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Factors influencing comfort level in head and neck neoplasm patients receiving radiotherapy

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ABSTRACT

Objective: To determine factors that influence comfort in head and neck neoplasm patients receiving radiotherapy.

Methods: In total, 200 head and neck neoplasm patients receiving radiotherapy were recruited from three tertiary first class hospitals. They were assessed by Radiotherapy Comfort Questionnaire for patients with head and neck neoplasm, Social Support Scale, and Medical Coping Modes Questionnaire.

Results: The total score of comfort was 60.54 ± 8.32. Multiple linear regression analysis indicated that number of radiation treatments, family accompaniment, educational level, resignation coping mode, complications due to diabetes, accompanying chemotherapy, and the utilization of social support significantly influenced comfort level ($p < 0.05$). Among these, number of radiation treatments, complications due to diabetes, accompanying chemotherapy, and resignation coping were negative factors.

Conclusion: Encouraging utilization of social support systems and a positive coping mode is important for increasing comfort level in head and neck neoplasm patients during radiotherapy. Nurses should pay particular attention to those patients during later stages of radiotherapy or chemotherapy, with diabetes, without family accompaniment, and with lower education level.

1. Introduction

Comfort is a basic human need, and at the very core of practicing nursing is the assessment of patient comfort and the giving of comfort measures [1,2]. Since the anatomical structure around the head and neck is so complex, patients with head and neck neoplasms often require comfort needs that extend beyond pain management. Head and neck tumors are mainly poorly differentiated squamous cell carcinomas,

which are sensitive to radiation therapy. Although radiotherapy is considered the preferred treatment in these cases, radiation therapy can cause serious side effects, including dysphagia, xerostomia, pain, fatigue, altered taste, mucositis, skin changes, and weight loss [3]. In addition, these patients are often uncertain about the effectiveness of an unfamiliar treatment and have psychological and behavioral problems such as anxiety, depression, use of negative coping styles, and poor self-care [4,5]. Comfort needs may include physical fitness, social and spiritual support, comfortable environment, correction of self-esteem and self-concept, and giving life meaningful value. Given the level of physical discomfort in head and neck cancer patients, it is necessary to improve comfort for these patients during radiotherapy. Therefore, we investigated the level and influence of various factors on comfort in head and neck neoplasm patients receiving radiotherapy.

2. Methods

2.1. Participants

A cross-sectional descriptive design was adopted for this study. From July to December 2012, 200 head and neck neoplasm patients receiving radiotherapy were recruited from three tertiary first class hospitals in Zhejiang Province. Inclusion criteria included the following: a. head and neck neoplasm diagnosis; b. receiving radiotherapy; c. primary school education or above; and d. voluntary participation in the study. Those who had difficulty communicating, had mental or personal disorders, or had poor and serious condition were excluded.

2.2. Instrument

The questionnaire used for data collection consisted of four parts: (1) socio-demographic characteristics; (2) Radiotherapy Comfort Questionnaire for patients with head and neck neoplasm; (3) Social Support Scale; and (4) Medical Coping Modes Questionnaire.

2.2.1. Socio-demographic characteristics
Socio-demographic information regarding personal details such as gender, age, educational background, marital status, occupation, family income, health-payment types, without or with family accompanying, and religious beliefs were recorded. Disease and treatment related information such as diagnosis, neoplasm stage, pathologic type, number of radiation treatments, presence of complications due to diabetes, and accompanying chemotherapy were also included.

2.2.2. Radiotherapy Comfort Questionnaire for Patients with head and neck neoplasm
The Radiotherapy Comfort Questionnaire (RCQ) is based on the Kolcaba's comfort theory and was developed and validated in a pilot study of 180 neck neoplasm patients receiving radiotherapy by the author [6]. The RCQ consists of 29 items grouped into four factors labeled as physical comfort (12 items), psychological comfort (five items), sociocultural comfort (six items), and environmental comfort (six items). The content validity was 0.885 and Cronbach's α was 0.851. The Cronbach's α of the four factors was 0.917, 0.634, 0.635, and 0.778, respectively. Each item was assessed using a five-point Likert scale, ranging from 1 ("Strongly Agree") to 5 ("Strongly Disagree"). The total scores ranged from 29 to 145, where a higher score indicated a higher degree of comfort.

2.2.3. Social support scale
The social support scale was developed and modified by Xiao Shuiyuan [7]. It contains three subscales with 10 items, including objective support (three items), subjective support (four items), and utilization of social support (three items). A higher score indicated more social support. The Cronbach's α of the scale ranged from 0.89 to 0.94. The test-retest reliability coefficient was 0.92 ($p < 0.05$).

2.2.4. Medical Coping Modes Questionnaire
Medical Coping Modes Questionnaire (MCMQ) [8] is a 19-item questionnaire designed to assess three illness-related coping strategies: confrontation, avoidance, and acceptance-resignation. Items were answered on a four-point continuum ranging from 1 (never) to 4 (very often). Regarding the psychometric properties of the MCMQ, Feifel et al. [8] and others [9] reported moderate to high Cronbach's α coefficients (0.56—0.74). Varimax rotated component analysis results ranged from 0.559 to 0.803 [10], which are consistent with an acceptable value for validity.

2.3. Data collection

Patients were informed of the purpose of this study. In addition, the researcher emphasized that participation in the study was voluntary and confidentiality and anonymity was guaranteed. Participants completed the questionnaire in approximately 25—30 minutes. The questionnaire was checked and collected on the spot to avoid missing data. For those who were unable to complete the questionnaire, the content of the questionnaire was read aloud and the patient's answers were recorded by the collector. All 200 participants returned the survey (response rate was 100%), and all were valid for analysis.

2.4. Statistical analysis

The data were analyzed using SPSS Version 17.0 (Chicago, IL, USA). Descriptive statistics were used to describe patient characteristics. Differences between and among groups within different characteristics were calculated using an independent samples t-test and one-way analysis of variance (ANOVA). Pearson or Spearman correlational analysis was used to determine the correlation between social support and MCMQ score with overall comfort level. Multiple regression analysis was used to identify factors that influence comfort in head and neck neoplasm patients receiving radiotherapy.