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Factors Affecting the Tendency of Cancer Patients for Religion and Spirituality: A Questionnaire-Based Study

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Abstract This descriptive, cross-sectional, and analytical study was carried out to identify the factors affecting the tendency of cancer patients for the religion and spirituality. The research was applied on a total of 800 individuals: 400 cancer patients under chemotherapy and 400 non-cancer individuals. Data were collected by personal information form, Ok-Religious Attitude Scale, and spiritual life questions. LISREL 8.7 program was run for the confirmatory factor analysis in order to evaluate the compliance of spiritual life questions. Data from Ok-Religious Attitude Scale and scores collected from spiritual life questions for both cancer and non-cancer individuals were statistically analyzed by two-way ANOVA. Cancer patients (82.8%) prayed more than non-cancer individuals (72.5%). Non-cancer individuals, on the other hand, visited the tombs (13.8%), sacrificed (22.2%), consulted the religious officials (9.2%), and more. The patients had more positive religious attitude than non-cancer individuals ($Z = 4.193$; $p = 0.0001$). Religious women were more positive than religious men. Lower education level caused more positive religious attitude. Medical properties of patients did not affect the religious attitude. Forgiveness, spiritual values, and beliefs were stronger in cancer patients than in non-cancer individuals ($p = 0.0001$). Knowing the factors affecting spiritual life and religious attitudes of patients and determining the spiritual needs of patients with a holistic perspective facilitate compliance of patients with cancer and its treatment. Therefore, containing the spiritual routine in the nursing care is essential.

Keywords Spirituality · Religious attitude · Cancer · Nursing care · Turkey

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Introduction

Cancer expands every day and threatens human life for years (Jemal et al. 2008). A total of 14.1 million cancer cases occurred, and 8.2 million people died because of cancer in 2012. This cancer incidence rate and increased number of old people could result in 19.3 million cancer cases in 2025. More than half of cancer cases and deaths occur in underdeveloped countries (WHO 2012). Though many therapy methods are developed because of the expansion of cancer, it still has high mortality rate (Jemal et al. 2008; WHO 2012). The studies on cancer today are carried to cure the cancer, lengthen the life of patients, and improve the quality of life of the patients.

Cancer always reminds death, affects the patient as a whole, and worsens homeostasis of the patient. It brings the feeling for the loss and psychological reactions associated with it (Tavoli et al. 2007). Cancer patient faces problems at every stage of the therapy. Cancer patients struggling with the feelings of loss and fear practice many methods to adapt to therapy and to cope with the disease. In that process, patient tries religious and spiritual methods to cope with cancer (Tavoli et al. 2007, National Cancer Institute 2012).

Though spirituality and religion terms are considered the same, spirituality is more extensive and involves religious practices as well (National Cancer Institute 2012). The spirituality is an abstract and complex area stating the place, relationships, and the existence of the individual and provides perception, interpretation, meaning about the disease, health, and life after death. Therefore, evaluation of the spiritual characteristics of the patient whom to receive health care becomes more important on these days (Dein et al. 2012; O'Connell and Skevington 2010).

Cancer nurse should provide a holistic care after considering spiritual and religious characteristics of the patient since the spirituality and religion affect many parameters from life practices and preferences to the disease and medical care (Myers 2000; Ateşçi et al. 2003; O'Connell and Skevington 2010; Yılmaz 2011).

The aim of the cancer patient care should be to induce the capacity to cope with the disease and improve the life quality by increasing the adaptation to the care. In that stage, knowing how a patient, facing the fear for the loss and the death, tries to cope with the difficulties and what makes a patient stronger, knowing the patient, providing support are needed for an effective nursing care.

An increasing number of studies were recently carried out about the spiritual characteristics and preferences in world (Sherman et al. 2015). Breast cancer patients (29%) in the USA practiced spiritual coping methods (Vande Creek et al. 1999), and 73% of the patients in another study in England (Thune-Boyle et al. 2011) practiced religious coping methods. Ebright and Lyon (2002) found that religious beliefs of newly diagnosed breast cancer patients eased their coping with the disease. Prostate cancer patients tended the religion (Bowie et al. 2003). There are many studies indicating that cancer patients appealed to praying/beliefs and frequently practiced religious coping methods against the disease (Taylor and Mamier 2005; Acklin et al. 1983).

