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Psychometric properties of the Persian version of the Mishel's Uncertainty in Illness Scale in Patients with Cancer

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A B S T R A C T

Purpose: Uncertainty is a major component in the illness experiences which extraordinarily can affect the psychological adjustment and the illness outcomes. Uncertainty in illness is defined as inability to define the illness-related events to the illness or disability in predicting the illness outcomes. The present study aimed to translate the Persian version of Uncertainty in Illness Scale (MUIS-A) and to investigate its psychometric properties on patients with cancer.

Method: In this methodological study, validation of the Persian version of MUIS-A was performed in Iran on 420 cancer patients attending two major hospitals in Tehran, Iran. The scale was translated into Persian and back translated into English and revised according to editorial comments of the scale designers. Then, content and face validity, construct validity, internal consistency reliability and stability of the Persian version were measured. Data were analyzed using SPSS version 16 and LISREL 8.5.

Results: Mean of the participants MUIS-A score was 90.1 (16.8). Confirmatory factor analysis confirmed validity of the whole instrument and its four subscales. The consistency of the instrument with a three-week interval was $r = 0.91$. Cronbach's alpha was 0.89 for the whole scale of 32 MUIS-A items and $\alpha = 0.58–0.86$ for its four factors.

Conclusions: The Persian version of the MUIS-A has good psychometric properties. It can be used to assess uncertainty in illness in Iranian patients with cancer.

Introduction

Uncertainty is a natural part in the illness experience and can occur at all stages of disease including diagnosis, treatment and prognosis of the disease. Uncertainty in illness occurs when the patient is unable to determine the meaning of illness-related events; therefore, it is considered a major cause of psychological stress to the patients (Mishel, 1997a, 2013), that can leave major impacts on the psychological adaptation and outcomes of the disease (Neville, 2003). Uncertainty in illness is defined as the "inability to determine the meaning of illness-related events when the patient cannot determine the value of events or cannot accurately predict the disease outcome due to the lack of sufficient cues" (Mishel, 1988).

Uncertainty occurs when the individuals cannot form a cognitive framework for understanding their status and interpreting illness related events (Bailey et al., 2011; Mishel, 1990, 2013). Therefore, in most cases, it is accepted as a major stressor that most people seek to reduce and to learn methods to cope with (Neville, 2003). Chronic diseases are a long term and intense source of psychological stress that influences all aspects of patients' life and reduces their daily activities and quality of life (Flemme et al., 2005). Furthermore, various studies have been conducted on chronic patients such as patients with cardiovascular diseases, dialysis, hepatitis, liver transplantation, AIDS and Alzheimer's whose results indicate that uncertainty exists in these patients and can lead to reduction in quality of life and the ability to cope with

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illness (Bailey et al., 2009; Brashers et al., 2004; Flemme et al., 2005; Lasker et al., 2010; Madar and Bar-Tal, 2009; Mauro, 2010; Sodowsky, 2012).

Cancer, as one of the chronic diseases, is the second leading cause of death in the West (Shaha et al., 2008). It is the third cause of death in Iran after heart diseases and car accidents. Based on the recent statistics, the rate of cancer incidence in Iran is about 107 people in 100,000 people (more than 80,000 people considering Iran's 75-million population). It is predicted that with regard to the raise of environmental pollution, increasing the elderly (aging community) and population growth, coming decades will witness an increasing trend in cancer so that it becomes a principle health problem in Iran (Rasaf et al., 2012). Today, advances in cancer diagnosis and treatment technology has led to an increase in patients' survival, and one of the important points in the care of these patients is to notice and improve the quality of life (Stewart et al., 2010b).

From the diagnosis time to the onset of treatment, patients with cancer suffer from high levels of emotional tension (Chen et al., 2010). Due to the complexities of treatment and symptoms, patients experience some levels of uncertainty about illness which originates from problems related to the inability to perform daily activities, inadequate treatment, and concerns about the relapse of the disease (Haisfield-Wolfe et al., 2012). Various studies have been conducted in the field of uncertainty in illness in different types of cancer in other countries (mainly Western countries) (Detprapon et al., 2013; Haisfield-Wolfe et al., 2012; Harrow et al., 2008; Kurita et al., 2013; Parker et al., 2013; Shaha et al., 2008; Sherman and Simonton, 2010; Stewart et al., 2010a; Woodgate and Degner, 2002). The ultimate goal of these studies is to help the patients (or their families) to effectively manage uncertainty so that its negative effect on the patient's psychological adaptation is reduced (Stewart et al., 2010b). Nurses are frequently in contact with the patient, thus they are in the best position to reduce uncertainty in patients by providing information and promoting patients' understanding of health (Madar and Bar-Tal, 2009).

