

# The correlation between spiritual wellbeing and depression in elderly patients with cancer in Iran

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## Abstract

**Background and Objective:** Being elderly is the most significant risk factor for incidence of cancer. Cancer can adversely influence the spiritual health of elderly patients. Moreover, spiritual health influences other aspects of health and has received considerable research interest. Therefore, the present study aimed to investigate the correlation between spiritual health and depression among elderly patients with cancer.

**Methods:** This was a cross-sectional descriptive-analytic study in elderly patients (n=180) diagnosed with respiratory, breast, and gastrointestinal cancer and who referred to the Hospitals affiliated with one of the Medical Universities in Tehran, Iran during 2016. The relevant data were collected using a demographic information questionnaire, Geriatric Depression Scale (GDS), and Alison Palutzin Questionnaire. To analyze the data, the statistical software Stata (Windows, version 13) was used. Descriptive statistics (number, percentage of frequency, mean, and standard deviation) and analytical statistics (linear regression and Pearson correlation coefficient) were used and the statistical significance level was set at  $p \leq 0.05$ .

**Results:** A significant inverse correlation was observed between spiritual health and depression ( $P=0.001$ ,  $r = -0.54$ ) in elderly cancer patients. Furthermore, an inverse and significant correlation was observed between religious ( $r=-0.23$ ,  $P=0.002$ ) and existential ( $r=-0.59$ ,  $P=0.001$ ) dimensions of spiritual health and depression in these patients.

**Conclusions:** Findings of this study demonstrated that spiritual health is an important factor for the health of elderly patients with cancer and the religious and existential dimensions of spiritual health are the main mechanisms for depression reduction. It is recommended to adopt a comprehensive nursing care program to improve the spiritual health of these patients.

**Key words:** Depression, Spiritual health, elderly, cancer, healthcare

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## Introduction

In the USA and other countries all over the world, cancer is regarded as one of the most important health threats (1). In 2015, cancer was responsible for 8.8 million deaths worldwide (2) and it is the third leading cause of death in Iran (3). Cancer is usually affected by age; in such a way that most individuals of 65+ years are diagnosed with different types of cancer (4). Nowadays, this disease is one of the most prevalent chronic diseases worldwide and its prevalence and occurrence rate increase as individuals get older (5). Patients diagnosed with cancer also experience many mental disorders such as adjustment, having a depressed mood, anxiety, and lack of self-confidence. These patients are most likely to suffer from severe depression and other mental disorders at advanced stages (6).

Depression is one of the most prevalent disorders in cancer patients, especially in elderly patients (7), which might affect their decision-making skills, continued treatment and various aspects of the patients' lives. Prevalence of depression in cancer patients has been estimated between 5 and 30%. (8). One of the most prevalent and common psychological disorders of old age is basic depression (9) with a prevalence of 71.8% in older adults (10).

Awareness of cancer diagnosis and longterm and invasive treatments are an unpleasant and shocking experience and in many cases, because of this distasteful experience, the patients are unable to enjoy their lives.

(11, 12). Because of this unpleasant experience, a significant increase is seen in the spiritual needs of the patients (13) and they might be at risk of suffering from spiritual distress (12). Cancer leads to changes in perception of life in the cancerous patients and cause physical, mental, social, economic and family problems (14). Generally, there are numerous concepts that are always taken into account in association with how patients are facing the problems and the tension caused by this disease, one of which is the concept of spiritual health (15-16).

Spiritual health is one of the dimensions of health which establishes a coherent and integrated relationship between the inner forces of individuals who are spiritually healthy, feel close to themselves, God, society and the environment they live in and has them experience a sense of peace and stability in life (17). This concept has two dimensions: a religious dimension and an existential dimension. Religious health refers to a sense of satisfaction because of having a connection with a higher power and existential health refers to the effort that is made by an individual to understand the meaning and purpose of life (18-19).

Many scholars believe that spirituality can overshadow all of the aspects of humanity and it can be defined as a cohesive dimension of anyone's health and welfare (20).

Nurses play an important role in preserving a good level of health and quality of life of elders and their families throughout their cancer treatment (21). Studies focusing on spiritual support, particularly for cancer patients, have shown that nurses should utilize the effect of spirituality and religiousness on shaping the meaning of life and death in the minds of patients and discovering ways in coping with physical and mental tensions. Taking care of patients in terms of spirituality is just like other aspects of taking care of them and it must be done based on nursing protocols. It is necessary for nurses to become aware of the spiritual needs of patients as well as the probable effects of the disease they are currently suffering from and their spiritual experiences during their treatment. Respecting the spiritual beliefs of a patient and incorporating these beliefs in their care treatment process is of crucial importance (22).