In Turkey, as in other populations, support of family and friends and practicing spiritual and cultural methods are common ways to cope with the disease (Sahin et al. 2012, Arslan 2003). Praying, visiting holy places, religious offering and vowing, using amulets, and consulting religious persons (hodja) are among the methods practiced by patients to seek cure (Arslan 2003; Üstündağ and Demir Zencirci 2015b). Visiting holy places, which are believed to have supernatural powers, like ocak (folk physician), türbe (shrine), kümbet (tomb), tekke (dervish lodge) is very common in Turkey (Güray 2003).

In Turkish-Islamic culture, drinking holy water (zam–zam), making a vow and sacrificing an animal for the forgiveness, and blessing of god (Allah) are holy rituals. These are İslam-specific rituals which desperate patients commonly practice (Kara Düzgün 2009). Especially in terminal disease cases, casting spell (Sipahi 2006), avoiding the evil eye, using amulet to prevent accident, disease, or even death are widespread practices (Çıblak 2004; Sipahi 2006).

There are only few studies on cancer patients' spiritual coping methods. These studies are on the coping methods of terminal patients, and how cancer patients and their relatives deal with stress and on desperation (Tan and Karabulutlu 2005; Yildirim et al. 2009; Pehlivan et al. 2012; Karabulutlu 2014). In a study on 397 chemotherapy-receiving cancer patients (Üstündağ and Demir Zencirci 2015b), it was found that 92.2% of the patients fallen back on blessing and prayer, 21.7% vowed and sacrificed, 3.5% poured lead, 1.8% consulted a religion person (Hodja), 6.3% visited tombs, 1.3% went to ocak, 1.5% used amulets, 12.3% drank holy water (zam–zam), and 2.3% used charm. In another study on healthy individuals, it was found that 74% of the participants believed in the help of holy persons, 83.7% believed in evil eye, 83% believed that praying in a tomb would make the wishes come true, 45.8% believed that drinking holy water blessed by reading Quran would restore health, and 42.2% believed that pouring lead would work against the evil eye (Arslan 2003).

This research was carried out to determine religious, spiritual, and cultural parameters affecting the tendency of cancer patients in Turkey.

Hypotheses

($H_0$1) Cancer patients and healthy (non-cancer) individuals show no difference in the religious and cultural methods they use to seek remedy.

($H_0$2) Sociodemographic characteristics of cancer patients and healthy (non-cancer) individuals do not affect their religious approaches.

($H_0$3) Medical characteristics of cancer patients do not affect their religious approach.

($H_0$4) Spiritual life of cancer patients and healthy (non-cancer) individuals show no difference.

This research to determine religious and spiritual tendency in cancer patients receiving chemotherapy was planned and done as a descriptive, cross-sectional, and analytical research.

Methods

Design and Settings

No sampling was made, and whole universe was studied. Cancer patients receiving chemotherapy were reached at the Ankara University Medical Faculty İbni Sina and Cebeci Hospitals and Gazi University Medical Faculty Gazi Hospital. Non-cancer individuals were contacted via the Ministry of Health, Family Health Directorate, Altındağ and Çankaya Family Centers. Cancer patients were those from the Oncology Day Care Units of the Hospitals just mentioned.

Inclusion Criteria

Patients with ≥50 Karnofsky Performance grade, third- or fourth-stage cancers, older than 18 years of age, literate, Muslim, without any neurological or psychiatric diagnosis preventing the fill out the form, and volunteered individuals were included in the study.

Non-cancer individuals complying with the below criteria were included in the study: older than 18 years of age, literate, Muslim, without any neurological or psychiatric diagnosis preventing the fill out the form, and volunteered to participate.

Pilot Study

Thirty cancer patients from the Day Unit of Medical Oncology and 30 non-cancer individuals from the Family Health Center were pre-surveyed to test understandability of the questionnaires. The total number was 60. No change was made after the pilot study. Written consents were obtained from all individuals informed about the study. Those in pilot study were excluded from the study.

Instruments

Data collection instrument in the study consisted of demographic data, religious belief, and spiritual sections.

Demographic Data The questions in this section were about age, education, profession, and cancer history in the family of the participant. In addition, there were also questions about the diseases: the diagnosis of the cancer patients, the stage of the cancer, chemotherapy cure number, and the name of the chemotherapy drug type.

