

Research Paper





The Relationship Between Spiritual Health, Positive Thinking, Type D Personality, and Health Promoting Lifestyle With Death Anxiety

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Please cite this article as Sharifizad A, Askarizadeh Gh, Bagheri M. The Relationship Between Spiritual Health, Positive Thinking, Type D Personality, and Health Promoting Lifestyle With Death Anxiety. J Vessel Circ. 2022; 3(3):125-132. http://dx.doi.org/10.32598/JVC.3.3.31.17





Article info:

Received: 11 Mar 2022 Accepted: 01 May 2022 Publish: 01 Jul 2022

Keywords:

Spiritual therapies, Optimism, Type D personality, Anxiety, Heart failure

ABSTRACT

Background and Aim: The present study was conducted to investigate the relationship between spiritual health, positive thinking, type D personality, and health-promoting lifestyle with death anxiety in heart failure patients.

Materials and Methods: This research was analytical-cross-sectional conducted in 2022. The statistical population included all heart failure patients in Yazd city, Iran, in 2021. A sample of 200 people with heart failure disease was selected using the convenience sampling method. The data collection tools in this research included Poltzen-Wallis's (1982) spiritual health questionnaire, Ingram and Wisnicki's positive thinking questionnaire, personality type D questionnaire, Walker's health-promoting lifestyle questionnaire, and Templer's death anxiety questionnaire. The data were examined and analyzed using correlation and regression analysis. SPSS software, version 26 was used to analyze the data.

Results: The results showed that spiritual health, positive thinking, type D personality, and health-enhancing lifestyle reduce death anxiety in heart failure patients and the relationship between the variables is positive and significant.

Conclusion: The results indicate that the higher the level of spiritual health, positive thinking, D personality type, and health-enhancing lifestyle among heart failure patients, the less death anxiety, and the higher the mental health of the patients, the better their quality of life.

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1. Introduction

eart failure is one of the most common heart diseases and the main cause of hospitalization of people older than 65 years old. In these patients, one of the most common psychological problems caused by chronic diseases, including cardiovascular diseases, can be considered death

anxiety. The research conducted in this field also shows that 27% of cardiac patients experience a high level of death anxiety, therefore the fear of death caused by this disease is common and worthy of attention among patients with cardiac complications [1-3]. However, death anxiety includes various and wide dimensions, such as fear of the unknown, fear of pain, torment, suffering, loneliness, and loss of control; it is also related to and influenced by many things, including religion and religious tendencies, individual differences and personality traits, social and cultural differences, etc. [4]. Spiritual health is considered one of the critical dimensions in human health. Islamic teachings, with a reasonable analysis of the phenomenon of death, not only eliminate its negative effect but also try to create attractiveness in it. However, most people's reaction to it is not positive. According to studies, the factor that can be effective in reducing death anxiety is spiritual health [5]. When crises occur, spirituality is a powerful source that is considered a serious obstacle in dealing with the mental pressure and anxiety of patients. Religious behaviors, such as prayer can increase spiritual energy and create a positive attitude in the patient [6]. Spiritual health is considered a protective factor in promoting health and preventing diseases, while spiritual health can be mentioned as a successful and helpful strategy for human life in all stages and areas of life, including situations full of stress, diseases, and even death. According to the studies, spiritual health is considered a crucial therapeutic factor in the process of treating patients [7]. Other factors affecting death anxiety and general health are individual differences and personality traits. Among the disease-prone personalities, which was first proposed by Denault and derived from the word anxious personality and short for helpless personality, is personality type D, which is vital in physical and mental health [8]. Following the increase in cardiovascular diseases, many studies have been conducted concerning the development and exacerbation of this disease, and it has been determined that personality type D, anxiety, depression, etc. are crucial predicting factors [9]. Because people with personality type D pay less attention to positive emotions and more to negative emotions and also avoid expressing their emotions in social interactions [10], which are prone to depression, worry, anxiety, and negative view of others more than other people; therefore, these people face more psychological and clinical problems, including cardiovascular diseases, cancer, blood pressure, depression, etc. [11]. The D or distress personality type is considered to be an underlying factor for coronary heart disease. Positive thinking is the way or the result of the positive focus of one's mind on something constructive and good, and therefore removes negative or destructive thoughts and emotions from it [12]. Thinking positively and removing negative thoughts reduces the risk of heart disease. A health-promoting lifestyle includes behaviors that lead to empowering people to increase control over their health and ultimately improve the health of the individual and society [13]. Health promotion is defined as the concept of empowering people to know the factors influencing individual-social health and making correct decisions in choosing healthy behaviors and as a result, observing a healthy lifestyle. The crucial factors that make up a health-promoting lifestyle are self-care health, physical activity, proper nutrition, spiritual, and social interactions, and stress management. According to the mentioned materials, this study was conducted to investigate the relationship between spiritual health, positive thinking, type D personality, and health-promoting lifestyle with death anxiety in heart failure patients.

