Original Article

Investigation of the Relationship between Spirituality, Functional Life and Disease Perception in Patients with Cancer: A Pilot Study from Turkey

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Abstract
Background: Cancer leading to a decrease in their quality of life and negatively affecting their general well-being and psychosocial life.
Objective: To investigate the relationship between spirituality, functional life, and disease perception among patients with cancer.
Methods: This analytical cross-sectional study investigated the relationship between spirituality, functional life, and illness perceptions in 120 patients with cancer. The data were collected using an "information form," a "spiritual orientation scale," the "functional living index-cancer," and the "functional living questionnaire-revised," and were evaluated using descriptive and Pearson's correlation analyses.
Results: We found a statistically positive relationship between spirituality and functional life (r=0.21; p=0.02) and the duration subscale scores of the illness perception questionnaire's attributions of the patients' consent to the disease and causes (r=0.19; p=0.03).
Conclusions: The results highlight the need to incorporate spiritual care into health systems and its positive impact on the quality of life and perception of illness of patients with cancer, as well as interventions involving spirituality in clinical settings.

Keywords: Cancer**;** Disease perceptions; Functional life; Nursing care; Spirituality

Introduction

Cancer can cause death and severe pain, raise existential concerns and questions, and be a challenging process that affects individuals in many ways. In particular, the disease progresses over a severe course, requires a long duration of treatment, and causes many side effects. These problems can reduce the physical performance and activities of daily living of the patient, leading to a decrease in their quality of life and negatively affecting their general well-being and psychosocial life. In this process, reactions to cancer and the meanings attributed to it are closely related to one's interpretation systems, values, and beliefs. This network of relationships can impact coping with cancer, physical and mental health, adaptation to the disease, and quality of life (Halac and Oz, 2011; Tarakeshwar et al., 2006).

The quality of life for patients with cancer is a multidimensional concept. Quality of life in health is generally evaluated in terms of physical, psychological, and social dimensions. However, recent studies have shown that the interaction areas of the

concept, especially religion and spirituality and the interpretation, perception, and evaluation of the disease of the patient as an individual are important components of the quality of life (Akın et al., 2010).

The World Health Organization has defined six dimensions of quality of life using a holistic approach: physical, psychological, independence level, social relations, environmental relations, and religion-spiritual-individual beliefs. The literature shows that religious and spiritual practices within these dimensions can be especially effective in coping with cancer. It has also been determined that religion and spirituality play an important role in achieving meaning and purpose in life (Thuné-Boyle et al., 2006). Studies on the relationship between religion, spirituality, and quality of life in the field of health have shown that religion and spirituality have positive effects on mental health in diseases such as cancer, which create an existential crisis. Additionally, patients with cancer who have higher moral well-being have lower anxiety and depression levels and higher hope and quality of life (Cotton et al., 1999).

Religion and spirituality have been found to constitute a powerful source of meaning for life, illness, and death in patients with cancer, helping them endure suffering and distress and fight the disease (Nelson et al., 2002). Due to the traditional understanding of destiny, it is common in Turkey to explain situations that exceed human power through religious concepts. A common belief is that although patients do their best for their treatment, everything depends on God (Ahmadi et al., 2019; Harbali and Koc, 2022; Koylu, 2010). Turkey has a Muslim society, and accepting that “all diseases and cures are the wills of God” is one of the most important methods of struggle Muslims resort to against diseases (Harbali and Koc 2022; Koylu 2010).

In Muslim society, while coping with the difficulties of life, individuals tend to endure pressure with patience, seek help from God in difficult times, rely on religious practices, re-evaluate life by questioning it from a religious perspective, and see life experiences as a test. In this context, a patient who learns that he has cancer may evaluate this situation as a "test of the world's life" or "a punishment from God". This and many other beliefs and practices take place in different religious beliefs in different ways, and religious and spiritual practices differ from society to society (Harbali and Koc, 2022).

Therefore, for a better quality of life in patients with cancer, it is important to consider the religious and spiritual dimensions as well as the biological, psychological, and social dimensions, especially the effect of spirituality on other dimensions of quality of life, illness perception, and the relationships between them. It is expected that meeting the religious and spiritual support and needs of patients within the framework of the holistic approach model in the cancer treatment process will contribute positively to the quality of life and disease perception.

