

## Research Paper

# The Relationship Between Spiritual Health and Hospital Anxiety and Depression in Patients With Gastrointestinal Cancer



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## ABSTRACT

**Background and Objectives:** Spiritual health is essential in human adaptation and relaxation, especially in chronic diseases. Cancer among human beings causes a physical and psychological crisis. Therefore, this study aimed to investigate the relationship between spiritual health and anxiety and depression in patients with gastrointestinal cancer.

**Methods:** This research is a correlational cross-sectional study. The samples included 207 patients with gastrointestinal cancer. The study was conducted in Shahid Beheshti Educational and Medical Center in Qom City, Iran, in 2020. The research method was convenience sampling. A demographic questionnaire, Paloutzian, and Ellison spiritual health questionnaire, and hospital anxiety and depression questionnaire were used in this research. Data were analyzed using descriptive statistics, Chi-square test, t-test, and analysis of variance (ANOVA) with SPSS software, v. 22.

**Results:** The Mean±SD value of patients' spiritual health was 94.47±12.56, and the Mean±SD value of their spiritual and existential health was 48.10±6.96 and 46.6±36.49, respectively. 53.62% of the samples had moderate spiritual health, 30.91% had high spiritual health, and 15.45% had low spiritual health. Also, 52.65% of the samples had moderate depression, 31.4% had mild depression, and 15.14% had severe depression. 54.58% had moderate anxiety, 28.98% had mild anxiety, and 16.42% had severe anxiety. The study results showed a correlation between spiritual health and anxiety and depression in patients with cancer (P<0.001).

**Conclusion:** The results showed that patients with good spiritual health consequently suffered less depression and anxiety. Therefore, spiritual health can reduce the stress and anxiety of patients with cancer and ultimately help patients recover.

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## Introduction

Cancer is one of the critical diseases of the present century and the second leading cause of death after cardiovascular diseases [1]. In Iran and the world, the prevalence of cancer, including gastrointestinal cancer, is increasing [2, 3], accounting for about 25% of cancers among the most common cancers in the country [4]. This type of cancer is significant due to its high prevalence and mortality [5].

Cancer can be considered a crippling and incurable disease in which the sufferer usually suffers from severe emotional problems, such as anxiety and depression after becoming aware of it [6]. In addition, common complications after initial treatment include fatigue, cognitive changes, body image, sexual health, fear of relapse, social, economic, and care problems, pain, depression, and death anxiety. These complications eventually disrupt the psychosocial aspects of cancer survivors [7].

On the one hand, spiritual health is one of the significant dimensions of health promoting general health, along with physical, mental, and social dimensions [8]. It provides a harmonious and integrated connection between man's inner forces and is characterized by stability in life, peace, fit and harmony, and close contact with oneself, God, society, and the environment [9]. When spiritual health had seriously endangered, a person may suffer from mental disorders, such as feelings of loneliness, depression, and loss of meaning in life [10].

In addition, spirituality and spiritual health are vital and efficient factors in life that help people adapt to cancer [9]. Religious practices may not cure the patient but can help him feel good and prevent some problems and troubles so that the person can easily cope with illness and death [1].

On the other hand, diagnosing and becoming aware of cancer disrupts individual interaction due to uncertainty about the future [11]. Previous adjustment mechanisms seem ineffective, and hospitalization may create a feeling of loneliness in the future. A spiritual crisis is likely to arise in the individual and sometimes leads to a loss of self-confidence and religious faith [12].

The study's results showed an inverse (negative) correlation between spiritual health and death anxiety. It shows that increasing spiritual health can reduce the death anxiety of patients with advanced cancer and

improve their quality of life [7, 13, 14]. Despite such results, some studies suggest that people's religious beliefs may lead to the avoidance or discontinuation of patients' treatment, failure to seek timely medical care, and the avoidance of preventive measures affecting a person's health [15].

Even though Iran has a rich cultural, social, and spiritual context of empowerment, limited studies have been conducted in this area compared to other countries. Also, due to the effectiveness and the tangible vacuum of spirituality in the country's medical system in spiritual care and the increase in the number of cancers, especially gastrointestinal cancer, extensive research should be conducted on all aspects of cancer. The research results can be developed by developing more practical methods for spiritual support of patients with cancer.