2. Materials and Methods

The current research was a descriptive analytical-crosssectional study. The statistical population of the present study included all heart failure patients who visited the care departments of hospitals and doctors' offices in Yazd city, Iran, in early March 2021. In this research, 200 patients with heart failure who were hospitalized were selected by the census. The tools used in this study are Poltzin Wallison's spiritual health questionnaire (1982), Ingram and Vincicki's positive thinking questionnaire (1998), Denault's personality type questionnaire (2005), Walker et al.'s health-promoting lifestyle questionnaire (1997), and Templer's death anxiety questionnaire (1970). The spiritual health questionnaire included 20 items; 10 items evaluate religious health and the other 10 items evaluate the health of being, and finally, the total score of spiritual health is obtained from the sum of these 2 components, and the score between 10-60 is obtained. The overall mental health score is the sum of these two subscales, the range of which is between 20-120. The answers to the questions are usually classified on a 6-point Likert scale, including completely disagree (1), and completely agree (6). In negative questions, scoring is

done in reverse. According to the instruction of the scale, mental health was divided into three levels, low-20-40, medium-99-41, and high 100-120. This questionnaire is a standard questionnaire and its validity and reliability have been proven in several studies. In Iran, in the study conducted by Seyed Fatemi et al. [13], the validity of the questionnaire through content validity was 0.87 and its reliability was obtained at 0.82 through Cronbach's α reliability coefficient. In the present study, the validity was obtained at 0.89 and the reliability was 0.84. The next tool was the automatic positive thoughts questionnaire or Ingram and Wisnicki's positive thinking questionnaire. The scoring of this questionnaire is based on a 5-point Likert scale of never (1), rarely (2), sometimes (3), often (4), and always (5). Subjects answer questions based on how many positive thoughts they have experienced in the past week. The minimum score in this questionnaire is 30 and the maximum score is 150. The average score of a subject is equal to 90 and a higher score indicates that the subject has higher positive thinking [14].

