ORIGINAL RESEARCH

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Spirituality, A Method of Coping with Depression in Cancer Patients Who Received Chemotherapy in the Southwest of Turkey (PRAYER Study)

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ABSTRACT Objective: Previous studies have shown that positive and negative approaches toward religious orientation are significant coping methods in cancer patients and their relatives. However, the results of these studies are controversial as to how the religious system is being used in cancer patients and their relatives for overcoming depression and how often it is used are unclear. The aim of this study was to determine the spiritual orientation as a method of coping with depression in cancer patients and their primary caregivers. **Material and Methods:** A survey was conducted including a face-to-face meeting with cancer patients and only one primary caregiver of these patients. For statistical analyses, the chi-squared test, Fischer's exact test, Wilcoxon test, and logistic regression analyses were performed. **Results:** A total of 123 cancer patients (group 1) and their primary relatives (group 2) were included in this study. The majority of patients in group 1 were male (n=69), married (n=81), not educated (n=69), of low economic status (n=85), and older than 65 years (n=65). Most of the participants in group 2 were female (n=74), married (n=69), educated (n=71), of low economic status (n=82), and younger than 65 years (n=64). Depression rate was 63% (n=78) in group 1 and 74% (n=91) in group 2. In group 1, positive religious coping was significant. However, in group 2, negative religious coping was leading. In stepwise multiple regression analysis, negative religious coping was a significant and independent risk factor for depression in groups 1 and 2 (odds ratio [OR]: 2.14; 95% CI, 1.41-3.11; p=0.044 for group 1 and OR: 2.48; 95% CI, 1.38-4.35 for group 2). **Conclusion:** The use of spiritual orientation as a coping method for depression, which is the most common psychological problem in cancer, can have a positive effect on cancer patients and their relatives.

Keywords: Religious; depression; coping; cancer; caregivers

Despite the developments of different treatment options, cancer is still the most significant health problem and one of the most prominent causes of death.[1] During cancer diagnosis, treatment, and follow-up processes, cancer patients have to overcome either symptoms of their diseases or adverse effects of their therapies. If these symptoms combine with the fear of death and unhealed feeling, harmony with therapy and quality of life get worse. This leads to curiosity and fear in patients, thus deteriorating their physical and mental health.[1-3]

In recent years, studies on psycho-oncology are increasing. These studies have declared that patients with cancer who have bad feeling status can negatively affect either their caregivers or oncologists. Therefore, it is crucial to control both malignancy and mental health of cancer patients. Several studies showed that depression and anxiety are the most common problems in cancer patients and their caregivers than the normal population; rates are sometimes more than 50%.[1-5]

When cancer patients receive bad news and have bad moods, they may have different coping mechanisms against stress. Maybe the most crucial coping mechanism is mental tranquility.[6] Daily activities, art activities, housework, yoga, group therapies, hypno-

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sis, and music therapies are leading as positive coping methods; however, some people can also overcome by negative mechanisms such as outbreak, anger, and suppression.[1-5]

Previous studies have shown that positive and negative approaches toward religious orientation are significant coping methods in cancer patients and their relatives. However, the results are controversial and how the religious system is being used in cancer patients and their relatives for overcoming depression and how often are unclear.[7-9]

This study aimed to determine the spiritual orientation as a coping method for depression in cancer patients and their primary caregivers and to emphasize the importance of spiritual orientation in psycho-oncological status.

MATERIAL AND METHODS

DESIGN OF STUDY AND PARTICIPANTS

This is a survey including a face-to-face meeting with cancer patients (group 1) and only one primary caregiver of these patients (group 2). In this study, two different groups were used to determine the frequency of depression and whether the spiritual orientation had different effects on coping with depression in cancer patients and their primary caregivers.

Patients were excluded from the study if they were younger than 18 years, had the psychotic disease, were illiterate, and had brain metastasis. The caregivers of patients who cannot speak Turkish were also excluded.

In the study, Beck Depression Scale (BDS) and the Brief Religious Coping Questionnaire (RCOPE) for religious coping were used. RCOPE is similar to a Likert-type survey which includes five responses (1 as never to 5 as very much) and measures religious approaches. This survey included positive and negative religious orientations. Scoring is based on negative religious coping (items 8-14) responses and scored as follows: low spiritual struggle (each item is scored 1 or six items are scored 1 and one item is scored 2), moderate spiritual struggle (two items are scored 2 and remaining items are scored 1), and high spiritual struggle (two or more items are scored 3 or 4 or three or more items are scored 2 and more, or one item is scored 2 and one or more items are scored 3 or 4). Another scoring system is scoring the parameters used for the analysis of the values of the Brief RCOPE Scale: none or negligible (1.00 to 1.50), low (1.51 to 2.50), average (2.51 to 3.50), high (3.51 to 4.50), and very high (4.51 to 5.00).[10] The Brief RCOPE scale is currently not used in Turkish.

