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European Journal of Experimental Biology, 2012, 2 (5):1750-1754



Fear, Anxiety, and Beliefs about Surgery in Candidates Patients for Coronary Artery Bypass Grafting

¹Nazila Shahmansouri, ²Meeri Koivula, ³Seyed Hossein Ahmadi, ⁴Akram Arjmandi, ³Abbasali Karimi

¹Department of Psychiatry, Tehran Heart Center, Tehran University of Medical Sciences, Iran

²University of Tampere, School of Health Sciences, Finland

³Department of Cardiovascular Surgery, Tehran Heart Center, Tehran university of Medical Sciences, Iran

⁴Department of Psychology, Tehran Heart Center, Tehran University of Medical Sciences, Iran

ABSTRACT

The purpose of this study was to identify the prevalence of fear, anxiety and beliefs about surgery amongst coronary artery bypass graft surgery (CABG) candidates and to evaluate the correlations between fear and anxiety and other relevant factors. A total of 277 patients hospitalized for CABG between October 2011 and January 2012 were included in this study. The Bypass Grafting Fear Scale and the Spielberg Questionnaire STATE Inventory were given to the patients the day after hospitalization to measure fear and anxiety. Two hundred and seventy-seven patients completed the questionnaire. Our results showed that 3.32% of our study population had no fear, whilst 53.14% had low, 38.75% moderate, and only 4.08% high levels of fear. Also, 69.14% of the respondents had moderate, 19.70% low, and 11.15% severe levels of anxiety. In our CABG candidates, fear of pain after surgery had the highest frequency, followed by fear of health deterioration, fear of myocardial infarction, and fear of CABG surgery. Fear was observed to be more common amongst the female respondents, while age had no significant correlation with fear. Anxiety and opium consumption and cigarette smoking were associated with reduction of fear. The results of this study help in better identifying the most common fears and measure the prevalence of fear and anxiety in candidates for coronary artery bypass grafting.

Keywords: Anxiety; Fear; CABG; Coronary artery bypass grafting

INTRODUCTION

Undergoing cardiac operations, especially invasive procedures such as coronary artery bypass graft surgery (CABG) is a daunting prospect and is deemed an important life-event, partly due to the psycho-emotional impacts they exert on patients and their families [20]. Indeed, CABG may be a relatively common procedure with proven relief of signs and symptoms of angina and well-documented low mortality rates, but fear and anxiety are to be expected amongst patients scheduled for this surgical modality [6]. Different severity levels of anxiety have been reported for 20 to 55% of coronary artery disease patients [11] and the same prevalence ratios have been observed for patients

candidate for CABG [18]. Anxiety can adversely affect surgical patients' current well-being as well as their Intensive Care Unit and recovery periods [15, 6, 17, 8]. What is more, throughout the operative course, not only does anxiety persist but it also intensifies. Mood disturbances and stress disorders can both influence the outcome of cardiac procedures via affecting physiological conditions such as increase of blood pressure, arterial damage, irregular heart rhythms, platelet reactivity, decreased heart variability and increased pro-inflammatory markers and intensify pain, worsen fatigue and sluggishness, and cause a person to withdraw into social isolation [1, 13, 16]. Anxiety has been reported more frequently in women than in men [7, 2, 3]. Appearance of these disorders around the time of surgery can predict postoperative complications and poor quality of life as well as occurrence of life-threatening cardiac events and even higher rates of mortality [4]. For all the studies conducted hitherto on anxiety, there is a dearth of data in the existing literature on the variety of fear of and misconceptions about CABG amongst those candidates for this procedure [8, 9, 10]. A better understanding of fear is vitally important for decision-making about the appropriate and timely intervention and provision of information aimed at reducing patients' uncertainties [9]. The present study primarily sought to identify the prevalence of fear and anxiety and then determine the variety and degrees of fear amongst CABG candidates.