However, owing to the limited number of studies on the effect of spirituality on quality of life and disease perception in patients with cancer, more comprehensive and multifaceted studies are needed. This study examined the relationship between spirituality, functional life, and disease perception among patients with cancer.

Research Questions

1. What are the spiritual orientation, functional quality of life, and disease perception of patients with cancer who are receiving chemotherapy?

2. Is there a significant relationship between the spiritual orientation and functional quality of life of patients with cancer receiving chemotherapy?

3. Is there a significant relationship between the spiritual orientation and disease perceptions of patients with cancer receiving chemotherapy?

Methods

Study Design and ethical issues: This is an analytical cross-sectional study was approved by the Aydin Adnan Menderes University Faculty of Nursing Non-Interventional Clinical Research Ethics Committee (Approval no. 2022/286). Written institutional permission was obtained from the hospital where the study was conducted. Participants were informed about the purpose of the study, and verbal consent was obtained

from all participants. The study was conducted in accordance with the principles of the Declaration of Helsinki.

Sample: The study population comprised patients receiving chemotherapy in the outpatient chemotherapy unit of a university practice and research hospital in western Turkey. The relevant unit has 35 beds, and an average of 50 patients receive outpatient chemotherapy treatment daily. The sample size of the study was calculated at a 95% confidence level using the "G. Power-3.1.9.2" program. For the effect size used in the calculation of the sample number, data obtained from an article by Ozkan and Akın (2017) were used. The sample size was calculated to be 100 for the correlation test, considering the effect size (d=0.33), 5% margin of error (α=0.05), and 80% power (1-β=0.80). A minimum of 120 patients were included in the study to account for a 20% probability of data loss. The study sample consisted of 120 patients who received chemotherapy in the relevant chemotherapy unit between February 15, 2022, and April 15, 2022, met the inclusion criteria, and agreed to participate.

Inclusion and Exclusion Criteria: The study included patients (1) who received outpatient chemotherapy; (2) who received at least one chemotherapy treatment; and (3) those who were Turkish speakers and understood Turkish. Patients who experienced dizziness, nausea, vomiting, or pain during data collection were excluded from the study.

Data Collection: The data were collected at least three days a week by the researchers in the outpatient chemotherapy unit, at a time when the patient was convenient, by explaining the study objectives to the patient, providing detailed information about the study, and obtaining verbal consent through face-to-face interviews.

Instruments of data collection: Data were collected using four tools: an "information form," a "spiritual orientation scale," a "functional life scale (cancer)," and an "illness perception scale (in patients with cancer)."

The information form was prepared by the researchers based on previous studies (Akin et al., 2010; Bektas and Akdemir, 2006; Bektas and Akdemir, 2008). It contained 13 questions related to the sociodemographic and disease status of the patients, such as age, sex, marital and educational statuses, place of residence, perceived income and expenditure status, current disease diagnosis, and chronic disease status.

The spiritual orientation scale was developed by Kasapoglu (2015) and consisted of 16 items rated on a one-dimensional 7-point Likert scale. The scale was scored from "1" (strongly disagree) to "7" (strongly agree), with a minimum score of 16 and a maximum score of 112. The higher the score, the higher the spiritual orientation of the patients. In the validity and reliability study, Cronbach's alpha was 0.87. The scale had a Cronbach's alpha value of 0.97 in this study.

The functional living index for cancer was developed by Schipper et al. (1984) and validated for use in Turkish by Bektas and Akdemir (2008). The scale consists of 22 items and five sub-dimensions: physical functioning, psychological functioning, cancer-related difficulties, current well-being (social functioning), and gastrointestinal symptoms (nausea). The scale used a 7-point Likert scale, with the options ranging from positive to negative (Bektas and Akdemir, 2008). The options on the functional life scale were 7 to 1 for the negative questions, which were scored as 1 to 7. Questions 2, 3, 6, 9, 10, 12, 14, 16, 18, 19, 21, and 22 were evaluated positively towards the right of the column; questions 1, 4, 5, 7, 8, 11, 13, 15, 17, and 20 were evaluated negatively towards the right of the column. The scale results were obtained by adding point values to each question. The maximum score on the scale is 154, the minimum score is 22, and high scores indicate very good functional status and quality of life. The Cronbach alpha value of the scale is 0.79 (Bektas and Akdemir, 2008). In this study, the Cronbach's alpha value of the scale was 0.84.