Ok-Religious Attitude Scale Ok-Religious Attitude Scale consisted of 4 sub-dimensions: information, emotion, behavior, and the God. There were a total of 8 statements, 2 related with each sub-dimension. The sub-dimension for determining religious attitude had 2 statements: "I believe the religion is unnecessary" and "Religious belief gives more harm than benefit." The emotion sub-dimension had "I got emotional when I hear the religious readings/hearings like the call for prayer, pray or verse" and "I got pleasure from the religious activities when attended" statements. The behavior sub-dimension contained "I try to follow religious values in my life" and "I follow the requirements of the religion in I believe." Lastly, the God dimension had "In harder times, I believe the God helps me" and "I feel the God is too close to me." Each statement had a point of 1 for "Totally do not agree," 2 for "agree some," 3 for "agree 50%," 4 for "agree most," and 5 "agree totally." The replies for information sub-dimensions were reversely coded. While calculating scale points, the average was computed. The higher point means the higher religious attitude. The validity and the reliability for Ok-Religious Attitude Scale were previously tested by 2 studies on 930 and 388 university students. Internal consistency was 0.81 and 0.91, respectively (Ok 2011). Cronbach α constant in this study was 0.93.

Spiritual Life Questions This section contained the questions on spiritual life. The questions were about cancer and non-cancer patients' religious beliefs and practices. The questions were compiled and restructured from the questions in the "Multidimensional Measurement of Religiousness/Spirituality for Use in Health Research," which were prepared by the Fetzer Institute for health studies (The Fetzer Institute 2003). There were 6 sub-dimensions in the spiritual life section. These were spiritual value, belief, forgiveness, spiritual practices, positive religious coping, and negative religious coping. Each question

had 3 alternatives for the participants. There existed 18 spiritual life questions under 6 sub-dimensions (Table 1). Six different points were computed by summing up the points the participants earned.

Six spiritual life questions—spiritual value belief, forgiveness, spiritual practices, positive religious coping, and negative religious coping—were tested by confirmatory factor analysis in LISREL 8.7 to determine factor appropriateness. The model tested was appropriate with following adaptation $\chi^2 = 669.26$, $df = 120$, $\chi^2/df = 5.577$, RMSEA = 0.076, GFI = 0.96, CFI = 0.97, and NFI = 0.97 (Fig. 1).

Table 1 Spiritual life questions

Sub-dimensions	Spiritual life questions	Options		
Spiritual value	My whole approach to life is based on my religion	Agree*	Not sure**	Do not agree***
	Although I believe in my religion, many other things are more important in life			
	My faith helps me know right from wrong			
Belief	How much is religion source of strength and comfort you?	None***	Some**	A lot*
	Do you believe there is a life after death?	Yes*	Do not know**	No***
Forgiveness	I have forgiven myself for things that I have done wrong.	Always*	Sometimes**	Never***
	I have forgiven those who hurt me.			
	I know that God forgives me.			
The religious practice	How often do you pray privately in places offer than at mosque?	At least once a week*	At least once a month**	Fewer than once a month or none***
	How often do you watch or listen the religious programs on TV or radio?			
	How often do you read the Quran or other religious literature?			
	How often there are prayers in your home?			
Positive religious coping	I think my life is a part of a larger spiritual force.	Yes*	Some**	No***
	I work together with God as partners to get through hard times.			
	I look to God for strength, support, and guidance in crises.			
Negative religious coping	I feel that stressful situations are God's way of punishing me for my sins or lack of spirituality.	Yes*	Some**	No***
	I wonder whether God has abandoned me.			
	I try to make sense of the situation and decide what to do without relying on God.			

