



The effect of the spiritual intervention on reducing anxiety caused by COVID-19 in patients with cancer

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Original Article

Abstract

BACKGROUND: Cancer is a disease with a high prevalence that can lead to emotional and psychological disorders such as anxiety. Anxiety in these individuals weakens the body's immune system and makes it vulnerable to diseases, including coronavirus disease 2019 (COVID-19). The present study was conducted with the aim of determining the effect of spiritual intervention on reducing anxiety caused by COVID-19 among patients with cancer.

METHODS: This was a semi-experimental study. The statistical population consisted of patients with cancer referred to the oncology departments in Tohid Hospital in Sanandaj City, Iran, from June 2022 to February 2023. The samples were selected using random sampling. The sample size was 90 participants. The intervention group underwent spiritual intervention, which was held during 6 group sessions daily for 45 minutes. Data were collected using the COVID-19 Disease Anxiety Scale (CDAS) and were analyzed by multivariate analysis of covariance (MANCOVA) using the Stata software.

RESULTS: The average score of anxiety in the intervention group showed a significant difference in the post-test ($P < 0.001$), but the average score of the individuals in the control group did not differ in the post-test ($P = 0.335$). It showed that the difference between the two groups with regard to the dependent variables was significant in total ($P < 0.001$).

CONCLUSION: According to the results of the present study, spiritual intervention can be used to reduce negative psychological consequences and increase effective strategies to deal with anxiety in patients with cancer.

KEYWORDS: Spiritual Intervention; Anxiety; COVID-19; Cancer

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Introduction

A new and highly contagious infectious

disease called coronavirus disease 2019 (COVID-19), which is caused by the new pathogen "severe acute respiratory syndrome coronavirus 2" (SARS-CoV-2), started in December 2019, and became prevalent in China, and spread rapidly worldwide.¹ The new influenza-like COVID-19 virus is transmitted through respiratory droplets

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during unprotected close contact between people.² This disease not only threatens people's physical health but also affects their mental health.³ A study in China that was conducted on 1210 participants showed that 28.8% suffered from anxiety, 8.53% from stress, and 1.16% from depression.⁴

On the other hand, one of the important issues that may happen to any family is experiencing one of their relatives suffering from diseases that are commonly regarded as incurable. This category covers a wide range of diseases, of which the most well-known and tangible among people are different types of cancer. Getting cancer is one of the most serious medical conditions and also difficult to cure medical problems that a person may face in life. Despite the progress that has been made in the field of treating various diseases, in people's customs, the concept of getting such a disease is equal to dying.⁵ According to the World Health Organization (WHO) statistics, the incidence of cancer in Iran in 2020 reached 85653 people and the mortality rate due to cancer reached 62897 cases.⁶ People who are diagnosed with cancer may suffer from unfavorable mental conditions that lower their quality of life (QOL) during their lifetime, but positive psychological resources such as secure attachment and adaptive coping strategies may be able to accompany them through a more peaceful path of treatment, so that they can experience a higher level of positive mental health.⁷

Patients with cancer are worried about COVID-19 and its impact on their health; uncertainty about following the treatment process due to the spread of COVID-19 for recently diagnosed patients and especially for those who have just started their chemotherapy is stressful.⁸ The persistence of various psychological disorders among these patients eventually leads to negative effects on their self-confidence and self-esteem; thus, trying to restore the physical and mental

health of these patients is of high importance.⁹

In patients with chronic physical problems such as cancer, coping processes or coping strategies have an important effect on their health and adaptation.⁵ Since the diagnosis of cancer and its aggressive and long-term treatments in many cases deprive patients of life satisfaction, it causes most patients to suffer from a lack of purpose, value, and meaning in their lives. Therefore, in addition to rehabilitation, the spiritual needs of these patients and their families should also be considered as a treatment strategy. Considering spiritual needs and providing spiritual well-being to patients with cancer can affect the QOL of these patients and their families.¹⁰ Spirituality can reduce anxiety, depression, and feelings of loneliness among patients and improve their QOL by increasing positive feelings and pleasure.⁵ Bolhari *et al.* held 12 sessions of spiritual group therapy interventions for 24 women with breast cancer. The results of their study showed that there was a significant reduction in depression; moreover, the therapy significantly improved the spiritual well-being of the subjects in the experimental group compared to the members of the control group. There was not a significant difference in the anxiety level between the intervention and control groups after the treatment.¹¹ The results of Reisi *et al.*'s study showed a significant relationship between religion and spirituality with depression and anxiety and the effectiveness of religion and spirituality on patients with cancer.¹²

