The Relationship Between Self-care Behaviors with Religious Attitudes, Anxiety, and Depression in Patients with Heart Failure

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Abstract

Background and Aim:

Heart failure is one of the major concerns and problems associated with anxiety and depression, which cause changes in self-care behaviors. This study aimed to investigate the relationship between self-care behaviours with religious attitudes, anxiety, and depression in patients with heart failure.

Materials and Methods

This descriptive cross-sectional study was performed in 114 patients selected by the quota sampling method. Data collection tools included a demographic information questionnaire, a European questionnaire of self-care behaviour in patients with heart failure, hospital anxiety, and depression questionnaire, and a religious attitude questionnaire. Data analysis was performed by using SPSS software and Pearson statistical tests, regression analysis, t-test, and ANOVA, and the significance level was considered $p < 0.05$.

Results

The mean age of the participants was 55.47 ± 13.90 years. Hypertension (15.8%) and diabetes with hypertension (14%) were the most common underlying diseases in the participants. The mean self-care score of the patients was 38.92 ± 7.86 and was moderate. The mean scores of anxieties, depression and religious attitude were 9.83 ± 4.22 , 9.61 ± 4.75 and 69.05 ± 10.08 , respectively, and were moderate. There was also a significant relationship between self-care with anxiety and depression ($p < 0.05$).

Conclusion

Self-care is directly related to anxiety and depression and the effect of anxiety is much greater than depression. Therefore, according to the results of the present study, if we could reduce the anxiety and stress of these patients with different methods, we can promote self-care and improve their health status.

Introduction

Despite significant advances in the treatment and management of cardiovascular disease, Heart Failure (HF) is still a major concern and problem, both medically and economically [1]. An estimated 64.3 million people are living with heart failure worldwide. In developed countries, the prevalence of known heart failure is generally estimated at 1–2% of the general adult population [2]. Cardiovascular diseases are the cause of many deaths in the world and impose a great burden on society [3, 4]. Based on an American Heart Association (AHA) estimation of 5380 US \$ per HF case, the current worldwide economic burden of HF can be estimated at 346.17 billion US \$ [5]. This chronic disorder is the first cause of death

in Iran and is the most important challenge of the country's health system, which is the cause of more than one-third of all deaths 39%[6]. Heart failure is associated with various physical and psychological stressors such as pain, lack of health, job loss, sensory deprivation, the feeling of imminent death and leads to varying degrees of psychological reactions such as frustration, fatigue and panic, worthlessness, and anxiety. Depression occurs in the patient[7, 8].

One of the important factors for better control and management of heart disease and insufficiency is self-care, which is also closely related to depression in these patients because depressive symptoms in patients with heart failure prevent self-care behaviours[9, 10]. Self-care is a decision-making process that involves choosing behaviours that include maintaining, managing, and trusting self-care[11]. In patients with heart failure, self-care empowers the individual to cope with the disease and reduces the quality of life by reducing the limitations caused by the disease[12]. Self-care leads to better management of symptoms such as pain, anxiety, and depression, and a sense of well-being, and increased life expectancy[13]. Therefore, self-care is one of the important factors for controlling and managing heart disease and failure[8].

Among the variables that can be an important factor in promoting self-care behaviours are psychological factors, especially depression and anxiety. Also, although anxiety and depression are very common in patients with heart failure, little attention has been paid to this issue, and usually, in heart patients, more attention is paid to the disease itself and less attention is paid to its consequences[14]. In general, the prevalence of depression and anxiety in cardiovascular patients is 2 to 3 times that of the general population and is equal to the rate of depression in patients with diabetes and cancer [15]. Recent studies have shown that moderate to severe depression is associated with a 5-fold increased risk of death in patients with heart failure and the risk of mortality in patients who are not depressed is 80% lower[16, 17]. In addition, 40% of heart failure patients may develop anxiety disorders. Studies have shown that the overall level of anxiety in these patients is 4-5 times higher than in healthy individuals[18]. Anxiety and depression are associated with a chronic illness such as heart failure, leading to increased mortality, reduced quality of life, disability, and increased need for health care and costs. Also, these disorders lead to intolerance to activity and cause the patient to lose his independence in performing normal life activities and become dependent on others in performing self-care activities [17]. Since the culture of self-care and observance of the principles of personal hygiene is rooted in our religious beliefs, so the path to perfection is not possible except in the shadow of body and soul health, so it can be said that religious beliefs and attitudes and adherence to beliefs are guidelines. Religion is very effective in creating and strengthening self-care behaviour in people, especially in our Islamic society[19]. Religious beliefs, in addition to preventing the occurrence and spread of mental illness, can reduce the physical effects of illness and its duration, so that people who believe in religion recover faster from illness than non-religious people. Religious people, on the other hand, have lower levels of anxiety and lower levels of negative emotions and depression[20].

