PREVALENCE OF EMOTIONAL DISTURBANCES AMONG CARDIAC PATIENTS: A COMPARATIVE ANALYSIS

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ABSTRACT

Objective: To study the prevalence of emotional disturbances such as depression, anxiety, and stress among patients with Myocardial Infarction and Heart Failure.
Study Design: Cross sectional study.
Place and Duration of Study: The study was conducted at Armed Forces Institute of Cardiology Rawalpindi Pakistan, from May to July 2018.
Material and Methods: Overall 200 patients were enrolled in the survey (31% female patients). Patients of age ≤20 years and ≥85 were excluded. DASS-21, a set of three self-report scales and clinical interview were used to measure the patient's emotional disturbances.
Results: The prevalence of emotional disturbances such as depression, anxiety and stress was higher in Heart failure as compared to Myocardial Infarction.
Conclusion: Thereis the need to address depression, anxiety and stress of patients at the critical care units and outpatients departments to control the delayed healing process of patients at the cardiac hospitals.

Keywords: Cardiac diseases, Emotional disturbances, Myocardial Infarction, Heart Failure.

INTRODUCTION

Cardiac diseases account for a great amount of the worldwide health burden. In Pakistan, cardiac diseases are the major health issue where the numbers of patients are increasing every year[1,2]. According to the World Health Organization, 16.7 million people died in 2000 andthe death rate increased up to 17 million in 2008[3]. The health data taken from more than 190 countries in 2015 showed that heart disease is the topmost cause of mortality with 17.3 million deaths took place every year throughout the world[4]. Cardiac diseases are rising throughout the world but more warmingly in developing countries like Pakistan[5]. Due to cardiac diseases, approximately 31% of people died every year and out of these, 75% deaths took place in the low and middle-income groups such asin Pakistan[3].

Heart problem hascaused 25% deaths in developed while 80% deaths in low and middle-income countries[6]. Due to this diseases, 85% of disabilities have been caused throughout the world[7]. Within Asian countries, people are highly prone towards the development of cardiac problems that may lead them towards death[9]. Females have the higher risks for the onset of depression after heart diseases compared to males[3].

The most common cardiac diseases are 'Myocardial Infarction' that is the necrosis of heart muscle secondary to the acute insufficiency of oxygen supply or ischemia[10] and 'Heart Failure' that is the progressive and chronic condition in which heart muscles are unable to pump necessary blood to meet the needs of oxygen. It can be said that when the heart cannot keep up its workload then it results in heart failure[11].

Cardiac diseases are mostly caused due to prolonged use of smoking, high level of hypertension, diabetes mellitus and increased cholesterol levels[8]. The other associated factors are the high level of stress, unhealthy diet, obesity, and lack of enough physical activities[12]. The most important point here is the risks provoked due to the emotional disturbances may be equal to

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or greater than the traditional risk factors of smoking, hypertension, diabetes mellitus hypercholesterolemia. The emotional disturbances are manifested in the form of depression, anxiety, and stress.

Depression is the most common mental illness throughout the world that affects the personal, family and social activities of individuals. Every year, about 800,000 people died because of depressive symptoms that lead them towards suicidal attempts[13]. The risks of depression are two to three times higher in the chronic degenerative diseases such as chronic obstructive pulmonary disease, diabetes, asthma and cardiac diseases that are the major focus of attention in the present study.

Clinical studies have shown that emotional stress generates the onset of acute myocardial infarction. The life-threatening situations such as earthquakes may increase the risks associated with myocardial infarction. Patients who have a higher level of anger and sexual activity are more at risk for the onset of the heart attack. The highest physical stress possesses greater risks for the onset of myocardial infarction that is also linked with extreme emotional stress[14].

The study on myocardial Infarction stated that women experience anxiety, depression and sadness side by side with their cardiac problem. Anxiety and depression are significantly high in cardiac patients that also affect their social functioning. Individuals with cardiac problems face depression in the aftermath of heart attack and heart failure[15]. Another study was conducted to measure the association between depression and chronic diseases with each other. The study showed that depression is linked to the higher mortality rate in patients with coronary heart failure[16]. In Iran, the prevalence of depression was found in 9,292 participants through using 12 studies that were published from 2008 to 2016. Through using the random-effects model, the study showed that the prevalence of depression in heart patients is 47%[5].

The significance of the present study is that it sheds light on the prevalence of depression, anxiety and stress in two adult populations including patients after myocardial infarction and inpatients with heart failure. Previous studies have highlighted that cardiac diseases are increasing every year where patients face emotional disturbance after the onset of these problems. Their psychological adjustments are affected that is why it is necessary to explore the prevalence rate of negative psychological symptoms.

MATERIAL AND METHODS

The study used cross-sectional design as an attempts to accurately portray the emotional disturbances of cardiac patients at the Armed Forces Institute of Cardiology.

