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Non-pharmacological interventions used by cancer patients during chemotherapy in Turkey

Gulbeyaz Can [a,*], Ozgul Erol [b], Adnan Aydiner [c], Erkan Topuz [c]

[a] Istanbul University Florence Nightingale School of Nursing, Abide-i Hurriyet Cad., Caglayan, 34387 Istanbul, Turkey
[b] Trakya University Faculty of Health Sciences, Edirne, Turkey
[c] Istanbul University Institute of Oncology, Istanbul, Turkey

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A B S T R A C T

Purpose: Although there are many non-pharmacological practices being recommended for symptom management, most patients prefer to use pharmacological interventions. This study assesses the non-pharmacological interventions used by cancer patients for symptom management during chemotherapy and the factors affecting its use.
Method: This study was conducted at the Istanbul University Institute of Oncology, Turkey, with 202 patients. Personal characteristics, illness-related characteristics, symptom severity and non-pharmacological interventions used by the patients were assessed by using Patient Description Form, ECOG and Nightingale Symptom Assessment Scale.
Results: Most of the patients in this study were living in Istanbul, 58.4% were women, 78.7% were married and their mean age was 48.82 ± 1.44. Most of the patients experienced different symptoms related to chemotherapy, but only a small number of patients preferred to use and benefited from the non-pharmacological interventions in their symptom management. There were different factors affecting the well-being of the patients, but only being young was found to be an important variable in the use of psychological interventions (OR 3.06 [95% CI 1.17–7.96]).
Conclusions: Physicians remain the central figure in the treatment of cancer patients, so oncologists and oncology nurses should be more proactive and innovative in their patient care, education, and counseling to maximize the use of non-pharmacological interventions that may be helpful in symptom management. Further research evaluating the use and effectiveness of non-pharmacological interventions on symptom management in cancer patients is needed.

Introduction

Cancer is a major burden of disease worldwide, and is perceived as a frightening and untreatable disease that implies death. Each year, ten million people are diagnosed with cancer around the world, and it is estimated that in 2020, this number will reach 15 million (Can et al., 2009; Max and Yu, 2006; Turgay et al., 2008).

Depending on the type and stage of disease, patients are treated with different treatments (Max and Yu, 2006; WHO, 2007). However, the literature shows that such treatments and the disease itself may cause different symptoms such as anxiety, fatigue, nausea/vomiting, anorexia, pain and constipation which decrease the physical functioning and quality of life (QoL) of the cancer patients (Can et al., 2009; Deng et al., 2007; Solà et al., 2004). Most of the symptoms are multidimensional, complex, and reflect changes in the bio-psychosocial functioning of the patients. Therefore, the symptom management is a very important issue for cancer patients and a vital aspect of the oncology nursing practice (Barsevick, 2007). Generally pharmacological interventions are recommended for symptom management, because most of the studies have shown evidence of effectiveness. However, there are many non-pharmacological interventions initiated independently by cancer patients being recommended for prevention, controlling or treating disease or therapy related symptoms in the past few years (Deng et al., 2007; Lotfi-Jam et al., 2008).

In different studies it has been shown that the incidence or severity of nausea or vomiting was significantly lower in patients who attended an exercise program (Mock et al., 1994), who listened to music (Ezzone et al., 1998) and did relaxation exercises (Molassiotis et al., 2002; Vasterling et al., 1993; Billhult et al., 2007;

* Corresponding author. Tel.: +90 532 6264969; fax: +90 212 2244990.
E-mail address: gulbeyaz@istanbul.edu.tr (G. Can).

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Molassiotis, 2000). Acupuncture, acupressure, guided imagery, psycho-educational support and dietary changes can be recommended as non-pharmacological interventions in the management of chemotherapy-related nausea and vomiting (Ezzo et al., 2006; Garrett et al., 2003; Schwartzberg, 2007; Tipton et al., 2007). Vasterling et al. (1993) who investigated the effect of cognitive distraction on nausea in adults with mixed cancer types undergoing chemotherapy suggest that the severity of nausea was significantly lower in the intervention patients at the first and fourth treatments ($p = 0.05$).

Fatigue is a multidimensional concept that affects patients in different ways. Many integrative non-pharmacological behavioral interventions, including exercise, psychosocial interventions, and other integrative therapies used have been effective in the management of fatigue (Mustian et al., 2007; NCCN, 2009). In studies by Yates et al. (2005) and Ream et al. (2006) it has been shown that a psycho-educational program delivered by a nurse significantly lowered the incidence, severity and distress related to fatigue. The severity of fatigue also was found to be significantly lower in patients who were doing 30 min of breathing exercises at the 6 week follow up (Kim and Kim, 2005).