Despite limited studies in this field, the relationship and interaction of self-care, religious attitudes, anxiety, and depression in these patients have not been well studied and in other words, it is not yet clear

exactly how self-care is affected by religious attitudes, anxiety, and depression. On the other hand, considering the role of nurses in providing the necessary training and care regarding prevention, care, and rehabilitation in the field of patients with anxiety and depression, it seems that by providing nursing care to such patients, an effective step can be taken in their promotion. Therefore, this study was performed to investigate the relationship between self-care and religious attitudes, depression, and anxiety in patients with HR.

Materials And Methods

Study Design And Sampling

The present study was a cross-sectional analytical study that aimed to examine self-care behaviours, religious attitudes, depression, and anxiety in patients with heart failure. The study population of cardiac patients in cardiac intensive care units of Imam and Golestan hospitals in Ahvaz and the sample included 114 heart failure patients from Jan2020 to Aug 2020 admitted to Ahvaz teaching hospitals who were selected from the research community based on the inclusion criteria of participants. Inclusion criteria include the patient's willingness to participate in the study and completion of the questionnaire, diagnosis of heart failure confirmed by a cardiologist for more than a year, the absence of neurological problems in the medical history (cerebrovascular accidents, transient ischemic attack, absence of short-term memory impairment or dementia) and among the exclusion criteria can be named incomplete completion of questionnaires.

Data Gathering And Tools

In this study, the data collection tool was a questionnaire that included a demographic information questionnaire, a European questionnaire on self-care behaviour in patients with heart failure, hospital anxiety, and depression questionnaire, and a religious attitude questionnaire. Personal information including age, sex, marital status (single, married, deceased spouse, divorced spouse), level of education, religion, occupation, duration of illness, presence of other underlying diseases (hyperglycaemia/hypertension/low Hyperthyroidism/hyperthyroidism / nervous disorders or other diseases) was collected using a demographic questionnaire.

The European Self-Care Behavior Questionnaire (ESCBQ) for Heart Failure Patients was designed by Jarasma et al. This questionnaire contains 12 questions[21]. Scoring and Interpretation Method: This questionnaire is formulated on a five-point Likert scale. To calculate the overall score of the questionnaire, add the scores of all the items in the questionnaire. The score range of this questionnaire will be between 12 and 60. Scores of 12 to 28 are good, 29 to 44 are average and 45 to 60 are poor. The lower the score obtained from this questionnaire, the better the self-care behavior of individuals will be, and vice versa. It was confirmed and its reliability was calculated by Cronbach's alpha method of 0.68 and in the well-cut study with Cronbach's alpha was calculated to be 0.71[22, 23].

The Hospital Anxiety and Depression Scale (HADS) consists of 14 questions, of which 7 questions are related to anxiety and 7 questions are related to depression[24]. A total of 21 points are earned from each episode. The cut-off points are 0 to 7 for healthy (no clinical signs), 8 to 10 for mild anxiety or depression, and 11 to 21 for severe anxiety or depression (clinical) for both subscales. Using this questionnaire is useful for determining the rate of depression and anxiety in heart patients. To determine the validity of the Hospital Anxiety and Depression Questionnaire, face, content, and simultaneous validity based on external criteria were used and its reliability by calculating Cronbach's alpha for the Depression subscale was 0.70 and the Anxiety subscale was 0.85[12, 25].

Religious attitude questionnaire was adapted to Islam, the essence of Shia based on the Stark and Glock model[26]. This questionnaire measures the dimensions of religiosity including 26 questions that measure religiosity in 4 dimensions (subscale). Reliability was assessed by the halving method and Cronbach's alpha are 0.75 and 0.78 respectively. It should be noted that the reliability and validity of all dimensions were significant ($p < 0.001$) and satisfactory[27, 28].

