Death anxiety and related factors in CABG candidate patients

Abstract

Aims: Coronary artery bypass grafting (CABG) is a recommended and effective treatment for some heart patients. Among its psychological complications, death anxiety is one of the most common. Various factors can influence the development and severity of this anxiety. This study aimed to investigate death anxiety and its related factors in patients scheduled for CABG.

Methods: This descriptive-correlational study was conducted in 2024 at Shariati Hospital in Isfahan. A total of 100 CABG candidates admitted to the cardiac intensive care unit were selected via convenience sampling. After obtaining informed consent, participants were instructed on completing a questionnaire, which consisted of three parts: demographic data and Templer's Death Anxiety Scale. Data were analyzed using SPSS version 20 through descriptive statistics and Pearson correlation.

Findings: The overall level of death anxiety in patients was moderate. There was a significant relationship between death anxiety and variables such as age, sex, marital status, employment, and the presence of underlying disease (P≤0.05). However, no significant relationship was found with place of residence (urban/rural), education level, or duration of illness (P>0.05).

Conclusion: Death anxiety is prevalent among heart patients awaiting CABG. It is essential for healthcare providers, especially nurses in cardiac units, to recognize and address this concern. Understanding contributing factors can guide supportive interventions. Therefore, it is recommended to incorporate the topic of death anxiety into the training programs for caregivers of cardiac patients.

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Keywords: Death Anxiety, Related Factors in Death Anxiety, Coronary Artery Bypass.

Introduction

Coronary artery disease (CAD) is a prevalent cardiovascular condition resulting from the accumulation of atherosclerotic plaque within the coronary arteries, which are responsible for delivering oxygen-rich blood to the myocardium. Plaque buildup in these arteries reduces blood flow, leading to symptoms such as chest pain, shortness of breath, nausea, vomiting, radiating pain to the arm, neck, jaw, or abdomen, and fatigue [1]. According to the American Heart Association, by 2030, approximately one in every three individuals will be affected by some form of cardiovascular disease [2]. In recent years, the prevalence of CAD in Iran has increased by an estimated 20–25% [3].

Coronary artery bypass grafting (CABG) remains the most commonly performed surgical intervention for patients with coronary artery stenosis [4]. This procedure can be carried out either with cardiopulmonary bypass (on-pump) or without it (off-pump) [5]. CABG significantly improves myocardial perfusion, enhances patients' quality of life, extends life expectancy, and reduces mortality. However, it is also associated with various psychological challenges, among which death anxiety is particularly significant.

Death anxiety is defined as a persistent fear, worry, or distress triggered by thoughts of death or dying [6]. It is a universal phenomenon that manifests differently across individuals. Some may experience intense fear, while others report mild concern [7,8]. Causes of death anxiety vary and may include fear of the unknown, separation from loved ones, or anticipated pain and suffering before death.

In patients undergoing CABG, death anxiety may lead to anxiety disorders, depression, hopelessness, increased stress, social isolation, decreased quality of life, panic attacks, non-adherence to treatment, and physiological changes such as elevated blood pressure and heart rate [9,10]. Numerous factors can influence the development and intensity of death anxiety, including age (with older adults experiencing higher levels due to proximity to end-of-life) [13], gender (with some studies suggesting higher rates in women) [14], and the individual's religious and spiritual beliefs (where stronger beliefs are often associated with lower anxiety) [15].

Additionally, physical and mental health status, the presence of chronic diseases, psychological disorders, fear of surgery, socio-economic status, and unfavorable cultural attitudes toward death

can contribute to increased anxiety levels [16–20]. Lack of social support is also a critical factor, whereas the presence of strong support networks can mitigate anxiety and enhance coping mechanisms [21].

Despite the clinical significance of death anxiety in CABG candidates, limited research has been conducted on this topic. Understanding its contributing factors is essential for developing effective psychological and therapeutic interventions. Therefore, the present study was designed to investigate the level of death anxiety and its related factors among patients scheduled for CABG at Shariati Hospital in 2024.

Information and Methods

This study is a correlational descriptive study that was conducted on patients hospitalized in the heart surgery department of Shariati Hospital in Isfahan in 1403. The sample size was calculated using the Cochran formula, standard deviation of 0.26 and error rate of 0.05 for 100 samples. Sampling was done in an available manner and the people who met the conditions to enter the study were included in the study. The researcher entered the study environment after obtaining permission from the vice president of research and hospital officials, and receiving written informed consent from the research units. The criteria for entering the study included: the patient was a candidate for CABG, the patient was hospitalized in the surgical department, literate, willing to participate in the study, and the exclusion criteria included the death or transfer of the patient to other medical centers and failure to complete the questionnaires. In order to conduct the study, how to complete the questionnaire was explained to the patients. The data collection tool consisted of a questionnaire that included two parts: The first part included the demographic characteristics of the research samples including: age, gender, marital status, number of children, education level, place of residence, employment status, economic status, duration of illness and duration of treatment. The personal profile form has objective and clear questions, so content validity was used to determine the validity of this part. In the second part of the questionnaire, Templer's death anxiety was used, which includes 15 questions, the range of scores of this scale varies between 0 and 15, and the higher score is the anxiety of people about death. This questionnaire was introduced for the first time in 1970 [22]. This questionnaire was standard and has been used many times in researches at the world level, and it has been translated and validated in Iran, and its internal homogeneity has been mentioned in Rajabi et al.'s study [23]. n order to estimate the reliability of the questionnaire, first, the questionnaire was given to 30 patients [who did not participate in the study] as a test, and its reliability in this study was obtained using Cronbach's alpha for the death anxiety questionnaire equal to 0.88. The results of the research were used to determine the mean, standard deviation and absolute frequency distribution tables using descriptive statistical methods and Pearson's correlation test was used to check the relationship between the variables and then the data were analyzed in SPSS version 20 software.

