhangwu, and Liaoyang have 15, eight, and 14 towns, respectively. In the second stage, one town was selected at random from each county (total of three towns), with 13, eight, and 20 rural villages, respectively. In the third stage, eight to 10 rural villages from each town were selected at random (total of 26 rural villages). All the eligible permanent residents aged ≥35 years from each village were invited to participate in the study (total of 14,016 participants). In total, 11,956 subjects agreed to participate and completed the present study (response rate 85.3%). The study was approved by the Ethics Committee of China Medical University (Shenyang, China). All procedures were performed in accordance with ethical standards. Written consent was obtained from all participants after they had been informed of the objectives, benefits, medical items, and confidentiality regarding their personal information. If the participants were illiterate, written informed consent was obtained from their proxies. Only participants with a complete set of data for the variables analyzed in the study were included in this report, making a final sample size of 11,351 (5264 men and 6087 women).

Data collection and measurements

Data were collected by cardiologists and trained nurses during a single clinic visit using a standard questionnaire and a face-to-face interview. Before the survey was performed, all eligible investigators were invited to attend organized training. The training covered the purpose of this study, how to administer the questionnaire, the standard method of measurement, the importance of standardization, and the study procedures. A strict test was given after training, and only those with a perfect score on the test became investigators. During data collection, the inspectors received further instructions and support.

Data on demographic characteristics, lifestyle risk factors, family income, disease history, and evaluation of psychological status [Patient Health Questionnaire-9 (PHQ-9)], and quality of life (WHOQOL-BREF) were obtained by interview with a standardized questionnaire. There was a central steering committee with a subcommittee for quality control. Ethnicity was classified as Han or other (including ethnic minorities in China, such as Mongol and Manchu). Educational level was divided into primary school or below, middle school, and high school or above. Family income was classified as ≤5000, 5000–20,000, and >20,000 China Yuan (CNY)/year according to the mean annual income of rural residents in Liaoning Province. Smoking and alcohol consumption statuses were also surveyed. Current smokers were defined as those who had smoked more than one cigarette every day for ≥6 months and those who had quit smoking for <6 months. Current drinkers were defined as those who had consumed alcohol twice or more each week for ≥1 year least and those who had quit drinking for <6 months. Physical activity included occupational and leisure-time physical activity. Occupational and leisure-time physical activity were merged and regrouped into the following three categories:

- low, subjects who reported light levels of both occupational and leisure-time physical activity (i.e. most working time