Data analysis

The data were analyzed using SPSS 22 software. Descriptive analysis was used to describe quantitative data and frequency and percentage were used in qualitative variables. ANOVA, independent t-test, Chi-square test, and Pearson correlation test and regression were used to analyze the data at the inferential level. The significance level in the tests was considered 0.05.

Findings

In this study, a total of 114 patients were studied. The mean age of the research units was 55.47 ± 13.90 years, all of whom were Muslims in terms of religion. Most of the subjects were male (50.9%). Most of them were married (79.8%) and most of them had a diploma (30.7%) and most of them were housewives (39.5%) (Table 1). Hypertension (15.8%) and then diabetes with hypertension (14%) were the most common underlying diseases in the subjects (Table 2). According to Table 3, age was directly related to anxiety and depression and increased with increasing age, anxiety, and depression, but was not related to religious attitudes and self-care. On the other hand, as shown in this table, age had a significant relationship with the duration of the disease ($p < 0.05$). Also, the duration of the disease was significantly correlated with anxiety, so that the longer the duration of the disease, the more anxiety increases.

Table 1
Frequency distribution of demographic information of patients with heart failure
hospitalized in the intensive care unit of Ahvaz teaching hospitals

Variable	Classification	Frequency (Percentage)	Age Mean± SD
Gender	Man	58(50.9)	57.12±14.68
	Woman	56(49.1)	53.77±12.95
Religion	Shia	114(100)	55.47±13.90
Marital status	Single	9.6(11)	38.09±8.20
	Married	79.8(91)	55.75±12.57
	widow	8.8(10)	71.90±9.93
	Separated	1.8(2)	56.50±3.54
education	illiterate	21.9(25)	68.92±10.59
	Under the diploma	29.8(34)	58.24±10.60
	Diploma	30.7(35)	48.29±12.50
	Associate	7.9(9)	43.44±11.73
	Bachelor	8.8(10)	50.20±7.76
	Master	0.9(1)	38.00±
Job status	Jobless	9.6(11)	65..82±12.77
	Self-employed	16.7(19)	47.94±11.85
	Housewife	39.5(45)	55.78±13.09
	The employee	20.2(23)	47.04±9.03
	Retired	14.0(11)	68.88±10.35
Total	Total	100(114)	55.47±13.90

Table 2
Frequency distribution of underlying diseases of patients with heart failure
hospitalized in the intensive care unit of Ahvaz teaching hospitals

Underlying comorbid diseases	Frequency (Percent)
Diabetes	6 (5.3)
Fat	6 (5.3)
Blood pressure	18 (15.8)
Hypothyroidism	2 (1.8)
Thyroid	1 (0.9)
Diabetes, fat	7 (6.1)
Diabetes, fat, Thyroid	1 (0.9)
Diabetes, fat, Blood pressure, Hypothyroidism	4 (3.5)
Diabetes, fat, Blood pressure, Neurology and psychiatry	2 (1.8)
Diabetes, fat, blood pressure	12 (10.5)
Diabetes, blood pressure	16 (14.0)
Fat, blood pressure	9(7.9)
Diabetes, fat, Neurology and psychiatry	4(3.5)
Fat, blood pressure, Hypothyroidism	1(0.9)
Diabetes, Hypothyroidism	1(0.9)
Fat, Hypothyroidism	1(0.9)
Diabetes, fat, Hypothyroidism	2(1.8)
Diabetes, fat, blood pressure	2(1.8)
Cancer	1(0.9)
None	18(15.8)
Total	114(100)

Table 3

Investigating the relationship between age and religious attitude, anxiety, depression, and self-care in the studied units

		Age	The duration of diseases	Anxiety	Depression	Religious attitude	Self-care
Age	Spearman correlation coefficient	1.000	0.637**	0.446**	0.341**	-0.021	0.281**
	Significance level		0.000	0.000	0.000	0.821	0.002
	Number	114	114	114	113	113	114

In this study, there was no significant difference between education and religious attitude, but there was a significant relationship between education and self-care and anxiety and depression so that education has an inverse relationship with anxiety and depression and religious attitude and a direct relationship with self-care (Table 4). Also, based on the results of the Pearson correlation test, the mean self-care score of the subjects was 38.92 ± 7.86 and was moderate. The mean scores of anxieties, depression, and religious attitude were 9.83 ± 4.22 , 9.61 ± 4.75 and 69.05 ± 10.08 , respectively, and were moderate (Table 4).