In general, due to the pathogenic nature of this virus, the speed of its spread, and the percentage of mortality rate caused by it, this disease may endanger the mental health of infected patients in different dimensions. Therefore, in the current high-risk situation, it is necessary to identify people prone to psychological disorders at different levels of society. This study was conducted with the aim of investigating the effect of spiritual

intervention on anxiety caused by COVID-19 among patients with cancer.

Methods

In this semi-experimental study, the research population consisted of patients with cancer referred to the oncology departments of Tohid Hospital in Sananda City in Iran from June 2022 to February 2023. The number of studied samples is based on the following formula.

$$n = \frac{(z_{1-\alpha/2} + z_{1-\beta})^2 (p_1(1-p_1) + p_2(1-p_2))}{(p_1 - p_2)^2}$$

The sample size of the study was 90 participants who were selected by purposive sampling. In this study, the individuals participating in the test were divided into two groups of 45 participants (who experienced spiritual intervention) and the control group (who did not experience spiritual intervention and only routine care was provided for them). Allocation of research subjects to the intervention and control groups was randomly done. In this way, the patients with the inclusion criteria were allocated by the researcher in a block of 2 (AB), A card was randomly selected from the pack and entered into one of the groups according to the Latin letter (A for the intervention group and B for the control group)..

The inclusion criteria for the study were the participants' age level ranging from 18 to 70 years, reading and writing literacy, consent and desire to participate in the study, participants' psychological well-being and stability in vital signs, absence of definite mental disorders, absence of substance abuse disorder, alcohol, and smoking, and absence of taking antidepressants. The exclusion criteria were non-continuing cooperation in the study and not completing the questionnaire, absence in group sessions for more than one session, the patient's abnormal health, and the patient's death.

The research tools used in the study included a demographic questionnaire and a COVID-19 anxiety questionnaire. The demographic questionnaire included items such as age, marital status, education level, employment status, economic status, history of cancer in the family, duration of cancer diagnosis, and type of cancer. In order to determine the validity of the demographic questionnaire, it was compiled by studying reference books and scientific articles, taking into account the research objectives and recognizing the confounding variables, and also was edited with the guidance of respected professors, and after asking for the opinion of 10 respected professors at the academic faculty and taking into account the corrections, its validity, was confirmed by calculating Cronbach's alpha coefficient (0.91).

In order to measure anxiety levels resulting from the COVID-19 pandemic in society, a questionnaire called COVID-19 Disease Anxiety Scale (CDAS) was used. This scale has been designed and validated to measure the prevalence of COVID-19 anxiety in Iran by Alipour *et al.*¹³ Using Cronbach's alpha method, the reliability of the questionnaire was reported as 0.87 and 0.86, respectively, for two subgroups and 0.92 for the whole questionnaire. The validity of the questionnaire has also been investigated by the correlational validity method using the standard Goldberg General Health Questionnaire (GHQ) and the results indicated a significant correlation with the factors of this questionnaire. The mentioned instrument has 18 items that generally measure 2 factors. Items 1 to 9 measure the psychological symptoms and items 10 to 18 measure physical symptoms. This instrument is scored on a 4-point Likert scale (never = 0, sometimes = 1, often = 2, and always = 3). Therefore, the minimum and maximum scores of the respondents on this scale are between 0 and 54 with high scores indicating a higher level of anxiety in individuals. This score is a

raw score and to determine the range and level of anxiety, these scores are converted into standard T scores, so that scores less than or equal to 39 indicate no anxiety or mild anxiety, scores between 40 and 60 indicate moderate anxiety, and scores equal to or more than 61 mean severe anxiety.

