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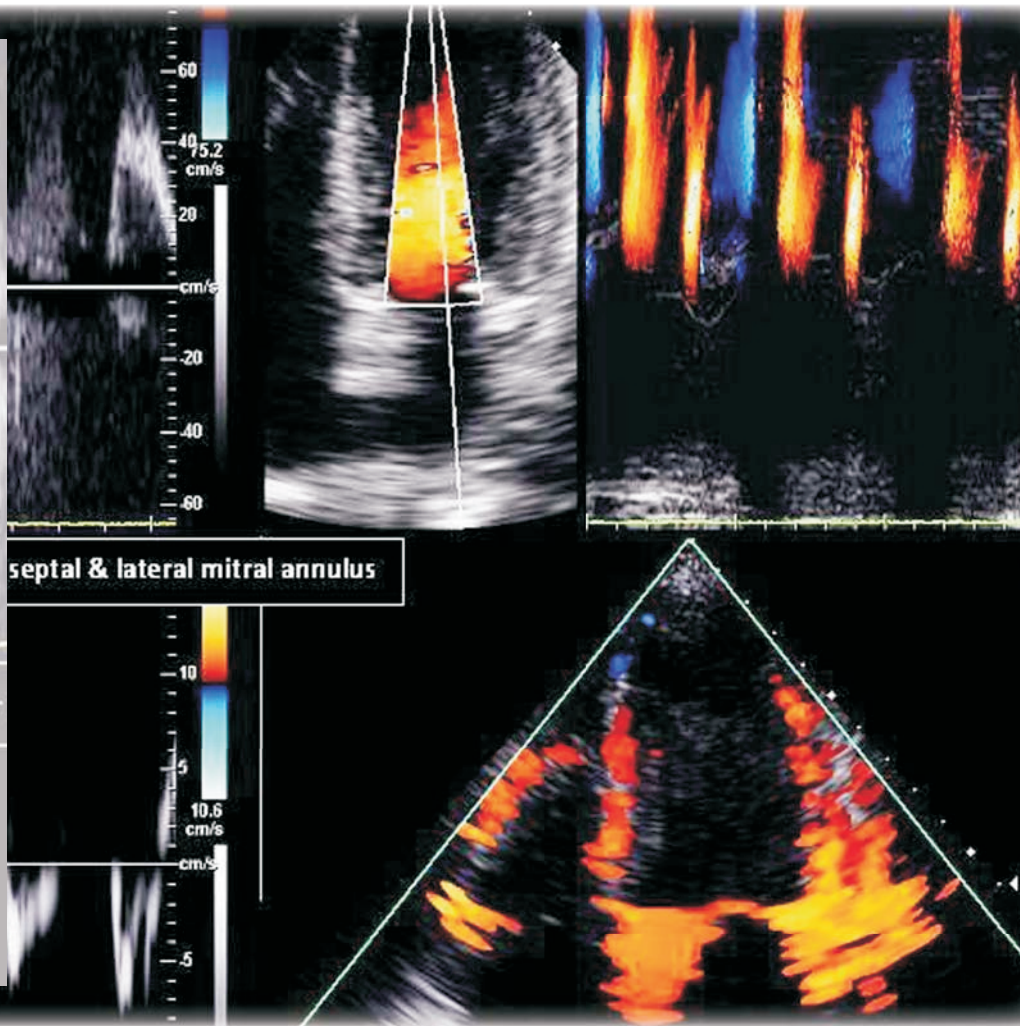
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Original Article

Anxiety and hope to life in open heart surgery patients-A cross sectional study

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ABSTRACT

Background: Open heart surgery patients experience too much mental pressure, so this study has been made to investigate the relation between the anxiety and hope to life in open heart surgery patients. **Methods:** This study is a cross sectional study. Eighty patients, who have been the candidates for open-heart surgery in Fatemeh Zahra hospital in Sari-Iran, were selected through convenience sampling method. The data collection instruments included standard questionnaires to measure life hope, anxiety and life expectancy. The data were analyzed MANCOVA and Pierson. **Results:** Theresults showed that there was no significant statistical difference between anxiety scores and hope to life before open-heart surgery and a month after that (P>0.005). In addition, the correlation intensity between anxiety and hope to life was reversed, defective and significant (P=0.000 and r=-0.930). **Conclusion:** The finding of present study indicated that open-heart surgery patients have tolerated and experienced too much anxiety and also have low hope to life, therefore, they need more training and social and family support.

Key words: Anxiety, Hope, Open heart surgery, Life expectancy, Stress.