Ingram and Wisnicki's (1998) positive thinking questionnaire includes 5 subscales (daily positive functioning, positive self-evaluation, others' evaluation of oneself, positive future expectations, and self-confidence). Ingram and Wisnicki reported the correlation coefficient between this questionnaire and the Beck depression questionnaire as -0.33 and with the state-trait anxiety questionnaire as -0.37 to check the construct validity and differential validity. Ingram and Wisnicki reported the reliability of this tool by calculating the Cronbach α coefficient of 0.94, and the retest coefficient of 0.95. Ghavidel, Gillory and Noushin Fard -Karimi, Karbalai, Migoni, and Sabet reported the Cronbach α coefficient for the whole questionnaire as 0.94. The third questionnaire was the type D personality scale, which has 14 questions. This scale is graded on a five-point Likert scale as false, somewhat false, indifferent, somewhat true, and true scored zero, one, two, three, and four, respectively. The findings show that the concurrent and differential validity of this scale is optimal. In addition, the social pregnancy subscale has a negative correlation with extroversion -0.61 and alertness level -0.40 and a positive correlation with neuroticism -0.50. These coefficients are significant at the 0.001 level. In Iran, Zuljanahi and Vafaei [15] also obtained the internal consistency of the negative affect subscale at 0.77 and the internal consistency of the social inhibition subscale at 0.69. The next tool was Walker's health-promoting lifestyle questionnaire. This questionnaire has 54 questions and six subscales (nutrition, exercise, responsibility for health, stress management, interpersonal support, and self-actualization) and its response range is a 4-point Likert type. In Mohammadi Zaidi's research [16], the validity of the questionnaire was confirmed and the variance of the overall variable with a factor analysis of 25.58 was reported. The fourth Templer's death anxiety scale (DAS) was created to measure anxiety related to death and has been the most widely used. This scale is a self-administered questionnaire consisting of 15 yes and no questions. The answer yes is a sign of anxiety in the person. The range of scores on this scale is from 0 to 15, and a high score (higher than the average score of 8) indicates a high degree of death anxiety. In this way, the scores of this scale vary between 0 and 15, where a high score indicates higher anxiety of people about death. Also, the reliability of the questionnaire in the research of Qasempour et al. [17] using the Cronbach α test was reported 65% and the validity of the questionnaire was also 0.72. In the present study, the reliability was obtained at 0.68 and validity was also 0.74 using the Cronbach α test. This research is a descriptive cross-sectional study that was conducted in early March 2021 in the care departments of hospitals and doctors' offices in Yazd city. The acceptance criteria of the sample in this study were all heart failure patients, permission to conduct the research was obtained from hospitals and doctors' offices, and the research units were assured of the confidentiality of all information. After obtaining written consent from the research units, the patients were asked to fill out the form honestly. Therefore, to conduct the research, the researcher first referred and coordinated with the hospitals and doctors' offices of Yazd city, and among all the patients, a sample size of 200 patients was selected by census method, and after the selection of the sample, the patients were explained about the purpose of the research. Then, the research questionnaires were provided to the patients and they expressed their opinion regarding spiritual health, positive thinking, personality type, lifestyle, and death anxiety. In the next step, after collecting the questionnaires, the information was entered into SPSS software, version 26 and analyzed with statistical tests of correlation coefficient and simultaneous regression.

3. Results

Table 1 presents the state of death anxiety variable, the state of spiritual health and its subscales, the positive thinking variable and its subscales, the variable of type D personality and its subscales, the state of lifestyle, and its subscales.

As shown in Table 2, the regression coefficient of spiritual health on death anxiety (P<0.004, B=-20) is significant, which shows that spiritual health has been able to predict death anxiety. Also, the regression coefficient of



Table 1. Examining scores of death anxiety, spiritual health, positive thinking, type D personality, and lifestyle

Variables	Skewness	Kurtosis	Maximum Scores	Minimum Scores	Mean±SD	
Death anxiety	-0.25	0.46	30	15	21.56±3.43	
Religious health	0.85	-0.64	60	10	46.66±8.87	
Existential health	0.28	-0.16	60	12	40.76±8.35	
Spiritual health	0.69	-0.35	120	22	87.43±15.58	
Daily positive functioning	0.002	-0.31	60	12	34.72±7.56	
Positive self-evaluation	-0.46	-0.08	32	11	22.009±4.21	
Positive self-evaluation	-0.46	-0.08	32	11	22.009±4.21	
Positive expectation	-0.21	-0.43	11	2	7.01±1.75	
Self-confidence	-0.19	0.13	40	13	25.96±5.33	
Positive thinking	-0.21	0.06	150	55	105.35±18.56	
Negative emotion	-0.79	0.11	30	6	17.86±6.58	
Social inhibition	-0.85	0.30	30	6	15.93±6.06	
Type D personality	-0.66	0.13	60	13	33.80±10.78	
Nutrition	0.06	0.21	36	9	20.36±4.61	
Sport	-0.46	0.21	33	8	17.65±5.92	
Stress management	0.03	0.16	24	6	15.01±3.41	
Interpersonal support	-0.36	-0.18	32	10	22.09±4.64	
Accountability	0.05.	-0.05	52	15	35.31±7.21	
self-actualization	0.12	-0.31	44	12	31.24±6.11	
Total lifestyle	0.46	0.05	210	73	141.67±23.22	

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spiritual health on death anxiety (P<0.0001, B=-35) is significant, which shows that positive thinking has been able to predict death anxiety. The regression coefficient of type D personality on death anxiety is significant (P<0.0001, B=16.16), which shows that type D personality has been able to predict death anxiety. The regression coefficient of a health-promoting lifestyle on death anxiety (P<0.0001, B=-26) is significant, which shows that a health-promoting lifestyle can predict death anxiety.