Therefore, the researchers decided to study the relationship between spiritual health and hospital anxiety and depression in patients with gastrointestinal cancer in Shahid Beheshti Hospital in Qom City. The results would serve as a basis for other studies and clinical trials. The medical staff should provide more effective patient care by considering the religious dimensions and spiritual beliefs in Iranian society, where religion and spirituality are significant.

## Methods

This research is a correlational cross-sectional study. The samples included all patients with gastrointestinal cancer referred to the oncology department of Shahid Beheshti Medical Center in Qom City from April to November 2020 for chemotherapy. A total of 207 patients with gastrointestinal cancer participated in this study. The inclusion criteria included Muslims of Shi'ite religion, aged over 18 years, definitive diagnosis of cancer, awareness of one's disease, no mental illness, and willingness to participate in the study.

The exclusion criteria also included patients with a history of known psychiatric disorders or those with a history of taking psychiatric medication in the last six months. The research tool is Pultzin and Ellison's (1982) 20-item spiritual health questionnaire, 10 of which measure spiritual health and the other 10 questions measure the individual's existential health. The spiritual health score is the sum of these two subgroups, whose range is between 12-120. The answers to these questions were categorized into six options from strongly disagree to strongly agree. Finally, the spiritual health

of individuals was divided into three categories, such as low (20-40), medium (41-99), and high (100-120).

This questionnaire was designed by Mojgan Abbasi in 2005 on 283 nursing students at Shahid Beheshti University of Tehran City, Iran. The reliability reported for this questionnaire was  $r=0.82$  [16]. Also, the hospital anxiety and depression scale questionnaire was designed by Sigmon and Snight (1983). This selective three- to four-item checklist was intended to measure mood swings, especially anxiety and depression. On this scale, seven questions are related to anxiety symptoms (12, 9, 8, 5, 4, 1, and 13) and seven questions are related to depression symptoms (11, 10, 7, 6, 3, 2, and 14).

This questionnaire is scored on a four-point scale (3, 2, 1, 0). The authors suggest a score of 11 as the cut-off point, and scores above that are clinically significant. High scores on the depression scale indicate that in addition to coping with anxiety, other treatments should have been considered. Mortazavi et al. reported this scale's internal consistency in terms of Cronbach's alpha for the subscales of anxiety and depression in the Iranian sample, 0.86 and 0.78, respectively [17].

To conduct the study, the researcher, after going through the administrative process and obtaining the approval of the University Vice-Chancellor and the Ethics Committee, first referred to the relevant medical center about the research goals and its importance, emphasizing not to mention the name, voluntary participation, and confidentiality of information. Sufficient information was provided to the participants, and then the relevant questionnaires were delivered to the eligible patients.

Ethical considerations criteria, include obtaining the necessary license from Qom University of Medical Sciences and Health Services, obtaining informed and written consent, explaining the subject of study and goals to the candidates, observing all ethical and religious issues in all stages of research, and gathering information, the confidentiality of information collected to comply with the rules and ethics and knowledge of individuals will remain strictly confidential. The results were published in groups (Code: IR.MUQ.REC.2020.05).

After collecting the relevant questionnaires, the raw data were entered into SPSS software, version 22. The data were analyzed using descriptive statistical methods (Mean $\pm$ SD) and analytical statistical tests of the Pearson's correlation coefficient at a significance level of 0.05.

## Results

The samples of this study included 207 patients with gastrointestinal cancer. The results showed that 58.4% were men and 41.6% were women; most of them were aged over 60 years (70%); 88% were married; 72.4% had three or more children; 4.4% were unemployed; 32% were workers; 68% had not passed academic courses. Regarding disease duration, 23 patients (10.8%) had the disease for more than 25 months, and 101 patients (48.8%) had the disease between 1 and 6 months. 40% had a family history of gastrointestinal cancer. In terms of the type of disease referred to the oncology ward of Qom Shahid Beheshti Hospital, the highest number of patients was related to gastric cancer (23.34%), and the lowest number was related to anal cancer (4.51%) (Table 1, 2, 3 and 4).