The illness perception questionnaire revised for patients with cancer was developed by Weinmann et al. and revised by Moss-Morris et al. (2002) and Turkish validity and reliability study was done by Kocaman (2007). It was used to assess patients with cancer as well as those with other chronic diseases such as rheumatoid arthritis, psoriasis, diabetes, chronic lung disease, and heart disease. The scale consisted of questions related to the disease perception of the patients, its causes, and its impact on

their lives. Armay et al. (2007) conducted a validity and reliability study in patients with cancer.

The disease type subscale (illness identity) includes 14 common disease symptoms such as pain, nausea, weight loss, fatigue, wheezing, difficulty breathing, joint stiffness, burning in the throat, burning in the eyes, difficulty sleeping, headache, stomach complaints, and dizziness sensation. For each of these symptoms, the patient was first asked "whether they have lived since the onset of the disease" and then "whether they have seen this symptom related to their illness." This subscale is designed to answer both questions with "yes" or "no" responses for each symptom. The sum of the "yes" answers to the second question constituted the evaluation result of the disease type dimension (Armay et al., 2007). The attributions consenting to the disease and causes subscale is a 5-point Likert scale that consists of 38 items. It includes seven subscales, which are acute or chronic timeline, personnel control, results (consequences), understanding of the disease, treatment control, emotional representations (emotional regression), and duration (cyclical). The duration subscale is related to the duration of the illness of the patient and is classified as acute, chronic, or cyclical. The outcome subscale examines the severity of an illness and the beliefs of the patients about its possible impact on their psychological, physical, social, and functional abilities. Self-control evaluates the perception of the patients about the treatment, course, duration, and internal control of the illness. Treatment control explores the beliefs of the patients about the effectiveness of the administered treatment. Being able to understand a disease indicates the extent to which one understands or comprehends the disease. Emotional representations investigate how a person feels about their illness (Armay et al., 2007). The causes of disease subscale is also a 5-point Likert-type scale consisting of 18 items, including possible causes of diseases. This subscale, which consists of psychological attributions, risk factors, immunity, and accident or chance subscales, is aimed at investigating the thoughts of the patients about the possible causes of the disease (Kocaman, 2007). In a Turkish study in which the validity and reliability of the scale were evaluated, Cronbach's alpha value was reported as 0.69–0.77 for the dimension of views about the disease and 0.25–0.72 for the dimension of causes of disease (Armay et al., 2007).

Statistical analysis: In this study, the data were analyzed in IBM SPSS Statistics for Windows, version 22 (IBM Corp., Armonk, NY, USA). According to the results of the normality test (Kolmogorov-Smirnov test), the data showed a normal distribution (Kurtosis and Skewness between −1.5 and +1.5). All descriptive statistics were presented as numbers, percentages, and averages. Pearson's correlation analysis was performed to evaluate the data. The results were evaluated at a 95% confidence interval with a significance level of $p < 0.05$.

Results

The mean age of the participants was 57.41 ± 11.72 years; 62.8% were female; 80.2% were married; 51.2% were primary school graduates; 46.3% stated that their income was equal to their expenses; 51.2% lived in the district for the longest time in their lives; 76% had a nuclear family; 36.4% were retired; 72.7% did not have a chronic disease (Table 1).

In Table 2, the average scores of the patients on the spiritual orientation, functional life, and disease perception scales and subscales are presented.

Pearson's correlation analysis revealed a statistically positive correlation between spiritual orientation and the functional living index for cancer grand total score ($r=0.21$; $p=0.02$).

As a result of Pearson's correlation analysis conducted between spiritual orientation and functional living index for cancer sub-dimensions, there was a statistically significant relationship between spiritual orientation and functional life scale sub-dimensions only for the gastrointestinal symptoms (nausea) sub-dimension ($r=0.17$; $p=0.05$) and no significant relationship with other sub-dimensions (Table 3).