4. Discussion

The results of the study showed that death anxiety is explained based on spiritual health. The results of this study were consistent with the findings of domestic studies [18-21]. In explaining this finding, since the be-

ginning, death has been the main focus of various superstitions and beliefs, and mankind has taken refuge in religion and philosophy to face this unknown and fearful phenomenon and has made it easier to bear it by resorting to science and art. Spirituality reduces the fear of death and spiritual health appears when a person spends his life with complete spirituality [22]. People, who have spiritual health and have firm faith in a supreme force or being, and with the knowledge that life will end soon, actively seek a higher meaning in it and experience less death anxiety, these people can give meaning to problems, psychological pressures, psychological losses, physical disabilities, and psychological vulnerability, and most importantly, natural losses, such as the death of spouses and relatives that occur in the life cycle, and through dealing with these problems reduce its psycho-

Table 2. Prediction of death anxiety based on predictive variables

Predictor Variables	β	P≤	Т	В	Р	F	R²	R
Spiritual health	-0.08	0.004	-2.94	-0.20	0.004	8.67	0.04	0.20
Positive thinking	-0.13	0.0001	-5.30	-0.35	0.0001	28.15	0.12	0.35
Type D personality	-0.3	0.0001	2.29	0.16	0.02	5.25	0.03	0.16
Lifestyle	-0.10	0.0001	-3.74	-0.26	0.0001	13.96	0.07	0.26



logical burden. When the spiritual health of patients with heart failure is low, the person may suffer from mental disorders, such as loneliness, anxiety, and loss of meaning in life, but people whose spiritual health is strengthened can effectively adapt to their illness. In this regard, Koeing et al. [23] believe that in stressful situations, spirituality is a critical source of adaptation, which is related to a person's satisfaction with his life, better adaptation, and reduction of death anxiety. Because man's incomplete understanding of religion and God and false teachings cause him to imagine death as entering a world full of pain and suffering and for this reason, he is afraid of death [24]. Other results of the study showed that death anxiety is also related to positive thinking. This finding of our study was related to the findings of other studies [12, 25]. In general conclusion, death anxiety and positive thinking can act as a protective shield against the perception of pain and reduce the perception of pain and discomfort in people with heart disease and as a result, have lower death anxiety. Regarding the relationship between death anxiety and type D personality, which was significant in our study, this finding was consistent with other studies [26, 27]. Bakshaiesh and Dehghani [28] found that people with type D personality have lower general health. In the explanation of this finding, because people with type D personality tend to experience negative emotions, such as sadness, anxiety, anger, and hostile emotions, along with inhibiting these emotions when avoiding social contact, rather than positive emotions, therefore probably they suffer from emotional problems, such as worry, depression, and psychosomatic diseases [29]. This issue can affect a person's anxiety. In our study, it was found that death anxiety is explained based on a health-promoting lifestyle. This finding is consistent with domestic findings [30-32] and foreign findings [33]. In explaining this finding, it can be said that one of the crucial factors that are effective in the treatment of heart disease as well as increasing vitality is having proper nutrition and sufficient exercise in a health-promoting lifestyle. Nutrition and exercise have a significant effect on increasing vitality and physical health. It

is not possible to carry out medical recommendations without having a suitable and healthy lifestyle, and even if it is, it will not last for a long time. Therefore, people can overcome their disease and recover by choosing a good diet and exercise program and keeping this program constant in life. Symptoms of recovery in patients reduce death anxiety. Also, one of the results of having a health-promoting lifestyle is learning ways to deal with mental pressures and life problems. These characteristics enable people suffering from heart failure to cope with life's problems and psychological pressures or deal with them; therefore, people will experience less anxiety and stress and will have lower death anxiety. According to the results of this study, it is suggested to carry out formal or informal training to increase positive thinking to reduce death anxiety among heart failure patients.

Ethical Considerations

Compliance with ethical guidelines

This study was approved by the Ethics Committee of the Shahid Bahonar University of Kerman (Code: E.A.01.03.08.03).

Funding

The paper was extracted from the MSc Thesis of Alireza Sharifizad at Department of General Psychology, Shahid Bahonar University of Kerman.