Gonzalez et al. (2014) and Bekelman et al. (2007) demonstrated a relationship between spiritual health and depression in cancer patients; while some studies have shown that there is an inverse significant relationship between spiritual health, depression, and anxiety in patients diagnosed with advanced cancer; but there is no significant relationship between religious health and depression (23). In the studies of Nsameng (2016) and Khezri (2015), there are no relationships between the average total score of spiritual health and its religious dimension and depression. Also, findings indicted the absence of a relationship between religious and believing in life after death and depression in cancer patients (24).

Increasing population ageing during recent years, high prevalence of cancer and the negative effects of cancer and associated comorbidities, especially depression, have necessitated the need for paying special attention to this subject. The controversial findings of different studies have confirmed the need for research on this issue. On the other hand, there are social, cultural, and religious differences in spiritual beliefs between Iran and other countries which might affect various aspects of people's lives and health. In addition, the growth in elderly population (the old age crisis) (25) also affirms that it is necessary to conduct more research in this field. The present study aimed to investigate the correlation between spiritual health and depression among the elderly patients with cancer in the selected Hospitals affiliated with one of the medical Universities located in Tehran city, Iran.

## Materials and methods

This was a cross-sectional descriptive-analytic study investigating the correlation between spiritual health and depression among the elders with cancer. The study population consisted of all of the elderly men and women diagnosed with respiratory cancer, breast cancer, and gastrointestinal cancer referred to the Hospitals affiliated with one of the Medical Universities in Tehran city, Iran during 2016. The study subjects (n=180) were selected using purposive sampling and based on the inclusion and exclusion criteria of the study.

**Sample size:** Considering the estimated alpha (0.05), power (80%) and correlation coefficient (22%) (Khezri et al.2015), the sample size was calculated at 160. To compensate for the attrition of the patients the sample size of this study was considered 10% higher than the calculated size (n=180).

**Inclusion and exclusion criteria:** The inclusion criteria for this study were: age of 60 years old and higher, literacy, cancer diagnosis with a minimum history of 6 to 8-month Report of the disease. The reason behind defining the minimum history of 8 months of cancer as the main criterion of inclusion is that after this period the patient has supposedly past the severe mental effects of the diagnosis and treatment of cancer and has completed the mental phases of accepting the disease (26). The exclusion criteria of the study were as follows: unwillingness to participate in the study, suffering from mental retardation, dementia or schizophrenia, and drug abuse.

**Questionnaires:** Three questionnaires were used in this study as tools for collecting data. One of these questionnaires is the questionnaire used for gaining demographic information about the patients (age, gender, profession, level of income, type of cancer, time of diagnosis, etc.) and the other two were Geriatric Depression Scale (GDS) and Paloutzian and Ellison's Spiritual well-being Questionnaire. The mental health questionnaire had 20 items. A 6-point Likert scale was used in this questionnaire (from totally disagree to totally agree). In this scale, spiritual health has two domains: religious health and existential health. Each includes 10 items which yield a score ranging from 10 to 60. The odd phrases show the level of religious health of the participants and the even phrases show the level of existential health of the participants. Total score obtained from each participant is the sum of scores of the two subscales (20 to 120). In total, the obtained scores can be classified as follows: low spiritual health 20 to 40, average spiritual health 41 to 99, and high spiritual health 100 to 120 (18). In Iran, Seyedfatemi et al. (2006) used this questionnaire and reported the Cronbach's alpha coefficient of 0.82 of this questionnaire, confirming the reliability of the questionnaire (27). Moreover, the reliability and validity of the questionnaire have been confirmed in many types of study (27). In a study conducted by Baljani et al. (2011), the reliability of the questionnaire was confirmed by using Cronbach's alpha coefficient of  $r=0.88$  (28).

The GDS questionnaire consists of 15 items with two-point responses (yes/no). Achieving a score of 5 means the presence of depression and higher scores indicate more severe depression. Validity and reliability of this questionnaire were measured in various studies and the Cronbach's alpha coefficient of this questionnaire was 0.84.

In this study, content validity and face validity were used for determining the validity of the tools. To determine the content validity of the tool, this questionnaire was distributed among 10 members of the faculty of nursing and midwifery. The obtained results were indicative of the

content validity of the questionnaire; total CVI (Content Validity Index) was 0.95 which was acceptable.