* 3 Points, ** 2 points, *** 1 point

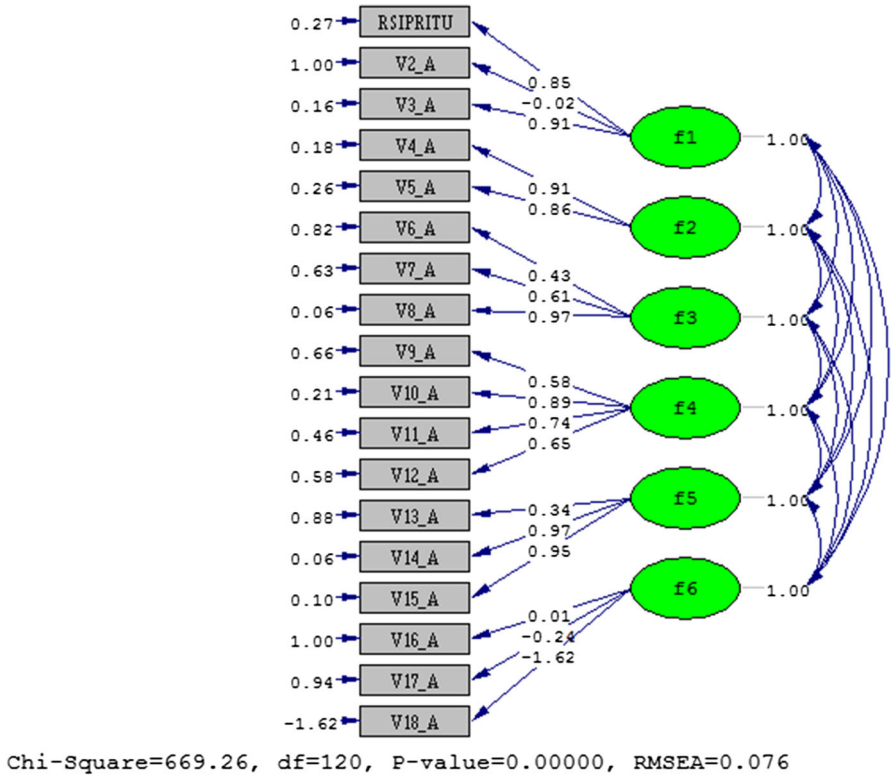

Fig. 1 Confirmatory factor analysis

Data Collection

The research was applied on a total of 800, 400 cancer and 400 non-cancer individuals. The application on 400 cancer individuals was between April 2013 and April 2014 in the oncology day units of the hospitals. Participation rate was 71.04% since 116 individuals refused to participate and 47 stopped to participate after a while due to tiredness, vomiting, pain, etc. The study on non-cancer individuals was on 400 individuals applied to the family health centers between September 2013 and February 2014. Participation rate was 73.6% since 123 refused to participate and 55 participants did not complete.

Written consent was obtained from all participants. Then, demographic data from the individuals and medical information from the patient files and pathology reports were obtained. Ok-Religious Attitude Scale and the questions about the spiritual life were filled out by the individuals. The time to fill out a questionnaire was 25 min on average.

Data Analysis

Data were analyzed, and tables were constructed via Statistical Package for Social Sciences (SPSS) version 16. Qualitative variables were presented as frequency and percentage, and quantitative variables as mean and standard deviation. Statements for spiritual life were graded for the answers given. Confirmatory factor analysis was run for six spiritual life

questions in LISREL 8.7 program. Grades from Ok-Religious Attitude Scale and spiritual life questions were statistically analyzed by two-way ANOVA in both cancer and non-cancer groups. Age variable was discarded when analyses for religious attitude and spiritual issues were carried out, since cancer and non-cancer groups were highly different for age.

Ethical Consideration

Permission (588 numbered and 09/27/2012 dated) from Ankara University Ethics Committee was obtained for the study. In addition, written permission was obtained from the institutions, where the research was done. Written consents were obtained from the participants after they were informed about the study.

Limitations

Obtaining real data might have been restricted since religious belief and spiritual issues were very sensitive topics to study about. In addition, one should avoid generalizing the results of the study since the universe studied was a cross-sectional population.

Results

The mean age of the cancer patients was 55.32 ± 11.63 years and of the non-cancer individuals was 35.09 ± 14.44 years.

The characteristics of cancer patients were: 61.2% woman, 92.2% married, 57.2% elementary school graduate, 52% jobless, and 69.8% with cancer story in the family

Table 2 Sociodemographic characteristics of the cancer patients and non-cancer individuals (N = 800)

Sociodemographic characteristics	Cancer		Non-cancer	
	N	%	*N*	%
Sex				
Woman	245	61.2	298	74.5
Man	155	38.8	102	25.5
Marital status				
Married	369	92.2	202	50.5
Single	31	7.8	198	49.5
Education level				
Primary education	229	57.2	95	23.8
Secondary education	113	28.3	159	39.8
Higher education	58	14.5	146	36.5
Job				
Jobless	208	52	190	47.4
Retired	111	27.8	23	5.8
Employee	44	11	63	15.8
Officer	37	9.2	124	31
Past cancer history				
No	279	69.8	290	72.5
Yes	121	30.2	110	27.5

(Table 2). Most of the patients had gynecological cancer (23.4%), 52.5% were at the phase 3, 10.5% had 7 or more cures, and 57.2% received platinum-based therapy (Table 3).

