Article

Comparison of the association between spiritual experiences and death anxiety in heart failure patients with angina pectoris patients

Fatemeh Ghorbani[1], Mahin Roohani[*1], Kourosh Amini[2], Farzane Ahmadi[3]

[1]Department of Emergency and Critical Care Nursing, School of Nursing and Midwifery, Zanjan University of Medical Sciences, Zanjan, Iran
[2]Department of Psychiatric Nursing, School of Nursing and Midwifery, Zanjan University of Medical Sciences, Zanjn, Iran
[3]Department of Epidemiology and Biostatistics, School of Medicine, Zanjan University of Medical Sciences, Zanjan, Iran

Article Info

Article history:
Received: 2 July 2023
Accepted: 14 Nov 2023

Keywords:
spiritual experiences, death anxiety, heart failure, angina pectoris

***Corresponding author:**
Zanjan University of Medical Sciences, Dr.Sobouti Blvd. School of Nursing and Midwifery, Zanjan, Iran

Email: Roohani@zums.ac.ir

Abstract

Background: Paying attention to religion and spirituality as a support tool to reduce anxiety can be investigated.
Objectives: This study aimed to compare the association between spiritual experiences and death anxiety in heart failure patients with angina pectoris patients.
Methods: The cross sectional study with a comparative descriptive approach was conducted between July and November of 2022. 248 people participated in this study through convenience sampling (124 patients from each group). Data were collected using demographic information questionnaires, Templar's death anxiety scale and daily spiritual experience scale (DSES). Data were analyzed using X2, Fisher exact test, independent t-test, Mann-Whitney and Quade tests and Fisher's Z transformation in SPSS v.26 software.
***Results*:** The mean score of spiritual experiences in heart failure patients was significantly higher than in angina pectoris patients (P=0.010). The mean score of death anxiety in the angina pectoris group was higher than the heart failure group, but this difference was not significant statistically (p=0.205). There was a significant and negative correlation between spiritual experiences and death anxiety in both groups (p<0.001). Fisher's Z transformation test demonstrated that the difference between the correlation coefficient of spiritual experiences with death anxiety in patients of the two groups is not notable (t=0.20, p=0.420).
Conclusion: The development of a comprehensive care program including support, facilitation and attention to spiritual desires and needs is suggested in order to reduce death anxiety.

Implications of this paper in nursing and midwifery preventive care:
- The death anxiety of patients with angina pectoris was higher than that of patients with heart failure.
- Increasing spiritual experiences reduces death anxiety in both patients with angina pectoris and patients with heart failure.
- Designing and implementing a comprehensive nurse-centered care program in order to support, facilitate and pay attention to the spiritual needs of patients in addition to physical and psychological needs can reduce death anxiety in heart patients.

Introduction

Heart Failure (HF) refers to the condition that the heart cannot pump sufficient blood to fulfill the tissue's need for oxygen and nutrients [1]. Heart failure is one of the most important cardiovascular diseases, affecting 1% of people in their 50s and 10% of people in their 80s [2]. About 2% of adults living in developed countries suffer from HF, and nearly 20 million people have HF worldwide [3]. It is predicted that the prevalence of HF will increase up to 25% as of 2030 [4]. HF can lead to high mortality, medical costs, and hospitalization. [2].

Other important groups of cardiovascular disease involve ischemic heart disease (IHD), coronary heart disease, angina pectoris and acute coronary syndrome (ACS). The largest number of patients hospitalized in the heart wards are those suffering from this group of heart disorders. Angina pectoris refers to the condition in which the patient has pain in the chest and the pain or problem originates from the coronary arteries. The cause of angina pectoris is the lack of sufficient oxygen in the heart muscles. Angina is usually a temporary phenomenon. In contrast with heart failure, in angina pectoris, the patient's pain

is killed or relieved by rest and sublingual nitroglycerin. Ischemic heart disease currently is a contributing factor to approximately 1.8 million deaths per year, or 20% of all mortality in Europe. The highest rate of mortality and complications caused by ischemic heart disease is directed to the Asian continent in the world [5]. Cardiovascular diseases are the main cause of death in our country, as well as, and it ranks 25th among the countries of the world. The burden and high cost of these diseases fall on the health-treatment systems of the countries [6].