**Table 1.** Distribution of statistical sample by type of disease

Type of Disease	No. (%)
Gastric cancer	48(23.34)
Small bowel cancer	18(8.45)
Bowel cancer	38(18.14)
Liver cancer	42(20.21)
Gallbladder cancer	25(12.12)
Pancreatic cancer	14(6.62)
Anal cancer	9(4.51)
Esophageal cancer	13(6.61)

**Table 2.** Spiritual health status in different groups referred to the oncology ward of Qom Shahid Beheshti Hospital

Cancer	No. (%)		
	Low	Moderate	High
Gastric	6(12.5)	34(68.75)	8(18.75)
Small bowel	4(33.34)	6(22.22)	8(44.44)
Bowel	8(23.68)	21(52.64)	9(23.68)
Liver	3(7.14)	29(69.05)	10(23.81)
Gallbladder	5(20.00)	6(24.00)	14(56.00)
Pancreatic	1(7.14)	7(50.00)	6(42.86)
Anal cancer	1(11.12)	4(44.44)	4(44.44)
Esophageal	4(30.76)	4(30.76)	5(38.46)
Total	32(15.45)	11(53.62)	64(30.91)

**Table 3.** Prevalence of depression in different groups referred to the oncology ward of Qom Shahid Beheshti Hospital

Type of Cancer	No. (%)		
	Low	Moderate	Severe
Gastric	9(18.75)	33(68.75)	6(12.50)
Small bowel	8(44.44)	6(22.22)	4(33.34)
Bowel	9(23.68)	20(52.64)	9(23.68)
Liver	10(23.81)	29(69.05)	3(7.14)
Gallbladder	14(56.00)	6(24.00)	5(20.00)
Pancreatic	6(42.86)	7(50.00)	1(7.14)
Anal cancer	4(44.44)	4(44.44)	1(11.12)
Esophageal	5(41.66)	4(25.00)	4(33.34)
Total	65(31.40)	109(52.65)	33(15.94)

**Table 4.** Prevalence of anxiety in different groups referred to the oncology ward of Qom Shahid Beheshti Hospital

Type of Cancer	No. (%)		
	Low	Moderate	Severe
Gastric	8(16.66)	35(72.91)	5(10.42)
Small bowel	7(38.88)	5(27.78)	6(33.34)
Bowel	7(18.43)	22(57.89)	9(23.68)
Liver	9(21.43)	28(65.12)	5(11.65)
Gallbladder	15(60.00)	6(24.00)	4(16.00)
Pancreatic	6(42.86)	8(57.14)	0(0.00)
Anal	3(33.33)	5(55.55)	1(11.12)
Esophageal	5(38.46)	4(30.76)	4(30.76)
Total	60(28.98)	113(54.58)	34(16.42)



**Table 5.** Pearson correlation coefficients between spiritual health score with the level of depression and anxiety

Variables	Religious Dimension	Existential Dimension	Spiritual Health
Depression	r=-0.256 P<0.001	r=-0.623 P<0.001	r=-0.452 P<0.001
Anxiety	r=-0.184 P=0.008	r=-0.264 P<0.001	r=-0.255 P<0.001



The results showed that the Mean±SD value for the spiritual health of patients was 94.47±12.56, and the Mean±SD value for spiritual and existential health was 46.36±6.49 and 48.10±6.96, respectively.

The results of Pearson's correlation test showed a significant and negative correlation between spiritual health and the level of depression in patients with gastrointestinal cancer (r=-0.452; P<0.001). It means that the higher the spiritual health of oncology patients, the less depression they experience. Regarding the dimensions of spiritual health, these dimensions have a negative and significant correlation with the rate of depression in oncology patients (religious dimension P<0.001; existential dimension P<0.001) (Table 5).

Also, the results of Pearson's correlation test showed a significant and negative correlation between spiritual health and anxiety in patients with gastrointestinal cancer (r=-0.255; P<0.001). It means that the higher the spiritual health of oncology patients, the less anxiety they experience. Also, regarding the dimensions of spiritual health, these dimensions have a negative and significant correlation with the anxiety level of oncology patients (religious dimension P=0.008; existential dimension P<0.001) (Table 5).