Cancer patients (82.8%) prayed more than non-cancer individuals (72.5%). Non-cancer ones, on the other hand, had more often practiced pouring lead (6.2%), visiting tomb (13.8%), vow/sacrifice (22.2%), consulting Muslim preacher (9.2%), using amulet (4%), charm (13.5%), consulting the local herbalist (23.5%), and visiting the "ocak" (3.5%) than cancer patients (Table 4).

Cancer patients had an overall grade of 4.32 ± 0.59 Ok-Religious Attitude Scale and non-cancer ones had 4.00 ± 0.92, meaning that cancer patients had a more positive religious attitude ($Z = 4.193$, $p = 0.0001$).

Religious attitude grade and sociodemographic data were analyzed after the effect of age was discarded (Table 5). When two-way ANOVA was run, gender ($p = 0.003$) and cancer and non-cancer ($p = 0.0001$) were significant but gender X (cancer–non-cancer) interaction was insignificant ($p = 0.661$).

When two-way ANOVA was run for marital status and group (cancer × non-cancer), cancer and non-cancer ($p = 0008$) were significant but marital status × (cancer–non-cancer) interaction was insignificant ($p = 0388$).

Table 3 Medical characteristics of the patient ($N = 400$)

Medical properties	*N*	%
The medical diagnosis		
Gynecological cancer	94	23.4
Breast cancer	70	17.5
Lung cancer	62	15.5
Colorectal cancer	59	14.8
Gastrointestinal cancer	58	14.5
Head and neck cancer	20	5
Lymphoma	15	3.8
Sarcoma	12	3
Urinary cancer	10	2.5
Cell stage		
Phase 3	210	52.5
Phase 4	190	47.5
The number of chemotherapy		
2nd cure	94	23.5
3rd cure	99	24.8
4th cure	66	16.5
5th cure	38	9.5
6th cure	61	15.2
7th cure and over	42	10.5
Type of chemotherapy		
Platinum-based therapy	229	57.2
Fluorouracil-based therapy	64	16
Taxane-based therapy	64	16
Targeted therapy	30	7.5
Doxorubicine-based therapy	13	3.3

Table 4 Religious and cultural practices rather than medical practiced by cancer and non-cancer individuals

Religious and cultural practices	Cancer patients ($N = 400$)		Non-cancer patients ($N = 400$)	
	N	%	N	%
Blessing/prayers				
Yes	331	82.8	290	72.5
No	69	17.2	110	27.5
Lead pouring				
Yes	3	0.8	25	6.2
No	397	99.2	375	93.8
Tom visit				
Yes	22	5.5	55	13.8
No	378	94.5	345	86.2
Vow/sacrifice				
Yes	39	9.8	89	22.2
No	361	90.2	311	77.8
Consult religion person/Hodja				
Yes	1	0.8	37	9.2
No	399	99.2	363	90.8
Amulet				
Yes	2	0.5	16	4
No	398	99.5	384	96
Charm				
Yes	9	2.2	54	13.5
No	391	97.8	346	86.5
Consult local herbalist				
Yes	58	14.5	94	23.5
No	342	85.5	306	76.5
Visit ocak*				
Yes	3	0.8	14	3.5
No	397	99.2	386	96.5

* People doctor (a person with the mystical power and from home of a divine lineage person)

When two-way ANOVA was run, education level ($p = 0.0001$) and cancer and non-cancer ($p = 0.030$) were significant but gender × (cancer–non-cancer) interaction was insignificant ($p = 0.621$).

When two-way ANOVA was run, profession ($p = 0.0001$) and cancer and non-cancer ($p = 0.011$) were significant but gender × (cancer–non-cancer) interaction was insignificant ($p = 0.672$).

When two-way ANOVA was run, cancer history (0.196) was insignificant and cancer and non-cancer ($p = 0.0001$) significant but gender × (cancer–non-cancer) interaction was significant ($p = 0.013$). Those cancer patients with a cancer history had significantly higher religious attitude than healthy group. Both groups without cancer history did not differ for religious attitude ($p > 0.05$) (Table 5). There was no significant difference between diagnosis, cancer stages, number of chemotherapy, chemotherapy drug types, and religious attitude ($p > 0.05$) (Table 6).