One of the variables under study is death anxiety. Death anxiety is considered as one of the most significant anxieties and is defined as a conscious or unconscious fear of death for oneself or others [7]. Heart failure leads to activity intolerance and creates changes in the patient's lifestyle that affect his/her life satisfaction. People with heart failure, in addition to physical pain, often experience stress, anxiety, depression, and poor quality of life [8]. Alhurani et al. (2018) reported higher anxiety levels among those who have HF by 60%, compared to healthy elders [9]. In case of happening acute cardiovascular events like angina pectoris, common complications such as low mood, sleep disorder, stress and anxiety follows. If this disease does not lead to death, it affects patients' life quality, so that most of them have severe anxiety during hospitalization, especially within the first two days. Excessive anxiety delays the treatment process of the disease and the possibility of death is higher in the first months [10]. HF is a chronic and life-threatening disease during which patients experience fear, anxiety, depression and death expectation permanently [11,12]. Unlike heart failure, angina pectoris is regarded as an acute crisis and a temporary disease very often. However, in angina pectoris we also observe constant fear and anxiety during hospitalization and even after discharge from the hospital [10]. On the other hand, fear of sudden death is a common phenomenon among cardiovascular patients [13].

To control anxiety, pharmacological and non-pharmacological methods are used, and owing to the temporary effect and side effects of drugs, more attention has been paid to non-pharmacological interventions in recent years [14]. For centuries, prayer, meditation and spiritual experiences have been utilized as one of the spiritual, intellectual and physical techniques to maintain and improve health and reduce stress and anxiety. Meantime, those with a religious background tend to use these methods [8].

It seems that the two important phenomena of death anxiety and spiritual experiences can play a very important role in the process of these two diseases, i.e. the patients with HF and angina pectoris. HF is chronic in nature and patients experience repeated hospitalizations, but angina pectoris is an acute condition and usually patients are hospitalized for the first time. According to the conditions of these two groups, the state of death anxiety may be different in the two groups. Meanwhile, the role of the nurse as both a patient supporter and a member of the medical care team who is in constant contact with the patient during hospitalization is very effective. Hence, by collecting comprehensive information from all aspects of patients' lives, nurses should make more accurate plans to improve the patients' condition. It is also necessary to provide holistic care and pay attention to the spiritual needs of patients along with physical and psychological ones. In Iran, people believe in religious beliefs and spirituality, so, planning interventions in this field can have a chance of success. Also, efforts to verify the role of religiosity in death anxiety through experimental research have created contradictory findings. There are contradictory results concerning the association between spiritual experiences and death anxiety in patients. Some studies represent a significant relationship between the two mentioned variables [15,16], but some others represent no relationship between these two variables [7,17]. On the other hand, the relationship between spiritual experiences, spiritual well-being, and spiritual interventions with death anxiety has been assessed in a specific group of chronic diseases such as cancers and no research has been done to compare the relationship between spiritual experiences in two different groups of diseases, including acute diseases (such as angina pectoris) and chronic diseases (such as heart failure). Considering the importance of the increasing statistics of heart diseases and the need to properly manage the treatment of the complications caused by these diseases, as well as the importance of the impact of spiritual experiences on death anxiety caused by the complications of these diseases, this study

aims to compare the relationship between spiritual experiences and death anxiety in patients with It was planned and performed in heart failure and angina pectoris patients.

Methods

This descriptive cross-sectional study with a comparative descriptive approach compares the association between spiritual experiences and death anxiety in heart failure patients with angina pectoris patients referred to Ayatollah Mousavi Hospital in Zanjan, Iran. Sampling was conducted for 5 months from July to November 2022.

