Applied Nursing Research 28 (2015) 328–333

Contents lists available at ScienceDirect

Applied Nursing Research

journal homepage: www.elsevier.com/locate/apnr

Psychometric testing of the Chinese version of the Medical Outcomes Study Social Support Survey among people living with HIV/AIDS in China

Yu Yu, MPH [a,b,1], Joyce P. Yang, M.S. [c,2], Cheng-Shi Shiu, MSW, PhD [d,3], Jane M. Simoni, PhD [c,4], Shuiyuan Xiao, MD [a,5], Wei-ti Chen, PhD [e,6], Deepa Rao, PhD [f,7], Mingjiong Wang, M.S. [g,*]

[a] Department of Social Medicine and Health Management, Public Health School, Central South University, Changsha, Hunan 410008, China
[b] Department of Global Health, University of Washington, Seattle, WA 98195-7765, USA
[c] Department of Psychology, University of Washington, Seattle, WA 98195-1525, USA
[d] School of Social Work, University of Washington, Seattle, WA 98105, USA
[e] Yale school of nursing, Yale University, Orange, CT 06477, USA
[f] Department of Global Health, University of Washington, Seattle, WA 98104, USA
[g] Department of Traditional Chinese Medicine, Changsha Medical School, Lei feng road nine kilometers, Traditional Chinese Medicine department of Changsha Medical School, Wangcheng, Changshang city, Hunan province 410219, China

ARTICLE INFO

Article history:
Received 3 November 2014
Revised 2 March 2015
Accepted 5 March 2015

Keywords:
Medical Outcomes Study Social Support Survey
Psychometric testing
HIV/AIDS
Chinese

ABSTRACT

Purpose: The aim of this study was to assess the psychometric properties of the Chinese (Mandarin) version of the Medical Outcomes Study Social Support Survey (MOS-SSS-CM) among people living with HIV/AIDS (PLWHA) in Mainland China.
Methods: A cross-sectional study was conducted with a convenience sample of 200 Chinese PLWHA. They completed the MOS-SSS-CM along with the Chinese version of the Beck Depression Inventory Revised (BDI-II) scale, the Zung Self-Rating Anxiety Scale (SAS), the Perceived Stress Scale (PSS-10), and the World Health Organization Quality of Life Brief (WHOQOL-BREF) scale.
Results: Internal consistency (Cronbach's α) was 0.97 for the overall MOS-SSS-CM and 0.82–0.91 for the five subscales originally proposed. However, 11 of the 19 items demonstrated unsatisfactory item discriminant validity. An exploratory factor analysis yielded a two-factor solution with tangible and social-emotional dimensions, which demonstrated satisfactory reliability and better discrimination between different subscales than did the original five-factor model. The concurrent validity of the two-factor scale was further confirmed by its significant negative correlations with the BDI-II ($r = -0.41$, $p < 0.01$); the SAS ($r = -0.27$, $p < 0.01$); and the PSS-10 ($r = -0.30$, $p < 0.01$), and significant positive correlation with the WHOQOL-BREF scale ($r = 0.61$, $p < 0.01$).
Conclusion: We found a two-factor solution for the MOS-SSS-CM, which demonstrated good reliability and validity when applied to Chinese PLWHA. This was consistent with results from a study of Taiwanese caregivers. Further validation in other populations and disease states is warranted.

1. Introduction

HIV has become one of the most serious infectious diseases in China. In 2011, there was an estimated 780,000 people living with HIV/AIDS (PLWHA) in China, with 48,000 new infections and 28,000 deaths annually (Ministry of Health of the People's Republic of China (MHPRC), 2012). Due to strong governmental intervention around treatment, the mortality of PLWHA has drastically decreased. Improving the quality of life among PLWHA however, has become a more recent prominent concern.