Authors' contributions

All authors equally contributed to preparing this article.

Conflict of interest

The authors declared no conflict of interest.



References

- [1] Azimian J, Soleimany MA, Pahlevan Sharif S, Banihashemi H. [The effect of s piritual care program on death anxiety of cardiac patients: A randomized clinical trial (Persian)]. Avicenna J Nurs Midwifery Care. 2019; 27(1):1-10. [DOI:10.30699/ajnmc.27.1.1]
- [2] Babamohamadi H, Kadkhodaei-Elyaderani H, Ebrahimian A, Ghorbani R. The effect of spiritual care based on the sound heart model on the spiritual health of patients with acute myocardial infarction. J Relig Health. 2020; 59(5):2638-53. [DOI:10.1007/s10943-020-01003-w] [PMID]
- [3] Hejazi SF, Doostali K, Shater MM, Iranirad L, Rahimi S, Noori E, et al. Underlying factors associated with failure to achieve therapeutic lipid goals by intensive statin therapy in post-myocardial infarction patients. J Vessel Circ. 2021; 2(3):99-104. [DOI:10.32598/JVC.2.3.64.1]
- [4] May R, Yalom ID. Existential psychotherapy. In: Corsini RJ, Wedding D, Editors, Current psychotherapies. Kolkata: Peacock Publishers; 1989. [Link]
- [5] Aryafard H, Dehvan F, Albatineh AN, Dalvand S, Gheshlagh RG. Spiritual health in iranian patients with cardiovascular diseases: A systematic review and meta-analysis. Omega. 2022; 302228221108293. [DOI:10.1177/00302228221108293] [PMID]
- [6] Kashanimovahhed B, Hosseinian-Sarajehloo F, Bahrami A, Shokri-Khoubestani M, Abdoljabari M. [Spiritual health in the Iranian elderly: A systematic review (Persian)]. J Pizhūhish Dar Dīn Va Salāmat. 2020; 6(2):129-47. [Link]
- [7] Samiee Rad F, Kalhor M. [An overview of spiritual health in cancer patients (Persian)]. Iran J Psychiatr Nurs. 2019; 6(6):82-8. [DOI:10.21859/ijpn-060610]
- [8] Sadeghi M, Mir drikvand FL, Moradizadeh S. [Study and comparison of type-D personality, social support and cognitive flexibility in normal and cardiac patients (Persian)]. Yafte. 2018; 20(2):41-52. [Link]
- [9] Rashidi K, Safavi M, Yahyavi SH, Farahani H. [The effect of the peers' support on self efficacy level type II diabetic patients (Persian)]. Avicenna J Nurs Midwifery Care. 2015; 23(3):15-26. [Link]
- [10] Aquarius AE, Denollet J, Hamming JF, De Vries J. Role of disease status and type D personality in outcomes in patients with peripheral arterial disease. Am J Cardiol. 2005; 96(7):996-1001. [DOI:10.1016/j.amjcard.2005.05.059] [PMID]
- [11] Ahmadpour Mobarake A, Ahadi H, Mazaheri MM, Nafissi G. [Construction and scale validation for evaluating type D personality and a study of its relationship to the coronary heart disease (Persian)]. 2007; (32):37-60. [Link]
- [12] Ahangarezaiezadeh S, Oladrostam N, Nemotplahi A. [The effect of positive thinking training on stress, anxiety and depression in coronary heart disease (Persian)]. Nurs Midwifery J. 2017; 15(5):339-48. [Link]
- [13] Baheiraei A, Mirghafourvand M, Charandabi SM, Mohammadi E, Nedjat S. Health-promoting behaviors and social support in Iranian women of reproductive age: A sequential explanatory mixed methods study. Int J Public Health. 2014; 59(3):465-73. [DOI:10.1007/s00038-013-0513-y] [PMID]