Population of this study included the patients with heart failure (As a chronic disease) and angina pectoris (As an acute illness) who were admitted to the heart ward of Ayatollah Mousavi Hospital in Zanjan and convenience sampling was used to select them. To compare the association between spiritual experiences and death anxiety in two groups of patients with heart failure and angina pectoris, 124 people were selected from each group, the total number was 248 people.

The inclusion criteria were (a) the diagnosis of heart failure registered in the patient's medical record and documents based on the attending physician's diagnosis and clinical and preclinical findings with a cardiac ejection fraction of 40% or less on the basis of the results of echocardiography (These patients are hospitalized many times), (b) the diagnosis of angina pectoris registered in the patient's medical record and documents based on the diagnosis of the attending physician and clinical and preclinical findings (Usually, these patients are hospitalized for the first time), (c) to participate in the study with consent (d) having physical and hemodynamic stability and not to be in the acute phase of the disease.

It should be noted that the patients included in this study should have been in appropriate clinical condition according to the attending physician and obtaining information had not put at risk their lives (Often, the questionnaires were completed on the second day or the following days).

To collect data, three questionnaires were used. Questionnaires were given to the study participants from the second day of hospitalization if their physical and clinical conditions were stable. Questionnaires were completed by the first author for elderly and illiterate people (F Gh).

The first questionnaire including demographic characteristics such as age, gender, education, income satisfaction, occupation, place of residence, marital status. This questionnaire was completed based on the medical record and interview with the patient.

Templar's Death Anxiety Questionnaire was utilized to assess people's death anxiety. Templar's 15-item death anxiety questionnaire is a standard questionnaire and has been used in different studies throughout the world to assess death anxiety. This scale developed by Templar (1970). The answer to each of the items is a five-choice Likert scale from I strongly disagree (1), I disagree (2), I have no idea (3), I agree (4) and I strongly agree (5). The Questions 2, 3, 5, 6, 7 and 15 were scored in reverse. The minimum score was 15 (no anxiety) and the maximum score was 75 (very high death anxiety) [18]. In Iran, Sharif Nia and colleagues (2016) on the basis of the cultural and social context used and normalized the aforementioned questionnaire to examine death anxiety in different fields and its psychometric properties were examined, too. In order to determine the reliability of this questionnaire, Cronbach's alpha was used and its value was equal to 0.88 [19]. In the current study, a pilot study was done with 20 patients (including 10 angina pectoris patients and 10 heart failure patients) in order to measure the reliability of this questionnaire, and the results of Cronbach's alpha test were obtained 0.889 for this questionnaire.

The third part of the data collection tool was the Daily Spiritual Experience Scale (DSES), which was first designed by Underwood-Teresi in 2002, and it examines a person's perception of a transcendent (God) in his/her daily life and her/his perception of interacting with this power. The questionnaire consists of 16 items which is scored on a 6-point Likert scale from most of the day (score 5) to never or almost never (score 1). In this scale, a higher score means more spiritual experiences. Recorded experiences on this scale are: fear, compassionate attitude, giving other-centered love, receiving compassionate love, finding power, guidance, or comfort from a transcendent source, feeling peace or deep inner harmony, feeling a desire to be close to a divine source in Life, feeling of being blessed even in

hardships, and feeling of joy in exalting people in momentary problems among others, connection, joy and feeling of superiority, power, comfort, peace, God's help and assistance, God's guidance, receiving God's love, feeling surprise, gratitude, affection combined with compassion and feeling close to God [18]. The psychometric properties of the mentioned questionnaire were investigated by Sharif Nia et al. in 2017. The reliability of this questionnaire was confirmed using the internal consistency method and Cronbach's alpha coefficient was reported as 0.8 [20]. Soltani et al.(2016) confirmed the reliability of this tool using internal consistency and Cronbach's alpha coefficient (a=0.94) [21]. Through a pilot study with 20 patients (including 10 angina pectoris patients and 10 heart failure patients) the reliability of this questionnaire was measured and the results of Cronbach's alpha test were also obtained 0.945.