Results

Table No. 1 shows the demographic characteristics of the research samples [age, gender, marital status, education level, place of residence, employment status, economic status, time of infection, time of treatment, underlying diseases and number of children] in two intervention and control groups. In the present study, 88 people (60.3%) of the study samples were male, 92 people (63%) were married, 103 people (70.5%) lived in the city, 60 people (41.1%) were self-employed, 67 people (45.9%) had an average economic status, 60 people (41.1%) were illiterate, 79 people (54.1%) had a disease duration of less than 6 months and 81 people (55.5%) were treated in less than 6 months, 100 people (68.5%) had underlying diseases and 39 people (26.7%) had 5 to 6 children. The independent t-test showed that there is a significant difference between death anxiety in both male and female groups, so that the amount of death anxiety in women is higher than that of men (P<0.001). Also, the independent t-test showed that there is a significant difference between the death anxiety in the two groups with the underlying disease, so that the level of death anxiety is higher in people with the underlying disease (P<0.001). The independent t-test showed that there is no significant difference in the death anxiety in the two groups living in the city and the village. The one-way analysis of variance test showed that death anxiety has a significant relationship with the marital status, so that the level of death anxiety is higher in widowed people (P=0.002). Also, the one-

way analysis of variance test showed that the death anxiety has a significant relationship with the job status, so that the level of death anxiety is higher in unemployed people (P=0.002). The one-way analysis of variance test showed that death anxiety has a significant relationship with the treatment time, so that the level of death anxiety is higher in people who have done the treatment for less than 6 months (P=0.05). One-way analysis of variance test showed that death anxiety has no significant relationship with education level. Also, the one-way analysis of variance test showed that death anxiety has no significant relationship with the time of illness. Pearson's correlation test showed that death anxiety has an inverse and significant relationship with age, so that the higher the age, the higher the death anxiety (P=0.05).

Table 1: Average and frequency distribution of demographic variables of research samples [146 people]

Variable	Group	number	Percentage
Gender	Female	58	39.7
	Male	88	60.3
Place of residence	City	103	70.5
	Village	43	29.5
Marital status	Married	92	63
	Single	25	17.1
	Divorced	23	15.8
	Widow	6	4.1
Employment status	Unemployed	42	28.8
	Employed	60	41.1
	Retired	44	30.1
Educational level	Illiterate	60	41.1
	under diploma	48	32.9
	diploma	19	13
	Higher than diploma	19	13
Economic situation	good	22	15.1
	Average	67	45.9
	weak	57	39
Other disease	Yes	100	68.5
	No	46	31.5
Duration of heart disease	<6month	79	54.1
	6month-1years	29	19.9
	1-5 year	9	6.2
	>5 year	29	19.9
Duration of medical or surgical treatment	<6month	81	55.5
	6month -1yers	29	19.9
	1-5 year	9	6.2

	>5 year	27	18.5
Number of children	without children	31	22.2
	1-2	24	16.5
	3-4	38	26
	5-6	39	26.7
	>6	14	9.6

Variable	Mean	standard deviation
Age	59.55	17.74

Group Variable		Total score death anxiety	statistic test P value
Gender	Female	9.5 ±2.63	t =-5.85 P<0.001
	Male	6.76 ±2.85	
Place of residence	City	8.13 ±2.45	t =-1.76 P=0.08
	Village	7.16 ±4	
Marital status	Married	7.09 ±3	F =4.35 P=0.002
	Single	8.96 ±1.8	
	Widow	9.43 ±3. 5	
Employment status	Unemployed	8.86 ±3. 4	F =6.62 P=0.002
	Employed	6.73 ±2. 6	
	Retired	7.47 ±2.5	
Educational level	Higher than diploma	8.52 ±2	F =1.37 P=0.25
	diploma	6.84 ±1. 4	
	primary	7.563 ±3. 2	
	Illiterate	8.18 ±3. 5	
Other disease	Yes	8.62±3	t=4.8 P<0.001
	No	6.17±2.3	
Time of illness	<6month	8.32±2.7	F =2.13 P=0.09
	1years	7.75±2.1	
	1-5 year	6.11±2.9	
	>5 year	7.17±4.2	
Time of treatment	<6month	8.37±2.6	F =2.58