Table 4

Average of variables of anxiety, depression, religious attitude and self-care and its relationship with demographic variables of the studied units

Classification		Self-care	Religious attitude	Depression	Anxiety
		Mean $\pm$ SD	Mean $\pm$ SD	Mean $\pm$ SD	Mean $\pm$ SD
Gender	Man	38.93 $\pm$ 6.89	69.21 $\pm$ 8.76	10.21 $\pm$ 5.07	10.00 $\pm$ 4.09
	Woman	38.91 $\pm$ 8.81	68.89 $\pm$ 11.39	9.00 $\pm$ 4.36	9.66 $\pm$ 4.37
Religion	Shia	38.92 $\pm$ 7.86	69.05 $\pm$ 10.08	9.61 $\pm$ 4.75	9.83 $\pm$ 4.22
Marital status	Single	37.64 $\pm$ 11.72	68.73 $\pm$ 8.09	8.64 $\pm$ 2.62	8.64 $\pm$ 4.50
	Married	38.93 $\pm$ 7.65	69.09 $\pm$ 10.61	9.33 $\pm$ 4.78	9.65 $\pm$ 4.05
	Widow	40.50 $\pm$ 5.62	68.10 $\pm$ 7.55	13.30 $\pm$ 5.44	12.90 $\pm$ 4.86
	Divorced	37.50 $\pm$ 2.12	74.00 $\pm$ 11.31	9.00 $\pm$ 1.41	9.50 $\pm$ 2.12
Education	Illiterate	41.64 $\pm$ 6.72	69.60 $\pm$ 9.39	10.92 $\pm$ 3.89	11.80 $\pm$ 3.19
	Under the diploma	40.44 $\pm$ 6.50	69.29 $\pm$ 9.31	9.82 $\pm$ 4.50	9.79 $\pm$ 4.15
	Diploma	36.77 $\pm$ 6.96	67.54 $\pm$ 9.52	9.97 $\pm$ 5.94	9.57 $\pm$ 4.51
	Associate	41.44 $\pm$ 13.91	71.67 $\pm$ 7.00	7.78 $\pm$ 2.64	8.89 $\pm$ 5.33
	Bachelor	32.60 $\pm$ 6.74	75.00 $\pm$ 6.52	6.60 $\pm$ 2.50	7.40 $\pm$ 2.91
	Master	35.00 $\pm$ 0	23.00 $\pm$	4.00 $\pm$	4.00 $\pm$
Job status	Jobless	40.73 $\pm$ 6.57	67.45 $\pm$ 7.81	12.09 $\pm$ 3.08	10.55 $\pm$ 2.66
	Self-employed	38.72 $\pm$ 6.89	68.78 $\pm$ 8.60	11.06 $\pm$ 3.86	10.89 $\pm$ 3.85
	Housewife	39.40 $\pm$ 7.76	68.93 $\pm$ 10.01	9.36 $\pm$ 4.64	10.07 $\pm$ 4.36
	The employee	36.96 $\pm$ 10.00	70.91 $\pm$ 13.10	9.26 $\pm$ 5.85	9.13 $\pm$ 3.75
	Retired	40.06 $\pm$ 6.38	67.31 $\pm$ 8.67	11.19 $\pm$ 4.43	12.31 $\pm$ 4.54
	Total	38.92 $\pm$ 7.86	69.05 $\pm$ 10.08	9.61 $\pm$ 4.75	9.83 $\pm$ 4.22

Table 5

Investigating the correlation between anxiety, depression, religious attitude and self-care variables in the subjects

		Self-care	Religious attitude	Depression	Anxiety
Anxiety	Pearson sample correlation coefficient	0.489**	-0.064	0.646**	1
	Significance level	0.000	0.499	0.000	
	Total	114	114	114	114
Depression	Pearson sample correlation coefficient	0.393**	-0.059	1	0.646**
	Significance level	0.000	0.533		0.000
	Total	114	114	114	114
Religious attitude	Pearson sample correlation coefficient	-0.014	1	-0.059	-0.064
	Significance level	0.884		0.533	0.499
	Total	114	114	114	114
Self-care	Pearson sample correlation coefficient	1	-0.014	0.393**	0.489**
	Significance level		0.884	0.000	0.000
	Total	114	114	114	114