Data was analyzed using SPSS version 26 software. In order to determine the normality of the distribution of the variables, Kolmogorov Smirnov test was used. To check the association between qualitative and quantitative variables, the chi-square test and Fisher's test, the chi-square test based on Monte Carlo simulation, and independent t-tests and non-parametric Mann-Whitney tests were used, respectively. Descriptive statistics was used to estimate the absolute and relative frequency and calculation of mean and standard deviation. Spiritual experiences and death anxiety of the two groups have been compared once with the Mann-Whitney test (before adjusting the effect of variables) and then through the non-parametric Quade test (after modifying the effect of variables). To examine the correlation between spiritual experiences and death anxiety between the two groups, Spearman's correlation coefficient was used, and Fisher's Z transformation test was used for the comparison of the two correlation coefficients.

Results

Demographic variables such as age (years), place of residence, gender, education, occupation, marital status and income satisfaction in the two groups of angina pectoris and heart failure have been described in Table 1. There was no significant difference between the two groups in terms of marital status, gender and education (P>0.05).

Nevertheless, the age of patients in the heart failure group was significantly higher than the angina pectoris group (P=0.005).

There was a significant difference in the two groups in terms of place of residence (P=0.023), so that the angina pectoris group was more urban. There was a significant difference between the two groups in terms of occupation (P=0.025), and the biggest difference between the two groups is related to the occupational status of retired, freelance and unemployed patients. The number of unemployed and retired patients was higher in the heart failure group but the frequency of freelance patients was higher in the angina pectoris patients group. There was a significant difference between the two groups in terms of income satisfaction as well, so that the level of income satisfactions was higher in the heart failure group than in the angina pectoris group (P=0.001) (Table 1).

Table 1: Comparison of demographic variables in two groups of patients with angina pectoris and heart failure

Qualitative variables		Heart failure N(%)	Angina pectoris N(%)	Statistics	P-Value
Place of Residence	Urban	73(58.9)	90(72.6)	5.17	0.023*
	Rural	51(41.1)	34(27.4)		
Gender	Female	41(33.1)	44(35.5)	0.16	0.688*
	Male	83(66.9)	80(64.5)		
Level Of Education	Illiterate	49(39.5)	43(34.7)	2.11	0.715**
	Primary	45(36.3)	43(34.7)		
	High school	13(10.5)	14(11.3)		
	Diploma and higher	11(8.9)	13(10.5)		
	Bachelor and higher	6(4.8)	11(8.9)		
Occupation	Employee	3(2.4)	8(6.5)	12.86	0.025**
	Workman	25(20.2)	22(17.7)		
	Workless	12(9.7)	2(1.6)		
	Housewife	40(32.3)	43(34.7)		
	Self employment	22(17.7)	33(26.6)		
	Retired	22(17.7)	16(12.9)		
Marital status	Single	5(4)	1(0.8)	4.67	0.118**
	Married	115(92.7)	122(98.4)		
	Widow	4(3.2)	1(0.8)		
Income Satisfaction	not satisfied	67(54)	39(31.5)	16.25	<0.001**
	partly satisfied	57(46)	80(64.5)		
	Completely satisfied	0(0)	5(4)		
Quantitative variables		**Heart failure Mean(SD)**	**Angina pectoris Mean(SD)**	Statistics	P-Value
Age (years)	-	64.24(13.48)	59.60(12.03)	2.86	0.005***

* **the chi-square test ,** ** **the chi-square test based on Monte Carlo simulation,** *** **independent t-tests**