Having obtained approval from the Ethics Committee of Kurdistan University of Medical Sciences, Sanandaj, the study was conducted. First, the research subject selection form was completed by the researcher through interviews with patients, and patients who met the study's inclusion criteria were selected. Then the additional explanations about the objectives of the study were presented to each of the subjects for about 10 to 15 minutes. If the participants were willing to participate in the study, their informed consent was obtained and a personal profile form was completed.

It should be noted that before starting the data collection procedure, the researcher received the necessary training from an experienced religious expert regarding spiritual intervention. Educational materials were presented in the form of lectures and group discussions.

Before starting the treatment sessions, the demographic and COVID-19 anxiety questionnaires were completed by the participants. The intervention group

underwent 6 sessions based on spiritual interventions according to the Richards and Bergin¹⁴ model, regarding the Islamic religion and including psychological and spiritual factors, containing 6 sections of self-awareness, prayer, trust and recourse, patience, gratitude, and asking for forgiveness. In order to perform the intervention in the test group, spiritual intervention classes were presented in 10 groups of 5 participants for 45 minutes and in 6 daily sessions.¹⁴

After the treatment sessions, the CDAS was completed by the studied subjects in the intervention group. Then, one week after the intervention, the CDAS was given to the two groups to complete again, and a period of one week after the end of the intervention was considered to evaluate the presence of the effect of the spiritual intervention based on the reference.¹⁵ In terms of respecting ethical issues, at the end of the research, the principles of spiritual intervention were given to the control group in printed form.

The collected data were analyzed by Stata software (version 14, Stata Corporation, College Station, TX, USA) using descriptive statistics and multivariate analysis of covariance (MANCOVA). The significance level in this study was considered $P < 0.05$.

Table 1. Spiritual intervention sessions

Intervention sessions	Intervention
Session 1	Getting to know the group members with each other and the therapist, Self-awareness technique training
Session 2	Familiarity with the concept of trust and recourse and its role in coping with psychological pressure
Session 3	Familiarity with the concept of prayer and prayer experience and its effect on coping with life events
Session 4	Familiarity with the concept of gratitude and the effect of gratitude on changing emotions and thoughts
Session 5	Getting to know the concept of patience and instructing the procedures and levels of patience for resilience
Session 6	Familiarity with the concept of forgiveness and the consequences of forgiveness and its effect on emotion

This article has been approved with the code of ethics IR.MUK.REC.1401.110.

Results

The average age in the intervention and control groups was 42.31 ± 14.82 and 43.07 ± 13.38 years, respectively, and the duration of cancer diagnosis in the intervention and control groups was 1.86 ± 2.02 and 1.58 ± 0.63 years, respectively. 25 individuals (55.6%) from the intervention group and 24 individuals (53.3%) from the control group were men. In terms of marital status, 80% of the intervention group and 73.3% of the control group were married. Elementary education was more frequent in

the intervention and control groups.

The frequency of housewifery was reported in the intervention group and unemployment was frequent in the control group. The economic status of both groups was similar, and in terms of the type of cancer and history of getting cancer in the family, no significant difference between the intervention and control groups was observed ($P > 0.05$) (Table 2).

The results of the study revealed that the mean score of anxiety in the intervention group showed a significant difference after the post-test ($P < 0.001$), but the mean score of the individuals in the control group did not differ significantly after the post-test ($P = 0.335$).

Table 2. Comparison of demographic variables of the patients in the intervention and control groups

Variable	Intervention (n = 45)	Control (n = 45)	P
Age (year)	42.31 ± 14.82	43.07 ± 13.38	0.801
Duration of getting cancer (year)	1.86 ± 2.02	0.63 ± 1.58	0.364
Gender			0.832
Men	25 (55.6)	24 (53.3)	
Women	20 (44.4)	21 (46.7)	
Marital status			0.336
Single	9 (20.0)	12 (26.7)	
Married	36 (80.0)	33 (73.3)	
Education			0.128
Illiterate	12 (26.7)	16 (35.6)	
Elementary	18 (40.0)	9 (20.0)	
Secondary	6 (13.3)	11 (24.4)	
High school	4 (8.9)	7 (15.6)	
University	5 (11.1)	2 (4.4)	
Employment			0.362
Unemployed	14 (31.1)	20 (44.4)	
Employed	10 (22.2)	6 (13.3)	
Housewife	19 (42.2)	15 (33.3)	
Other	2 (4.4)	4 (8.8)	
Economic status			0.536
Low	19 (42.2)	14 (31.1)	
Medium	23 (51.1)	28 (62.2)	
High	3 (6.7)	3 (6.7)	
Cancer type			0.109
Blood	12 (26.7)	5 (11.1)	
Gastrointestinal	13 (28.9)	15 (33.3)	
Breast	3 (6.7)	9 (20.0)	
Other	17 (37.8)	16 (35.6)	
Family history of cancer			0.468
Yes	13 (28.9)	10 (22.2)	
No	32 (71.1)	35 (77.8)	