INTRODUCTION

Myocardial infarction is the second most prevalent disease in developed and in developing countries and transplant coronary artery has been 50 to 60 percent of total surgeries every year. The necessity of this surgery and obligation to accept it causes the anxiety in patients.[1] Despite the advances in heart surgeries, the recognition effects after surgeries is still common which leads to morbidity and longer recovery time.[2] A surgery operation is an stressful event with physiologic reaction in body such as increased heart rate, respiration, blood pressure and other risk factors.[3] Also, psychological conditions and mental pressure can effect on physical diseases and accelerate their development.[4]

The patients involve with stress in several stages from diagnosis to recovery such as making decision for surgeries, selecting hospital, spending money, care after surgeries. Beside they face with social, mental and physical pressure also. In fact, perception and accepting the surgery as the last medical treatment is like a shock and affect all physical and mental aspects of their life.[5]

Fear of death and tolerance of surgery consequences push them to avoid surgeries, but due to chest pain and breathing difficulties, they feel compulsion to accept heart surgeries.[6] Hopelessness and disappointment appear with the feeling of disability and lack of interest in life and patients become far inactive due to hopelessness. Some patients after surgery suggestion are not able to realize their conditions and make appropriate decisions. Evidence and documents showed that psychological conditions cause immunity changes and cause diseases in human beings. Behavioral factors can change the rate of susceptibility and suffering from diseases through functions of endocrine glands.[7] Benson Ward believed that high level of hope is associated with physical, psychological health, high self-value, positive thinking and social relations.[8] Snider concluded in a research that a low level of hope predicts the symptoms of depression.[9] Jackson *et al* concluded that hope has direct relationship

with compatibility or adjust functions like psychological compatibility, physical health and problem solving skill.[10]

Given high prevalence of coronary diseases due to inappropriate life style and nutrition, lack of exercise, laziness and stressful life, there is high rate ofopen-heart surgery candidates in Iran. In addition, low income and losing jobdue to illness, lack of social and family support for patients, and this study aimed to investigate the rate of mental pressure and hope to life in open heart surgery patients.

METHODS

The present study was a cross sectional descriptive research. The study population included 80 patients of Fatemeh Zahra hospital in Sari-Iran waiting for open-heart surgeries during 2011.

Sampling

The sampling criteria included the patient's willingness to participate in this study, non-urgentopen-heart surgeries, and excluding criteria were taking anti-anxiety drugs and tranquilizers, critical situations and traumas during last 6 months and history of mental diseases.

Tools

The data collection instruments included the patients' demographic information, hope to life and anxiety questionnaire.

Hear Hope Index

HHI has been used in various studies to assess hope in acute and chronic diseases specially cancer from diagnosis to end of life care. The Hear Hope Index is a shortened version of the heart hope scale, including the three subscales from the original HHS. The HHI is a 12-item Likert scale, arranged with scores from 1 to 4, where 1 is 'strongly disagree' and 4 is

'strongly agree'. The scores may vary from 12 to 48 the higher the score, the higher the level of hope.

Excellent psychometric features has been reported by the convener of the tool: Chronbach's alpha coefficient 0.97, test-retest reliability (2 weeks) of 0.91, and the concurrent criterion validity with the HHS was 0.92, with the Existential Well-Being Scale (r=0.84) and with the Nowotny Hope Scale (r =0.92).[11]

Exploratory factor analysis conducted by Higginson and Donaldson revealed that the twelve items could be loaded in three factors representing:'positivity' (items 1, 8, 10, 11, 12), 'goals' (items 2 and 4), and 'support loneliness' (items 3, 5, 6, 7, and 9,[12] while in another study only two factors were loaded namely: 'reconciliation with life situation' and'religiosity'.[13]

Life expectancy: The questionnaire was made for the first time by Halajian in Iran in 2009. This questionnaire includes 33 items, that the participants respond it according to Likert scale (Quite, about, never). The maximum score is 99 in this test; the person gets higher score indicates the greater life expectancy. The reliability coefficient has been reported %80 in the testretestmethod.[14]

Beck anxiety Inventory: The BAI consists of 21 questions about how the subject has been feeling in the last week, expressed as common symptoms of anxiety (such as numbness and tingling, sweating not due to heat, and fear of the worst happening). It is designed for an age range of 17–80 years old. Each question has the same set of four possible answer choices, which are arranged in columns and are answered by marking the appropriate one with a cross. These are:

NOT AT ALL (0 points)

MILDLY: It did not bother me much. (1 point)

MODERATELY: It was very unpleasant, but I could stand it. (2 points)

SEVERELY: I could barely stand it. (3 point)

The BAI has a maximum score of 63.

0-7 minimal level of anxiety

8-15 mild anxiety

16-25 moderate anxiety

26-63 severe anxiety

The female with anxiety disorders tend to score 4 points higher than males with anxiety disorders. [15]

The total experienced anxiety score is obtained from the total score of each symptom. High scores show the higher anxiety. Kaviani and Mousavi (2007), reported appropriate validity (r=0.72) and reliability (r=0.83) and internal stability (α=0.92).[16]

Statistics

To analyze the data using $SPSS_{18}$, inferential and descriptive statistics such as and multivariable covariance analysis were used to omit continuous erasing variables and Pearson correlation coefficient.

RESULTS

Of 80 patients undergoing open-heart surgeries participating in this study, totally 24 were male (30%) and 56 female (70%). The samples' age average was 47.5 ± 10.8. More than 90% of them were married and 70% were unemployed. The descriptive indicators of the test scores in two variables of mental pressure and hope of life in pretest and post test stages were shown in Table 1.