Table 2 compares spiritual experiences and death anxiety in two groups. There was a significant difference in the two groups in terms of spiritual experiences, so that spiritual experiences were higher in the heart failure group (p=0.010). Death anxiety was higher in the angina pectoris group than that of the heart failure group, but this difference was not statistically significant (p=0.205). Due to the presence of significant differences in the two groups of angina pectoris and heart failure based on the variables of age, place of residence, occupation and income satisfaction, spiritual experiences and death anxiety were compared between the two groups by modifying the effect of these variables. Due to the non-normality of the variables of spiritual experiences and death anxiety, this comparison was done using Quade's non-parametric test. By modifying the variables, there was no significant difference between spiritual experiences and death anxiety in the two groups (p=0.963, p=0.270) (Table 2).

Table 2: Comparison of spiritual experiences and death anxiety in two groups of patients with angina pectoris and heart failure

Variable	group				Non-modification+		modification*	
	Angina pectoris		Heart failure					
	Median (IQR)	Mean (SD)	Median (IQR)	Mean (SD)	Statistics	P-Value	Statistics	P-Value
Spiritual Experiences	79 (13)	78.03 (11.31)	80 (20)	81.98 (12.65)	6237.00	0.010	1.11	0.270
Death anxiety	47.00 (15.75)	45.58 (10.12)	44.50 (22.00)	43.15 (13.41)	8404.00	0.205	-0.05	0.963

+**Mann-Whitney test,** * **Quade's non-parametric test**

Table 3 shows that Spearman's correlation coefficient between the two variables of death anxiety and spiritual experiences in both heart failure and angina pectoris groups was inverse

and significant (p<0.001). The results of comparing two correlation coefficients using Fisher's Z transformation test showed that the difference of correlation coefficient between spiritual experiences and death anxiety in two groups was not significant (p=0.420).

Table 3: Comparison of the correlation of spiritual experiences and death anxiety between two groups

group	Spearman's correlation coefficient	P-Value*	comparing two correlation coefficients	
			Statistics	P-Value**
Angina pectoris	-0.609	<0.001	0.20	0.420
Heart failure	-0.625	<0.001		

***Spearman's correlation coefficient, ****Fisher's Z transformation test**

Discussion

Current study aimed to compare the association between spiritual experiences and death anxiety in heart failure patients with angina pectoris patients. Our result shows that there was a significant difference in the two groups in terms of spiritual experiences, so that spiritual experiences were higher in the heart failure group. To justify these findings, it can be said due to the fact that the mean age of patients in the heart failure group was higher than the angina group, and with age increase, people approach the final stages of their spiritual and psychological development and have a clearer and more meaningful view to the passage of their lives. On one hand, the cultural and religious context in Iran is such that older people have a greater spiritual and religious perspective. On the other hand, it can be said that in stressful events such as an acute angina pectoris attack, people doubt their religious beliefs, which have a negative effect on their religious coping. In the study of Nezami et al. (2020), no statistically significant difference was observed between the groups under study in terms of spiritual experiences [17], which was contrary to our results. This difference in the results may be due to the difference in the sample size and the statistical population under study.

Our finding shows that the level of death anxiety in the angina pectoris group was higher than in the heart failure group, but this difference was not statistically significant. A higher level of death anxiety in angina pectoris patients can be justified due to the acute nature of this disease and that the heart as a vital organ is now the main focus and concern of the patient, but in heart failure groups due to chronicity and the progressive course of the disease, patients adapt to the specific conditions of the disease and experience less anxiety. In the study of Nezami et al. the findings showed that there is a significant difference in the mean scores of deaths anxiety in women with breast and cervical cancer and women with stomach and colorectal cancer. Also, the mean scores of deaths anxiety in women with gynecological cancer were significantly higher than those of women with general cancer, which is consistent with the present study due to the existence of a significant difference in the mean scores of deaths anxiety in the two study groups [17].