MATERIALS AND METHODS

Tehran Heart Center is a referral center where around 2500 heart surgical operation are performed annually. CABG accounts for the majority of these operations. The present study, approved by the Ethics Committee of Tehran Heart Center, initially recruited 295 patients hospitalized for CABG between October 2011 and January 2012. Patients were excluded if they did not have an acceptable command of the Persian language and were not thus able to complete the questionnaire (n=7), if they were in poor physical condition at the CCU or ICU (n=4), if they were reluctant to participate (n=4), and if they were scheduled to undergo emergency surgery (n=3). After the exclusion of these 18 patients, the final sample consisted of 277 CABG candidates. Fear, anxiety, and demographic data questionnaires were given to the patients the day after hospitalization. The questionnaires were answered on a self-reported basis, unless the patient was illiterate, in which case assistance was provided by a research fellow. The fear questionnaire was designed according to the Bypass Grafting Fear Scale (BGFS) [14]. The language was adjusted by translation into Persian and then back translation into the original language, and the validity was thereafter reviewed and approved by some expert clinical researchers. The internal consistency of the questionnaire was measured via the Cronbach alpha in the first 30 patients, which yielded a result of 0.88. The result being significant, the study was continued with a larger population. This questionnaire comprised twelve questions, scored from 1 (without any fear) to 10 (high fear): Score 1, no fear; Score 2-4, low fear; Score 5-7, moderate fear; and Score 8-10, high fear levels. Consequently, the intensity of fear was evaluated as mild for a total score of 24-48, moderate for 49-84, and severe for 85-144. The Spielberg Anxiety Questionnaire Inventory has two parts: trait and state. The Anxiety Inventory (STAI) assesses situational anxiety (state anxiety, STATE) and individual tendency to experience anxiety part, which is anxiety proneness (trait anxiety, TRAIT). In the present study, the state part, consisting of twenty items, was employed. The validity and reliability of this questionnaire had been previously proven in Iran [10]. The Spielberg Anxiety Questionnaire scoring ranges from 20 to 80 in the state part; and the higher the score, the greater the intensity of anxiety: mild, 20-31; moderate up to low, 32-42; moderate up to high, 43-53; almost severe, 54-64; severe, 65-75; and highly severe, over 75. The One-way ANOVA, t-test, and logistic regression analysis were utilized to measure the association of fear and anxiety with the other variables. Descriptive statistics were drawn upon to examine the intensity of fear and anxiety and the demographic data. The demographic data consisted of age, sex, marital status, education, history of psychiatric disorder, psychiatric medicine intake, cigarette smoking, and opium addiction.

RESULTS

A total of 277 patients comprised our final sample, consisting of 183 (66.06%) male and 94 (33.93%) female patients. The sociodemographic characteristics are depicted in Table 1. Our results showed that 3.32% of our respondents reported no fear, 53.14% had low, 38.75% moderate, and only 4.80% high fear levels. Furthermore, 69.14% of our study population had moderate, 19.70% low, and 11.15% severe anxiety levels (Table 2). Our results demonstrated that amongst our CABG candidates, fear of pain after surgery had the highest frequency, followed by fear of health deterioration, fear of myocardial infarction. Fear of recovery from operation and fear of uncertainty about illness had the lowest frequency (Table). There was a significant correlation between anxiety and fear ($r=0.491$). According to the Pearson results, no significant correlation was found between age and the intensity of fear or anxiety ($r=-0.098$, -0.060). The history of previous psychiatric disorders increased the intensity of anxiety

significantly (p value <0.01), whereas there was no significant correlation between fear and history of previous psychiatric disorders (p value >0.05); and nor was there any significant correlation between marital status (p value >0.05) and education (p value >0.05) and fear or anxiety. Current and past psychiatric medication intakes were found to have a significant correlation with the intensity of fear and anxiety (p value <0.05). The patients with a history of opium consumption had a significantly lower intensity of fear and anxiety (p value <0.05). History of cigarette smoking significantly decreased fear of CABG (p value <0.05); however, no such correlation existed with respect to anxiety in this subset of patients (p value >0.05).

Table 1. Demographic characteristics of the participants (n = 277)

Characteristics	n (%)
Sex	
Female	94 (33.9)
Male	183 (66.1)
Age (Mean)	
Female	61
Male	59
Total (mean):	59.9
Marital status	
Single	17 (6.1)
Married	248 (89.5)
Divorced/widowed	5 (1.8)
education	
illiterate	166 (88)
primary school	111 (40)
Diploma and Bachelor's degree	47 (17)
Master's degree and PhD	13(4.7)
Psychiatry history	
past psychiatry history	33(11.9)
present psychiatry history	22(7.9)
Substance	
Cigarette	81(29)
Opium	25(9)

