Sexual & Reproductive Healthcare 5 (2014) 142–148

Contents lists available at ScienceDirect

Sexual & Reproductive Healthcare

journal homepage: www.srhcjournal.org

Development and psychometric evaluation of a sexual health care knowledge scale for oncology nurses

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ARTICLE INFO

Article history:
Received 12 August 2013
Received in revised form 16 April 2014
Accepted 25 April 2014

Keywords:
Sexual health
Knowledge
Nurse

ABSTRACT

Objective: The purpose of this study was to develop a sexual health care knowledge scale for oncology nurses and to evaluate its psychometric properties using Rasch analysis and the known-groups technique.
Background: Although sexual oncology has become a popular topic and sexual health care is now promoted, there has been a lack of instruments supported by psychometric evaluations to measure nurses' knowledge of sexual health issues.
Methods: The initial 72 items were compiled to form the Sexual Health Care Scale – Knowledge (SHCS-K) for oncology nurses using a literature review and analysis of existing research tools. After a specialist panel verified content validity, the questionnaire was shortened to 58 items. The data were analyzed using a Rasch model to investigate the items with respect to unidimensionality of fit and difficulty and reliability distribution. Discriminant validity was examined using the known-groups technique.
Results: Two items did not fit with the Rasch model. Person and item separation-index ratios were 3.33 and 9.45, respectively, which confirmed that the SHCS-K functioned well. The reliability was good, at 0.99. Significant differences in marital status, levels of education, and participation in SHC training were observed between groups. The final version of the questionnaire consisted of 55 items, with a total score range of 0–55.
Conclusions: The SHCS-K was found to be a valid and reliable measure for evaluating levels of sexual health care knowledge among this sample of oncology nurses.

Introduction

As an essential aspect of quality of life, sexuality is emerging as an important issue for cancer patients and survivors [1]. In light of the importance of sexual oncology, sexual health care (SHC) is currently endorsed as standardized practice in cancer nursing [2,3].

Sexual health issues are a common and important topic for oncology patients and survivors, particularly those with breast, gynecologic, and genitourinary cancers, with sexual dysfunction most prevalent in prostate cancer patients [4,5]. Additionally, patients who undergo chemotherapy often experience infertility problems [6,7]. Furthermore, these changes could persist over time and can be worsened by alterations in body image, fear for one's life, loss of self-esteem, side effects of treatment, and concerns regarding abandonment [1,8,9].

While there has been a recent shift toward promoting SHC in clinical practice [10], it remains a difficult and elusive issue for many health care professionals [11]. Although oncology nurses are in an ideal position to discuss reproductive health with patients [11,12], the sexual, interpersonal, and reproductive late effects of cancer treatment are seldom addressed adequately by nurses [13]. Indeed, nurses are reportedly reluctant to initiate discussions regarding sexual function [14] and have limited knowledge and communication skills related to SHC [2].

A systematic review of the literature revealed that nurses' knowledge deficit has been the main limitation affecting discussing SHC with patients [15]. King et al. [11] reported that nurses require specialized knowledge about SHC procedures, fertility institutes and clinics, resources for patients, and practice guidelines.

With regard to specific types of cancer, Lavin and Hyde [5] reported that oncology nurses lacked awareness of the consequences of surgery and the potential sexual side effects of chemotherapy, such as early menopause and infertility, in women with breast cancer. Quinn [16] also reported that while the nurses were vaguely aware of infertility treatment options for men, such as sperm banking, they

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http://dx.doi.org/10.1016/j.srhc.2014.04.003
1877-5756/

were unaware of what the procedure entailed. Some nurses were unclear about what their role in supporting patients facing sperm banking should encompass [17,18]. Inadequate knowledge was also observed among a sample of Dutch oncology nurses regarding problems and interventions related to lovemaking, intercourse, masturbation, and planning care for such problems via intra- and interprofessional cooperation [19].

SHC is recognized as an integral part of advanced oncology nursing [20], and oncology nurses are expected to provide sexual health counseling in the US and South Korea [21,22]. However, this is contingent upon the basic premise that oncology nurses acquire and maintain current SHC knowledge relevant to oncology nursing practice. Although SHC knowledge alone does not guarantee improved practice, it is an important contributory factor in the practice of SHC. It is therefore important for health professionals to acquire adequate knowledge in order to provide SHC.

To date, there have been no studies evaluating SHC knowledge among oncology nurses using a valid and reliable scale. The literature reveals one instrument that measures nurses' sexual health knowledge related to sperm banking before cancer treatment [18], but this instrument is limited as it lacked pilot testing and only reported face validity for items generated through an exit questionnaire. The widely used Sex Knowledge and Attitude Test [23] includes sexual knowledge items and has been used with nurses and medical students [24,25]. However, as it was developed as a means of evaluating students enrolled in human sexuality courses, it is limited to knowledge concerning specific sexual behaviors and does not sufficiently reflect nursing practice.