Pearson's correlation analysis revealed a statistically positive relationship between

spiritual orientation and duration (circular) attributions consenting to the disease and its causes (r=0.19; p=0.03) (Table 4).

Table 1. Descriptive characteristics of the patients

Descriptives	n	%	Descriptives	n	%
Gender			**Marital status**		
Female	76	62.8	Married	97	80.2
Male	45	37.2	Single	24	19.8
Educational Status			**Proffesion**		
Literate	12	9.9	Self-employement	50	41.3
Primary school	62	51.2	Idle	15	12.4
High school	20	16.5	Retired	44	36.4
University	27	22.3	Servant	12	9.9
Economical situation			**Longest lived place**		
Income more than expenses	13	10.7	Village	26	21.5
Income equals expense	56	46.3	Country	62	51.2
Income less than expenses	52	43.0	City	33	27.3
Family type			**Having a chronic illness**		
Lives alone	12	9.9	Yes	33	27.3
Nuclear family	92	76.0	No	88	72.7
Extended family	17	14.0			

Table 2. Distribution of patients' mean scores from scales and subscales

Scales and Subscales	Mean	SD
Spiritual Orientation Scale	96.31	23.25
Functional Living Index-Cancer	96.46	9.39
Physical Functioning	36.67	6.07
Psychological Functioning	30.14	5.09
Cancer-Related Difficulties	13.00	2.65
Current well-being (social Functioning)	10.69	3.58

Gastrointestinal symptoms (Nausea)	5.93	3.70
The Illness Perception Questionnaire		
Disease type (Illness identity)	6.73	3.41
Attributions consenting the disease and causes		
Acute/Chronic timeline	18.91	3.35
Personnel control	19.61	4.14
Results	19.49	4.69
Understanding the disease	14.05	4.11
Treatment control	16.78	2.86
Emotional representations	18.77	6.28
Duration (cyclical)	13.78	3.47
Causes of disease		
Psychological attributions	16.67	5.33
Risk factors	16.67	5.33
İmmunity	8.26	3.01
Accident or chance	4.15	1.82

Table 3. The relationship between the spiritual orientations and functional living of the patients

Variables	**Spiritual Orientations**	
	r	**p**
Functional Living Index-Cancer	0.21*	0.02
Physical Functioning	0.14	0.12
Psychological Functioning	-0.05	0.54
Cancer-Related Difficulties	0.05	0.57
Current well-being (social Functioning)	0.17	0.06
Gastrointestinal symptoms (Nausea)	0.17*	0.05

*. Correlation is significant at the 0.05 level.

Table 4. The relationship between patients' spiritual orientations and perceptions of illness

Variables	Spiritual Orientations	
	r	p
The Illness Perception Questionnaire		
Disease type (Illness identity)	0.07	0.42
Attributions consenting the disease and causes		
Acute/Chronic timeline	0.10	0.23
Personnel control	0.03	0.68
Results	0.16	0.07
Understanding the disease	0.06	0.50
Treatment control	0.09	0.32
Emotional representations	0.05	0.57
Duration (cyclical)	0.19*	0.03
Causes of disease		
Psychological attributions	0.04	0.62
Risk factors	0.01	0.87
İmmunity	0.01	0.84
Accident or chance	-0.04	0.64

*. Correlation is significant at the 0.05 level.

Discussion

Cancer is a complex disease that affects the individual in many ways during the treatment process, often evoking severe pain and leading to death. In this process, the reactions of the patients to cancer and the meanings they attribute to it are closely related to their interpretation systems, values, and beliefs [16]. These relationships are thought to have an impact on coping with cancer both physically and mentally, as well as on adaptation to the disease and overall quality of life (Hallac 2011).

This study examined the effect of spirituality on functional life and illness perceptions in patients with cancer and found that the spiritual orientation of the patients during this study was quite high. It has been determined in many studies that patients with cancer show a high tendency toward spirituality, which is of central importance to them (Tasan and Saritas 2022; Gudenkauf et al 2019). This may be explained by the fact that patients see spirituality as a means of coping with the difficult processes of the disease.

