

## An Investigation of the Relationship between Spiritual Health and Depression, Anxiety, and Stress in Patients with Heart Failure

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### Abstract

**Background and Objectives:** Heart failure is a life-threatening illness in which panic disorder, anxiety, depression, and death expectation are constantly experienced. This study, thus, determined to examine the relationship between spiritual health and depression, anxiety, and stress in patients with heart failure.

**Methods:** This study was a descriptive-correlational investigation that was performed on 150 patients with heart failure in selected Ardabil teaching hospitals in 2014. Data was collected using Demographic Questionnaire, Ellison-Paloutzian Spiritual Well-Being Scale, and Depression, Anxiety, and Stress Scale (DASS-21). They were, then, analyzed using SPSS, descriptive statistical method, Pearson's correlation coefficient, and multivariable regression analysis.

**Results:** The results of this study showed that the spiritual wellbeing level of most subjects (75.3%) was in the range of medium. Mean scores of religious and existential aspects of spiritual well-being were obtained to be  $33.26 \pm 1.247$  and  $45.76 \pm 1.328$ , respectively. In addition, depression, anxiety, and stress levels of most research units were in the medium range. Pearson's correlation coefficient showed that there was a statistically significant relationship between depression, anxiety, and stress in all aspects of spiritual wellbeing ( $r = -0.59$ ,  $P \leq 0.01$ ).

**Conclusion:** Results indicated that an increase in spiritual health would be a concomitant of a reduction in depression, anxiety, and stress levels in heart failure patients. Based on the results and importance of spiritual health, an improvement of proficiencies of medical and paramedical communities in offering spiritual healthcares appears to be mandatory.

**Keywords:** Spiritual health, Depression, Anxiety, Stress, Heart failure

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### Introduction

Heart failure is an incapacitating illness whose prevalence rate has been on surprising rise in recent years despite tremendous advances in healthcare services and diagnosis technology. Under these conditions, heart becomes unable to provide sufficient amounts of blood due to structural or functional problems (1). Prevalence of this illness has a direct relationship with increase in age so that probability of heart failure is doubled with a ten-year increase in age. Five-year mortality rate of heart failure is 45% in women and 60% in men (2). Heart failure patients make the most use of healthcare systems so that an average of 25% of patients hospitalized in heart units are affected by heart failure,

according to a study conducted in Iran (3). Due to heart failure complications and its long and deteriorating course, heart failure patients are highly subject to depression and anxiety (4,5). Depression and anxiety are not only prevalent causes of dissatisfactions and mortalities, but also predictors of detrimental heart issues in cardiovascular patients (6,7). As dangers independent of age, gender, and other classic factors of heart failure, stress and tension are socio-mental factors that stimulate the autonomic nervous system, especially the sympathetic system, through physiological and neuropsychiatric mechanisms. They, therefore, cause an increase in cardiovascular reactions,

contributing to outbreak and continuance of heart diseases (8).

Identification of heart diseases by those bearing them could result in constitution of a spiritual crisis and endangerment of their self-confidence and religious faith (9). Spiritual health plays a key role in performance, health conditions, and life quality of heart failure patients, since this is important for coming along with the disease (10). In fact, spiritual health is composed of possession of sense of acceptance, positive emotions, ethics, and sense of positive interaction with a superior ruling power (11). When the spiritual health is critically endangered, people might get mental disorders such as loneliness, anxiety, and loss of meaning in life. Patients whose spiritual health is reinforced could efficiently cope with their illness and pass final stages of their disease in a favorable manner (12). Magir (2013) showed that those patients with Coronary Artery Disease (CAD) who have made little religious attempts tend to report higher symptoms of depression, anxiety, and sleep disturbances (13).

Moreover, Ghale Ghasemi (2013) demonstrated that high rates of spiritual health are an important protecting factor against anxiety in heart failure patients (14). Studies on general population of patients constantly showed that more than 90% of people believe in a Higher Being, and 94% of patients attach equal importance to their spiritual and physical wellness (15). Most patients wish to fulfill their spiritual and religious needs; whereas, according to these findings, spiritual needs of most patients are more often than not overlooked (16). In their studies on MS patients, Brook et al. found that faith and spiritual beliefs are beneficial in coping with the disease (17). Not only is spirituality effective on individuals' dispositions and mental health, but also it improves their physical conditions (18). Spirituality, in fact, increases both patients' ability to deal with an illness and the speed by which they are healed over (19). Additionally, the impacts left by mental disorders on treatment procedures of heart failure patients would result in an increase in costs incurred by healthcare

services (20). Given the fact that spiritual health improves mental conditions and enables patients to cope with their mental problems ensuing from the illness, the present study was conducted to determine the relationship between spiritual health and depression, anxiety, and stress in heart failure patients.

