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The influence of a department's psychosocial climate and treatment environment on cancer patients' anxiety during radiotherapy

Tara Mullaney^{a,*,1}, Kristina Olausson^{b,c,1}, Lena Sharp^{d,e}, Björn Zackrisson^b, David Edvardsson^{f,g}, Tufve Nyholm^b

^a Umeå University, Institute of Design, SE 901 87 Umeå, Sweden

^b Umeå University, Department of Radiation Sciences, SE 901 87 Umeå, Sweden

^c Karolinska University Hospital, Division of Medicine and Surgery 1, SE 171 76 Stockholm, Sweden

^d Karolinska Institute, Department of Learning, Informatics, Management and Ethics, SE 171 77 Stockholm, Sweden

^e Regional Cancer Centre, Stockholm Gotland, Box 6909, SE 102 39 Stockholm, Sweden

^f School of Nursing and Midwifery, La Trobe University, Melbourne, Australia

^g Umeå University, Department of Nursing, SE 901 87 Umeå, Sweden

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ABSTRACT

Purpose: The objective of this study is to determine whether there is a relationship between cancer patients' perceptions of the person-centeredness of their treatment experience and their anxiety levels during treatment.

Method: A questionnaire was distributed to adult cancer patients going through external beam radiotherapy (RT) with curative intent at a university hospital in Sweden (n = 892), which included two surveys, the State Trait Anxiety Inventory–state specific questions (STAI-S), and the Patient-centered Climate Questionnaire (PCQ) and additional treatment-specific questions. Eligible patients were provided with the questionnaire on their seventh day of RT by an RT-nurse.

Results: Statistical analysis showed a significant negative relationship between STAI-S scores and PCQ scores, and a significant positive relationship between the Treatment Environment questions and the STAI-S scores. Multivariate regression modeling found the PCQ subscale of safety to have the strongest negative association with STAI-S scores, showing that a climate of safety can significantly decrease patient situational anxiety levels. On the other hand, difficulty tolerating the overall treatment experience, worry about the treatment equipment, or feelings of isolation or claustrophobia within the treatment room all significantly factor into increases in patient-reported situational anxiety levels.

Conclusion: Both the treatment environment and the psychosocial climate of the RT clinic significantly impact cancer patient state anxiety levels. These findings suggest that actively employing a person-centered approach during RT, and designing the treatment environment to be more attentive to the patient experience can both play a significant role in decreasing patient situational anxiety during treatment.

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1. Introduction

Person-centered care (PCC) has become a powerful concept in healthcare and nursing over the past few years, and is currently regarded as the best approach to ensure high quality of care (Browall et al., 2013; Edvardsson et al., 2008; McCormack et al.,

2010). Environmental aspects, both physical and psychosocial, seem to have a strong impact on patients' well-being and it is seen as important to create environments in hospitals that support patients' needs (Browall et al., 2013). Radiotherapy (RT) can be an overwhelming experience and cause worry in patients. In a recent qualitative study head and neck cancer patients were interviewed about their RT experiences. The participants describe being left alone in the treatment room during the RT session, and that this was an important factor in triggering anxiety in the patient and brought their cancer diagnosis to the forefront of their thoughts during this time (Egestad, 2013).

* Corresponding author.

E-mail address: tara.mullaney@umu.se (T. Mullaney).

¹ Joint first authorship.

Despite the widely held belief that providing PCC is important, there is a lack of consensus around the definition of this term, due to the diverse multidimensional nature of this model (Price, 2006), which allows for a wide variety of interpretations (Leplege et al., 2007). However, treating patients as individuals, with this perspective embedded within the center of all care processes is the most common description. Many different terms and factors are used to describe person-centeredness. These often include the patient's need for more holistic aspects of care, such as physical, social, psychological, spiritual and physical environment support (Berg et al., 2005; Browall et al., 2013; Edvardsson et al., 2008; McCormack et al., 2010). Given the profound and extensive impact of RT for cancer on many aspects of a person's wellbeing, the principles of PCC are likely to be ideally suited to the RT setting (Rose and Yates, 2013).

To assess and measure the extent to which patients experience the psychosocial climate as being person-centered, a specific tool, the Person-centered Climate Questionnaire (PCQ), has been created (Edvardsson et al., 2008). The questionnaire was developed based upon a theoretical framework consisting of three dimensions that together construct a person-centered psychosocial environment: a climate of safety; a climate of everydayness and a climate of hospitality. The tool has shown to be a valid and reliable tool for assessing the person-centered psychosocial climate within different healthcare environments (Bergland et al., 2012; Edvardsson et al., 2008).