Table 5 Comparison of the demographic characteristics of cancer and non-cancer group by Ok-Religious Attitude Scale Score

Factors	Group		Group	Factor	Group × Factor
	Cancer ($N = 400$) $\bar{X} \pm$ sd	Non-cancer ($N = 400$) $\bar{X} \pm$ sd	p^*	p^*	p^*
Sex					
Woman	4.4 ± 0.5	4.1 ± 1.0	0.003	<0.001	0.661
Man	4.2 ± 0.7	3.9 ± 1.0			
Marital status					
Single	4.3 ± 0.6	4.1 ± 0.9	0.008	0.144	0.388
Married	4.3 ± 0.6	3.9 ± 1.0			
Education level					
First	4.5 ± 0.5	4.3 ± 0.8	0.030	<0.001	0.621
Secondary	4.2 ± 0.6	4.1 ± 0.8			
Higher	3.9 ± 0.6	3.7 ± 1.0			
Job					
Jobless	4.5 ± 0.5	4.2 ± 0.8	0.011	<0.001	0.672
Employee	4.0 ± 0.6	3.9 ± 0.8			
Officer	4.2 ± 0.7	3.8 ± 1.0			
Retired	4.2 ± 0.7	3.9 ± 0.9			
Cancer past					
Yes	4.4 ± 0.5[a]	3.9 ± 1.0[b]	0.001	0.196	0.013
No	4.3 ± 0.6	4.1 ± 0.9			

[*] Two-way ANOVA was performed

[**] Different letters indicate a statistically significant difference ($p < 0.05$)

[a,b] Capital letters indicate differences between cancer and non-cancer groups)

Cancer and non-cancer individuals did statistically differ for spiritual values ($p = 0.0001$), and cancer patients were stronger than non-cancer ones (Table 7).

Cancer and non-cancer participants significantly differed for spiritual belief ($p = 0.0001$), and cancer ones had higher spiritual values. Cancer and non-cancer individuals significantly differed for forgiveness ($p = 0.0001$), and cancer ones were more forgiving. There was no difference between groups for religious practice ($p = 0.429$). There was no difference between groups for positive religious coping ($p = 0.226$). Groups significantly differed for negative religious coping ($p = 0.0001$) (Table 7).

Discussion

Cancer individuals prayed and performed salaat (Namaz) more than non-cancer ones. Non-cancer ones, on the other hand, poured the lead, visited the tomb, vowed/sacrificed, consulted a Muslim preacher, carried amulet and charm, referred local herbalist, and visited the "ocak" more than cancer patients (Table 4). Similarly, Nazik et al. (2012) reported that patients preferred herbal product use and religious practices a lot in addition to medical practices. Some other studies also existed indicating the herbal product use and religious

Table 6 Comparison of patient medical characteristics and Ok-Religious Attitude Scale score ($N = 400$)

Medical properties	Ok-Religious Attitude Scale	
	N	$\bar{X} \pm$ sd
The medical diagnosis		
Breast cancer	70	4.34 ± 0.49
Gastrointestinal cancer	58	4.36 ± 0.59
Urinary tract cancer	10	4.11 ± 0.79
Sarcoma	12	4.06 ± 0.74
Gynecological cancer	94	4.46 ± 0.46
Lung cancer	62	4.27 ± 0.63
Head and neck cancer	20	4.20 ± 0.72
Lymphoma	15	4.33 ± 0.63
Colorectal cancer	59	4.24 ± 0.68
Assessment	$\chi^2 = 7.053^{*}$ $p = 0.531$	
Cell stage		
Phase 3	210	4.32 ± 0.57
Phase 4	190	4.33 ± 0.62
Assessment	$t = 0.239^{**}$ $p = 0.812$	
The number of chemotherapy		
2nd cure	94	4.28 ± 0.66
3rd cure	99	4.37 ± 0.59
4th cure	66	4.22 ± 0.57
5th cure	38	4.29 ± 0.58
6th cure	61	4.45 ± 0.46
7th cure and over	42	4.33 ± 0.61
Assessment	$\chi^2 = 5.606^{*}$ $p = 0.346$	
Type of chemotherapy		
Fluorouracil-based therapy	64	4.18 ± 0.65
Platinum-based therapy	229	4.35 ± 0.60
Taxane-based therapy	64	4.41 ± 0.50
Doxorubicine-based therapy	13	4.06 ± 0.61
Targeted therapy	30	4.38 ± 0.49
Assessment	$F = 2.040^{***}$ $p = 0.088$	

* Kruskal–Wallis analysis of variance was performed

** Student t test was applied

*** One-way analysis of variance was performed

practices in large scale (Uçan et al. 2008; Can et al. 2009; Üstündağ and Demir Zencirci 2015a, b).