Our findings showed that patients with heart failure and angina pectoris with low levels of spiritual experiences had higher levels of death anxiety. Since most people in Iranian society are religious and adhere to spiritual and religious principles, and on the other hand, these patients face with a stressful event such as heart disease, spirituality plays a significant role in overcoming this situation, and this result was not far from what is expected. In a study conducted by Rababa et al. to examine the relationship between death anxiety and spiritual well-being and religious coping in adults during the COVID-19 pandemic, the death anxiety score was higher than the mean score [22], which is due to the fact that both diseases COVID-19 and angina pectoris can be considered among acute diseases, the findings of the present study regarding the high mean of death anxiety in angina pectoris are consistent with the aforementioned study. In a study conducted by Soltani et al. [21] to examine the association between spiritual experiences and death anxiety and life expectancy in patients undergoing coronary artery bypass surgery,

spiritual experiences had a statistically significant and inverse association with death anxiety, which complies with the present study. In a study carried out by Oshwandi et al. [7] to examine the effect of the spiritual care program on the death anxiety of patients suffering from end-stage chronic kidney failure under hemodialysis in a clinical trial study, the death anxiety scores decreased in the trial group after the intervention, which was statistically significant and in compliance with the present study. However, in the study of Haqdoost et al. [16] and in the study of Azimian et al. [23], the association between spiritual experiences and death anxiety was inverse, weak, and not significant. Also, in Bakan et al.'s study [15], no significant association was observed between age, death anxiety scale and religious orientation scale. Most of the elderly people who participated in this study experienced high levels of death anxiety, which is not consistent with the present study. The different results obtained from the studies can be because of the difference in the number of the study sample, the type of disease, intervening factors due to other underlying diseases, and various tools for collecting information.

According to our findings, comparing the correlation coefficient between spiritual experiences and death anxiety in heart failure and angina pectoris patients did not show a statistically significant difference. In this regard, no study was found that is consistent with the results of the current research. In Nezami et al.'s study [17], which aimed to compare the association between spiritual well-being and death anxiety in women suffering from breast and cervical cancer and women with gastric and colorectal cancer, the findings of the study indicate a significant inverse association between death anxiety and spiritual well-being in both groups. Thus, people with higher spiritual health experience less anxiety about death. In addition, the relationship between death anxiety and spiritual well-being in women with gastric and colorectal cancer was stronger than in women with breast and cervical cancer, which is not consistent with the current study. The difference in the results of the studies can be due to the difference in the nature of the compared diseases. In Nezami et al.'s study, all four groups of compared diseases include chronic diseases (types of cancers), while in the present study, among the two groups of chronic heart disease (heart failure) and acute heart disease (angina) have been compared.

Due to limitations such as lack of access to similar studies, it was very difficult to compare and evaluate the findings of this research. It seems that the experience and report of death anxiety in people with other diseases in different societies depends on demographic variables, cultural backgrounds and religious beliefs. Like other studies, this study had limitations, as well. Although the participation in the study was completely voluntary and the confidentiality of the information was assured, but the participants may have given incorrect answers to the questionnaires, which was beyond the control of the researcher. In addition, the physical and mental conditions of the participants also had an effect on the responses given to the questions when filling out the questionnaire. The completion of the questionnaires was done after the second day of hospitalization so that the participants have reached relative balance as much as possible mentally and physically. Of course, the lack of control over social, economic and cultural variables and the inability to generalize them to other groups of heart diseases can also be mentioned. In order to control these variables, it is recommended to carry out further studies in a specific group of society from the cultural, social and economic point of view.