To measure the reliability of the tools used in this study, the internal consistency method was used. To determine the internal consistency through Cronbach's alpha coefficient method, the questionnaires were given to 30 older adults diagnosed with cancer who had the specifications of the units under study. Cronbach's alpha coefficient for the spiritual health tool was 0.82 and it was 0.86 for older adults' depression.

**Ethical considerations:** All of the experimental procedures and protocols of this study were approved by the local ethics committee of Shahid Beheshti Medical University, Tehran, Iran (registration code: IR.SBMU.PHNM.1395.484). The researcher visited the relevant health care centers and clearly explained the objectives and procedures of the study and the significance of the study to all potential participants along with sufficient information about the study including research objectives and the importance of conduction of the research and the fact that participants remain anonymous, participation in the study is voluntary, and the obtained information remain confidential. Then, the questionnaires were distributed to the qualified patients to be filled out.

**Statistical Analysis:** To analyze the data, the statistical software Stata (Windows, version 13) was used. Descriptive statistics (number, percentage of frequency, mean, and standard deviation) and analytical statistics (linear regression and Pearson correlation coefficient) were used for describing the data. For all statistical analyses the statistical significance level was set at  $p \leq 0.05$ .

## Results

In this study, 180 cancer patients in the age group of over 60 years participated with the mean and standard deviation of  $65.13 \pm 5.71$  years. In terms of gender, 54% (98 patients) were female and 45% were male (82 patients). Mean and standard deviation of the duration of diagnosis with the disease was  $26.62 \pm 23.08$  months with a range from 6 to 180. 55% of the samples (99 patients) lived in Tehran and 45% (81 patients) lived in other cities. The most prevalent type of cancer was gastrointestinal cancer. In terms of education, the maximum frequency was that of an elementary school diploma (61.11%) and academic degree (7.22%). Most of these patients were unemployed, 25% of them were retired (45 patients) and 11.67% of them were employed. 48.33% of these patients lived with their spouses and their children. 17.22% of the patients under study stated that they have a record of depression.

The result of simple linear regression analysis showed that the variables of academic degree ( $P=0.03$ ), retirement ( $P=0.005$ ), +306-dollar income ( $P=0.006$ ), and the variable "who do you live with?" (Spouse and children  $p=0.02$ ) have a significant relationship with depression in elders (Table 4). However, there was no significant relationship among the variables age, gender, marital status, type of cancer, a report of depression, diagnosis with other patients'

**Table 1. Distribution of the mean score of spiritual health and its dimensions and depression in elders**

Variable		Number	Mean	Standard deviation	Minimum	Maximum	Confidence interval of 95%	
							Low level	High level
Spiritual health	Total	180	86.22	10.35	53	114	84.96	87.74
	Religious dimension	180	46.03	4.31	20	56	45.40	46.67
	Existential dimension	180	40.2	7.80	15	59	39.05	41.34
Depression		180	6.5	4.05	0	15	5.93	7.12

**Table 2. Correlation between spiritual health and its dimensions and depression in the elders participating in the study**

Variable		Existential health	Religious health	Spiritual health	Depression
Existential health	Correlation coefficient	1.00			
	P-value	Reference group			
Religious health	Correlation coefficient	0.41	1.00		
	P-value	0.001	---		
Spiritual health	Correlation coefficient	0.92	0.72	1.00	
	P-value	0.001	0.001	---	
Depression	Correlation coefficient	-0.59	-0.23	-0.54	1.00
	P-value	*0.001	*0.002	*0.001	---

**Table 3. Distribution of the mean score of spiritual health and depression based on the type of cancer**

Cancer	Spiritual health				Depression			
	Mean	Standard deviation	Minimum	Maximum	Mean	Standard deviation	Minimum	Maximum
Breast cancer	87.24	11.46	53	111	6.06	4.61	0	15
Respiratory Cancer	84.41	10.01	68	108	7.33	3.91	1	15
Gastrointestinal cancer	86.75	9.83	57	114	6.29	3.73	0	14

duration of diagnosis with cancer and place of residence and depression in elders. Moreover, there was a direct and significant relationship between spiritual health and employment status (retirement,  $P=0.005$ ) and +306-dollar income at the level of 0.03. There was no statistically significant relationship between spiritual health and other variables.

In this regard, the results show that old patients who live with their "spouse and children" had a higher depression score than those who only live with their "spouse". On the

other hand, employed and Emeritus old patients had a lower depression score than unemployed old patients. In addition, old patients with an academic degree had a lower depression score than those with an elementary diploma. No significant relationship was observed between the depression variable and other variables. Furthermore, there was no significant relationship between the demographic variables and spiritual health in elders (by controlling the destructive effect of other variables at the level of  $\alpha = 0.05$ ).

