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RESEARCH ARTICLE

Reliability and validity of Persian version of Medical Outcome Study-HIV health survey in Iranian people living with HIV

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Abstract

OBJECTIVE: To evaluate the psychometric properties of the Persian version of the medical outcome study human immunodeficiency virus (MOS-HIV) health survey among people living with HIV or acquired immune deficiency syndrome (HIV/AIDS) in Iran is our main goal in this study.

METHODS: The MOS-HIV questionnaire was translated into Persian using backward translation and the Persian version was filled by 100 HIV infected patients. Reliability of the questionnaire was estimated using Cronbach's alpha coefficient for the total questionnaire and for each dimension. Convergent, discriminant and construct validity were performed. Comparisons were performed between the subscales of the questionnaire in Iran and some other countries with *t*-test.

RESULTS: The overall Cronbach's alpha in this study was 0.90 and the range of this coefficient was from 0.71 to 0.86 across the subscales with two exceptions, general health perception and role functioning, which were at 0.65 and 0.61. Convergent and discriminant validity were excellent in all domains. The two factor confirmatory factor analysis showed a good fit based on standardized estimates of factor loading, incremental and absolute fit indices.

CONCLUSION: The Persian version of the MOS-HIV had good reliability and validity in measuring health related quality of life in people living with HIV in Iran. Furthermore, quality of life for HIV infected patients was very low in comparing with the people in some other countries.

Keywords: Acquired immunodeficiency syndrome; HIV; Quality of life; Cross-sectional studies; Health surveys

INTRODUCTION

Quality of life (QoL) is a multidimensional construct[1] that can measure the different aspects such as physical, psychological and social functions of patients.[2] According to objectives of "Healthy People 2020 web site", increasing life expectancy, promoting quality of life, healthy development, and healthy behaviors in all stage of life, QoL has been considered as an indicator of health status and well-being of people[3] and scientists are making an effort to identify different aspects that have an effect on health related QoL (HRQoL).[4] In recent years, evaluating HRQoL is a fundamental issue for people who suffer from chronic diseases. One of the most significant chronic diseases is acquired im-

mune deficiency syndrome (AIDS) which kills nearly 1.1 million people in the world each year, based on the estimate statistic by the world health organization (WHO) and united nation program on human immunodeficiency virus or AIDS (HIV/AIDS), UNAIDS.[5] Therefore, improving the QoL in people living with HIV/AIDS (PLWHA) may be an effective treatment for these patients.[6]

Measuring QoL in chronic illness required to have reliable and valid methods. There are many tools for measuring QoL in PLWHA.[7-9] One of the latest international and widely used instruments is the Medical Outcome Study HIV (MOS-HIV) health survey.[10] This questionnaire was designed to measure various aspects of patient's HRQoL.[11] MOS-HIV health survey contains 35 questions categorized into 10 dimensions of health status. The subscales include general health perceptions (GHP), physical functioning (PF), role functioning (RF), pain (PN), social functioning (SF), mental health (MH), vitality (VT), health distress (HD), cognitive functioning (CF) and QoL. Questionnaire's items were converted on the scale of 0-100 in order to provide a comparison between the dimensions. Higher scores indicate better health status.[10] Moreover, two other summary scale scores, physical health summary (PHS) and mental health summary (MHS) are used to explain all domains in two factors.[10-12]

The MOS-HIV is a specific questionnaire for HIV infected patients that is translated and culturally adapted in order to be used in more than 20 languages.[13-22] So far, many generic tools have been used to measure HRQoL in PLWHA in Iran.[23-26] However, the MOS-HIV health survey and psychometric properties of this questionnaire are unknown in people with HIV-positive in Iran. Assessment of reliability and validity of the Persian version of the MOS-HIV questionnaire and measuring HRQoL among PLWHA were the main goals in this study.

METHODS

Subjects

This cross sectional study was carried out among the 100 HIV-infected injection drug users (IDUs) who referred to behavioral disorder counseling centers affiliated to Shiraz University of Medical Sciences in Fars Province, south west of Iran during June to August 2010. Many of our participants in this study (93%) were infected *via* contaminated syringes and the remaining (7%) were unsure about how they were infected. Furthermore, women who referred to these centers, refused to participate in this study.

Inclusion criteria involved age over 18 years, with at least primary education and the lack of mental and cognitive disorders. Also, all participants gave their letter of consent prior to their inclusion in this research. Demographic variables were gender, age, education, marital status, CD4 cell count, number of years that the individuals were addicted and the time they were diagnosis with HIV. Since most of the participants did not answer question about job status and income level, these two variables did not achieve any results and they were excluded from the study.

Translation of MOS-HIV questionnaire

English version of the questionnaire was translated and adapted into Persian language and culture by two professional translators fluent in English. This version was revised and retranslated into English. The final Persian version was produced and after the final feedback it was in a way that patients could easily understand and answer the questions. All participants completed all items of the questionnaire so that none of them are missed. In order to use the Persian version of the MOS-HIV in Iran, consent was obtained from the designers.

Statistical analyses

Several statistical methods were used to evaluate the reliability and validity of the MOS-HIV questionnaire. The reliability or scale internal consistency was evaluated by calculating Cronbach's alpha for all items, multi-item scales and two summary factors, PHS and MHS. A value of 0.7 or greater is considered acceptable reliability for each subscale. Moreover, the percentages of respond to questions on minimum and maximum scales were measured to determine the floor and ceiling effects.[27]

Convergent and discriminant validity of the MOS-HIV Persian version was assessed. For checking the convergent and discriminant validity, Spearman's correlation matrix was calculated between the total scores and hypothesis subscale scores. Correlations greater than 0.4 between an item and its subscale score are acceptable for convergent validity.[18] Significant correlations between an item and other subscale scores are acceptable for discriminant validity.[28-30] A *P*-value of 0.05 or less was considered statistically significant.

We also assessed the validity of MOS-HIV by construct validity. This is based on building and testing conceptual model that explains the relationship between the subscales of questionnaire.[28] In order to evaluate construct validity of MOS-HIV, we used confirmatory factor analysis (CFA) to see if the covariance matrix of dataset confirms with previous expectations about the theoretical model. Based on the results of the Revicki *et al* [11] the physical subscales such as PF, RF and PN had the most contribution onto PHS scale with CF, MH, HD and QoL had the most contribution onto MHS and GHP, SF and VT are included onto both summary scores. Moreover, goodness of fit indices including χ^2 statistic, normed fit index (NFI), non-normed fit index (NNFI), Comparative fit index (CFI), goodness of fit index (GFI), adjusted goodness of fit index (AGFI), standardized root mean square re-