The availability of an instrument supported by psychometric evaluation may enable nurses to assess their sexual knowledge levels and to facilitate SHC provision for cancer patients and survivors. It could also assist in highlighting practical issues regarding the development of educational programs aimed at enhancing SHC knowledge, in addition to examining the effects of educational interventions.

As a modern psychometric approach, Rasch modeling has numerous advantages compared with the classical test theory approach. Rasch analysis is superior because it can provide a more comprehensive understanding of the underlying latent structure [26] of a scale and is less dependent upon the sample. Therefore, the purpose of this study was to develop an SHC knowledge scale and to evaluate its psychometric properties using Rasch analysis and the known-groups technique.

Instrument development

Literature review and initial item development

The initial item pool was based on a literature review and analysis of existing research tools. As SHC knowledge was conceptualized as knowledge that enables nurses to ensure the sexual health of their patients, the Permission, Limited Information, Specific Suggestion, and Intensive Therapy (PLSSIT) model, typically used to assess and manage patients' sexual concerns, was consulted [27]. We reviewed specific knowledge related to changes in sexual function and the impact of cancer treatment following cancer diagnosis for each level of the PLSSIT: permission, limited information, specific suggestion, and intensive therapy.

The overall content of the SHC knowledge instrument was framed around the four categories of the World Health Organization's (WHO) definition of sexual health as "a state of physical, emotional, mental, and social well-being in relation to sexuality" [28]. This broad concept was adapted because general sexual health and the impact of cancer and its treatment are complex and holistic issues [2,29].

In a critical review study, deficits in SHC knowledge were classified as an inability to provide information, insufficient experience, and poor sexual communication skills [15]. Communication skills and referral are integral to providing SHC knowledge using the PLSSIT model [29,30]. Based on the literature review, the initial item pool was grouped into five conceptual domains: physical, psychological, social, communication skills, and referring and recording.

Our literature review revealed specific areas of knowledge that undergo transition and therefore require nurses' attention. These included knowledge of sexual function, the side effects of cancer treatment (i.e., nausea and fatigue), fertility problems, and management of ostomy care. With regard to specific types of cancer, Lavin and Hyde [5] reported that oncology nurses lacked awareness of the consequences of surgery and the potential sexual side effects of chemotherapy such as early menopause and infertility in women with breast cancer.

With regard to the physical side effects of cancer treatment, the oncology nurse's role in sexual counseling is to guide patients toward solutions to their problems. For example, nurses should discuss methods of reducing the effect of patients' ostomies on sexual interactions, such as ensuring that the appliance fits well and emptying the bag before sex [31]. This practical information should be supported by the provision of detailed information based on the type of ostomy used [31].

Fertility preservation counseling is often a high priority for newly diagnosed cancer patients [11]. Some nurses are unclear about the nature of their roles with respect to supporting patients facing sperm banking [17,18], and a lack of knowledge regarding sperm banking could influence the performance of SHC [18]. Nonetheless, options for the preservation of fertility in both women and men undergoing treatment for cancer should be considered [32]. In a qualitative study of young cancer survivors, information on fertility preservation options and the impact of treatment on fertility was offered, even if patients did not express related concerns at diagnosis [33].

There are also psychological effects of cancer treatment that need to be addressed. For example, a person with a stoma is likely to suffer profound threats to his/her sense of physical integrity and self-concept, and this change in body image often culminates in serious sexual dysfunction [31]. Types of psychosocial sexual dysfunction include poor body image, stress, avoidance, and fear of rejection from a partner [34]. In fact, Korean women with breast cancer commonly feel shame and refuse to expose their breasts, even to their husbands [35]. It is critical for oncology nurses to understand such psychological issues in order to help patients to deal with the fear, denial, anger, sorrow, and depression that arise during their illness [1,9,36].

These negative psychosocial characteristics and emotions occur throughout the entire course of the disease, from cancer diagnosis to treatment, recurrence and transference, and termination of treatment [1,9,36]. In each of these stages, patients experience sexual changes that affect their well-being.

Communication skills and referring and recording should be emphasized in the provision of SHC [29,30].

Nurses' knowledge of sperm banking and cancer treatment [18] were partially adapted from a review of existing literature to form the preliminary items on male infertility.

The items were discussed and evaluated according to the literature review. Further input was sought from three nursing professors with expertise in sexual health to identify areas needing supplementation, and the questionnaire was reviewed to achieve clarity and brevity. The pool was narrowed to 72 candidate items in five domains of SHC knowledge.

A sample of initial items included "lack of sexual activity due to cancer treatment could make patients or their partners feel rejected," "female cancer patients are advised to practice