According to the results of the Pearson test, there was a significant and direct statistically significant and direct relationship between self-care and anxiety scale, as well as self-care and depression scale ($P < 0.001$) (Table 5 and figure No. 1 and 2 and 3). There was a significant and direct relationship between anxiety and depression ($p < 0.001$) (Table 5), so that increase anxiety and depression reduces self-care, but there was no significant relationship between self-care, anxiety, and depression with religious attitude ($P < 0.05$)

Discussion

This study aimed to determine the relationship between self-care behaviours with religious attitudes and anxiety and depression in patients with heart failure referred to teaching hospitals in Ahvaz.

Based on the findings of the present study, the total self-care behaviours were moderate. The study of Bagheri Saveh et al. showed that the level of self-care behaviours by patients was mostly moderate and the level of education and living and education about the disease had a significant relationship. As a

result, the level of self-care behaviours in patients with heart failure was not satisfactory, so training and strengthening self-care behaviours in these patients is necessary [29]. In Zeighami Mohammadi et al. (2015) study, the results showed that adherence to self-care behaviours was moderate in 84% and poor in 10%. As a result, following self-care behaviours is not appropriate in patients with heart failure. Education and follow-up of self-care behaviours should be done with a focus on specific problems of old age, social support, simplification of medication and diet, and attention to other chronic diseases[30]; Therefore, it can be concluded that more attention should be paid to self-care behaviours in heart patients.

Also, based on the findings of the present study, depression and anxiety were moderate, which is in line with the results of the study by Agakhani et al.[12], Janjani et al.[6], Chang et al. [10], Lee et al.[8], Graven et al. (2015) are consistent and the effect of anxiety and depression on self-care has been confirmed. Therefore, it can be inferred that in order to promote self-care in patients with heart failure, anxiety and depression in these patients should be studied and treated. In the present study, self-care did not have a significant relationship with religious attitude. This finding is not consistent with the results of Ghanbari and Bahadori Monfared however they are emphasized of religious attitude on self-care [19]. The reason for this difference is probably rooted in the attitude of people and their culture. There was also a significant and direct relationship between self-care behaviours and depression. This study is consistent with the of Abbasi et al study who cited that high self-care and resilience lead to a reduction in depression in the elderly with heart disease [6]. Chang et al. (2017) in Taiwan conducted a study entitled the relationship between depressive symptoms and self-care in patients with heart failure. The results showed that depressive symptoms directly reduced self-care behaviours in heart failure patients by reducing self-care confidence. As a result, it is important to strive to promote self-care behaviours by reducing depressive symptoms in patients with heart failure[10]. Findings of this study showed that there is a significant and direct relationship between self-care behaviours and anxiety. This finding is consistent with the study of Aga Khani et al. [12].

Limitations Of The Study

Small sample size of this study which limited the generalizability of the results. However, these findings should be reassessed after replicating this study in other contexts. It should be noted that the pandemic of novel coronavirus in this period may cause extra anxiety in the patients, also this situation changed some caring protocols which may limit the generalizability of the study.

Conclusion

Finally, it should be noted that self-care is directly related to anxiety and depression and the effect of anxiety is much greater than depression. But the self-care of the subjects had nothing to do with their religious attitudes. Therefore, according to the results of the present study, by teaching methods to reduce anxiety and stress as well as relaxation methods, we can help perform better self-care and improve health status of patients with heart failure. Self-care training-support packages can reduce anxiety and

depression in patients with HF. Therefore, nursing managers in the medical centres can use this method as an effective solution to reduce expenditure and burn of diseases.

Abbreviations

HR: Heart Failure; AHA: American Heart Association; ANOVA: Analysis of Variance; ESCBQ: European Self-Care Behavior Questionnaire; HADS: Hospital Anxiety and Depression Scale; SPSS: Statistical Package for the Social Science.

Declarations

Ethics approval and consent to participate

This paper was extracted from the NK thesis. It should be noted that in this study we explained clearly about objectives and consequences of intervention, the anonymity of data then informed consent was obtained from legal guardians/parents of the participants. Also, this study was performed following the declaration of Helsinki and approved by the Biomedical Ethics Committee of Ahvaz Jundishapur University of Medical Sciences (AJUMS) (Reference Number: IR.AJUMS.1398.342).

