



Research Article

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INVESTIGATION OF THE EFFECT OF CANCER NEEDS OF OUTPATIENT CHEMOTHERAPY PATIENTS ON THEIR HEALTH PERCEPTIONS: A CROSS-SECTIONAL STUDY

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Abstract

Objectives: Cancer, a health problem with an increasing incidence, poses many financial and moral difficulties to the patient and his family. An individual diagnosed with cancer and undergoing chemotherapy has increased care needs throughout the course of the disease in many areas. It is important to consider it holistically to meet the needs of patients. This study was conducted to examine the effects of the cancer needs of patients receiving ambulatory chemotherapy on their health perceptions.

Materials and Methods: A cross-sectional study was conducted with 384 outpatient chemotherapy patients. Data were collected with a sociodemographic information form, the Cancer Needs Questionnaire-Short Form, and the Perception of Health Status Scale.

Results: The mean scores of the study group were 130 ± 12.38 on the total "Cancer Needs Questionnaire" and 2.92 ± 0.68 on the total "Perception of Health Status Scale". A high-level and very significant positive correlation was found between the total scores of both scales ($p \leq 0.05$). It was determined that the cancer needs of the study group highly significantly predicted their health perceptions ($p = 0.000$).

Conclusion: The findings of this study showed that patients with cancer receiving ambulatory chemotherapy had a high level of cancer needs and poor health perceptions and that these two characteristics showed a high, positive, and very significant relationship.

Keywords: Cancer, chemotherapy, cancer need, health perception, patient.

Introduction

Cancer, known as the uncontrollable division of cells in a certain part of the body and its spread into surrounding tissues, is a chronic disease that is compelling for patients and their family members in terms of biopsychosocial and economic aspects and can result in death in some cases.¹ Despite the rapid developments in diagnosis and treatment, cancer ranks first among the diseases that threaten individuals' lives.² According to the International Agency for Research on Cancer 2022 data, an estimated 19.9 million new cancer cases and approximately 10 million cancer deaths occurred globally. In addition, IARC foresees the number of cancer cases as 35.3 million people in 2050.³ In Turkey, the annual number of new cancer cases in 2022 was 240,013 and the number of cancer-related deaths was reported as 129,672.⁴ Cancer, which is a health problem with an increasing incidence, creates financial and moral difficulties for patients and their families and even causes many social, psychological, economic, and physical losses.⁵

Chemotherapy is a treatment method that aims to kill cells that proliferate uncontrollably in the individual's body and makes up an important part of cancer treatment.⁶ It can be administered more than once, depending on the patient's response to treatment.^{6,7} Chemotherapeutic agents used in chemotherapy treatment can also damage healthy cells because they cannot choose their mechanism of action. For this reason, they cause physical and psychological symptoms in patients.^{8,9} Individuals diagnosed with cancer and undergoing chemotherapy have to fight against many difficulties, such as disease management, side effects of treatment, anxiety, uncertainty, fear of recurrence, hopelessness, sexual dysfunction, deterioration in body image, deterioration in social relationships, economic losses, marital distress, and performing daily living activities.^{10,11} This situation affects the patient and their families physically, emotionally, socially, psychologically, and spiritually in many ways and reduces the quality of life of individuals.¹² It has been stated that patients with cancer have increasing care needs in physical, emotional, social, psychological, spiritual, information, and practical areas throughout the course of the disease.¹³ Patients should be handled and supported holistically to meet their needs and manage the symptoms they experience.¹⁴ Supportive care aims to increase patients' physical comfort, support them psycho-socially, provide moral support, and optimize their well-being by reducing their information needs.^{14,15} Identifying and addressing supportive care needs reduces the patient's distress, care dissatisfaction, disability, morbidity, and mortality rates and the cost associated with healthcare services, and ultimately contributes to improving quality of life. For these reasons, this study was planned based on the following question: "What is the effect of cancer needs of patients with cancer receiving ambulatory chemotherapy on their health perceptions?"

Materials and Methods

This study has planned as a cross-sectional design. This study was performed in line with the principles of the Declaration of Helsinki. Approval was granted by the Cankiri Karatekin University Scientific Research Ethics Committee in Turkey (Date: 28.06.2022/No: 26). The hospital where the study was conducted was obtained. At the outset, individuals were informed about the study, and then verbal consent of those who agreed to participate in the study voluntarily was obtained. Permission of the authors of the scales to be used in the study was obtained via e-mail.