Social support has been shown to contribute both to mental and physical health among PLWHA and is especially effective in reducing psychological distress such as depression and anxiety (Arriola, Spaulding, Booker, et al., 2013; Lam, Naar-King, & Wright, 2007; Liu, Pang, Sun, et al., 2013; Mizuno, Purcell, Dawson-Rose, et al., 2003; Reich, Lounsbury, Zaid-Muhammad, et al., 2010). Furthermore, perceived social support has been associated with higher quality of life of PLWHA in both cross-sectional and longitudinal studies (Bastardo & Kimberlin, 2000; Bekele, Rourke, Tucker, et al., 2013; Jia, Uphold, Wu, et al., 2004; Jia, Uphold, Zheng, et al., 2007; Rao, Chen, Pearson, et al., 2012; Yadav, 2010). With increasing recognition of its positive health impact, social support has been incorporated into health care interventions for PLWHA (Horvath, Oakes, Rosser, et al., 2013; Huynh, Kinsler,

* Corresponding author. Tel.: +86 15274984256.
E-mail addresses: youxiang8864@163.com (Y. Yu), jpyang@u.washington.edu (J.P. Yang), sigontw@gmail.com (C.-S. Shiu), jsimoni@uw.edu (J.M. Simoni), xiaosy@csu.edu.cn (S. Xiao), wei-ti.chen@yale.edu (W. Chen), deeparao@uw.edu (D. Rao), 403616846@qq.com (M. Wang).
[1] Tel.: +86 15675857745.
[2] Tel.: +1 314 283 4154.
[3] Tel.: +1 773 454 9957.
[4] Tel.: +1 206 406 5521; fax: +1 206 685 3157.
[5] Tel.: +86 731 84805459.
[6] Tel.: +1 203 737 2416.
[7] Tel.: +1 206 685 3064.

http://dx.doi.org/10.1016/j.apnr.2015.03.006
0897-1897/

Cunningham, et al., 2013; Remien, Stirratt, Dognin, et al., 2006). In order to better understand and evaluate the health-promoting effects of social support interventions in fighting HIV/AIDS, a psychometrically sound measurement tool of social support is needed.

In China, the most commonly used assessment tool for social support is the Social Support Rating Scale (SSRS) developed by Shuiyuan Xiao 肖水源 (1994). It is a ten-item scale including subjective support, objective support, and utilization of support, and has been broadly used to assess social support in various populations. However, with no specific target population, the application of SSRS to individuals living with chronic illness such as HIV may be limited.

The Medical Outcomes Study–Social Support Survey (MOS-SSS) is a brief, multidimensional, self-administered questionnaire developed by Sherbourne and Stewart (1991) to evaluate social support in patients with chronic illness. It was originally hypothesized to measure five dimensions of social support: (1) emotional support (expression of positive affect, empathetic understanding, and the encouragement of expressions of feelings); (2) informational support (offering of advice, information, guidance, or feedback); (3) tangible support (provision of material aid or behavioral assistance); (4) positive social interaction (availability of other persons with whom to engage in pleasurable activities); and (5) affectionate support (expressions of love and affection) (Sherbourne & Stewart, 1991). With well-established reliability and validity, the MOS-SSS has been translated into different languages including Portuguese (Griep, Chor, Faerstein, et al., 2005; Soares, Biasoli, Scheliga, et al., 2012), Spanish (Cohen & Wills, 1985; House, Robbins, & Metzner, 1982), French (Anderson, Bilodeau, Deshaies, et al., 2005; Robitaille, Orpana, & McIntosh, 2011), and Malay (Mahmud, Awang, & Mohamed, 2004) and has been well validated among different sub-populations in various countries (Anderson et al., 2005; Cohen & Wills, 1985; Griep et al., 2005; House et al., 1982; Mahmud et al., 2004; Robitaille et al., 2011; Soares et al., 2012).

In 2004, the MOS-SSS was first translated into Mandarin (Yu, Lee, & Woo, 2004a), the world's most common language with over 1.3 billion speakers. Subsequent psychometric testing has demonstrated good reliability and validity (Lee, Thompson, Yu, et al., 2005; Shyu, Tang, Liang, et al., 2006; Thompson, Ski, Watson, et al., 2014; Wang et al.; Yu, Lee, & Woo, 2004b). Since psychometric testing is sample dependent (McHorney, Ware, Lu, et al., 1994) and most of the previous studies focused on elderly people with coronary heart disease, little is known about the scale's applicability in other disease groups such as PLWHA. The primary purpose of this study was to describe the psychometric properties of the original 5-dimension MOS-SSS-CM in PLWHA in Mainland China.

2. Methods

2.1. Participants

This cross-sectional descriptive study was conducted at Beijing's Ditan Hospital, the premier treatment center for infectious diseases in China. A convenience sample of 200 HIV-positive patients were recruited in the clinic waiting room between June and July 2012. The *N* of 200 satisfies the sample size requirement of at least 5 participants for each item to conduct a factor analysis (Tamaka, 1987). Eligible participants were required to be Mandarin-speaking individuals receiving care at Ditan Hospital who were at least 18 years of age. Cognitively impaired or actively psychotic individuals were excluded. After providing written informed consent, participants were asked to complete an hour-long paper-and-pencil survey and were reimbursed RMB100 ($15) for their time. Ethics approval was granted by the Institutional Review Boards of the University of Washington and Ditan Hospital.