The BDS includes 21 questions and is based on 0-4 scoring and scored between 0 and 63. As per the scoring, 0-13 is "no depression," 14-19 is "mild depression," 20-28 is "moderate depression," and 29-63 is "severe depression." The BDS was developed by Beck et al., and the scale was studied for reliability and validity of the Turkish version by Hisli.[11,12]

The study was started after obtaining the approval of the academic ethics committee within ethical rules. Survey questions included the psychosocial study survey which was approved by Pamukkale University Clinic Research Ethics Committee. The answers were collected between August 2012 and September 2015.

The data were expressed as the mean±standard deviation or the median and interquartile range (25-75%). The distribution of variables was analyzed using the Kolmogorov-Smirnov test. Quantitative variables with normal distributions were analyzed using a two-tailed, independent Student's t-test. Nonparametric variables were analyzed using the Mann-Whitney U test. However, qualitative parameters were analyzed using chi-square and Fisher's exact tests. The relationships between depression and other study variables including age, gender, marital status, economic status, employment status, educational level, patient relationship, living area, location of patient's primary tumor, stage of patient's cancer, and patient's knowledge of own cancer were determined using Spearman's correlation tests and analysis of variance. The dependent variable for the multiple logistic regression analysis was the negative or positive coping with religious orientation on depression. Both the adjusted and crude odds ratios (ORs) were calculated with 95% confidence interval (CI) to assess the influence of various independent variables on the depression status. A p-value of <0.05 was considered statistically significant. All the analyses were per-

formed using the Statistical Program for Social Sciences version 15.

RESULTS

A total of 123 cancer patients who were receiving chemotherapy and 123 relatives who were their primary caregivers were included in the study. The demographic properties of patients and their caregivers are presented in Table 1.

The majority of cancer patients (group 1) were male (n=69, 56%), married (n=81, 66%), not educated (n=69, 56%), of low economic status (n=85, 69%), and older than 65 years (n=65, 53%). Most of the participants in group 2 were female (n=74, 60%), married (n=69, 56%), educated (n=71, 58%), of low economic status (n=82, 67%), and younger than 65 years (n=64, 52%). The average age of participants in groups 1 and 2 was 49±14 (range: 38-78) years and 42±9 (range: 24-62) years, respectively. No disparity in age was detected for men and women in groups 1 and 2 (p=0.204 and p=0.198, respectively).

We found that 58% (n=72) of cancer patients did not know about cancer diagnosis, whereas 42% (n=51) of them knew about the cancer diagnosis.

Findings of depression and religious coping features are presented in Table 2. Depression rate was 63% (n=78) in group 1. BDS was 11±8 when all cancer patients were included, and in stratification analyses, mild depression was noted in 58% (n=47) of cancer patients. In this study, depression rate was 72% (n=37) and BDS was 17±9 in cancer patients who know their diagnosis and the rate was 57% (n=41) and BDS was 7±6 in patients who do not know their diagnosis (p=0.039 and p=0.043, respectively).

No significant difference was observed in depression score between men (11±7) and women (12±8) (p=0.243) in group 1; however, female cancer patients who know their diseases had more depression score (17±8) than male patients who know or do not know their diseases (15±9 and 6±4, respectively) and female cancer patients who do not know their diseases (7±5) (p=0.034).

In group 1, a significant correlation was observed between depression and age younger than 65 years, females, those who do know their disease, and metastatic diseases (r=0.546, p=0.042; r=0.574, p=0.045; r=0.612, p=0.031; r=0.608, p=0.036, respectively) and no relationship was observed between depression and

TABLE 1: Demographic characteristics of the study participants.