The population of the research consisted of patients who received treatment in the outpatient chemotherapy unit of a hospital located in the Central Anatolia Region of Turkey between June and August 2022. The study was conducted with 384 individuals who received treatment in the outpatient chemotherapy unit of the oncology department during the data collection time and who met the inclusion criteria of the study. Inclusion criteria were (a) having been diagnosed with cancer, (b) receiving chemotherapy, (c) being literate, (d) speaking Turkish as a mother tongue, and (e) agreeing to participate in the study voluntarily. Exclusion criteria were (a) not filling out data collection tools completely, and (b) not having chemotherapy treatment as an outpatient.

Data collection measures included a Sociodemographic Information Form, the Cancer Needs Questionnaire-Short Form, and the Perception of Health Status Scale.

Sociodemographic Information Form created by the researchers in line with the literature. This form has 9 questions about sociodemographic characteristics of individuals. The variables for these questions are age, gender, education, marital status, place of residence, social security, employment status, income status, and history of cancer in first-degree relatives.

The Cancer Needs Questionnaire-Short Form (CNQ) was developed by Cossich et al for use in patients receiving treatment in an outpatient chemotherapy unit.¹⁶ Its Turkish adaptation study was conducted by Dolu et al.¹⁷ It consists of 32 items and 5 sub-dimensions, namely "psychological", "interpersonal communication", "health information", "patient care and support", and "physical and daily living". There are no reverse-coded items on the scale, and each item is scored on a five-point Likert-type. The total score that can be obtained from the scale is 32-160. High scores indicate that the patient needs a high level of help. Cronbach's alpha coefficient was 0.87. In the present study, this value was 0.88.

The Perception of Health Status Scale (PHSS) was developed by Davis, Avery, and Donald in 1978 and it was adapted into Turkish by Esin in 1997. It is used to determine how individuals perceive their current health

status. The evaluation is done using the “very good” (1), “good” (2), “poor” (3), and “very poor” (4) options. Total scores on the scale range between one and four, with four being the lowest score and one the highest.¹⁸

Study data were analyzed on the SPSS 23.0 software package. The conformity of the variables to the normal distribution was examined using visual (histogram and probability graphs) and analytical methods (skewness, kurtosis, and Shapiro-Wilk tests). In addition to descriptive statistics, Kruskal-Wallis H and Mann-Whitney U tests were used to analyze variables that did not fit the normal distribution in intergroup comparisons. Pearson correlation analysis was used to determine the relationship between the two scales, and linear regression analysis was employed to determine the effect of cancer needs on health perception.

Results

The mean age of the participants was 58.19 ± 15.87 years, 52.1% of the study group was female, 73.7% were married, 49.2% were primary school graduates, 60.7% did not have a paid job, and 47.1% stated that their income was less than their expenses. In addition, 63.8% of the participants stated that they had a history of cancer in their first-degree relatives (Table 1).

As seen in Table 2, participants' mean scores were 130 ± 12.38 on the total CNQ, 46.22 ± 5.50 on the psychological sub-dimension, 29.07 ± 3.13 on the interpersonal communication sub-dimension, 31.76 ± 3.68 on the health information sub-dimension, 12.11 ± 1.42 on the patient care and support sub-dimension, and 11.64 ± 2.55 on the physical and daily living sub-dimension. The mean score on the total PHSS was 2.92 ± 0.68 (Table 2).

A high, positive, and very significant correlation was found between the total scores of CNQ and the PHSS ($r=0.225$, $p=0.000$). In addition, a positive and highly significant correlation was found between the psychological, interpersonal communication, health information, and patient care and support sub-dimensions of the CNQ and the total PHSS score (Table 3).

As seen in Table 4, the cancer needs of the research group highly significantly predicted their health perceptions. The psychological sub-dimension of the CNQ explained the 4.4% increase in the perception of health ($R^2=0.044$), the interpersonal communication sub-dimension 3.8% ($R^2=0.038$), the health information sub-dimension 1.8% ($R^2=0.018$), the patient care and support sub-dimension 5.5% ($R^2=0.055$), and the total scale 5.1% ($R^2=0.051$) (Table 4).