2.2. Measures

2.2.1. MOS-SSS-CM

The MOS-SSS is a 19-item survey originally designed to assess five different dimensions of social support (i.e., emotional, informational, tangible, affectionate support, and positive social interaction). Respondents are asked to choose how often each kind of support is available to them on a 5-point Likert scale from 0 = "none of the time," 1 = "a little of the time," 2 = "some of the time," 3 = "most of the time," to 4 = "all of the time" (Sherbourne & Stewart, 1991). The MOS-SSS demonstrated good reliability and validity in a United States sample of nearly 3000 chronic patients, with Cronbach's α coefficients greater than 0.91 for all subscales (Sherbourne & Stewart, 1991). The Chinese (Mandarin) version of MOS-SSS (MOS-SSS-CM) has been validated among sub-groups in various parts of China and has shown acceptable internal consistency with Cronbach's α coefficients ranging from 0.91 to 0.98 for the overall scale and 2-week test–retest reliability as measured by intra-class correlation coefficients ranging from 0.74 to 0.84 (Shyu et al., 2006; Wang et al.; Yu et al., 2004b).

2.2.2. BDI-II

The Beck Depression Inventory Revised (BDI-II) (Beck, Steer, & Brown, 1996) is a 21-item self-report questionnaire revised from the original BDI (Beck, Ward, Mendelson, et al., 1961) developed by Beck et al. (1961) to assess clinical depression. It assesses the psychological (items 1–13) and somatic (items 14–21) manifestations of depressive symptoms during the preceding 2 weeks. Each item is rated from 0 to 3 to indicate least to most depressed mood. A total score is calculated by adding the scores of each item and ranges from 0 to 63. With high reliability and validity, the English version of BDI-II has been translated and popularized in various countries in Europe, the Middle East, Asia, and Latin America (Alansari, 2005; Corbière, Bonneville-Roussy, Franche, et al., 2011; Gomes-Oliveira, Gorenstein, Lotufo Neto, et al., 2012; Penley, Wiebe, & Nwosu, 2003; Wang & Gorenstein, 2013). In the present study, the Chinese version of BDI-II demonstrated good internal consistency, with a Cronbach's α coefficient of 0.92.

2.2.3. SAS

The Self-Rating Anxiety Scale (SAS) is a 20-item measure developed by Zung Zung (1971) to assess the frequency of anxiety symptoms. It was primarily used to assess the frequency of anxiety-related somatic symptoms (Olatunji, Deacon, Abramowitz, et al., 2006). Items are assessed on a 4-point Likert scale ranging from 1 = "none or a little of the time" to 4 = "most or all of the time". Items 5, 9, 13, 17, and 19 are reversed scored and a cumulative score is obtained by adding individual scores. The Chinese version of SAS used in the present study had satisfactory internal consistency (Cronbach's α coefficient was 0.82).

2.2.4. PSS-10

The Perceived Stress Scale (PSS-10) is a shortened version of the original 14-item English version Perceived Stress Scale (PSS-14) developed by Cohen et al. (1983) as a global measure of stress (Cohen, Kamarck, & Mermelstein, 1983). It captures the extent to which respondents' lives appear to be unpredictable, uncontrollable, or overloaded over the past month. The PSS-10 consists of six negative and four positive items, to which participants are asked to respond on a 5-point Likert scale ranging from 0 = "never" to 4 = "very often", with higher composite scores indicating greater perceived stress. The PSS-10 has been widely used in measuring stress of patients with chronic disease and has demonstrated high internal consistency and test–retest reliability (Cohen et al., 1983; Chaaya, Osman, Naassan, et al., 2010; Mitchell, Crane, & Kim, 2008). The Chinese version of PSS-10 used in the present study demonstrated satisfactory internal consistency, with a Cronbach's α coefficient of 0.80.

2.2.5. WHOQOL-BREF

The WHOQOL-BREF (Group, W, 1998) is a self-report questionnaire developed by the WHO as a broad and comprehensive tool to assess quality of life and is cross-culturally applicable. It contains 26 questions with the first 2 questions regarding the overall quality of life and health