The interaction among gender, marital status, education, and profession was statistically nonsignificant. Cancer patients in the study had more positive religious attitude than non-cancer individuals ($p = 0.0001$). Many studies indicated that a positive relationship between religion and good feeling as well as mental health, a decrease in the depression by religious beliefs and practice, a meaningful and goal full life, and a higher social support have existed (Koenig 2004). Stronger moral improved the adaptation of gynecological

Table 7 Comparison of spiritual values of cancer patients and non-cancer individuals

	Cancer ($N = 400$) $\bar{X} \pm$ sd	Non-cancer ($N = 400$) $\bar{X} \pm$ sd	p^*
Spiritual value	6.9 ± 1.1	6.3 ± 1.4	<0.001
Spiritual 1	2.6 ± 0.7	2.3 ± 0.9	<0.001
Spiritual 2	1.4 ± 0.6	1.3 ± 0.7	0.823
Spiritual 3	2.9 ± 0.3	2.7 ± 0.7	<0.001
Spiritual belief	5.8 ± 0.5	5.3 ± 1.2	<0.001
Spiritual 4	2.9 ± 0.4	2.6 ± 0.6	<0.001
Spiritual 5	2.9 ± 0.3	2.7 ± 0.6	<0.001
Forgiveness	7.5 ± 1.2	6.7 ± 1.1	<0.001
Spiritual 6	2.4 ± 0.5	2.2 ± 0.5	<0.001
Spiritual 7	2.5 ± 0.5	2.1 ± 0.5	<0.001
Spiritual 8	2.6 ± 0.5	2.4 ± 0.6	0.030
Religious practice	6.9 ± 2.0	6.7 ± 2.7	0.429
Spiritual 9	1.3 ± 0.5	1.6 ± 0.8	<0.001
Spiritual 10	2.1 ± 0.8	1.8 ± 0.8	0.010
Spiritual 11	1.5 ± 0.8	1.7 ± 0.8	0.003
Spiritual 12	2.0 ± 0.9	1.7 ± 0.9	<0.001
Positive religious coping	7.3 ± 1.2	7.1 ± 1.7	0.226
Spiritual 13	1.8 ± 0.8	2.0 ± 0.7	<0.001
Spiritual 14	2.8 ± 0.4	2.5 ± 0.6	<0.001
Spiritual 15	2.8 ± 0.5	2.5 ± 0.6	<0.001
Negative religious coping	3.6 ± 0.9	4.5 ± 1.2	<0.001
Spiritual 16	1.2 ± 0.5	1.7 ± 0.7	<0.001
Spiritual 17	1.2 ± 0.4	1.3 ± 0.6	0.011
Spiritual 18	1.2 ± 0.5	1.5 ± 0.7	<0.001

* Two-way ANOVA was performed

cancer patients to the disease (Camperson 2009); moral and religion again helped breast and gynecological cancer patients easily cope with the cancer (Lauver et al. 2007).

Woman in the study had more positive religious attitude than man for the interaction between religious attitude and sociodemographic characteristics ($p = 0.0001$) (Table 5). There was not any study for the interaction between gender and religious attitude. Similarly, non-cancer woman was more religious than man and practiced religious practices more (Batson and Schoenrade 1993; Beit-Hallahmi and Argyle 1997; Chatters et al. 1999). Woman cardiology and psychiatry patients, their woman relatives, and hospital woman workers had practiced both positive and negative religious coping methods more (Ayten et al. 2012). Some studies, on the other hand, indicated that gender did not affected religious attitude and no significant difference existed between genders (Çınar 2013, Cirhinlioğlu 2010).

Lower education level in the study resulted in the increased positive religious attitude ($p = 0.0001$) (Table 5). Similarly, Phelps et al. (2009) reported that using religion as a method of cope by cancer patients decreased with the longer education. Kuzgun and Sevim (2004) found that individuals at the elementary school level education had higher religious

attitudes than those at the high school and university levels. Similarly, Acar et al. (1996) revealed that there was a negative relationship between education and religious level.

Profession of the individuals in the study affected religious attitude, and jobless ones had higher religious attitude than retired clerks and workers ($p = 0.0001$) (Table 5). Social class, education, and economic statue might affect religious attitude and behaviors of the individuals.