In order to conduct interventions to reduce uncertainty in patients with cancer and to measure effectiveness of these interventions, a scale is needed to measure it. There are various scales for uncertainty assessment in different patients and groups (Lin et al., 2012; Mishel, 1997b; Pai et al., 2007; Stewart et al., 2010a). One of the convenient and widely used scales is Mishel Uncertainty in Illness Scale-Adult form (MUIS-A). MUIS-A is a valid and reliable scale and has been used in several studies. This instrument contains 32 items on Likert scale from 1 (strongly disagree) to 5 (strongly agree) points and occurs in four dimensions of ambiguity, complexity, inconsistency, and unpredictability. The instrument scores between 32 and 160, and earning more points shows greater uncertainty (Bailey et al., 2009; Mishel, 1997b). MUIS-A has a good internal consistency with Coronbach's alpha of 0.87 for the whole instrument, 0.86 for the subscales of ambiguity (13 items), 0.81 for complexity (7 items), 0.78 for inconsistency (7 items), and 0.65 for unpredictability (5 items). This scale has been translated into different languages and its validity and reliability have been studied (Mishel, 1997b).

Despite the importance of the concept of uncertainty in illness in cancer patients, no valid and reliable tool exists in this regard in Iran. Therefore, this study was conducted with the aim of translation and psychometric properties of the Persian Version of "Mishel Uncertainty in Illness Scale" in cancer patients.

Methods

Procedures

The present study is a methodological research (LoBiondo-Wood et al., 2006) through which the MUIS-A scale is translated and its Persian version has been validated among patients with cancer. The study population was all the cancer patients attending the clinics and oncology wards of Imam Khomeini Hospital (Iran's largest cancer center) and Taleghani Hospital in Tehran. Given these centers accept patients from all over the country, results of the study can be better generalized to the society. Convenient sampling was performed in order to achieve a sufficient sample size to conduct a confirmatory factor analysis. The inclusion criteria were willingness to participate in research, cancer diagnosis by the oncologist, being aware of one's illness, being Iranian, the ability to understand and speak Persian, the minimum age of 21 years, and absence of other serious illnesses and no history of serious mental disorders (such as schizophrenia). Type and stage of cancer and treatment type were not the inclusion criteria of this study. Based on these criteria, eventually 420 individuals were chosen.

Scale translation

In this study, translation and validation of the instrument was performed based on the suggested model by Wild et al. (2005). After obtaining written permission from the original designer of the scale, the original scale was translated into Persian by two people fluent in English and Persian. Then the two translations were compared and the final version was prepared with a few modifications. Then, the final translated version was given to two people fluent in both languages of English and Persian (one native English speaker), who were not in contact with the first people to translate it back into English. Then, the back-translation was contrasted by a supervisor with translations of the original scale in terms of similarity of translations, and some minor revisions were made in statements of the Persian version. Afterward, validation process of the translated scale was performed by assessing face and content validity, construct validity (using confirmatory factor analysis), reliability, and internal consistency.

Content validity

In order to examine the content validity index (CVI), the translated scale was given to ten people (a specialist in clinical psychology, an oncologist, two psychiatric nurses, two oncology nursing instructors, four nursing assistant professors with experience in instrument development) to review that and provide their correctional comments. They also investigated and affirmed face validity of the translated scale. Then, the scale was given to 10 patients with cancer to express their idea about simplicity of use, and understandability of words and phrases. The Persian version was finalized without much change in its sentences.

Data collection

To collect the data, after choosing eligible patients and explaining the study objectives and methods, the informed consent was obtained from them. Next, the questionnaire including demographics (age, sex, educational level, marital status, occupation, place of residence, type of illness, type of treatment, time of diagnosis) and MUIS-A scale were given to them to complete. Completion of the questionnaire took about 20–25 min. For illiterate people, the questionnaire was read and patients' answers were marked by the researcher. Investigating validity of the MUIS-A construct and the model fitness was conducted by confirmatory factor analysis (CFA) using LISREL statistical software version 8.5.