Patients presenting to the hospital with the diagnosis of Myocardial Infarction and Heart Failure were included in the study. Data was collected anonymously through using questionnaire and clinical interview. Informed consent was taken from study participants. It was clarified to the patients that whatever they tell us, will remain confidentially and only be used for research purpose. Patients were asked to share their actual information. At the end, patients were thanked for their participation in the study.

Patients of age ≤20 years and ≥85 were excluded from the study.

Depression Anxiety Stress Scales (DASS-21) developed by Peter Lovibondwas used in present study. DASS-21 is the set of three self-report scales that are designed to measure the emotional disturbances. It is the Likert scale ranges from "did not apply to me at all" to "applied to me very much". The scale contains high internal consistency and alpha reliability of 0.90 for depression 0.83 for anxiety and lastly 0.86 for stress. This scale can be used to measure the current state for the clinical or research purpose[17]. In broader categorization, the scale is divided into three parts including depression, anxiety, and stress. Each of three DASS-21 scales contains 7 items that contain similar content. The depression scale assesses hopelessness, lack of involve-

ment, inertia, dysphoria, devaluation of life, anhedonia, and self-deprecation. Anxiety scale measures autonomic arousal, situational anxiety, skeletal muscle effects, and subjective experience of anxious conditions. Stress scale is used for non-specific arousal. It measures complexity in relaxing, being upset easily, feelings of agitation, overreaction, impatient and nervous arousal. Scores for depression, anxiety, and stress are summed up in the relevant categories[17].

Table-1: Demographic Characteristics

Variables	f (%)	Mean (SD)
Age		55.84 (11.89)
Gender		
Male	138 (69)	
Female	62 (31)	
Education		
Illiterate	51 (25.5)	
Primary	21 (10.5)	
Middle	34 (17.0)	
Matric	50 (25.0)	
Inter	21 (10.5)	
Graduation	20 (10.0)	
Masters	03 (1.4)	
Geographical Location		
Urban	81 (40.5)	
Rural	119 (59.5)	
Family system		
Joint	127 (63.5)	
Nuclear	73 (36.5)	
Cardiac Diagnosis		
MI	100 (50)	
HF	100 (50)	

f = Frequency, %= percentage

Data was entered into the Statistical Package for Social Sciences (SPSS, ver 21). Descriptive Statistics and t-test was conducted to meet the study objectives.

RESULTS

This section represents demographic characteristics, psychometric properties, and t-test analysis of study variables.

Table-II shows the alpha reliability and normality scores of the scale. The internal consistency of the DASS-Depression, DASS-Anxiety, and DASS-Stress is a >0.5 which shows that the reliability values of the scale are in the acceptable range. Skewness and Kurtosis values are within the range of ±2 that is considered acceptable because it proves the normal distribution of the data.

DISCUSSION

Cardiac diseases indeed are the major cause of morbidity and mortality rate throughout the world. To prevent the disease, it is crucial to shed light on the emotional disturbances side by side the traditional risk factors of high blood pressure, diabetes mellitus, cholesterol and smoking. Studies in Pakistan to assess the emotional disturbances among cardiac patients are lacking. Therefore, the present research has assessed the level of emotional disturbances among two clinically diverse cardiac groups.

Table-II: Prevalence of depression, anxiety and stress among patients with MI and HF.

Variables	% in MI	% in HF
Depression-Normal	52	43.4
Mild	16	31.3
Moderate	24	13.1
Severe	05	7.1
Extremely Severe	03	5.1
Anxiety-Normal	37	16
Mild	05	02
Moderate	14	29
Severe	17	19
Extremely Severe	27	34
Stress-Normal	44	39
Mild	09	07
Moderate	17	18
Severe	15	17
Extremely Severe	15	19

% = percentage

Literature shows that due to the diagnosis of depression, patient's physical and social functioning are negatively affected[18]. High emotional distress such as anxiety, hostility, and aggression is most common in cardiac patients. These are the basic psychological factors that affect the onset of cardiac diseases. The study showed that patients with heart failure have a high level of depression and are in the greatest percentage comparable to the patients with myocardial infarction[19]. The

present research supports the literature of previous studies that were conducted worldwide.

The present study findings demonstrated that the prevalence of depression was high in patients with Heart Failure comparable to Myocardial Infarction. In patients with Myocardial Infarction, 52% patients were having the normal level of depression, 16% were mild, 24% moderate, 5% severe, and 3% were having extremely severe depression. In Heart Failure, 43.4% were having the normal level of depression, 31.1% were mild, 13.1% moderate, 7.1% severe, and 5.1% were having extremely severe depression.

Table-III: Psychometric properties of the depression, anxiety and stress scales.

