



# Sexual function in cervical cancer patients: Psychometric properties and performance of a Chinese version of the Female Sexual Function Index



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## ARTICLE INFO

### Article history:

Received 29 September 2014

Received in revised form

12 June 2015

Accepted 18 June 2015

### Keywords:

Instrument

Scale

Psychometric properties

FSFI

Female sexual function

Chinese

## ABSTRACT

**Purpose:** This study aimed to examine the psychometric properties and performance of a Chinese version of the Female Sexual Function Index (FSFI) among a sample of Chinese women with cervical cancer.

**Methods:** A cross-sectional survey design was used. The respondents included 215 women with cervical cancer in an oncology hospital in China. A translated Chinese version of the FSFI was used to investigate their sexual functioning. Psychometric testing included internal consistency reliability (Cronbach's alpha coefficient and item–total correlations), test–retest reliability, construct validity (principal component analysis via oblique rotation and confirmatory factor analysis), and variability (floor and ceiling effects).

**Results:** The mean score of the total scale was  $20.65 \pm 4.77$ . The Cronbach values were .94 for the total scale, .72–.90 for the domains. Test–retest correlation coefficients over 2–4 weeks were .84 ( $p < .05$ ) for the total scale, .68–.83 for the subscales. Item–total correlation coefficients ranged between .47 and .83 ( $p < .05$ ). A five-factor model was identified via principal component analysis and established by confirmatory factor analysis, including desire/arousal, lubrication, orgasm, satisfaction, and pain. There was no evidence of floor or ceiling effects.

**Conclusions:** With good psychometric properties similar to its original English version, this Chinese version of the FSFI is demonstrated to be a reliable and valid instrument that can be used to assess sexual functioning of women with cervical cancer in China. Future research is still needed to confirm its psychometric properties and performance among a large sample.

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## 1. Introduction

Cervical cancer is seen as the second most common cancer affecting women worldwide, with an estimation of 530 000 new cases and more than 270 000 deaths annually due to this disease (WHO, 2013). Of these deaths, 85% occur in low and middle income

countries, where the disease is the second largest cancer killer of women (WHO, 2013; Cervical Cancer-Free Coalition, 2014). In China, cervical cancer is the most common type of cancer affecting females with an estimated 33 914 deaths each year; the second highest number of women dying annually from the disease globally (Chen et al., 2013; Cervical Cancer-Free Coalition, 2014).

The current treatment for cervical cancer includes surgery, radiotherapy and chemotherapy, depending on how far the cancer has spread (NHS, 2014). These treatments often cause significant physiological and anatomical changes and complications such as shortened vagina, vaginal dryness and dyspareunia, and consequently have an adverse effect on a women's quality of life and her ability to engage in sexual intercourse (Wilmoth and Spinelli, 2000; Reis et al., 2010). Findings of empirical research have shown that

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women with cervical cancer often report less sexual interest, a decrease in sexual activity, dyspareunia, lack of lubrication, and low sexual satisfaction (Bergmark et al., 2002; Donovan et al., 2007; Jeffery et al., 2009; Levin et al., 2010; Lammerink et al., 2012).

Female sexual dysfunction (FSD) is regarded as a group of disorders with physiological and psychological changes that have an adverse impact on a woman's quality of life and interpersonal relationships (American Psychiatric Association & American Psychiatric Association, 2000). FSD is often defined as persistent or recurrent disorders of desire/libido, arousal, pain/discomfort, and inhibited orgasm associated with sexual intercourse (American Psychiatric Association & American Psychiatric Association, 2000; Rosen et al., 2000). Based on the framework of the International Classification of Diseases-10 and DSM-IV: Diagnosis and Statistical Manual of Mental Disorders of the American Psychiatric Association, an international consensus conference panel have expanded the existing classifications of FSD to include psychogenic and organic causes of desire (hypoactive sexual desire disorder and sexual aversion disorder), arousal, orgasmic, and pain disorders (dyspareunia, vaginismus and other sexual pain disorders) (Basson et al., 2001).