## Methods

This study was a descriptive-correlational investigation that was performed in selected Ardabil city teaching hospitals in 2014. Convenience sampling method was adopted, and all heart failure patients, who had referred to Ardabil City teaching hospitals within three months, were surveyed. Since the number of patients was 150, the study sample was held to include 150 subjects. Inclusion criteria were being in age range of 40 to 75; ability to read and write; having records of echocardiography in hospitalization case; ejection fraction rates being lower than 45%; proofs of heart failure in patients' cases; being affected not by underlying diseases such as diabetes and mental disorders like depression; obtaining written conscious consent form the units being studied. Three instruments were used to collect data: Demographic Questionnaire, Ellison-Paloutzian Spiritual Well-Being Scale, and Depression, Anxiety, and Stress Scale (DASS-21). Ellison-Paloutzian Spiritual Well-Being Scale (1982) was utilized to investigate spiritual wellbeing level. It includes 20 items, one half of which being related to religious health and the other half existential wellbeing. Replies to questions were arranged within the framework of a six-point Likert Scale, including totally disagree, disagree, relatively disagree, relatively agree, agree, and totally agree. The last option was given 6 points, and the first one 1 point. Aggregation of scores could be categorized as spiritual health at low level (20-40), spiritual health at average level (41-99), and spiritual health at high level (100-120). Reliability of this questionnaire, which was found to be standard, was calculated to be 0.85 using Cronbach's alpha.

Validity of the Spiritual Health Questionnaire was authenticated by the study undertaken by Seyed Fatemi et al. Its reliability, moreover,

was determined to be 0.82 through Cronbach's alpha (21). DASS-21 Standard Questionnaire was employed to examine anxiety, stress, and depression levels. As a shortened version of DASS-42, this questionnaire was first presented by Lobanov Lovibond in 1995 (22), and includes 21 items respecting depression (7 items), anxiety (7 items), and stress (7 items).

This questionnaire was arranged within the framework of a four-point Likert Scale. The lowest and highest scores related to each item were zero and three, respectively, in which the lowest and highest scores were assigned to never and very much options. Reliability of this test was calculated to be 0.92 using Cronbach's alpha. In this study, test-retest method was applied to determine the questionnaires' reliability coefficient. In this method, questionnaires were handed out to 15 heart failure patients in two stages, the latter of which happening 10 days after the other. Correlation between the two tests was, afterwards, calculated to be  $r=0.76$  for Spiritual Health Questionnaire and Depression, Anxiety, and Stress Scale.

After obtaining required permits from Nursing and Midwifery School officials and presenting the relevant introduction letter to Ardabil City teaching hospitals, the researcher made daily references to above-said centers, and then selected patients and achieved their written consent to gather their self-reported information. It is important to note that the units under investigation were given required information about the research's objectives. The time span between project initiation and the end of its sampling was almost three months from March to May 2014. SPSS, version 20, was adopted to analyze data using descriptive statistical methods (mean and frequency percentage), multivariable regression analysis, and Pearson's correlation coefficient. Frequency distribution tables were also used in order to summarize and categorize data.

## Result

In this study, a number of 150 patients with heart failure took part in this study, and their age range and SD were  $56\pm 1.5$ . Respecting their jobs, 42.2% (64 persons) were housewives. Most research subjects, i.e., 59.3% (89 persons), had primary school degrees. In addition, 71.3% of research subjects had records of hospitalization. According to research findings, general spiritual health level of 75.3% of patients (13 persons) was in average level. Mean and SD of total spiritual health score were  $64.73\pm 2.34$ , and mean and SD of religious health score were  $33.26\pm 1.24$ . Also, mean and SD of existential health were calculated to be  $45.76\pm 1.328$ . Furthermore, investigation of depression levels showed that 44% of patients were depressed to a medium extent, and 12% were severely depressed. Anxiety level of most patients, i.e., 60%, was in average level. And, 63% of research subjects had medium stress and 19% severe stress (Table 1).

Table 1: absolute and relative frequency distribution of spiritual health, depression, anxiety, and stress scores of heart failure patients

Variable	Level	Frequency	Percentage
Spiritual health	Low (20-40)	34	22.7
	Medium (41-99)	113	75.3
	High (100-120)	3	2
Depression	Normal (0-9)	9	7.3
	Low (10-13)	54	36
	Medium (14-20)	66	44
Anxiety	High (21-27)	19	12.7
	Normal (0-7)	3	2
	Low (8-9)	51	34
	Medium (10-14)	91	60.7
Stress	High (15-19)	5	3.3
	Normal (0-14)	8	2.9
	Low (15-18)	18	14.5
	Medium (19-25)	95	63.3
	High (26-33)	29	19.3

Table 2 presents the correlation between depression, anxiety, and stress and aspects of spiritual health in research subjects using Pearson's correlation coefficient. According to findings presented in the Table, there is a significant relationship between all dimensions of spiritual health, on the one hand, and depression, anxiety, and stress, on the other.

Table 2: relationship between depression, anxiety, and stress and spiritual health in patients under study

DASS-21 subscales	Spiritual health	
	Pearson	
	P	r
Depression	P<0.01	-0.535
Anxiety	P<0.01	-0.598
Stress	P<0.01	-0.458

Based on correlation matrix table, there is a negative and reverse relationship between spiritual health and the variables depression, anxiety, and stress: as spiritual health is increased, symptoms of depression, anxiety, and stress in people are vanished. Results of regression analysis specified that depression is a powerful indicator of spiritual health, justifying 0.59 of spiritual health variance ( $P \leq 0.01$ ). Second to depression, stress is significant in  $P \leq 0.01$ . In other words, stress is decreased as to 0.44 when spiritual health is enhanced (Table 3).