To realize the difference between the obtained results, the covariance analysis statistical test was used (Table 2). The results showed that in patients of open heart surgeries, in term of anxiety (P>0.127 and F=97.8)

and hope to life (P>0.245 and F=227.6) there was no significant difference. Although, when considering the average score of anxiety and hope to life after open heart surgery rather than before the surgery, the patients experienced high anxiety and low hope to life or future.

The scores of hope to future life and mental pressure before and one month after the surgery showed no changes and there was no significant difference (Table 3).

The value of Pearson correlation coefficient between mental pressure and hope to future life was (P=0.0001 and r=−0.930), which implies the negative relationship between the two parameters of mental pressure and hope to future life in open-heart surgery patients (Table 4).

DISCUSSION AND CONCLUSION

There sults of present study showed that the patients were suffering from anxiety, low life hope and life expectancy before the open-heart surgery and one month after.

In addition, the study results showed that between the anxiety and life hope in open-heart surgery patients, before the surgery and one month after that, there was a reversed and negative relationship, which implies higher anxiety results to lower life hope. The anxiety before the surgeries is caused by the factors like unfamiliarity with the hospital environment, operation room and ICU with many medical strange equipment's and specially fear of death.

The anxiety after the surgeries due to staying in ICU, pain caused by surgery, being connected to ventilators, movement limitation, fear from losing family and social roles and responsibilities, physical and mental dependence and cardiac arrhythmia.

The present study is in agreement with Mooney *et al* (2007) who stated that at the time of open-heart surgery, the patients are afraid of the probability of dying and lack of endurance of surgery pain.[6] Graneheim *et al* (2004) in a research showed that patients' anxiety in ICU is due to disability to talk, pain, thirst, sleeping disorders and being couch potato.[17] In another study, Molazem and coworkers reported that after open-heart surgeries, the patients feel secure and safe with presence of nurses and feel in secure and unsafe when they are alone.[18]

The present study has shown the hope to future life before the surgery and one month after that. Low life hope before the surgery can be caused by fear of death , future life, losing family roles, the consequences and effects of the surgery and the disease, low quality of lifestyle due to chronic disease, too much expenses on the disease and treatment, losing jobs and feeling of uselessness and physical limitation. Low hope to life after surgery is associated with the factors like fear of death, physical and mental disability, dependence on nurses and care givers, severe pain of the surgery, shortness of breath, intubation, blood drainage of catheter, fear of future life with the disease and concerning about children and families and other diseases along with heart disease.[19]

Shafaee Pour *et al* (2013) reported that the patients faces many stressful situations while staying in hospitals and there is physical, mental and educational needs, which lead to feeling of fear and threat. They recommended relieving the patients from pain, nutrition training, taking medications, rate of activities, and the quality of self-carein nursing care programs.[5] Although these patients' life quality in most studies has been described satisfactory up to three months after open-heart surgeries, in some studies, the life quality was described and reported undesirable.[20] In another study, it was shown that the patients' life styles had been improved up to 3 months after the surgeries and their life styles had no significant difference during the first month after the surgeries.[21]

Therefore, low levels of life expectancy before the surgeries and up to one month after the open heart surgeries are concerned with the high stressors before and after the surgeries, which impose mental pressure

Table 1: The demographic feature analysis in the study samples

Variable		Number	Percentage
Sex	Male	24	30
	Female	56	70
	Age	47.5 ± 10.8	
Education level	Lower high school diploma	32	40
	Diploma and upper high school	48	60
	Single	0	0
Marital status	Married	77	96.25
	Divorced	3	2.75
	Clerk	11	13.75
Occupation	Unemployed	56	70
	Retired	13	16.25
Diabetes	Yes	56	70
	No	24	30

Table 2: The summary of test results of multi variable variance analysis

Variable	Stage	Number	Mean	Standard deviation
Anxiety	Before surgery	80	44.8	7.36
	One month after surgery	80	46.8	7.7
Life expectancy	Pretest	80	54.2	7.2
	One month after surgery	80	58.4	3.8
life Hope	Pretest	80	20.2	8.1
	One month after surgery	80	23.4	6.8

Table 3: Test summary of one way covariance analysis in MANCOVA context

Variable	Source of changes	Total square roots	Freedom degree	Mean square roots	F	Significant level
Anxiety	Error pretest and past test	4106.7	1	4106.7	97.8	0.127
		1176	28	42		
Life hope	Error pretest and past test	3121.2	1	3121.2	227.6	0.245
		384	28	13.7		
Life expectancy	Error pretest and past test	5216.1	1	5216.1	67.2	0.09
		842	28	22		

Table 4: The matrices of Pearson correlation coefficient among the life hope and anxiety

Variable	Pearson correlation coefficient	Significant level
Anxiety and life hope	−0/930	0/0001

to patients and results to psychological symptoms, and reduction of life hope and quality. Given the high levels of anxiety and low levels of life hope in open-heart surgery patients, it is suggested to use interference, support and care methods to them.

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CONFICT OF INTEREST

There is no any conflict of interest in this study.

ABBREVIATION USED

HHI: Hear Hope Index; **BAI:** Beck Anxiety Inventory; **ICU:** Intensive care unit.

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