Table 4. Relationship between demographic variables and mental health and depression

Variable		Depression score				Spiritual health score			
		$\beta$	Confidence distance of 95%		P-value	$\beta$	Confidence distance of 95%		P-value
			Low	High			Low	High	
Cancer	Breast	1.00	-	-		1.00	-	-	
	Respiratory	1.27	-0.32	2.86	0.117	-2.83	-6.92	1.25	0.173
	Gastrointestinal	0.23	-1.22	1.67	0.758	-0.49	-4.20	3.21	0.792
Age	Age	-0.03	-0.13	0.08	<b>0.629</b>	-0.01	-0.27	0.26	<b>0.960</b>
Gender	Male (base)	1.00	---	---	Reference group	1.00	---	---	Reference group
	Female	-0.44	-1.64	0.75	<b>0.465</b>	0.08	-2.98	3.15	<b>0.957</b>
Education	Elementary school	1.00	-	-	Reference group	1.00	-	-	Reference group
	Middle school	0.65	-1.08	2.38	0.460	-3.34	-7.83	1.16	<b>0.145</b>
	High school	-0.57	-2.14	1	0.473	1.36	-2.71	5.44	<b>0.510</b>
	University	-3.56	-5.85	-1.27	0.003	4.25	-1.71	10.20	<b>0.161</b>
Employment	Unemployed (base)	1.00	---	---	Reference group	1.00	---	---	Reference group
	Employed	-1.74	-3.60	0.11	<b>0.066</b>	4.20	-0.56	8.95	<b>0.084</b>
	Retired	-1.97	-3.35	-0.60	<b>0.005</b>	5.04	1.51	8.56	<b>0.005</b>
Income	Less than 184 dollars (base)	1.00	---	---	Reference group	1.00	---	---	Reference group
	184-306 dollars	-1.04	-2.28	0.21	<b>0.102</b>	2.78	-0.42	6	<b>0.089</b>
	More than 306 dollars	-3.36	-5.75	-0.98	<b>0.006</b>	6.80	0.65	12.96	<b>0.030</b>
Marital status	Other (base)	1.00	---	---	Reference group	1.00	---	---	Reference group
	Married	0.34	-1.11	1.78	<b>0.644</b>	2.21	-1.48	5.91	<b>0.238</b>
Who do you live with?	Spouse (base)	1.00	---	---	Reference group	1.00	---	---	Reference group
	Children	1.74	0.26	3.74	<b>0.088</b>	-1.36	-6.57	3.86	<b>0.608</b>
	Spouse and children	1.62	0.21	3.04	<b>0.025</b>	0.05	-3.64	3.75	<b>0.977</b>
	Others	5.52	-2.45	13.49	<b>0.173</b>	-2.75	-23.53	18.02	<b>0.794</b>
	Alone	0.04	-2.02	2.11	<b>0.966</b>	-3.13	-8.51	2.25	<b>0.252</b>
Duration of diagnosis	Duration of diagnosis	-0.02	-0.04	0	<b>0.081</b>	0.03	-0.03	0.08	<b>0.295</b>
Record of depression	Yes (base)	1.00	---	---	Reference group	1.00	---	---	Reference group
	No	-1.16	-2.73	0.41	<b>0.146</b>	1.55	-2.49	5.59	<b>0.449</b>
Diagnosis with other diseases	Yes (base)	1.00	---	---	Reference group	1.00	---	---	Reference group
	No	-0.92	-2.17	0.33	<b>0.149</b>	1.90	-1.32	5.11	<b>0.246</b>
Place of residence	Tehran (base)	1.00	---	---	Reference group	1.00	---	---	Reference group
	Other cities	-0.30	0.90	0	<b>0.624</b>	2.15	-0.90	5.21	<b>0.166</b>

## Discussion

The present study aimed to determine the correlation between spiritual health and depression among elderly adults diagnosed with cancer. The results of the present study showed a significantly negative correlation between depression and spiritual health in elderly cancer patients ( $P=0.001$ ,  $r=-0.54$ ), which support the findings of the previous similar studies (14, 19, 27, 29, 35).

In the present study, the average total score of the spiritual health of the majority of elderly cancer patients was moderate. However, the findings of studies conducted by Rezayi et al. and Hojati et al. (36) in Iran showed that most of the cancer patients had high levels of spiritual health. This difference in the findings can be attributed to the studied populations in the two studies where Rezayi et al. studied only women diagnosed with breast cancer in Isfahan city, Isfahan, Iran, whereas our study investigated both male and female patients diagnosed with three different types of cancer (breast cancer, respiratory cancer, and gastrointestinal cancer) in Tehran city.

