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Correlation between Spiritual Health and Perceived Stress in Cancer Patients undergoing Chemotherapy

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Abstract

Background and Aim: Stress is one of the common disorders that affects the treatment process in cancer patients. The paradoxical relationships found between spiritual health and perceived stress in cancer patients in international studies and the lack of similar studies in Iran prompted the researchers to conduct a study with the aim of investigating the correlation between spiritual health and perceived stress in cancer patients undergoing chemotherapy.

Materials and Methods: This is a descriptive-correlational study that was conducted on 150 patients referred to the oncology and chemotherapy departments of medical centers affiliated to Tehran Islamic Azad University of Medical Sciences in 2024. Patients were selected to take part in the study based on inclusion criteria, using a purposive sampling method. A demographic information questionnaire, the Paloutzian & Ellison's spiritual well-being scale and the perceived stress scale (PSS-14) were used to collect the data. Data was analyzed by SPSS-26 software, using descriptive and inferential statistics.

Results: The findings showed that perceived stress had a negative and significant correlation with spiritual health ($r=-0.550$, $P<0.001$).

Conclusion: Spiritual health can reduce the level of stress in cancer patients and ultimately, helps them to recover quicker. Therefore, it seems necessary to pay attention to spiritual health as one of the dimensions of health, because it affects the level of perceived stress in cancer patients.

Keywords: Spiritual Health, Stress, Cancer.

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Introduction

Cancer is one of the most important health problems worldwide [1]. Statistics show that the number of people affected by cancer will reach to 21 million by 2030 [2]. In Iran, cancer is also the third leading cause of death [3]. Caring for cancer patient is difficult, because it is full of challenging issues. The most important reason for this difficulty is the nature of cancer and its incurability from the public's perspective [4].

Basically, more than 50% of patients with cancer receive chemotherapy, as it has helped to effectively treat millions of cancer patients and return them to normal life. However, the effectiveness of chemotherapy is limited due to its toxic effects. Despite its many applications, chemotherapy has various side effects and can severely affect the emotional, social, physical and spiritual health of patient [5]. In principle, chemotherapy create significant challenges in all aspects of a patient's life, with 59% of patients stating that it is worse than the cancer itself [6]. The diagnosis and treatment of cancer disrupt sleep and daily activities, cause physical and psychological symptoms, and impair cognitive function, social participation and personal life of the patients [7]. Due to the chronic nature of cancer, patients are forced to accept long-term treatment with chemotherapy drugs. Multiple hospitalizations prevent these patients from having a normal life, and the side effects of chemotherapy deprive them of the ability to enjoy various aspects of life [8].

Spiritual health is a term that was introduced in modern medical science in 1979 by the World Health Organization as the fourth pillar of health, but the dimensions of this important pillar have not been well understood so far [9]. Spiritual health, as the newest dimension of health, is placed alongside other dimensions of health (physical, mental, and social) and facilitates the integration of other dimensions. On the other hand, it includes two existential and religious dimensions. Religious health refers to the satisfaction resulting from a connection with a higher power, and existential health refers to the effort to understand the meaning and purpose of life [10]. Also, attention to spirituality is increasing in various societies, especially in respect to incurable diseases [11]. Spiritual health is a meaningful factor in life that helps people adapt to life-threatening diseases. It also reduces their psychological stress, and improves their quality of life and psychosocial health [12].

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A cancer diagnosis causes a high level of stress in individuals. On the other hand, stress is defined as a physiological response to physical and psychological threats, and is an important risk factor affecting life [13]. People with cancer face multiple stresses, including fear of possible death, stress of life disruption, side effects of treatment, and other stimuli related to the disease and treatment [14].

Stress management is an important factor in patients' recovery and adaptation to the disease. Meanwhile, the role of spirituality as a component of health is increasing among health care professionals. Since the chemotherapy process affects the body and mind of patients, nurses can use a holistic approach to improve the patients' quality of life, help them to accept treatment, and promote health by emphasizing on the two concepts of stress management and spirituality, considering cultural and religious differences. Considering the impact of cancer and chemotherapy on various aspects of patient's life (physical, mental, social, and spiritual), it is necessary for caregivers and members of the healthcare team, especially nurses, to be aware of the spiritual health and stress of their clients and promote their health with a holistic approach. Therefore, this study was conducted to determine the relationship between spiritual health and perceived stress in cancer patients undergoing chemotherapy.