The results of Pearson's correlation test showed a significant and positive correlation between the level of anxiety and the rate of depression in oncology patients (r=0.169; P=0.006). It means that the higher the level of anxiety in oncology patients, the more they experience depression.

## Discussion

This study's results showed that the mean score of the spiritual health of patients with gastrointestinal cancer is moderate, indicating patients' tendency toward spirituality and spiritual importance among them. The results were consistent with some studies conducted in Iran [9, 18, 19]. Also, in other studies, the spiritual health of cancer patients has been high [7]. Since the people of Iran are mostly "Muslims" and have deep

religious beliefs, and Qom City is also a holy city, it is common and significant that most people have religious tendencies.

People behave differently depending on societies' cultural and social context to improve their aspirations and pains. Some people, especially people with religious roots, seek this relief in the spiritual world via a superhuman force. In a study, Breitbart et al. showed that the spiritual health score of cancer patients who were in the final stage of the disease and attended psychotherapy sessions was low [20].

The difference in the above studies' results can be due to the differences in research samples in terms of cancer type, treatment stage, time of diagnosis, and research environment, which have not been the same in studies, and these factors have played a crucial role in the different and sometimes contradictory study results.

This study showed that spiritual health score is slightly higher than existential health. The results of studies in Iran have also confirmed this result [19, 21, 22]. Probably, this can be related to the fact that the Iranian people have religious beliefs due to their cultural, ideological, and social conditions. Because of this belief, they turn to religion more to adapt to crises.

According to this study, 52.65% of patients had moderate depression, 31.4% had mild depression, and 15.14% had severe depression. 54.58% had moderate anxiety, 28.98% had mild anxiety, and 16.42% had severe anxiety. In the studies of Aghakhani et al., Nikbakht et al., and Dunn et al., patients with colorectal cancer had high levels of anxiety and depression [23]. Diagnosis of cancer causes profound emotional problems, such as stress, anxiety, and depression in the patient and his family. Anxiety and depression are common mental disorders in most cancer patients. One study on cancer patients reported a prevalence of 46% and anxiety at 48%.

In a review study, the prevalence of depression in cancer patients was 11.6%, and the prevalence of anxiety was 17.9% [24]. Due to the high prevalence of mental disorders in cancer patients, the specific conditions of the disease and the treatment process will likely lead to a wide range of mental disorders in this group of patients. Identifying and treating psychological disorders, such as depression and anxiety in cancer patients stems from the fact that eliminating these symptoms help increase the quality of life, increase physical and social activities, and improve sleep quality. However, these psychological disorders in cancer patients are often not identified and diagnosed in time and have not been treated. The medical staff seems to focus on the patients' physical problems [25].

According to the [World Health Organization \(WHO\)](#), health has physical, mental, social, and spiritual dimensions. The spiritual health dimension is one of the dimensions of health that some experts consider it necessary to pay serious attention to this dimension. Spiritual health has two dimensions. The vertical dimension includes communicating with the transcendental, and the horizontal dimension includes communicating with others and the environment.

There are several tools to measure spiritual health. One of which is the Palutzian and Ellison's spiritual health scale. In this scale, both horizontal and vertical dimensions were considered, and getting a higher score means having higher spiritual health. Some studies indicate that without spiritual health, other biological, psychological, and social dimensions cannot function properly or reach their maximum capacity, and the highest level of quality of life will not be achieved [26].

This study showed a relationship between spiritual health (religious health and existential health) and anxiety in cancer patients. People with higher levels of spirituality show less anxiety. Spirituality and religion are among the vital and influential factors in anxiety. Spirituality is a crucial source for adapting to stressful events in life. Spirituality means a constant search for meaning, the purpose in life, a deep understanding of the values of the existing natural forces, and a personal belief system through which one can understand the meaning of one's life and manage the anxiety caused by these stressful situations [24].

This study showed a relationship between spiritual health (religious health and existential health) and depression in patients with cancer. It means that people with higher levels of spirituality are less likely to be de-

pressed. Depression can result from loss or destruction, and in cancer, the loss of an organ, the loss of power and status and social roles, and the loss of a sense of worth can lead to depression. Many cancer patients often show a negative or depressed mood and a lack or decrease in positive emotions up to a year after diagnosis [24].