Consent for publication

N/A

Availability of data and material

The datasets generated and/or analysed during the current study are not publicly available due to limitations of ethical approval involving the patient data and anonymity but are available from the corresponding author on reasonable request.

Competing interests

The authors declare that they do not have any conflict of interest.

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Authors' contributions

NK, KZ, FA and MH were involved in designing this research. NK collected the data. MH analyzed the data. KZ and NK were involved in the data interpretation. KZ was responsible for writing and finalizing the manuscript. All authors have read and approved the manuscript.

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References

1. Baradaranfard F, Babaee S, Boroumand S, Mosleh S, Jafari F, Binaee N. The Relationship Between Quality of Life and Cardiovascular Self-Efficacy in Patients with Heart Failure: A Descriptive Correlation Study. *Jundishapur J Chronic Dis Care*. 2018;In Press In Press. doi:10.5812/jjcdc.68431.
2. Groenewegen A, Rutten FH, Mosterd A, Hoes AW. Epidemiology of heart failure. *Eur J Heart Fail*. 2020;22:1342–56. doi:10.1002/ejhf.1858.
3. Roth GA, Forouzanfar MH, Moran AE, Barber R, Nguyen G, Feigin VL, et al. Demographic and Epidemiologic Drivers of Global Cardiovascular Mortality. *N Engl J Med*. 2015;372:1333–41.
4. Roth GA, Mensah GA, Johnson CO, Addolorato G, Ammirati E, Baddour LM, et al. Global Burden of Cardiovascular Diseases and Risk Factors, 1990–2019: Update From the GBD 2019 Study. *J Am Coll Cardiol*. 2020;76:2982–3021.
5. Lippi G, Sanchis-Gomar F. Global epidemiology and future trends of heart failure. *AME Med Journal*; Vol 5 (June 2020) *AME Med J*. 2020. <https://amj.amegroups.com/article/view/5475>.
6. Abbasi M, Ghadampour E, Hojati M. The Role of Self-care, Resilience and Despair on depression in the elderly with Heart Diseases. *Aging Psychol*. 2017;3:181–8.
7. Chang WT, Wang ST, Hsu CH, Tsai LM, Chan SH, Chen HM. Effects of illness representation-focused patient education on illness representations and self-care in patients with heart failure: A randomised clinical trial. *J Clin Nurs*. 2020;29:3461–72. doi:10.1111/jocn.15384.
8. Lee KS, Lennie TA, Yoon JY, Wu J-R, Moser DK. Living Arrangements Modify the Relationship Between Depressive Symptoms and Self-care in Patients With Heart Failure. *J Cardiovasc Nurs*. 2017;32:171–9.
9. Dekker RL. Patient perspectives about depressive symptoms in heart failure: a review of the qualitative literature. *J Cardiovasc Nurs*. 2014;29:E9-15.
10. Chang LY, Wu SY, Chiang CE, Tsai PS. Depression and self-care maintenance in patients with heart failure: A moderated mediation model of self-care confidence and resilience. *Eur J Cardiovasc Nurs*. 2017;16:435–43.
11. Holzapfel N, Löwe B, Wild B, Schellberg D, Zugck C, Remppis A, et al. Self-care and depression in patients with chronic heart failure. *Heart Lung J Acute Crit Care*. 2009;38:392–7.
12. Aghakhani N, Sanaie K, Baghaei R, Khademvatan K. the impact of educational- supportive self-care package on anxiety, depression and stress in myocardial infarction patients hospitalized in shahid gholipour hospital, boukan, iran, 2016. *Nurs Midwifery J*. 2017;15:281–91. <http://unmf.umsu.ac.ir/article-1-2996-en.html>.