Table 1. Distribution of the study group according to sociodemographic characteristics (n=384)

Characteristics	Mean±Sd	
Age	58.19±15.87 (min: 19, max: 89)	
	n	%
Gender		
Female	200	52.1
Male	184	47.9
Education		
Non-literate	61	15.9
Literate	74	19.3
Primary education	189	49.2
Undergraduate	49	12.8
Graduate	11	2.9
Marital status		
Married	283	73.7
Single	101	26.3
Place of residence		
Province	77	20.1
District	211	54.9
Village	96	25.0
Do you have any social security?		
Yes	360	93.8
No	24	6.3
Employment status		
Employed	151	39.3
Unemployed	233	60.7
Income status		
Income<expenses	181	47.1
Income=expenses	153	39.8
Income>expenses	50	13.0
History of cancer in first-degree relatives		
Yes		
No	245	63.8
	139	36.2

Table 2. Participants' mean scores on the Cancer Needs Questionnaire-Short Form, its sub-dimensions, and the Perception of Health Status Scale (n=384)

Cancer Needs Questionnaire-Short Form	Min.	Max.	Mean±Sd
Psychological	11	55	46.22±5.50
Interpersonal communication	7	35	29.07±3.13
Health information	7	35	31.76±3.68
Patient care and support	4	20	12.11±1.42
Physical and daily living	3	15	11.64±2.55
Total	32	160	130±12.38
Perception of Health Status Scale	4	1	2.92±0.68

Table 3. The correlation between participants' mean scores on the total and sub-dimensions of the Cancer Needs Questionnaire-Short Form and the total Perception of Health Status Scale

	Perception of Health Status Scale	
Cancer Needs Questionnaire Short Form	r	0.225**
	p	0.000
	n	384
Psychological	r	0.210**
	p	0.000
	n	384
Interpersonal communication	r	0.195**
	p	0.000
	n	384
Health information	r	0.134**
	p	0.008
	n	384
Patient care and support	r	0.234**
	p	0.000
	n	384
Physical and daily living	r	0.075
	p	0.140
	n	384

**p<0.001, r: Pearson product-moment correlation

Table 4. The effect of the participants' scores on the Cancer Needs Questionnaire-Short Form and its sub-dimensions on their health perceptions

Cancer Needs Questionnaire Short Form *	Perception of Health Status Scale					
	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6
	β	β	β	β	β	β
Psychological	1.726					
Interpersonal communication		1.690				
Health information			2.139			
Patient care and support				1.565		
Physical and daily living					2.694	
Cancer Needs Questionnaire						1.306
R	0.210	0.195	0.134	0.234	0.075	0.225
R ²	0.044	0.038	0.018	0.055	0.006	0.051
F	17.556	15.133	7.011	22.158	2.184	20.331
p	0.000	0.000	0.008	0.000	0.140	0.000
DW (1.5-2.5)**	1.960	1.924	1.931	1.970	1.928	1.943

Abbreviations: F, ANOVA value R, correlation coefficient; R², R square; β , standardized β ; DW, Durbin-Watson;

*Independent variable

Discussion

Cancer patients struggle with many difficulties, and their relatives are negatively affected by the course of the disease, which makes it vital to handle and meet their care needs holistically.¹⁹ The perception of poor health, which is defined as having negative beliefs about one's health,²⁰ may negatively affect the course of the disease. Therefore, in this study, we aimed to investigate how the cancer needs of patients receiving ambulatory chemotherapy affected their health perception. The mean score of the research group on the total CNQ was determined as 130±12.38. Considering that the minimum and maximum scores on the scale are 32 and 160, it can be said that patients' cancer needs were at a high level. High scores obtained from the sub-dimensions of the scale also drew attention to patients' care needs in psychological, interpersonal communication, health information, patient care, and physical and daily living domains. Considering that the total score of the research group on the PHSS was 2.92±0.68 and the minimum and maximum scores that can be obtained from the scale were four (very bad) and one (very good), respectively, it can be said that the patients had a perception of poor health.