There was no significant difference in this study between religious attitude and medical diagnosis, cancer stages, number of chemotherapy, chemotherapy drug type ($p > 0.05$) (Table 6). Phelps et al. (2009), dissimilar to our study, found that in advanced stage patients, especially among lung and colon cancer patients, a difference existed between medical diagnosis and positive religious coping. Depending on the stage, the cancer patients increased the frequency of religious attitudes (Çifçi 2007).

Cancer patients here had stronger moral values than non-cancer ones ($p = 0.0001$) (Table 7). Cancer threatens the life of an individual, worsens the functions, and is a crisis state. The individuals with cancer, which threatens the life and causes death fear, might develop higher moral values. Moral values were important for cancer patients (Daştan and Buzlu 2010; Puchalski 2001; Lin and Bauer-Wu 2003). A research conducted on breast cancer patients in Iran showed that spirituality positively affected the life quality of the patients Al-Natour et al. 2017). Tendency for moral values strengthened the capacity against cancer and stress (Cotton et al. 1999; Puchalski 2001).

Cancer patients in this study had stronger spiritual beliefs than non-cancer individuals ($p = 0.0001$) (Table 7). Patients need spiritual support for survival, hope, peace, having a meaningful life, loving and being loved more, and peaceful death (Hsiao et al. 2010). Belief in breast cancer patients improves emotional and social support and the meaning of life and, then, positively affects the capacity to cope with cancer (Feher and Maly 1999). Moral values were also an important factor increasing the psychosocial wellness (Lin and Bauer-Wu 2003). Patients in this study might have benefited from their moral values to cope with cancer.

Forgiveness in the study was higher in cancer patients than non-cancer ones ($p = 0.0001$) (Table 7). Individuals with cancer change the attitude for other life issues. Anything that used to disturb beforehand the cancer does not disturb the patient afterward. Moreover, he/she can forgive those whom he/she considers as potential social support mechanism and can wish them to be close. In the study, patients might have forgiven or been forgiven. Forgiveness is evaluated as wriggling of downtrodden person out of negative feelings and brings about physiological and psychological responses (Lawler-Row et al. 2008). Forgiveness was considered an effective way of losing negative emotions such as anger and offensiveness (Kara 2009; Yılmaz and Okyay 2009). Cancer patients (43%) needed help for internal tranquility (Moadel et al. 1999). Forgiveness and moral values, meantime, improved the life quality (Romero et al. 2006).

There was no difference between cancer and non-cancer individuals for religious practices ($p = 0.429$) (Table 7). While cancer patients had more positive religious attitudes than non-cancer ones, there was no difference between cancer and non-cancer for religious practices. This might be because of weakness and tiredness induced by chemotherapy. It has been demonstrated that people having more religious practices had higher well-being and life satisfaction level and those people experienced depression and anxiety symptoms less frequently, besides they had higher social support levels (Lai et al. 2017; Culliford 2002; Levine and Targ 2002; Thoresen 1999).

Cancer and non-cancer individuals did not differ for their positive and negative religious coping ($p = 0.226$), and non-cancer ones practiced negative religious coping more

($p = 0.0001$) (Table 7). Individuals have practiced both positive and negative spiritual cope methods (Daştan and Buzlu 2010; Romeo et al. 2006; Levine and Targ 2002). Cotton et al. (1999) reported a positive relationship between spiritual attitude and fighting spirit/fatalism and a negative relationship between anxiety and despair/hopelessness. Another study on breast cancer patients stated that spiritual therapy prevented psychological problems and improved the life quality (Bahreinian et al. 2017). Phelps et al. (2009) reported that cancer patients preferred positive religious coping and those had better life quality, relatively.

Conclusions

Cancer patients had a more positive religious attitude but less religious practice than non-cancer individuals. Therefore, religious needs of patients should be considered as a routine process under holistic care, and both infrastructural and spiritual conditions should be met.

Sociodemographic factors in this study affected religious attitude. Since woman and lower-level educated individuals experienced very positive religious attitude, caregivers should take these sociodemographic characteristics into consideration and then plan the care.

Cancer patients had stronger forgiveness, spiritual attitude, and beliefs than non-cancer individuals. Data indicated that religious and spiritual life was important. Therefore, nurses, who give care to those cancer patients, should take into consideration and not ignore spiritual needs of patients.

Nursing education syllabus could include emphasis on providing the patients' spiritual needs in holistic care. Besides, institutions providing health care could be equipped with necessary infrastructure to provide patients' spiritual needs.

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