Data are presented as mean \pm standard deviation (SD) or number and percent

Table 3. Average anxiety level related to disease and its factors in two intervention and control groups before and after treatment

Variable	Intervention		P	Control		P
	Pre-test	Post-test		Pre-test	Post-test	
Anxiety	34.20 ± 4.32	26.70 ± 7.72	< 0.001	25.60 ± 6.66	25.20 ± 5.21	0.335
Psychological	17.60 ± 3.52	11.60 ± 6.53	< 0.001	9.10 ± 4.12	8.20 ± 3.83	0.014
Physical	16.90 ± 3.17	15.10 ± 2.56	< 0.001	16.50 ± 2.52	16.60 ± 2.32	0.328

Data are presented as mean ± standard deviation (SD)

The mean score of the pre-test and post-test of psychological factors of anxiety showed that there was a significant difference in the intervention group, and in terms of the physical factors, a significant difference was observed in the intervention group ($P = 0.001$), but this difference was not significant in the control group ($P = 0.328$) (Table 3).

The results of the analysis of covariance (ANCOVA) showed that the effect of the test on the patients' anxiety shows that the difference between the two groups is significant with regard to the dependent variables, so that the effect size was 0.53 ($P < 0.001$). Moreover, in terms of the psychological factors of anxiety, the results showed a significant difference between the two groups, as the effect size was reported as 0.57 ($P < 0.001$), but in terms of the physical factor, no statistically significant difference was observed between the two groups, and the effect size was reported as 0.03 ($P = 0.071$) (Table 4).

Discussion

The present study was conducted with the aim of investigating the effect of spiritual intervention on reducing anxiety caused by COVID-19 in patients with cancer. In the current study, the mean score of anxiety related to COVID-19 in patients with cancer in the intervention group and the control group was reported as 34.20 ± 4.32 and 25.60 ± 5.66 ,

respectively, which indicates a low level of anxiety among the study participants. In Haghbin *et al.* study, the average anxiety caused by the COVID-19 virus in patients diagnosed with breast cancer was reported as 22.44 ± 16.61 , which was lower than the average. Among the factors of anxiety, the mean score of psychological factors (36.81 ± 24.38) of the patients was higher than physical factors (12.76 ± 11.73).¹⁶

The current study was conducted during the COVID-19 pandemic, and according to the results of the study by Wang *et al.*, the number of psychological disorders such as depression, stress, and anxiety among patients with cancer increased during the COVID-19 pandemic. Additionally, patients with breast cancer reported the prevalence of depression, anxiety, post-traumatic stress, and violence as 15.1%, 13.5%, 18.9%, and 15.9%, respectively.¹⁷ According to Ciazynska *et al.*, more than half of patients with cancer during the COVID-19 pandemic reported a high level of anxiety,¹⁸ which leads to consequences such as reduced adherence to treatment, reduced survival rate, increased healthcare costs, and a decrease in the quality of patient's life.¹⁹

Following the COVID-19 pandemic, significant attention has been paid to the prescribing of therapeutic interventions related to complementary medicine to support therapeutic research and potential interventions in the management of COVID-19 disease symptoms.²⁰

Table 4. The results of comparison of the difference in pre-test and post-test scores of the anxiety test in groups and its factors

Variable	Mean squares	Degree of freedom	F	Effect size	P
Anxiety	1335.0	1	101.70	0.534	< 0.001
Psychological	944.3	1	119.00	0.579	< 0.001
Physical	15.1	1	3.36	0.037	0.071