Anxiety is a common psychological response to cancer diagnosis and treatment. It has also historically been under-diagnosed and under-treated in cancer care. Recently however, anxiety is gaining more attention as researchers seek ways to improve quality of life during treatment and survivorship (Hess and Chen, 2014). Research has shown that anxiety can affect patients undergoing RT at varying rates throughout the course of their disease and treatment, impacting anywhere from 10% to 40% of the patient population (Stiegelis et al., 2004), and it has been directly linked to a decrease in patient quality of life (So et al., 2010).

Research has also shown that a large proportion of patients undergoing RT experience situational anxiety, caused by both physical and psychosocial factors (Clover et al., 2011; Delaney et al., 2005; Eton et al., 2001). Patient anxiety levels tend to be high before the initiation of the RT, however, they continue to remain high during treatment and at the end of the RT period (Chen et al., 2009; Stiegelis et al., 2004).

Triggers of patient anxiety can range from a lack of information about the treatment procedures, concern over the treatment equipment and environment, and fear of side-effects and treatment outcome (Halkett et al., 2010; Shimotsu et al., 2010). Other researchers have concluded that there are ways to make the RT processes less stressful, from altering the treatment environment to providing educational resources and teaching coping techniques to patients (Chen et al., 2013; Harrison et al., 2001; Mystakidou et al., 2013).

The State Trait Anxiety Inventory (STAI) is questionnaire that was developed to study the expression of these different types of anxiety within individuals (Spielberger et al., 1970), and is a widely accepted self-reporting tool to measure anxiety levels in cancer patients (Andersen and Tewfik, 1985; Dodd and Ahmed, 1987; Schreier and Williams, 2004; Hoff and Haaga, 2005). The Hospital Anxiety and Depression scale (HADS) is used in some papers focused on cancer patients undergoing RT (Dunn et al., 2012), but the STAI-questionnaire seems to be the most frequently used to quantify the levels of anxiety.

While there are many papers reporting on anxiety levels in cancer patients, few look closely at the relationship between patients' perceptions of their treatment experience and their reported

levels of anxiety during this process. The aim of this paper is to explore the relationship between curative cancer patients' state anxiety levels and their perceptions of both the psychosocial climate and the treatment environment of the RT department.

2. Patients and methods

2.1. Setting and design

This study was conducted as part of a larger study carried out at an out-patient RT-unit at Umeå University Hospital, Sweden. The RT-unit is a part of the department of Oncology with approximately 160–170 patients are being treated every day, for all types of cancer. The data in this study is a part of a larger study, described below. The larger study was designed to assess the current patient experience of RT, and then test an intervention within this environment for its impact on the patient experience (Mullaney et al., 2011). Ethical approval for the study was obtained from the Regional Ethical Review Board (Dnr 2010-371-31M).

Patient recruitment was carried out over a two year period (2011–2013). Eligible patients were asked to participate in the study on their seventh day of RT, at the end of their daily treatment session, by the RT nurses at the treatment room. The patients were informed that the study was being conducted to better understand their experience and improve the RT department. If they consented to participate in the study, they were provided with the questionnaire and instructed to complete this at home. A postbox was located in the RT departments waiting room, where the questionnaires could be returned on following day of treatment.

The total questionnaire response rate was 85% (n = 1268) for the larger study, which contains responses from patients that experienced either the control or intervention environment. This study examines the 892 control patients that submitted responses to the questionnaire. The large study involved a visual and sound intervention within one of the five RT treatment rooms at the unit and surveys were gathered from all five treatment rooms both before and after the intervention. All of the patients in the larger study, who did not experience the intervention, were included in this current study.

2.2. Participants

Adult outpatients with any type of cancer scheduled to receive curative external-beam RT were eligible to participate. Exclusion criteria were: (a) receiving palliative RT; (b) receiving short-duration RT of 7 days or less; (c) incapacitating psychosis or cognitive disabilities, which was assessed by the RT-nurses (a general assessment without any assessment tool since the patients were well known to the RT nurses at this point) in daily contact with the patients; (d) younger than 18 years of age; and (e) insufficient Swedish language skills.

2.3. Measures

Data on demographic characteristics of respondents, the psychosocial climate of the RT department, experience of the treatment environment, and self-reported state anxiety levels were collected. Two previously validated questionnaires were used: the State-Trait Anxiety Inventory (STAI) (Spielberger et al., 1970), and the Person-centered Climate Questionnaire (Edvardsson et al., 2008). Additional questions about the patients' experiences of the treatment environment were formulated based on our previous qualitative research into the RT patient experience (Mullaney et al., 2012), and other research linking patient anxiety to treatment-

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