- [14] Alimohammadi A, Shafizadeh H. [The relationship between high school students' positive thinking and social skills in the city of Semnan (Persian)]. J Fam Res. 2015; 12(4):77-92. [Link]
- [15] Zuljanahi E, Vafaei M. Relationship between type-D personality and behavioral inhibition and activation systems. New Psychol Res J. 2015; (1):2-3. [Link]
- [16] Mohamadi Zeidi I, Pakpour Hajiagha A, Mohammadi Zeidi B. [Reliability and validity of Persian version of the health promoting lifestyle profile (Persian)]. J Mazandaran Univ Med Sci. 2011; 20(1):102-13. [Link]
- [17] Ghasempour A, Jamal S, Mir Tohid STK. [Predicting death anxiety on the basis of emotion cognitive regulation strategies (Persian)]. Know Res Applied Psychol. 2012; 13(2):63-70. [Link]
- [18] Sharif Nia H, Soleimani MA, Ebadi A, Taghipour B, Zera'tgar L, Shahidifar S. [The relationship between spiritual intelligence, spiritual well-being and death anxiety among Iranian's Veterans (Persian)]. J Mil Med. 2017; 19(4):336-43. [Link]
- [19] 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 (Persian)]. J Hayat. 2018; 23(4):332-44. [Link]
- [20] Hedayati E, Hazrati M, Momen Nasab M, Shokoohi H, Afkari F. The relationship between spiritual well-being and anxiety of aged people admitted in coronary care units. Salmand. 2016; 11(3):432-9. [DOI:10.21859/sija-1103432]
- [21] Soltani F, Hosseini F, Arab M. [Relationship of daily spiritual experiences with life expectancy and death anxiety in patients undergoing coronary artery bypass surgery (Persian)]. Cardiovasc Nurs J. 2016; 5(2):6-13. [Link]
- [22] Levin M. Spiritual intelligence: Awakening the power of your spirituality and intuition. London: Coronet; 2000. [Link]
- [23] Koenig HG. Spirituality, wellness, and quality of life. Sex Reprod Menopause. 2004; 2(2):76-82. [DOI:10.1016/j. sram.2004.04.004]
- [24] Naderi F, Roushani K. [Relationship between spiritual intelligence and social intelligence with death anxiety of elderly womens (Persian)]. Women Cult. 2011; 2(6):55-67. [Link]
- [25] Madadi Ardekani H, Kamkar A. [The evaluation of relation between death anxiety and general health with spiritual well-being in patients with cancer in Shiraz city (Persian)]. 2015. Clin Psychol Pers. 2020; 17(2):19-30. [DOI:10.22070/CPAP.2020.2905]
- [26] van den Broek KC, Martens EJ, Nyklícek I, van der Voort PH, Pedersen SS. Increased emotional distress in type-D cardiac patients without a partner. J Psychosom Res. 2007; 63(1):41-9. [DOI:10.1016/j.jpsychores.2007.03.014] [PMID]
- [27] Polman R, Borkoles E, Nicholls AR. Type D personality, stress, and symptoms of burnout: The influence of avoidance coping and social support. Br J Health Psychol. 2010; 15(Pt 3):681-96.[DOI:10.1348/135910709X479069] [PMID]
- [28] Bakhshayesh AR, Dehghani F. [Surveying the relation between d-personality type, coping styles, and general health (Persian)]. Clinical Psychol Pers. 2013; 11(2):43-52. [Link]



- [29] De Fruyt F, Denollet J. Type D personality: A five-factor model perspective. Psychol Health. 2002; 17(5):671-83. [DOI:10.1080/08870440290025858]
- [30] Atadokht A, Rahimi S, Valinejad S. [The role of health promoting lifestyle and religious orientation in predicting quality of life and death anxiety in elders (Persian)]. Aging Psychol. 2018; 4(2):143-54. [Link]
- [31] Ghadampour E, Moshrefi S. Relationship between spiritual health, mental well-being and quality of life with death anxiety in the elderly. Aging Psychol. 2017; 3(2):97-106. [Link]
- [32] Mehri Nejad SA, Ramezan Saatchi L, Paydar S. [Death anxiety and its relationship with social support and adherence to religion in the elderly (Persian)]. Salmand. 2017; 11(4):494-503. [DOI:10.21859/sija-1104494]
- [33] Jung JY, Oh YH, Oh KS, Suh DW, Shin YC, Kim HJ. Positive-thinking and life satisfaction amongst Koreans. Yonsei Med J. 2007; 48(3):371-8. [DOI:10.3349/ymj.2007.48.3.371] [PMID] [PMCID]