In Brazil, during the COVID-19 pandemic, a special spiritual care line (Spiritual Hotline) was designed and implemented for the spiritual support of patients.²¹

According to the WHO, new health promotion methods besides common clinical treatments play an effective role in healthcare systems. In the late 1980s, the WHO deemed it necessary to add spiritual aspects to the definition of health and disease treatment.²² Spiritual care idea has two approaches. First, remote healing (also known as distance healing) is the process of sending healing over a distance to someone. The practitioner channels energy to the client to help facilitate healing on several levels including physical, mental, emotional, and spiritual whether in his presence or absence. Second, self-care includes the patient taking spiritual care of himself, which creates a religious and healing spirit in him.²³

A study by Abbasi investigated the role of social support, emotional regulation, and spiritual well-being in controlling COVID-19 anxiety among 292 individuals in the Mazandaran Province, Iran, and showed that there was a significant and direct relationship between all these three investigated variables with COVID-19 anxiety; spiritual well-being had the most significant contribution in predicting COVID-19 anxiety.²⁴ In explaining this finding, it could be said that due to the fact that religious and spiritual beliefs play a very important role in the formation of Iranian people's culture, there is a direct relationship between spirituality, religious beliefs, and the social life of people. Therefore, in critical situations such as COVID-19-related anxiety, individuals who have positive spiritual well-being protect themselves by performing religious coping methods such as prayer, meditation, and religious evaluations.²⁵

In this regard, Jahangir *et al.* conducted a study to determine the effects of spiritual practice along with routine medical care on the recovery of 64 patients admitted with COVID-

19. The intervention group accomplished spiritual practice three times a day (21 times in total) for 7 days; after the intervention, there was no significant difference in terms of the length of hospitalization days between the intervention group and the control group, but the mean score of anxiety and the mean score of depression score in the spiritual care group decreased significantly after the intervention. The rate of intensive care unit (ICU) requests was significantly higher in the control group (40%, $n = 14$) than in the intervention group (3.4%, $n = 1$) ($P < 0.001$).²³

Bolhari *et al.* held 12 sessions of spiritual group therapy interventions for 24 women with breast cancer; the results of their study showed that there was a significant reduction of depression. Moreover, the therapy significantly improved the spiritual well-being of the subjects in the experimental group compared to the members of the control group; there was not a significant difference in the anxiety level between the intervention and control groups after the treatment.¹¹ The reason for the difference in the results of the current study with the above-mentioned study could be due to the difference in the research context, the research instruments and type of spiritual intervention used, or the time of the study. In Bolhari *et al.* study, a treatment package which was developed by the researcher was used, and in this spiritual intervention, they addressed issues such as the concept of spirituality and religion, self-awareness, self-image, altruism, connection with the sacred, forgiveness, death, faith, and gratitude, but in the current study, a spiritual strategy model by Richards and Bergin¹⁴ was used, which included 6 concepts of self-awareness, prayer, trust and recourse, patience, gratitude, and asking for forgiveness. Furthermore, in contrast to Bolhari *et al.* study whose participants were patients with breast cancer, in the current study, participants with all types of cancer were studied. The prevalence of anxiety in different types of cancer is

variable, for example, in the study of Bolhari *et al.*, the prevalence of anxiety in breast cancer was reported from 35% to 64%. On the other hand, due to the fact that the current study was conducted during the COVID-19 pandemic, the anxiety level of the research participants was higher due to the strange nature of this disease, as a result, all of these variables have an effect on the results of the study.

Among the strengths of the present study, we can mention the investigation of the level of COVID-19 virus anxiety in individuals suffering from various types of cancer and conducting the test 1 week after the end of the intervention in order to check the stability of the results. However, the results of the present study are only limited to patients with cancer and cannot be generalized to other physical diseases.

It is suggested that the effect of spiritual intervention on other chronic diseases be investigated during the COVID-19 period and also the effect of spiritual intervention be assessed on other psychological problems and QOL in patients with cancer.

Conclusion

According to the result of present study spiritual intervention can be used to reduce negative Psychological consequences and increase effective strategies to deal with anxiety in cancer patients.

Conflict of Interests

Authors have no conflict of interests.

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