Methods

This is a descriptive-correlational study that was conducted in 2024 on patients hospitalized in oncology departments and clinics of hospitals affiliated with Tehran Medical Sciences, Islamic Azad University (Amirolmomenin, Farhikhtegan, and Buali hospitals).

The sample size was estimated to be 150 people using information extracted from the study of Gonzalez et al. [15], considering a type I error of 5% and a test power of 95%. In this study, sampling was done in a non-random manner, and from the beginning of the study, all available patients who met the inclusion were selected as the research sample. The inclusion criteria included; being 18 years of age or older, more being diagnosed with cancer for at least a year, being under chemotherapy treatment, having the ability to answer the questions in data collection tools. The exclusion criterion also included incomplete completion of the questionnaires and unwillingness to continue with the study.

The data collection tool consisted of three parts. The first part was a demographic questionnaire that was used to collect data

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such as age, gender, level of education, health insurance, marital status, and occupation.

The second part was the spiritual well-being scale of Polizon and Ellison (1982). This scale has two sections and 20 items, 10 of which are related to religious health and the other 10 evaluate the existential health. The sum of score in these two subgroups determines the total spiritual health score, which ranges from 20 to 120. Questions in this tool is based on a 6-point Likert scale ranging from I completely disagree (score 1) to I completely agree (score 6). In negative questions, the scoring is done in reverse. This tool classifies the spiritual well-being into three levels of low (20-40), medium (41-99), and high (100-120) [11].

The third part was the perceived stress scale developed by Cohen et al. (1983). This scale has two subscales of perceived helplessness and perceived self-efficacy, and 14 items, which are used to measure general perceived stress in the past month. This tool measures thoughts and feelings about stressful events, control, overcoming, coping with psychological pressure, and experienced stress. This scale also examines risk factors in behavioral disorders and shows the process of stressful relationships. The items in this scale are based on a 5-point Likert scale ranging from never (score=0) to most of the time (score=4), with higher score indicating greater perceived stress [16].

Face and content validity methods were used to validate the data collection tools. For this purpose, they were reviewed and evaluated by a team of 12 nursing faculty members, oncology and psychology professors, and their corrective comments and suggestions were considered and applied. The content validity of the perceived stress scale [17] and the spiritual well-being scale [18] has been confirmed in various studies. Their reliability however was determined using Cronbach's alpha method after conducting a pilot study on 20 patients, after which we found a Cronbach's alpha coefficient of 0.91 for the spiritual well-being scale and 0.94 for the perceived stress scale. It should be noted that Cronbach's alpha was estimated to be 0.84 for the perceived stress scale in the study of Sehati Shafaei et al. [17] and 0.86 for the spiritual well-being scale in the study of Gonzalez et al. [15].

After approving the project in the Research Deputy of Islamic Azad University of Medical Sciences in Tehran and obtaining permission for sampling from the respected directorates of hospitals, the researchers began collecting the data. For this purpose, patients who met the inclusion criteria were identified before being informed about the

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objectives and method of the study. A written consent was obtained from the participants and they were assured that their personal information would be completely confidential and would not be made available to anyone. In addition, to ensure compliance with ethical considerations, the questionnaires were distributed anonymously among the patients so that to complete and return them to the first author. It should be noted that the researchers selected chemotherapy patients in the hospital twice a week (in the morning and evening), if they met the inclusion criteria, and distributed the questionnaires among them. This process continued until the end of sampling. If a patient was illiterate, the researchers were present to read the questions to him/her and completed the questionnaire. Other patients also completed the questionnaire in the presence of the researcher, and any problems or ambiguities were clarified. Data collection lasted for 3 months (July to September 2024), and the questionnaire was scientifically approved in advance. Ethical permission for sampling was also obtained from the Regional Committee for Research Ethics of the Islamic Azad University of Medical Sciences in Tehran (IR.IAU.TMU.REC.1403.208).

The collected data were analyzed by SPSS-26 software, using descriptive (mean and standard deviation) and inferential statistics (Pearson correlation tests). Kolmogorov-Smirnov test was also used to check the normality of data. A statistically significant level was set at 0.05.

Results

The mean age (standard deviation) of the participants was 48.7 (11.82) years and their mean duration of cancer was 56.7 (8.31) months. Other demographic characteristics are listed in Table 1.