Variables	No. of Items	a	M	SD	Skewness	Kurtosis	Range	
							UL	LL
DASS-Depression	7	0.60	10.31	7.92	0.90	0.80	36	0
DASS-Anxiety	7	0.66	15.00	9.10	0.18	-0.61	40	0
DASS-Stress	7	0.80	19.40	13.00	0.14	-0.94	48	0

UL=Upper Limit. LL=Lower Limit, M=Mean, SD=Standard Deviations

Table-IV: Mean, standard deviations and t-values for two clinically diverse populations of MI and HF on depression, anxiety and stress

	MI		HF		t	*p*	95% C1		Cohen's d
Variables	M	S.D	M	S.D			UL	LL	
Depression	9.30	7.68	11.25	8.09	-1.67	0.96	0.33	-4.08	0.25
Anxiety	12.84	9.08	16.28	8.82	-2.72	0.01	-0.94	-5.94	0.38
Stress	18.70	12.50	20.00	12.59	-0.73	0.46	2.19	-4.78	0.10

MI=Myocardial Infarction; HF=Heart Failure

The prevalence of anxiety was significantly high in patients with Heart Failure comparable to Myocardial Infarction. Thirty seven percent were having the normal level of anxiety, 5% were mild, 14% moderate, 17% severe and 27% extremely severe in Myocardial Infarction. On the other hand, in heart failure, 16% were having the normal level of anxiety, 2% mild, 29% moderate, 19% sever and 34% patients had extremely severe anxiety.

Stress is another important cause of the cardiac disease that results in heart attacks or heart failure in the elderly population. The present research explored that in Myocardial Infarction, 44% patients were having the normal level of stress, 9% were having mild, 17% moderate, 15% severe and 15% extremely severe. On the other side, in Heart Failure, 39% patients were having the normal level of life stressors, 7% were having the mild level of stress, 18% moderate, 17% severe and 19% extremely severe. Through using t-test analysis, it is clarified that the depression and stress are non-significantly high in the patient with heart failure while anxiety is significantly high in patients with heart failure as compared to Myocardial Infarction.

The present research shows that the emotional disturbances have the important role in the onset of cardiac problems. Many professionals, health providers and even patients themselves are unaware of their harsh impacts. Literature supports the fact that the emotional disturbances affect the social functioning of patients[18]. In the present research, when cardiac patients were closely examined then the level of depression,

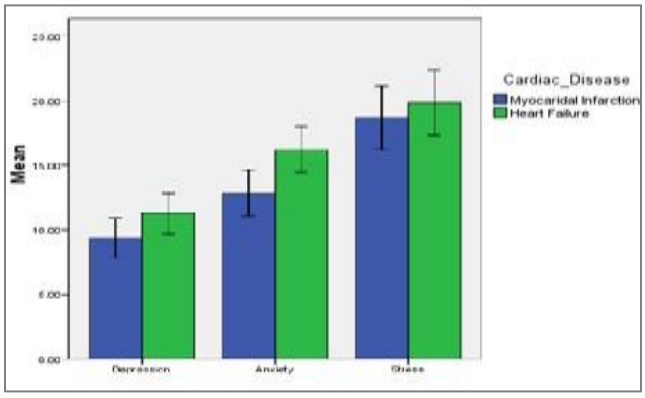

Figure: Comparison of depression, anxiety and stress among patients with myocardial infarction and heart failure.

anxiety, and stress were seen from mild to severe. In the hospital settings, the patient's medical diagnosis has been treated but psychological issues seem neglected. The present research has clearly manifested the prevalence rate of depression, anxiety and stress among two clinically diverse cardiac groups to put this fact into the surface. This research is informative for the cardiologists, health care providers and psychologists because they are in one to one interaction with the cardiac patients. Most of the time delayed healing process happens merely due to not knowing the severity ofthe patient's psychological issues.

The strength of the present research is that it has comparatively analyzed the sensitive psychological issue of emotional disturbances among two clinically diverse cardiac groups that was not researched earlier in Pakistan. The limitation of the study is that it has only conducted on the cardiac patients of Armed forces Institute of Cardiology, if other cardiac hospitals of Rawalpindi would be included in the study, then might be varied responses would be reflected. It is recommended for the future studies to use the present research as a basis and develop intervention plans to deal with the psychological issues such as depression, anxiety, and stress of cardiac patients. Furthermore, the future researches can shed light on the underlying reasons for the high emotional disturbances among patients with heart failure.

CONCLUSION

Emotional disturbanceshave a high prevalence rate in patients with Myocardial Infarction and heart failure. Therefore, there is the need to address depression, anxiety and stress of patients at the critical care units and outpatients departments. This, in turn, will result to control the delayed healing process of patients at the cardiac hospitals.

CONFLICT OF INTEREST

This study has no conflict of interest to declare by any author.

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