

Developing a Patient Education Method -The e-Knowledge Test with Feedback

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Abstract. Breast cancer and its treatment radiotherapy, have impact on woman's psychosocial and physical well-being causing disruption to quality of life. Because of the positive effects of knowledge on quality of life there is a challenge to develop effective education methods. Due to the growing use of internet among breast cancer patients the development should be focused on e-education. An e-education method, the e-Knowledge Test of radiotherapy with feedback for breast cancer patients (e-KTRT-BC) was planned and piloted. The content of it based on literature of breast cancer patients' knowledge needs of radiotherapy and structured through aspects of empowerment as a nursing intervention. The face validity study that was conducted via email revealed that the content of e-KTRC-BC was easy to use and understand. The e-KTRT-BC could be used as an e-education method to meet the breast cancer patients' knowledge needs. Evaluating the empowering effect of patient e-education with feedback is important for further development of e-education methods.

Keywords. Breast cancer, patient education method, knowledge test

Introduction

There were 28,000 new cases of cancer in Finland in 2009 and 4,475 of them were breast cancer patients. Almost half of the cancer patients receive curative radiotherapy (RT) at some stage of the disease [1]. Patient education is an essential part of care, because of psychosocial and physical side effects of RT [2].

The internet is beginning to be more widely used as a method in cancer patient education. Computer based education programs may have positive effect on physical and psychosocial symptoms of breast cancer consequently improving quality of life [3]. However, the knowledge needs of the patients are not always met.

Earlier studies have reported the experience of receiving RT and also identified knowledge needs. Information needs and sources of information among cancer patients during their pathway after diagnosis are also widely researched [4]. However, there is lack of appropriate patient e-education methods to meet breast cancer patients knowledge needs of RT.

This study was based on the idea of patient education as an empowering knowledge [5]. The empowering education reduces the worries of patients during the

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treatment process and they have ability to participate in their care [6]. Patients' knowledge needs are structured through aspects of empowerment as a nursing intervention such as the biophysiological (e.g. knowledge about illness, treatment, complications), functional (e.g. exercise needs, nutrition, body hygiene), experiential (e.g. emotions), ethical (e.g. participation in decision-making, rights), social (e.g. families, patient unions) and financial (e.g. financial benefits) dimensions of empowering knowledge. According to earlier studies RT patients expected knowledge of RT of all the knowledge areas that have been shown to empower the patient [7].

The test is an effective instrument to measure knowledge level and do the evaluation of knowledge needs. The provision of feedback is used to improve knowledge level. The aim of this study is to develop an empowering e-Knowledge Test (e-KTRT-BC) with feedback.

1. Methods

The development process of the e-KTRT-BC with feedback included constructing initial items, assessing content validity, pilot-testing the developed patient e-education method and face validity of items. The initial items based on the literature review of the knowledge needs of breast cancer patients relating to RT. The feedback is based on the comprehensive literature of RT.

The content validity was established. The first version of 21 items was reviewed by two panels: a sample of six professionals of one university hospital cancer polyclinic and RT (included one radiation therapist, one registered nurse, one breast cancer nurse, one medical oncologist, one radiation oncologist and one physicist) and a sample of five breast cancer patients of support group in South-Western cancer society. Based on their comments the second version of 36 items was written. The professionals were asked to review the revised test. After omitted and reworded items the e-KTRT-BC consisted of 28 items. A content validity index (CVI) was computed indicating high level of agreement.

The developed patient e-education method was piloted by ten breast cancer patients to ensure the adequacy of the method. The face validity was conducted by asking them to complete the e-KTRT-BC with feedback and assess the content applicability, readability and clarity.

2. Results

The patient education is to give opportunity to activate learning process that promotes empowerment. The patient education method consisted of three steps. In the first step, the overall structure of the method was explained via email, and the participant opened the link. The second step provided proposition of RT, and the participant answered between true and false options. The third step gives feedback offering right answer and included knowledge of RT.

The themes of the propositions included two areas that were most frequently mentioned in literature review [8, 9, 10]. Biophysiological area consisted of RT process e.g. "The purpose of radiotherapy is to enhance the body's radioactivity" and possible side-effects e.g. "Side effects are restrained to the treated area". Functional area

consisted of side-effects and self-care e.g. "The treated area is washed with soap" and life style and RT e.g. "Smoking decreases the effect of radiotherapy".

The results indicated that patients in the pilot study could comprehend the e-KTRT-BC with feedback. Every patient answered easily to propositions of RT. After answered to proposition patients were easily read and understood the correct answer and feedback.

3. Discussion

The e-KTRT-BC with feedback, developed in this study, could be used to educate breast cancer patients according to their knowledge needs. The content of the e-education method is based on the former studies and widely used in patient education of RT care. Furthermore, a pilot study of ten breast cancer patients was done and the education method was evaluated as comprehensive and easy to use. It is an essential step to meet knowledge needs and improve the quality of life of breast cancer patients. Testing and evaluating empowering effect of patient education according to their knowledge base diagnosis is needed for further development of e-education methods.

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