13. Riegel B, Dickson VV, Faulkner KM. The Situation-Specific Theory of Heart Failure Self-Care: Revised and Updated. *J Cardiovasc Nurs*. 2016;31:226–35.
14. Ebadi A, Moradian ST, Feyzi F, Asiabi M. Comparison of hospital anxiety and depression among patients with coronary artery disease based on proposed treatment. *Iran J Crit CARE Nurs*. 2011;4:97–102. <https://www.sid.ir/en/journal/ViewPaper.aspx?id=213623>.
15. Celano CM, Huffman JC. Depression and cardiac disease: a review. *Cardiol Rev*. 2011;19:130–42.
16. Rajan S, McKee M, Rangarajan S, Bangdiwala S, Rosengren A, Gupta R, et al. Association of Symptoms of Depression with Cardiovascular Disease and Mortality in Low-, Middle-, and High-Income Countries. *JAMA Psychiatry*. 2020;77:1052–63. doi:10.1001/jamapsychiatry.2020.1351.
17. Taghadosi M, Rohollah F, Aghajani M RF. Effect of cognitive therapy on mental health in patients with heart failure. *Feyz. J Kashan Univ Med Sci*. 2014;18:52–9. doi:10.22037/JRRH.V6I2.29917.
18. Mbakwem A, Aina F, Amadi C. Expert Opinion-Depression in Patients with Heart Failure: Is Enough Being Done? *Card Fail Rev*. 2016;2:110–2. doi:10.15420/cfr.2016:21:1.
19. Ghanbari S, Bahadorimonfared A. Self-care from the Perspective of Islam. *J Pizhūhish dar dīn va salāmat*. 2020;6:1–6. doi:10.22037/JRRH.V6I2.29917.
20. Nourisaeed A, Salari A, Nourisaeed A, Rouhi Balasi L, Moaddab F, Akbari B. Comparison of religious attitudes in patients with coronary artery disease and healthy people. *Iran J Nurs Res*. 2015;10:18–25. <http://ijnr.ir/article-1-1559-en.html>.
21. Jaarsma T, Cameron J, Riegel B, Stromberg A. Factors Related to Self-Care in Heart Failure Patients According to the Middle-Range Theory of Self-Care of Chronic Illness: a Literature Update. *Curr Heart Fail Rep*. 2017;14:71–7.
22. Ghanbari S, Bahadorimonfared A. Self-care from the Perspective of Islam. *gums-hnmj*. 2020;6:1–6. <http://hnmj.gums.ac.ir/article-1-166-en.html>.
23. Shojaei F, Asemi S, Najaf Yarandi A, Hosseini F. Self-care behaviors in patients with heart failure. *payeshj*. 2009;8:361–9. <http://payeshjournal.ir/article-1-598-en.html>.
24. Zigmond AS, Snaith RP. The hospital anxiety and depression scale. *Acta Psychiatr Scand*. 1983;67:361–70.
25. Zarea K, Maghsoudi S, Dashtebzorgi B, Hghighizadeh MH, Javadi M. The Impact of Peplau's Therapeutic Communication Model on Anxiety and Depression in Patients Candidate for Coronary Artery Bypass. *Clin Pract Epidemiol Ment Heal*. 2014;10:159–65.
26. Stark R, Glock CY. American Piety: The Nature of Religious Commitment. *Sociological Analysis*. 1968;29:164. doi:10.2307/3710152.
27. Serajzadeh S, Pouyafar M. Religion and social order: A study of the relationship between religiosity and feelings of anomie and perversion among a sample of students. *J Fac Lit Humanit (Kharazmi Univ)*. 2009;16:71–105. <https://www.sid.ir/fa/journal/ViewPaper.aspx?id=116020>.
28. Nourisaeed A, Salari A, Nourisaeed A, Rouhi Balasi L, Moaddab F, Akbari B. Comparison of religious attitudes in patients with coronary artery disease and healthy people. *Iran J Nurs Res*. 2015;10:18–

25. http://ijnr.ir/browse.php?a_id=1559&sid=1&slc_lang=en. Accessed 28 Nov 2021.
29. Bagheri-Saweh MI, Lotfi A, Salawati Ghasemi S. Self-care behaviors and related factors in chronic heart failure patients. *Int J Biomed Public Heal*. 2018;1:42–7. doi:10.22631/ijbmph.2018.56100.
30. Zeighami Mohamadi S, Alhani F, Shakoor M, Farmani P, Mohseni B, Fallah Taherpazir E. Self-care behaviors in patients with systolic heart failure. *J Nurs Midwifery Sci*. 2015;2:46–54. doi:10.7508/jnms.2015.01.007.

Figures

Figure 1

Investigating the relationship between self-care scale and anxiety in the subjects

Figure 2

Investigating the relationship between self-care scale and Depression in the subjects

Figure 3

Relationship between Anxiety, Depression, and Self-care as a final model by pathanalysis.