Conclusion

In the heart failure group, spiritual experiences were higher. Death anxiety in the angina pectoris group was higher than the heart failure group, but this discrepancy was not statistically significant. There was a negative and significant correlation between the two variables of spiritual experiences and death anxiety in both heart failure and angina pectoris groups, but the comparison of the two correlation coefficients showed that the difference in the correlation coefficient between spiritual experiences and death anxiety in the two groups was not significant. High level of death anxiety in the angina pectoris group and its negative correlation with the amount of spiritual experiences reveals the necessity of paying attention and developing a comprehensive care plan such as supporting, facilitating and paying attention to the spiritual desires and needs of

patients in addition to their physical and psychological needs in order to reduce the anxiety of death. Since Iran is a country with a rich history and deep religious beliefs, it is recommended that nursing care start from the very beginning of the patient's admission in order to improve the quality of the spiritual experiences of hospitalized patients in this group and use various methods, like support from the family and society, support from various spiritual and psychological and emotional systems, therapeutic counseling, strengthening hope, paying attention to psychological needs and increasing social support should be used.

Ethical Consideration

This study has been approved by the medical ethics committee of Zanjan University of Medical Sciences with code of ethics (IR.ZUMS.REC.1401.129). After introducing himself, the researcher explained the objectives of the study to the participants. Informed written consent was obtained from the participants.

Acknowledgments

We hereby appreciate all the people who helped us conduct this research.

Conflict of interest

The authors reported no conflict of interest.

Funding:

The Research and Technology Vice-Chancellor of Zanjan University of Medical Sciences has funded this project.

Authors' contributions:

All authors equally contributed to preparing this article.

References

1. Abbasi K, Mohammadi E, Sadeghian H, Gholami Fesharaki M. Quality of life in patients with heart failure. Iranian Journal of Nursing Research. 2016; 11(2): 10-23. http://doi.org/1735-7012. [In Persian]

2. Enayati M, Mardani-Hamooleh M, Farahani Nia M, Haghani S. Relationship between spiritual intelligence and illness-related worries in hospitalized patients with heart failure in Mazandaran, Iran. Iran Journal of Nursing. 2022; 35(138): 434-47. https://doi.org/10.32598/ijn.35.138.764.29. [In Persian]

3. Jameson L, Kasper D, Longo D, Fauci A, Hauser S. Harrisons principles of internal medicine. 20th ed. 2018.

4. Flint KM, Fairclough DL, Spertus JA, Bekelman DB. Does heart failure-specific health status identify patients with bothersome symptoms, depression, anxiety, and/or poorer spiritual well-being? European Heart Journal-Quality of Care and Clinical Outcomes. 2019; 5(3): 233-41. https://doi.org/10.1093/ehjqcco/qcy061.

5. Zipes D, Libby P, Bonow R, Mann D. Braunwald's Heart Disease. 11th ed2018.

6. Alimohammadzadeh K, Sadeghi R, Maher A, Kazemi MK. Short-term cost-effectiveness of reteplase versus primary percutaneous coronary intervention in patients with acute STEMI a tertiary hospital in Iran. International Journal of Cardiovascular Practice. 2017; 2(3): 65-9. https://doi.org/10.21859/ijcp-020305.

7. Oshvandi K, Amini S, Moghimbeigi A, Sadeghian E. The effect of spiritual care on death anxiety in hemodialysis patients with end-stage of renal disease: A Randomized Clinical Trial. Hayat. 2018; 23(4): 332-44. [In Persian]

8. Saiz J, Pung MA, Wilson KL, Pruitt C, Rutledge T, Redwine L, et al. Is belonging to a religious organization enough? Differences in religious affiliation versus self-ratings of spirituality on behavioral and psychological variables in individuals with heart failure. Healthcare. 2020; 129: 1-15.https://doi/10.3390/healthcare8020129.

9. Alhurani AS, Dekker RL, Abed MA, Khalil A, Al Zaghal MH, Lee KS, et al. The association of co-morbid symptoms of depression and anxiety with all-cause mortality and cardiac rehospitalization in patients with heart failure. Psychosomatics. 2015; 56(4): 371-80. http://dx.doi.org/10.1016/j.psym.2014.05.022.

10. Molaie R. The relationship between spiritual health and psychological well-being in patients admitted with acute coronary syndrome in hospitals of Kerman University of Medical Sciences in 1398: Kerman University of Medical Sciences ; 2021.