It was determined that there was a high, positive, and very significant correlation between the total CNQ score and the PHSS score of the research group. This finding is important in that it indicates that the perception of health deteriorates as the cancer requirements of patients receiving ambulatory chemotherapy increase. Today, the prevailing opinion is that anticancer treatment alone is not enough for the treatment of cancer patients and that the supportive care needs of the patients should also be met.²¹ Supportive care need is defined as the provision of basic care services that cover different aspects of care, such as self-help and support, provision of information, psychological support, social support, rehabilitation, and complementary therapies, which have been integrated with diagnosis and treatment.²² Although it is considered a basic care service, studies are showing that the supportive care needs of cancer patients are moderate to high. For example, de Calvo et al., stated that the care needs of nearly half (46.95%) of cancer patients receiving outpatient treatment in oncology units in Colombia were not met.²³ Wu et al., in their systematic review of the Chinese population, stated that Chinese patients had unmet needs during cancer disease, especially in areas that affected their quality of life.²⁴ Yan et al. reported that the cancer needs of 17.6% to 81.7% of patients with acute leukemia who had been newly diagnosed or treated for cancer were not met.²⁵ Hetz and Tomasone determined that although the needs of the majority (61.1%) of melanoma patients in Canada seemed to be met, the education and increasing information needs of patients with less education (high school diploma or below) were not met.²⁶ Liao et al. determined that patients diagnosed with lung cancer had a high level of supportive care needs, especially in the health system and information, psychological, and patient care and support domains.²⁷ Çelik (2021) determined that cancer patients treated in oncology hospitals needed a high level of care in psychological, health care and information, daily living, and sexuality domains.²⁸ Ayvat (2019) determined that cancer patients receiving ambulatory chemotherapy mostly needed supportive care in the daily living dimension.²⁹ The findings of the current study, similar to the findings of both international and national studies, showed that the research group had care needs in psychological, and interpersonal communication, health information, patient care and support, and physical and daily living domains.

The cancer needs of the research group significantly predicted their health perceptions. In other words, the level of cancer needs explained 5.1% of the increase in health perception. The interpretation of this finding is that the perception of health may worsen with the increase in cancer needs, and the perception of poor health might create a significant barrier to meeting the care needs of patients. Regarding supportive care needs, it is emphasized that patients and their relatives play a central role in making decisions about their care. It has also been stated that they may need health professionals' support to help them plan and evaluate their care and discover whether previous decisions need to be changed.²² How health is perceived can be an important determinant for patients to take a central role in decisions about their care because the perception of health affects health responsibility, health behaviors, treatment and rehabilitation of the disease, adjustment to treatment, and planning and implementation of effective interventions in patient education.³⁰ In this context, it is important to develop a perception of good health to help patients become aware of their cancer needs and

make decisions about their care, and thus develop the ability to take responsibility for their health. The care needs of patients should be addressed holistically, their awareness and positive beliefs about their health should be increased, and they should be given information about the protection and improvement of their health.

In this study, which was conducted to determine how the cancer needs of patients receiving ambulatory chemotherapy affected their health perception, it was determined that the cancer needs of the participants were high, their perception of health was bad, and these two characteristics showed a high, positive, and very significant correlation. Understanding the care needs and perception of health in cancer patients is important to develop approaches that increase the quality of life and satisfaction with care. Meeting the care needs of patients receiving ambulatory chemotherapy may be effective both in improving the treatment process and the perception of good health, thus improving well-being. Nurses are the individuals who can best understand and produce solutions for patients receiving ambulatory chemotherapy. By providing holistic care, nurses can support patients both in coping with the disease process and improving their health perception. Planning and performing home visits for outpatients can make this support even stronger.

We think that the results of our study will help determine the factors that impair the health perception of cancer patients receiving outpatient chemotherapy and guide the development of nursing practices that will meet their supportive care needs. It is recommended to increase the number of studies on the examination of the variables that may be related to the supportive care needs of patients receiving outpatient chemotherapy and to conduct intervention studies to meet their supportive care needs.

Limitations

In this study, outpatient chemotherapy patients were not evaluated according to cancer type. Therefore, the results obtained from the study cannot be generalized to all cancer types.

Ethical Considerations: The research received approval from the Çankırı Karatekin University Scientific Research Ethics Committee (Date: 28.06.2022/No:26).

Conflict of Interest: The authors declare no conflict of interest.

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