Pain is often a poorly-controlled-symptom in cancer patients. Three non-pharmacological strategies were found to be effective in reducing pain caused by cancer: patient psycho-education, supportive psychotherapy, and cognitive-behavioral interventions (Meyer and Mark, 1995). Mind-body modalities are recommended as part of a multidisciplinary approach to reduce chronic pain and improve quality of life (Deng et al., 2007). Listening to music reduces pain intensity levels and opioid requirements, but the magnitude of these benefits is small and, therefore, its clinical importance is unclear (Cepeda et al., 2006).

The incidence of oral mucositis is high in radiation therapy or after bone marrow transplantation and moderate in patients receiving myelosuppressive chemotherapy for solid tumors (Peterson, 2006) although different interventions such as Chinese medicine, cryotherapy, oral care protocols and honey were found to be effective in the prevention of oral mucositis (Worthington et al., 2007). Similar effectiveness, however, was not shown in the treatment of the mucositis (Clarkson et al., 2007).

Probiotics can also be used as non-pharmacological interventions in the prevention of radiation-induced diarrhea (Delia et al., 2007).

The cognitive-behavioral therapy approaches provided in an individual format can assist cancer survivors in reducing emotional distress (anxiety, depression) and improving quality of life (Osborn et al., 2006).

Despite the evidence supporting the benefits of the use of some non-pharmacological interventions, further research is needed to examine their 'dose' (frequency and duration) and combinations of psychosocial interventions and medication with diverse cancer populations (Deng et al., 2007).

Research questions

To our knowledge, there is no study determining the non-pharmacological interventions used by Turkish cancer patients for symptom management during chemotherapy. The following questions were developed:

1. What kind of non-pharmacological interventions are used by Turkish cancer patients for symptom management during chemotherapy?
2. Is there a relationship between symptom experience and non-pharmacological interventions use?
3. Which personal and illness-related variables predict the symptom experience and non-pharmacological interventions use in Turkish cancer patients?

Materials and methods

Research setting and sample

This descriptive, correlational, cross-sectional study was conducted at the Istanbul University Institute of Oncology, Turkey. Criteria for the inclusion of patients who volunteered to take part in the research were as follows: patients diagnosed with any type of cancer who are receiving only chemotherapy, older than 18 years of age; able to read, write, and communicate in Turkish; having a primary school education; and consenting to participate in the study. Eastern Cooperative Oncology Group performance status (ECOG PS) of 0, 1 or 2 was required for study participation. The patients who had received chemotherapy for the first time, had a social or psychological state that would interfere with participation in the study, or did not want to participate in the study after it was explained to them, were not included in the study. The sample size was computed statistically depending on the annual patient number ($N = 1650$) reflecting inclusion criteria and the acceptable value for α and β was set as 0.05 and 0.10, respectively. The required sample was determined to be 200. In our study 202 patients were included. This study was approved by the administration of Istanbul University, Oncology Institute. The patients were informed and a verbal consent was obtained.

Data collection

The Patient Characteristics Form developed by the researchers was used in the assessment of patients' personal and illness-related characteristics. Performance Status of the patients was assessed with the Eastern Cooperative Oncology Group (ECOG) Performance Status (Oken et al., 1982). The Nightingale Symptom Assessment Scale (N-SAS) (Can and Aydiner, 2009) was used to determine the treatment-related side effects and the non-pharmacological interventions used by the patients in the symptom management. Patients who were well enough completed the questionnaires themselves; for those who were too weak to do so, a friend or relative was asked to assist by verbally presenting the questions to the patient and completing the forms according to the patient's responses.

The Patient Characteristics Form consisted of 17 items that addressed the demographic data (e.g., age, income level, employment status) and the disease and treatment characteristics at the time of the initial diagnosis (e.g., surgical therapy, radiation therapy, chemotherapy).

The Eastern Cooperative Oncology Group (ECOG) Performance Status (Oken et al., 1982) scale assessed the performance status of cancer patients using six possible numeric responses: "0" – fully active, able to carry on all pre-disease performance without restriction, "1" – restricted in physically strenuous activity but ambulatory and able to carry out work of a light or sedentary nature, e.g., light house work, office work, "2" – Ambulatory and capable of all self care but unable to carry out any work activities, "3" – Capable of only limited self care, confined to bed or chair more than 50% of waking hours, "4" – Completely disabled, cannot carry on any self-care, totally confined to bed or chair and "5" – Dead.

The Nightingale Symptom Assessment Scale (N-SAS) developed by Can and Aydiner (2009) is a Likert type quality of life scale that includes 38 items that address the symptom experience of cancer patients during chemotherapy. In this scale, the severity of symptom experience was quantified using five possible numeric