Group definition/Features	Group 1 Cancer patients	Group 2 Cancer caregivers
N	123	123
Gender		
Female	54 (44)	74 (60)
Male	69 (56)	49 (40)
Age		
<65 years	58 (47)	64 (52)
≥65 years	65 (53)	59 (48)
Marital status		
Married	81 (66)	69 (56)
Other	42 (34)	54 (44)
Employment		
Employed	21 (17)	34 (28)
Unemployed	25 (20)	11 (9)
Retired	37 (30)	28 (22)
Student	2 (2)	11 (9)
Housewife	38 (31)	39 (32)
Education		
High school or greater	54 (44)	71 (58)
Other	69 (56)	42 (42)
Economic status		
High level	38 (31)	41 (33)
Low level	85 (69)	82 (67)
Living area		
Urban	68 (55)	72 (58)
Rural	55 (45)	51 (42)
Localization of primary tumor		
Breast	31 (25)	
Lung	27 (22)	
Colorectal	23 (19)	
Pancreaticobiliary	14 (11)	
Stomach	12 (10)	
Gynecological	10 (8)	
Prostate	6 (5)	
Stage of cancer		
Early-stage disease	41 (33)	
Locoregional disease	18 (15)	
Metastatic disease	64 (52)	
Status of knowledge about the patient's diagnosis		
Known	51 (42)	
Unknown	72 (58)	
Relationship to patient		
Spouse	54 (44)	
Child	49 (40)	
Other	20 (16)	

TABLE 2: Results of depression and religious coping strategies in cancer patients and their caregivers.

Features	Group 1	Group 2
Beck Depression score (mean±standard deviation)		
All individuals	11±8	14±9
Who do know their diagnosis (n=51)	17±9	11±6
Who do not know their diagnosis (n=72)	7±6	17±8
Presence of depression (n,%)		
All individuals	78 (63)	91 (74)
Who do know their diagnosis (n=51)	37 (72)	34 (67)
Who do not know their diagnosis (n=72)	41 (57)	57 (79)
Depression degree in all individuals (n,%)		
Absent	45 (37)	32 (26)
Mild	32 (26)	37 (30)
Modrate	39 (32)	46 (37)
Severe	7 (5)	8 (7)
Totally Brief RCOPE score (mean±standard deviation)		
All individuals	3.43±0.31	4.71±0.96
Who do know their diagnosis (n=51)	3.11±0.11	2.98±0.41
Who do not know their diagnosis (n=72)	2.18±0.21	4.18±0.98
Religious coping (all individuals; n,%)		
Positive coping	68 (55)	41 (33)
Negative coping	55 (45)	82 (67)

education level, marital status, economic status, employment status, and location of living (r=0.245, p=0.214; r=0.308, p=0.198; r=0.337, p=0.207; r=0.411, p=0.178; r=0.374, p=0.193, respectively).

Depression rate was 74% (n=91) in group 2. BDS was 14±9 when all primary caregivers (group 2) were included in the analysis, and in the stratification analysis, mild depression was noted in 67% (n=82) of primary caregivers. The depression rate was 68% (n=49) and BDS was 17±8 in the caregivers of patients who do not know their diagnosis and was 59% (n=30) and 11±6, respectively, in the caregivers of patients who know their diagnosis (p=0.038 and p=0.042, respectively). This result was different from that obtained in cancer patients. This status was associated with having the responsibility of for all therapy and life decisions and caregivers' theatrical approaches to cancer patients who do not know their diagnosis.

In group 2, a significant correlation was observed between depression and age younger than 65 years, females, those knowing about diagnosis, relationship degree, metastatic cancer, and high education level (r=0.463, p=0.042; r=0.501, p=0.047; r=0.468, p=0.041; r=0.503, p=0.047; r=0.518, p=0.046; and r=0.459, p=0.048, respectively); however, no significant relationship was observed between depression and economic status, employment status, and location of living (r=0.204, p=0.118; r=0.206, p=0.267; and r=0.301, p=0.284, respectively).

Thus, the depression score was significantly higher in caregivers than cancer patients (p=0.038). Similarly, the depression score was significantly higher in the caregivers of patients who know their diseases than the caregivers of patients who do not know their diseases (p=0.041).

In logistic regression analysis, depression was strongly correlated with age younger than 65 years, females, metastatic disease, breast cancer, and those who know their disease in group 1. Metastatic disease was determined as an independent risk factor in multivariate analysis (OR: 2.04; 95% CI, 1.11-5.14; p=0.037) for group 1. Similarly, in group 2, age younger than 65 years, females, relatives of a metastatic patient who know the diagnosis, relative of patients who does not know the diagnosis, and spouse were significant risk factors for depression in univariate re-

gression analysis. Not knowing the diagnosis was an independent risk factor in multivariate analysis (OR: 2.18; 95% CI, 1.41-4.11; p=0.032) for group 2.