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Table 1: Frequency distribution of demographic variables

variables		Frequency	Percentage
Sex	Male	77	51.3
	Female	73	48.7
Marital status	Single	34	22.7
	Married	116	77.3
Education	Illiterate	6	4
	High School	35	23.3
	Diploma	42	28
	University	67	44.7
Job	Manual laborer	9	6
	Office worker	39	26
	Self-employed	46	30.7
	Retired	14	9.3
	Unemployed/Housewife	42	28
Type of cancer	Breast	22	14.7
	Brain	5	3.3
	Genital	30	22
	Digestive	39	26
	Blood	12	8
	Lung	19	12.7
	Other	23	15.3

According to the results, perceived stress of the participants had a negative and significant correlation with their spiritual health (P<.001, r=.665). Also, a negative and significant correlation was observed between perceived stress, religious health and existential health. A negative and significant correlation was also observed between spiritual health and the subscales of perceived helplessness and perceived self-efficacy (Table 2).

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Table 2: Correlation between perceived stress and spiritual health with subscales

Pearson correlation	Perceived self-efficacy	Perceived helplessness	Perceived stress
Religious Health	-.516**	-.524**	-.550**
	P≤.001	P≤0.001	P≤.001
Existential Health	-.739**	-.659**	-.714**
	P≤.001	P≤.001	P≤.001
Spiritual Health	-.644**	-.612**	-.665**
	P≤.001	P≤.001	P≤.001

Discussion

The results showed a negative and significant correlation between the perceived stress and spiritual health of the cancer patients (P≤.001, r=-.665). In this regard, Einy and Hashemi who investigated the role of religious coping, spiritual intelligence, and spiritual well-being in predicting perceived stress in patients with cancer, showed a negative and significant relationship between perceived stress, spiritual well-being (β=-.359: p<.001), spiritual intelligence (β=-.170: p<.007) and positive religious coping (β=-.172: p<.011). They also found a positive and significant relationship between perceived stress and negative religious coping (β=.328: p<.001), and reported that spiritual well-being, religious coping, and spiritual intelligence predicted 70% of the variance in perceived stress scores in patients with cancer. Positive and negative religious coping, spiritual intelligence, and spiritual well-being were also found to be related to perceived stress and could explain the individual's attitude towards the disease [19]. The findings of another study by Khaljinia and colleagues, that investigated the relationship between spiritual health, anxiety and depression in patients with gastrointestinal cancer, indicated a relationship between spiritual health, anxiety and depression in patients with cancer (P<.001). In their study, patients who had good spiritual health suffered less from depression and anxiety [20]. Solaymani and colleagues in a study showed that spirituality reduces death anxiety in breast cancer patients [21]. Mato and colleagues also showed that spiritual therapy had a significant effect on reducing the fear of cancer recurrence and improving the perception of the disease in women with

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breast cancer (P<.001), [22]. A study conducted in 2022 to investigate the relationship between spiritual health, existential anxiety and illness anxiety in female patients with breast cancer also showed a significant and positive relationship between both religious and existential dimensions of spiritual health and existential anxiety (P<.001), [23]. It should be noted that no study has been conducted abroad on this issue.

Conclusions

The findings of present study showed that perceived stress has a negative and significant correlation with spiritual health in cancer patients. Considering the results of present study and the negative effects of stress and anxiety on the disease treatment and adaptation, the treatment team, especially nurses, should strive to promote the spiritual health of cancer patients and help them to adopt to their condition. Given the many effects that spiritual health has on the physical and mental health of cancer patients, promoting the spiritual health of cancer patients should be a priority of their caregivers. In this study, severity of the disease and tumor grading were not considered for sampling. Therefore, we suggest spiritual health and stress level to be examined in cancer patients according to the stage of the disease in future studies. Also, the present study was conducted on patients who had relatively good health and could participate in the study. Therefore, it is recommended that all patients, especially those in a bad condition, be included in the study so that these results can be generalized. One of the limitations of present study was the low cooperation of the participants, which was resolved by explaining the objectives and purpose of study to them in detail. Some patients also were not able to correctly answer the questions, which was controlled as much as possible by gaining the patient's trust.

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Conflict of Interest

The authors have no conflicts of interest.

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