11. Clark CC, Hunter J. Spirituality, spiritual well-being, and spiritual coping in advanced heart failure: Review of the literature. Journal of

Holistic Nursing. 2019; 37(1): 56-73. http://doi.org/10.1177/0898010118761401.
12. Vahed NB, Roohani M, Zenoozian S, Faghihzadeh E, Amini K. The effect of educational protocol intended to promote illness perception on death anxiety in patients with heart failure: A Clinical Trial Study. Preventive Care in Nursing & Midwifery Journal. 2022; 12(1). https://doi.org/10.52547/pcnm.12.1.60.
13. Yıldırım D, Kocatepe V. Evaluating death anxiety and death depression levels among patients with acute myocardial infarction. OMEGA-Journal of Death and Dying. 2021:00302228211009773. http://doi.org/10.1177%2F00302228211009773.
14. Sadat Kashi M, Hosseini MA, Mohammadi F, Akbari Kamrani A, Bakhshi E. The effect of jaw relaxation on anxiety of patients with myocardial infarction. Iranian Journal of Rehabilitation Research in Nursing (IJRN). 2016; 3(1): 36-42. http://doi.org/10.21859/ijrn-030105. [In Persian]
15. Bakan AB, Arli SK, Yıldız M. Relationship between religious orientation and death anxiety in elderly individuals. Journal of religion and health. 2019; 58(6): 2241-50. http://doi.org/10.1007/s10943-019-00917-4.
16. Haghdoost Z, Mohammadreza M, Saeed O. The relationship between spiritual experiences with hope to be alive and death anxiety in burned patients. Journal of Isfahan Medical School. 2021; 38(598): 811-7. http://doi.org/10.22122/jims.v38i598.13219. [In Persian]
17. Nezami N, Dashti F, Alilu L, Heidari S. Comparing relationship between spiritual well-being and death anxiety among women with breast and cervical cancers and women with gastric and colorectal cancers. Journal of Education and Health Promotion. 2020; 9. http://doi.org/10.4103/jehp.jehp_287_20.
18. Aghajani M, Valiee S, Tol A. Death anxiety amongst nurses in critical care and general wards. Iran J nurs. 2010;23(67):59-68.https://doi.org/10.1016/S0924-9338(10)70353-9. [In Persian]
19. SHarifnia H, Pahlavansharif S, GHodarzian A, Haghdost A, Ebadi A, Soleimani M. Evaluation of psychometric properties of the extended Templer Death Anxiety Scale in a sample of Iranian chemical warfare victims. HAYAT. 2016; 22(3): 229-44. [In Persian]
20. Sharif Nia H, Pahlevan Sharif S, Koocher GP, Yaghoobzadeh A, Haghdoost AA, Mar Win MT, et al. Psychometric properties of the death anxiety scale-extended among patients with end-stage renal disease. OMEGA-Journal of Death and Dying. 2020; 80(3): 380-96. http://doi.org/10.1177%2F0030222817733220.
21. Soltani F. Relationship of daily spiritual experiences with life expectancy and death anxiety in patients undergoing coronary artery bypass surgery. Iranian Journal of Cardiovascular Nursing. 2016; 5(2) :6-13. [In Persian]
22. Rababa M, Hayajneh AA, Bani-Iss W. Association of death anxiety with spiritual well-being and religious coping in older adults during the COVID-19 pandemic. Journal of religion and health. 2021; 60(1): 50-63. http://doi.org/10.1007/s10943-020-01129-x.
23. Azimian J, Soleimany M, Sharif SP, Banihashemi H. The effect of spiritual care program on death anxiety of cardiac patients: A randomized clinical trial. Avicenna Journal of Nursing and Midwifery Care. 2019; 27(1): 1-10. http://doi.org/10.30699/ajnmc.27.1.1. [In Persian]