In the analysis of group 1, the mean total religious coping score (RCS) was 3.43±0.31, negative was 1.14±0.23, and positive was 2.64±0.52. In addition, the mean negative RCS/positive RCS ratio was 0.28±0.08. In the analysis of group 2, the mean total RCS was 4.71±0.24, negative was 4.02±0.96, positive was 1.14±0.84, and mean negative RCS/positive RCS ratio was 0.44±0.28.

In group 1, positive religious coping was significant and a significant correlation was observed between positive RCS and early-stage cancer, age older than 65 years, low education level, and not having notice of diagnosis (r=0.416, p=0.048; r=0.345, p=0.041; r=0.514, p=0.043; and r=0.514, p=0.048, respectively); however, no such correlation was observed with other variables. Whereas in group 2, negative religious coping was leading and a significant positive correlation was observed between negative RCS and metastatic stage, age younger than 65 years, females, depression, and not having notice of patients' diagnosis (r=0.543, p=0.038; r=0.425, p=0.042; r=0.507, p=0.042; r=0.427, p=0.038; and r=0.604, p=0.032, respectively); however, no such correlation was observed with other variables.

Finally, in stepwise multivariate regression analysis where depression was considered a dependent factor and RCS was adjusted, negative religious coping was a significant and independent risk factor for depression in groups 1 and 2 (OR: 2.14; 95% CI, 1.41-3.11; p=0.044 and OR: 2.48; 95% CI, 1.38-4.35; p=0.037) (Table 3).

DISCUSSION

In this study, we aimed to demonstrate the relationship between depression and religious coping mechanisms in cancer patients and their primary caregivers. Positive religious coping properties were highly detected in cancer patients; however, the negative religious coping trend was more commonly observed in caregivers of cancer patients.

The most known coping mechanism with stress is the Transaction Model of Stress and Coping suggested by Lazarus and Folkman.[13] The clinical practice approaches that are obtained from this model are two different overcome mechanisms for individuals. These methods are described as "problem-focused" or "emotional focused," and it is unclear which method to be used in stress. In a problem-focused coping mechanism, individuals try to directly overcome stress. Whereas in an emotional-focused coping mechanism, the patients try to manage stress feelings. In classic psychology

TABLE 3: Multivariate regression analysis of depression in cancer patients and their caregivers.

Factors/Variables	Group 1		Group 2	
Group definition/Features	Cancer patients		Cancer caregivers	
N	123		123	
	OR (95% CI*)	p	OR (95% CI)	p
Gender	0.87 (0.79-1.04)	0.265	0.91 (0.87-1.08)	0.198
Age (<65 vs. ≥65 years)	0.95 (0.87-1.11)	0.332	0.94 (0.91-1.02)	0.087
Marital status (Married vs. other)	0.84 (0.71-1.09)	0.098	0.89 (0.84-1.11)	0.095
Employment (Employed vs. other)	0.91 (0.88-1.05)	0.201	0.94 (0.91-1.09)	0.245
Education (High school or greater vs. other)	0.94 (0.91-1.18)	0.145	0.98 (0.95-1.06)	0.203
Economic status (High level vs. low level)	0.91 (0.88-1.08)	0.132	0.91 (0.89-1.03)	0.142
Living area (Urban vs. rural)	0.93 (0.89-1.11)	0.087	0.94 (0.89-1.08)	0.106
Stage of cancer (Metastatic vs. non-metastatic)	0.94 (0.91-1.08)	0.372	0.92 (0.89-1.02)	0.215
Status of knowledge about the patient's diagnosis (Known vs. unknown)	0.88 (0.81-1.05)	0.219	0.89 (0.84-1.04)	0.162
Relationship to patient (Spouse vs. other)	0.91 (0.88-1.12)	0.115	0.92 (0.89-1.06)	0.134
Negative religious	2.14 (1.41-3.11)	0.044	2.48 (1.38-4.35)	0.037
Positive religious	0.93 (0.89-1.02)	0.146	0.91 (0.89-1.07)	0.203

OR: Odds ratio; CI: Confidence interval.

wishful thinking, minimization or avoidance is part of an emotional-focused coping mechanism. Thus, seeking social support includes either problem-focused or emotional-focused coping methods.

Previous studies have shown that cancer patients, particularly those with breast cancer, try to cope with their stress through religious coping/spirituality. Several studies on religious coping had controversial results.[7,8,14,15]

Positive approaches were leading "full reliance on God gave" religion behavior model, and negative approaches were leading as outbreak and avoidance. The mechanisms to overcome stress are connected to the community, cultural activities, ethnic identities, and several properties. Literature shows that religious/spirituality studies are related to the quality of life, pain, and depression.