Despite the high prevalence of sexual dysfunction among cervical cancer patients, it was not until the last decade that some psychometrically sound measures written in English were developed to assess FSD. Of these, the Female Sexual Function Index (FSFI) is widely used in research (Rosen, 2002; DeRogatis, 2008) and has been translated into many different languages (Berne et al., 2004; Rellini et al., 2005; Pechorro et al., 2012; Wylomanski et al., 2014). The FSFI was originally developed in the USA to assess six domains of FSD, including desire, arousal, lubrication, orgasm, satisfaction, and pain. The scale has also been validated in female survivors of various cancers in the USA and Australia, with good psychometric properties reported (Baser et al., 2012; Bartula and Sherman, 2015). However, there is no reliable evidence that the FSFI is a valid scale to assess sexual functioning of women with cervical cancer in China.

In China, little attention has been paid to FSD mainly because of the Chinese traditional ideology in relation to sex and sexual behaviour. Following a detailed literature search, only one validated questionnaire was found in the Chinese language (Sexual Quality of Life Questionnaire for Women) to assess female sexual functioning (Hu and Hu, 2008). The questionnaire consists of 32 items arranged in six subscales, including satisfaction, communication, anxiety, sexual response, attitude, and self-image. However, the scale, validated with healthy women, assesses only some common domains of sexual dysfunction, limiting its use in cervical cancer patients.

## 2. Aims

This study aimed to examine the psychometric properties and performance of a Chinese version of the FSFI among a sample of cervical cancer patients in mainland China.

## 3. Methods

### 3.1. Design

A cross-sectional survey design was used.

### 3.2. Sample

The study was conducted with a convenience sample of cervical cancer patients in an oncology hospital in Hunan province, China. Participants were approached by nurses who were not part of, but

trained by, the research team. Eligible criteria for participation included: women who were aged 18 years or over, were married or cohabitating, had surgery for cervical cancer at least three months before data collection, were either outpatients attending consultation at a gynaecology department or inpatients receiving radiotherapy and/or chemotherapy, and were native Chinese language speakers.

### 3.3. Data collection

The data were collected between June and December 2013. A study information package was distributed to 289 patients, containing an information sheet, a consent form, and questionnaires. The questionnaires were administered twice 2–4 weeks apart and were self-completed by patients. In total, 284 patients completed both assessments and returned their questionnaires. Of these, 69 respondents had no sexual intercourse in the preceding month, and so their responses were excluded from the analysis. Responses from the remaining 215 respondents were included in the analysis.

### 3.4. Procedures

General guidelines for cross-cultural adaption of measures was followed to translate the FSFI, with the use of multi-step procedures of translation, back translation, expert reviewing, and pilot testing (Sousa and Rojjanasrirat, 2011). First, the English version of the original FSFI was translated into Chinese by two translators independently. Discrepancies were solved by discussion. Second, the Chinese version of the scale was back-translated into English by two other bilingual researchers who were native Chinese speakers fluent in English. Third, a committee of eight bilingual nurses with expertise in research and clinical practice reviewed the original, translated, and back-translated versions to ensure each translated item reflected to the original one. Agreement on the final translation was achieved among committee members. Lastly, the translated scale was pilot tested twice with 10 cervical cancer patients with different educational levels to check their understanding of the scale items and response options. Some amendments were made based on the feedback received. The modified scale was tested again with the same group of patients, and no misunderstanding was found.

### 3.5. Instruments

Two instruments were used for data collection: the FSFI (Chinese version) and a general questionnaire. The general questionnaire was used to collect personal social-demographic data such as age, education, and occupation, as well as clinical data such as stage of cancer and type of therapy.

Originally developed in the English language, the FSFI is a self-reporting multidimensional instrument for assessing FSD (Rosen et al., 2000). The scale was initially validated among a group of women with sexual arousal disorder and a control group of women without this disorder. There are 19 items arranged in six subscales or domains: including two items on desire (questions 1–2), four items on arousal (questions 3–6), four items on lubrication (questions 7–10), three items on orgasm (questions 11–13), three items on satisfaction (questions 14–16), and two items on pain (questions 17–19). The score ranges of individual items are 1–5 for four items (1, 2, 15, and 16) and 0–5 for the rest of the 15 items, with zero indicating no sexual intercourse over the past four weeks. There are six separate scores, one for each domain, as well as an overall score of the total scale. Each subscale has a maximum score of 6 which can be obtained by adding the scores of individual domain items and multiplying the sum by a respective domain

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