The majority of the Turkish population in which the study was conducted is Muslim, and all the patients participating in the study

were also Muslims. Along with the traditional understanding of destiny in Turkey as a requirement for Muslim beliefs, the tendency to explain situations beyond human power in religious terms is common. A widely held belief is that although patients do their best for their treatment, everything is in God's hands. For this reason, accepting that "all diseases and healing are the wills of Allah" is one of the most important spiritual struggle methods Muslims resort to against diseases (Ahmadi et al. 2019; Harbali & Koc 2022; Koylu 2010).

Although religion and spirituality are important for many patients with cancer, numerous studies have shown that they are associated with good physical health outcomes, can increase the hope of recovery in patients, and can reduce psychological stress while encouraging positive health behaviors, ultimately improving the quality of life (Visser et al., 2010; Tsai et al., 2016; Khodaveirdyzadeh et al., 2016. Our study found that the quality of life of the patients was low (96.46 ± 9.39), and many other studies have found that the functional quality of life of patients with cancer receiving chemotherapy is moderate (Rahnama et al., 2015) or low (Bektas and Akdemir 2006; Bektas and Akdemir 2008; Clinch 1996).

In our study, a statistically positive relationship was found between spiritual orientation and the grand total score of the functional quality of life scale. Additionally, a statistically low-level significant relationship was found between spiritual orientation and only the gastrointestinal symptoms (nausea) subscale, which is one of the functional life scale subscales. In a study conducted by Kamijo and Miyamura (2020) on patients with cancer receiving chemotherapy, it was determined that there was a strong relationship between the spirituality of the patients and their quality of life. Similarly, other studies have found that as the spiritual and religious orientation levels of patients with cancer increase, their quality of life increases (Al-Natour et al., 2017; Armay et al., 2007; Gudenkauf et al., 2019; Harbali and Koc 2022; Johannessen-Henry et al., 2013; Morgan et al. 2006).

Although there are different views on the effects of spiritual orientation and religion on the quality of life of patients with cancer, especially on the adjustment process (Koenig 2004; Rahnama et al., 2015; Visser et al., 2010), many studies have shown that spiritual orientation and religious beliefs help patients accept and cope with the disease (Haghighi 2013; Khodaveirdyzadeh et al., 2016; Pargament et al., 2004; Rahnama et al., 2015; Tsai et al., 2016) and have a positive effect on the adjustment and meaning of the disease (Bowie et al., 2005; Daugherty et al., 2005; Gibson and Hendricks 2006; Im et al., 2008; Stewart et al., 2013). Giving meaning to illness, or, in other words, the illness's perception, is defined as organized mental representations or specific ideas that patients have about their illness. These mental representations or beliefs about one's physical state are important determinants of health behavior and have been associated with several important health outcomes, such as psychological well-being, adherence to treatment, and functional recovery (Weinman and Petrie 1997).

In our study, in the subscale of possible causes of the disease, the mean score of the psychological and risk factors subscale was the highest, and the mean score of the accident or chance subscale was the lowest. In a study conducted by Menekli et al., (2020) on the possible causes of disease subscale, the mean score of the psychological factors subscale was found to be the highest, and the mean score of the accident or chance subscale was the lowest. In our study, there was only a weak positive correlation between spiritual orientation and the duration (circular) sub-dimension of the opinions of the patients on the illness perception scale about the illness or its subscale (Menekli et al., 2020). Although the effect of spirituality on illness perception has been emphasized in the literature, no study has yet determined the relationship between the spiritual orientation of patients with cancer and their illness perception. Our study is the first to reveal spiritual orientation and illness perception, especially in Muslim societies.

This study had some limitations. This study was limited to a population for which research data were collected and cannot be generalized to all patients with cancer receiving chemotherapy. The entire study population consisted of Muslims. This may have affected

the results. This study was limited to data collected using three scales.

Conclusions: These results highlight the importance of meeting the religious and spiritual needs of patients as a part of comprehensive cancer care. Healthcare professionals should support and guide spiritual orientation practices as part of the care of patients with cancer receiving chemotherapy. Future studies should examine the effect of spiritual orientation on functional quality of life and disease perception in patients with cancer with different religious and spiritual orientations.

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