Table 3: beta coefficients of depression, anxiety, and stress and spiritual health

Variable	B	SE	$\beta$	p-value
Depression	0.42	0.03	0.592	0.000
Anxiety	0.23	0.04	0.224	0.000
Stress	7.24	128	0.445	0.000

## Discussion

In this study, a number of 150 heart failure patients participated in this study and their age mean was 56. As it was observed, prevalence of this illness has a direct relationship with an increase in age. According to Rochester and Friedman, probability of heart failure is doubled with a ten-year increase in age (23). Min Lu et al. (2014) showed that men's and women's mean age of heart failure is 37.5 and 40, respectively (24). In their study entitled "Depression in Male Heart Failure Patients and Factors Involved therein," Zeighami et al. (2012) selected their patients from among the patients within the age range of 34 to 88 (25). Most samples of this study were in an average spiritual health level.

Davison (2010) intended to examine aspects of spiritual health and life quality in patients with Chronic Kidney Disease. He calculated the mean spiritual health score to be 42.9, the finding which is indicative of an average

spiritual health level (26). This supports the findings obtained herein. In another study entitled "Comparison of Depression and Spiritual Health in Heart Failure Patients and Cancer Patients" undertaken by Bekelman et al., average spiritual health score was calculated to be 38.4 and 38.9 in heart failure patients and cancer patients, respectively. This finding shows a low spiritual health level among participants (27).

In the study entitled "The Relationship between Persistence on Praying and Spiritual Health in Hemodialysis Patients" conducted by Hojjati et al., total score of spiritual health was obtained to be 102, and 72% of samples had high rates of spiritual health. The rest 28% had average levels of spiritual health (28).

As it was observed, results of studies are relatively contradictory, which might be attributed to differences in atmospheres and communities under investigation. Most subjects under investigation had average degrees of depression, anxiety, and stress. Likewise, in the study by Shafiei (2014), most samples had average degrees of depression, anxiety, and stress (29). In his study entitled "Emotional Symptoms and Quality of Life in Patients with Hypertension," Jasper (2014) showed that 32.6% of patients have symptoms of depression, 48% of them symptoms of anxiety, and 27.6% of them symptoms of stress (30). The variables depression, anxiety, and stress have the highest impacts on people's health. In recent years, several studies have focused on the issue that how religiosity and religion influence various aspects of physical and mental health (21).

In this study, main hypothesis of the research was affirmed, and Pearson's correlation coefficient showed that there is a correlation between spiritual health and depression, anxiety, and stress. It means that heart failure patients who have higher degrees of spiritual attachments are likely to experience undesirable psychological conditions such as depression, anxiety, and stress. As a corroboration of this finding, Rezaei (2011) made attempts in his study to examine the relationship between spiritual health and stress and anxiety in women affected by breast

cancer. He showed that stress and anxiety levels are lower in patients whose spiritual health scores are higher ( $P < 0.001$ ) (32). Pour Ghane, also, indicated that an increase in religious beliefs ends in a decrease in stress degrees ( $P < 0.05$ ) (33). Meraviglia et al. showed that there is a relation between acquisition of high scores in spiritual dimensions and lowness of stress symptoms (34).

In another study, Dalmida et al. concluded that spiritual health causes an improvement in health conditions and feelings of goodness in women affected by HIV. It, in addition, increases emotional and social supports in these patients (35). Sorojjakool and Lynch showed that religious beliefs play a large-scale role in improvement of depression, and depression levels are lower in spiritual persons (36,37).

Results of above-mentioned studies are all supportive of this study's findings: patients with higher degrees of spiritual health are likely to experience lower levels of anxiety, depression, and stress. And, improvement of spiritual health assists individuals to have better feelings and get able to cope with their illness and, even, death. According to the findings of emotional area, spiritual and religious behaviors reduce negative emotions such as anxiety, depression, and stress by means of fulfilling individuals' innate needs for attachment and communication. Moreover, spirituality and religious beliefs facilitate coping with problems arising from chronic diseases such as heart failure and stress through comprehension of the fact that psychological issues and life problems are not but transitory. Religious beliefs, in reality, provide people with a sense of control over various conditions.

## Conclusion

According to above results, main hypothesis of the research, i.e., existence of a relationship between spiritual health and stress, depression, and anxiety in heart failure patients hospitalized in selected Ardabil City teaching hospitals, was supported. Physical factors including environmental noise are among the

limitations confronted by this research since they could make troubles for participants in selecting accurate options. This problem, however, was minimized through providing a desirable environment respecting required light, ventilation systems, and referring in proper times. According to the findings and the fact that the relation between spiritual health and depression, stress, and anxiety was significant, the outcomes might be used in clinical nursing services, media, nursing education, family education, and even future studies. It is also suggested to conduct further investigations regarding other factors impacting on depression, anxiety, and stress in heart failure patients.

## Conflict of interest

The authors declare no conflict of interest.

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