Atef-vahid et al. studied the relationship between the quality of life and religious coping.[16] Moreover, they used the European Organization for Research and Treatment of Cancer Quality of Life Questionnaire (EORTC QLQ-C30), the Cancer Coping Questionnaire, and Religious Attitude Questionnaire forms. They found that religious attitude is a crucial coping behavior model and has a significant association with the quality of life.

In a German study investigating the relationship between psychosocial adjustment and religious coping, confident, and constructive turning to religion were used as a positive religious coping model and religious struggle and doubt were used as a negative religious coping model.[16] Zwingmann et al. determined that specific religious-cultural properties could have an inconsistent effect on some literature.[17] Religious and cultural properties can affect the perspective of individuals for cancer disease as indicated in previous studies.

Most of the people who live in Turkey have a patriarchal perspective and destiny approach such as the Middle East community approach. Some myths and stigmas that are ordinary have a crucial place in Turkish society.

In Turkey, leading myths and perspectives because of cancer are death, fear, pain, suffering, control, and losing individual independence. Thus, Daher has written in an article that cancer has similar meanings to those terms in Middle East countries.[18] In Muslim societies, there are beliefs such as living after death and heaven/hell terms; however, in Turkey, an emotional contradiction was observed between believing in life after death and being afraid of death. Moreover, he emphasizes that cancer and fear of death in cancer patients and their caregivers are related to depression, anxiety, and poor quality of life. A common idea drawn up by Daher in Turkish society is as follows: "If you cut into cancer, it will spread immediately all over the body."[18] In addition, some symptoms and findings are stigmata that can cause the late diagnosis of cancer. Particularly, the diagnosis of breast and gynecological cancer is late because of these stigmas. As Daher emphasizes on patriarchal and closed societies, breast and female reproductive organs are parts of the body which are not spoken about.[18] In Daher's opinion, all these myths and stigmas were chosen as a mechanism to overcome cancer in Middle East countries; it is reflected as spirituality/religious orientations.[18] This study determined that most of the cancer patients believe that the disease is their destiny and they feel like they are choosing positive religious coping methods, whereas their caregivers thought the disease was a warning and punishment; therefore, it is the negative religious coping behavior models. Generally, these are parallel to the results of the previous studies and reflection of society's myths and stigmas to cancer.

Several studies investigating the relationship between depression and religious orientation/spirituality in cancer patients and their caregivers had unclear and controversial results. A study including 150 Iranian cancer patients conducted by Haghigi showed that the depression score of men was 5.8±4.08 and women was 5.58±4.63 (p=0.770).[19] In this study, no significant difference was observed between the depression score of men and women; however, in the metastatic stage, the depression score was higher in men than women. On the contrary, the depression score of the caregivers of cancer patients was higher than that of cancer patients.

These results were compared with that of Haghigi's study as it included Muslim patients who live in a Middle East country.[19] Haghigi reported that age, sexuality, education level, and religious coping

components (relationship with God, avoidant relationship, and ambivalence relationship) are the predictors for depression and a significant negative relation exists between avoidant relationships and depression.[19] We found that for determining the depression risk in patients having negative religious coping orientation, the avoidant relationship and metastatic stage are significant and independent risk factors. In youth caregivers of cancer patients, avoidant relationship and having notice of cancer diagnosis are independent risk factors.

From Haghigi's study or this study, a relationship between depression and religious coping methods, and most of the results are compatible with similar previous studies and inconsistent with some studies.[19]

Therefore, in cancer patients and their caregivers, there is a higher frequency of depression and religious/spirituality orientation is a crucial mechanism to overcome depression in patients.[20,21] Although there was an adequate number of participants, the study included only one part of Turkey and there was heterogeneity in participants, and therefore, this study could not present the Turkish society. National studies including more participants and centers are warranted. In a psychological approach, determining the mechanism to overcome stress and cancer in patients and their caregivers and detecting the appropriate religious/spirituality coping methods from these mechanisms are crucial for a higher quality of life and improving psychosocial burdens.

Source of Finance

During this study, no financial or spiritual support was received neither from any pharmaceutical company that has a direct connection with the research subject, nor from a company that provides or produces medical instruments and materials which may negatively affect the evaluation process of this study.

Conflict of Interest

No conflicts of interest between the authors and / or family members of the scientific and medical committee members or members of the potential conflicts of interest, counseling, expertise, working conditions, share holding and similar situations in any firm.

Authorship Contributions

This study is entirely author's own work and no other author contribution.

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