Table2. Level of fear and anxiety in the patients awaiting CABG

Emotion	None (%)	Low (%)	Medium (%)	High (%)
Fear (BGFS)	3.32	53.14	38.75	4.80
Anxiety (STATE)	0	19.70	69.14	1.15

Table 3. The intensity of fear in the CABG candidates

BGFS items	No (%)	Low (%)	Med (%)	High (%)
CABG surgery	27.8	27.4	27.4	15.9
Anesthesia	34.3	31.0	23.5	11.2
Pain	26.4	22.0	26.0	25.6
Death	40.4	22.7	16.2	20.6
Myocardial infarction	28.2	23.8	21.3	26.7
Economic problems	35.4	20.5	20.6	23.5
Sexual problems	43.0	27.1	17.0	12.9
Permanent deterioration of health	24.2	27.1	20.4	28.2
Uncertainty about illness	51.3	27.1	13.7	7.9
Being away from relatives	45.1	28.2	20.2	6.5
Dependence on staff's care and help	41.2	31.4	18.8	8.3
Recovery from operation	66.1	24.2	6.5	3.2

DISCUSSION

Every year a great number of cardiac operations are performed the world over, including Iran. Tehran Heart Center is a major referral hospital where approximately 2500 cardiac operations are carried out per annum. The average age of these patients is over 45 years, which is supposed to be the productive age. Hospitalization is a stressful experience and surgery, not least cardiac surgery, creates preoperative stress and anxiety. Fear and anxiety are the most common disorders amongst CABG candidates and as such interfere with the scheduling and recovering period of these patients [8, 10]. Most patients tend to harbor such strong concerns about surgery that they cannot even share

them with their physicians, which indubitably compromises the quality of medical care. Misleading or insufficient information, misconceptions, and a previous history of anxiety can beget fear and anxiety in patients scheduled for surgery and can thus reduce the outcome of the surgery and quality of life in the postoperative period. Prolonged hospitalization, intensified postoperative pain, and increased mortality and morbidity rates are some of the consequences of these psychological disorders [4, 12]. Some of the most notable fear and anxiety causative factors are the patient's false beliefs regarding the operation and postoperative symptoms. Intense fear and anxiety may be important predictors of coronary heart disease future outcomes [5] which render the identification of patients with high levels of fear and anxiety imperative [10]. A good insight into fears that a patient is liable to experience can help the treating physician furnish more effective education aimed at lessening such undesirable factors and this can expedite the postoperative recovery period [9].

In the current study, the principal fears of the patients were postoperative pain, fear of health deterioration, fear of recurrent myocardial infarction, and fear of recovery from operation in descending order. This finding does not chime in with a previous study, which reported fear of health deterioration as the chief concern, followed by recurrent myocardial infarction and pain and fear of being away from relatives [16]. It seems that aside from minimal differences, the assumptions and beliefs of the two study populations from two different countries are for all intents and purposes similar. It is deserving of note, however, that the factors that alleviate fear in patients are dissimilar. Dependency on the staff's care and anesthesia were the least significant factors in the Finnish population. To be precise, fear of dependency on the staff's care and anesthesia amongst Iranian patients was found to be moderate and higher than the level reported in the Finnish population [10]. Furthermore, ten percent of our population self-reported high levels of fear, and this does not appear consistent with the results of the aforementioned study; patients' different cultural and educational backgrounds and different information sources can explain these dissimilarities. As a result, devising an educational program to ease fear and anxiety in these two different populations would necessitate that such differences be taken into consideration. The average scores of fear and anxiety in these two populations were almost equal, and women and patients with a history of psychiatric disorders were more vulnerable. In our study, there was no significant correlation between fear and anxiety and vocational educations, marital status, and disease duration; whereas in previous studies, the correlation between these variables and fear and anxiety was significant [8, 10]. In most of these studies, woman had higher intensity of fear and anxiety [7, 2, 3, 10]. This finding was borne out by our results as well.

CONCLUSION

CABG has become a relatively common surgical operation in the recent decade. Be that as it may, most of the patients scheduled to undergo this surgical modality are likely to experience moderate or high fear levels, more often than not in consequence of misinformation and misconceptions. This requires timely medical interactions and well-thought-out educational programs to enhance treatment outcomes and quality of life. Needless to say, further studies are required to probe into individual life situations and fears of cardiac surgery candidates if more effective educational programs are to be devised.

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