In the present study, the mean score of the religious dimension of spiritual health (46.3) was higher than the mean score of the existential dimension of spiritual health (40.2). This finding is consistent with the findings of some previous studies that investigated cancer patients (14, 19, 27, 29, 37, 39). The religious culture that is dominant in Iran, especially among elders, can be the cause of this difference. It is because of this dominant culture that the people, who live in a stressful condition, or those who are faced with crises caused by chronic diseases, tend to be more religious.

The results of the regression analysis indicated a significant inverse correlation between the religious and existential dimensions of spiritual health and depression in elderly cancer patients ( $r=0.41$ ,  $P=0.001$ ) (19, 30, 35, 38, 40); in the sense that as the religious dimension of spiritual health is enhanced, the patients become less depressed. These results do not support the findings of McCoubrie and Davies (2006), Mills et al. 2015 and Nsameng et al. (2017) and the cause of this incompatibility can be the cultural and religious difference between the countries under study. Religion can be a source of important resources that can protect cancer patients against depression (41). Given that Iranian people have strong religious beliefs and are strictly committed to their spiritual views, this finding seems logical.

Our analysis showed a significant inverse relationship between the existential dimension of spiritual health and depression. This finding supports the findings of Bekelman et al. (2007), Lee et al. (2014), and Musarezaie et al. (2012): Cancer patients with higher scores of the existential dimension of spiritual health are less depressed ( $P=0.0001$ ). Mills et al. (2015) showed that elderly cancer patients with higher scores of the existential dimension of spiritual health are less depressed. In other words, an increase in the level of spiritual health is an important factor for preventing elders from suffering from depression (42).

Our analyses showed no statistically significant relationship between spiritual health and any of the demographic variables presented in Table 4. These findings are consistent with the findings of the McCoubrie et al., Bekelman et al. All human beings have spiritual needs whether they are aware of them or not. Many of these needs appear as individuals get older and as they suffer from chronic diseases that affect different aspects of their lives (43). Therefore, these findings can indicate that all of us need spirituality regardless of our age, gender, education level, professional occupation, and type of cancer.

In this study, the prevalence and intensity of the depression was lower in the elderly cancer patients who live with their spouses, those who were retired, and employed elderly, and elderly with a higher educational level. This finding supports the findings of the study of Khezri et al. (2015) conducted in Iran and Mårtensson et al. (2008) conducted in. Since caretakers of more than half of elders are their spouses, they have someone who cares about their welfare, comfort, and safety (44). The reason behind the fact that these people are less depressed than others can be associated with the fact that Iranian families are quite family-oriented and believe that family members must respect each other and there is a strong connection between family and health status of family members (45). Perhaps, elders who are employed and better educated are less depressed because they have more social interactions are supported by their families and the societies they live in and are more aware of the health care principles. However, in their study, Khademvatani et al. did not observe a significant relationship between professional occupation and education and depression (46).

## Conclusion

Our findings showed that spiritual health is a valuable resource for old cancer patients. Evidence shows that the existential and religious dimensions of spiritual health act as adjustment mechanisms for reducing depression. Thus, it is recommended to cancer patients to pay attention to their spiritual health so that the quality of their lives and their mental welfare can be improved.

Chronic diseases, such as cancer, affect patients' mind, body, and mentality. Since humans are essentially spiritual, spiritual cares are a part of the overall treatment process and are considered to be a part of an inclusive and comprehensive care program. Therefore, hospitals can present effective nursing interventions and improve the spiritual dimension of their care programs by developing an inclusive care program for nurses.

Clinical interventions help cancer patients through inspiring new meaning and purpose for their lives which resolve some of the disease associated issues and reduces their depression. Given the dominant culture in Iran and the unique features and characteristics of Iranian families, the family support system plays an important role throughout the treatment process and prevents patients from getting depressed. For reducing the depression of older adults, nurses can consider providing family-centered care. It is

obvious that being supported by one's spouse and family has a significant impact on the reduction of depression and its symptoms.

The present study has some limitations which should be considered in interpreting the findings and for future studies. This study has only studied old patients diagnosed with respiratory, breast, or gastrointestinal cancer in a large university in Tehran, Iran. It is recommended to conduct more comprehensive similar studies on the patients diagnosed with other types of cancer over the Tehran province. Furthermore, conducting further prospective and interventional studies are required.

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