	1years	7.75±2.1	P=0.05
	1-5 year	6.2±2.8	
	>5 year	7.8±3	
	Age	Work experience Total[years]	
	59.55±17.7	7.84±3.1	r = -0.158 P =0.05

Table 1]: Determining the relationship between demographic information and death anxiety in the study samples

Discussion

This study was conducted with the aim of investigating death anxiety and related factors in CABG candidates admitted to the surgery department of Isfahan Shariati Hospital in 1403. The findings of the present study showed that there is a significant difference in death anxiety in both male and female groups, so that the level of death anxiety in women is higher than in men. The findings of the present study were in line with the study of Nafei et al. (1403) under the title of death anxiety and related factors in the elderly. He showed that the death anxiety among elderly women is more than among men, which confirms the results of the present study. with the difference that Nafei et al. conducted their intervention in the elderly [24]. Also, the findings of the present study are in line with the study of Kakabraei et al. (2015) and Sharma (2019) [25, 26]. The findings of the present study were contrary to the study of Khalouti et al. (2019) under the title of death anxiety in Iranian elderly people. He showed that death anxiety is less in women than in men [13]. It was also contrary to Salehi et al.'s study [1401] under the title of prevalence of death anxiety in cancer patients in Kermanshah. He showed that there was no significant relationship between death anxiety and gender [27]. The difference in the findings of various studies may be due to the difference in the roles of men and women and even the level of expression of fear and anxiety by men and women. Women are more willing to express feelings such as fear, while men are less willing to express their feelings [28]. Pearson's correlation test showed that death anxiety has an inverse and significant relationship with age, so that as it increases, death anxiety increases. The findings of the present study were in line with the study of Shahbazpour et al. (2024) under the title of death anxiety and related factors in pre-hospital personnel of Qom University of Medical Sciences in the post-corona era. He showed that death anxiety increases with age [29]. It was also in line with the findings of Nafei et al. [24]. However, Chegini et al.'s study does not confirm the relationship between death anxiety and age [30] and it is contrary to the present study. Kakabraei et al. (2015) titled the relationship between age and finding meaning in life is not consistent with death anxiety in elderly men and women. He showed that with increasing age, death anxiety decreases almost to the same extent in elderly men and women The elderly are more prone to death anxiety due to various reasons such as loneliness, physical diseases, disability, increased dependence on others and the death of loved ones [25]. One-way analysis of variance test showed that death anxiety has a significant relationship with marital status, so that death anxiety is more in widowed people. The findings of the present study were in line with the study of Nafei et al. (1403) under the title of death anxiety and factors related to it in the elderly. He showed that single people and deceased spouses have higher death anxiety than married people [24], which confirms the results of the present study. It seems that not being alone and talking together at home is effective in the level of death anxiety. The findings of the present study are in line with the study of Salehi and colleagues [27]. The findings of the present study are contrary to the study of Moadi et al. (2015), who showed that there was no significant relationship between death anxiety and marital status [31]. The findings of the present study showed that death anxiety in two groups has a significant difference with the underlying disease, so that the level of death anxiety is higher in people with underlying disease The findings of the present study with the study of Valikhani et al. (2015) under the title of death anxiety in the framework of attachment patterns in cancer patients showed that death anxiety in cancer patients was higher than in normal people, that the average death anxiety in cancer patients was 8.78 and in normal people was 7.14, which confirms the results of the present study [32]. The findings of the present study are in line with the study of Norman and McSherry [33]. Masoudzadeh et al. (2017) in a study entitled comparing death anxiety and the meaning of life in people with and without heart failure showed that the risk of death was high in the majority of patients with the disease [17], which is in line with the present study. In explaining the findings of this research, it can be said that patients with serious diseases such as cancer or heart diseases have a higher experience of death anxiety. This anxiety can be caused

by worrying about the disease, the consequences of the disease, the unknown future, and feeling hopeless The findings of the present study showed that death anxiety has a significant relationship with job status, so the amount of death anxiety increases in unemployed people. The findings of the present study were in line with the study of Nafei et al. (1403) under the title of death anxiety and factors related to it in the elderly. He showed that employed and retired elderly had lower anxiety than unemployed elderly and covered by a support organization [aid committee] [24]. The findings of the study are inconsistent with the study of Yuen Gong under the title of factors related to death anxiety among rural Chinese elderly. He showed that there was no significant relationship between job status and death anxiety [34]. One of the limitations of this study was that the patients participating in the study are culturally, socially and emotionally different from each other; which tried to control this problem by randomly selecting samples. Also, some patients may have a history of living in tense families.

conclusion

Coronary artery transplant surgery is a heavy operation and creates fear and anxiety for patients, including death anxiety. Death anxiety is influenced by various factors such as age, gender, employment status, marital status and religious beliefs. Therefore, paying attention to these factors and providing appropriate psychological interventions can help reduce death anxiety and improve the mental health of patients after CABG surgery Therefore, it is suggested that the effective and useful solutions presented in other countries be used by the country's health system.