Among the studies that have achieved similar results is the research of McCoubrie and Davies. They also showed a significant inverse relationship between depression and spiritual health scores in cancer patients [27]. Also, in confirming these results, Romero et al.'s study showed a statistically significant relationship between spirituality and mental disorders in patients with cancer [28].

In addition, Jafari et al. considered a relationship between spiritual health anxiety and depression as a sign of patients' appropriate adaptation in the face of life-threatening events [29]. Madadi Ardakani and Kamkar showed an inverse and significant relationship between death anxiety and spiritual health [9]. In their research, Lo et al. showed that finding meaning in life and spirituality reduces death anxiety in patients with cancer [30].

Therefore, many studies on the positive effect of spirituality on mental health have confirmed the relationship between spirituality and mental health and considered this relationship significant. Thus, the impact of spiritual beliefs in life can be a factor in dealing with physical and mental problems caused by illnesses. In a society where people have rich and profound ideas, paying attention to semantics seems an easy and desirable way of human and multidimensional care. Also, care based on culture, semantics, and having a comprehensive view of the different dimensions of patients can help the health care staff in providing better services to patients with chronic diseases [31].

In contrast, the results of Hedayatzadeh Imran et al., Kurtulan, Cohen et al., and French et al. showed no significant correlation between death anxiety and spirituality of cancer patients [18, 31-33]. In addition, Khezri et al.'s results showed that the mean of the overall score of spiritual health and religious dimension is not associated with depression. Still, the existential dimension of spiritual health is significantly associated with depression [7]. Also, Vellone et al., in their study, did not observe a significant relationship between anxiety and depression and performing religious practices, such as praying and religious beliefs [34].

Since some studies show a lack of solidarity, there may not be a correct definition of the nature of spirituality and how it relates to the concept of religion or the mind. Or the structure of the concept of spirituality and religion is considered synonymous in some texts. However, in many problems, religion is helpful. Spirituality is beyond religion and is not only felt by religious categories and is related to past experiences and personality traits of individuals [18].

Based on these studies and comparing their results with the present study, it can be concluded that a relationship exists between people's spiritual health and the level of depression and anxiety. Thus, the higher the level of spirituality of individuals and the more effectively they achieve the meaning of their lives, the higher their spiritual health and the less emotional suffering they will experience.

Since Muslim patients have participated in this study, its results cannot be generalized to other religions. Therefore it is suggested that researchers consider the analysis in communities with other religions. One of the limitations of this study is that this study was performed only on patients with gastrointestinal cancer in Qom City. Generalizing its results to ordinary people and patients with other cancers in other cities and provinces of the country should be cautious and more research is needed.

The results of such studies can be due to intervening variables such as the type of disease, the severity of the disease, the amount of support received from family and relatives, income, duration of the disease, age, etc. The problem of cooperation, attracting patients, and ensuring that the subjects answer the questions due to many questions in the questionnaire and issues, such as literacy, chemotherapy, boredom, fatigue and severe weakness of the body, helplessness, inability to complete the questionnaire, are other limitations of this study.

## Conclusion

This study showed an inverse relationship between spiritual health and anxiety and depression levels, and implementing a spirituality-based care program can be a way to reduce patients' anxiety. Therefore, it is suggested that medical centers related to patients with cancer provide the necessary training in the field of spirituality.

## Ethical Considerations

### Compliance with ethical guidelines

This study was approved by the Ethics Committee of the [Qom University of Medical Sciences](#) (Code: IR.MUQ.REC.2020.05).

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### Authors' contributions

Conceptualization: Zohre Khalajinia, Amirreza Ramandi; Methodology: Zohre Khalajinia, ValiOllah Akbari, Mostafa Vahedian; Formal Analysis: ValiOllah Akbari, Amirreza Ramandi, Zohre Khalajinia; Writing – Original Draft Preparation, Writing – Review & Editing: Zohre Khalajinia, Amirreza Ramandi, ValiOllah Akbari, Mostafa Vahedian; Supervision: Zohre Khalajinia, ValiOllah Akbari; Project Administration: Zohre Khalajinia; Funding Acquisition: Amirreza Ramandi.

### Conflict of interest

The authors declared no conflict of interest.

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