

ORIGINAL ARTICLE

Anxiety and Depression among Cardiovascular Disease Sufferers Treated at Hearts International Hospital, Rawalpindi

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ABSTRACT

Objective: To determine the frequency of anxiety and depression among the patients suffering from cardiovascular diseases.

Study Design: A cross sectional study.

Place and Duration of Study: Research was conducted in Hearts International Hospital from March 2019 till May 2019.

Materials and Methods: A formal questionnaire based on socio-demographic was designed, in order to collect data along with Hamilton Anxiety and Depression Inventory. The perspective of fifty patients were interviewed that were diagnosed with cardiovascular disease.

Results: Relied on the Depression Anxiety Stress Scale-42 and Clinical Decision Support severe depression was found in more than 50 % patients., severe to very severe level of anxiety was found in less than 20% patients. Conversely, there was clearly no important distinction between an overall score of Hamilton Anxiety and Depression Scale as well as the score of patients' depression sub-scale stratified according to gender, age, education, and income. It was further found that unmarried participants had greater level of depression than the married participants along with that extreme depression level was found in patients having cardiovascular disease with co-morbid diseases.

Conclusion: Significantly high frequency of anxiety and depression among the patients of cardiovascular diseases highlight the importance of mental health care in cardiac rehabilitation.

Key Words: *Anxiety, Cardiovascular Diseases, Depression, Hospital, Patients.*

Introduction

Cardiovascular disease (CVD), anxiety and depression are extremely predominant and have main communal well-being impact. Intersection of cardiovascular disease with anxiety and depression is mutual and often related with inadequate results associated to only situations.^{1,2,3} Some researchers also suggest an interconnection between depression and hypertension^{4,5,6}, a vital predecessor to CVD.

Depression and anxiety are continuing, instable settings, and single procedures do not offer satisfactory evidence on the course or linked burden of these situations over time.⁷ Further, relations between depression, anxiety, and cardiovascular results are likely to be minimized due to relapse

reduction bias.⁸ Some studies have dignified multiple time points of depression^{9,10} or anxiety¹¹, finding persistent indications to be more analytical of contrary procedures, however, after a severe incident, the effects of depression and anxiety are likely to be compounded and specifically linked to the precise occurrence. At the main care stage, where these patients often stay, this has failed to understand the recurrence of these symptoms. In patients with this psychological mood disorders, the argument for treatments can primarily be dictated by their possible effect on medical costs. There is little evidence on the expenses involved with depression or anxiety associated with CHD, with one study showing that depression boosts cardiovascular costs from 15 to 50 percent over five years.¹²

Anxiety and depression have a direct physiological influence on treatment of cardiac disease through non-compliance with treatment as well as in direct influence through poor lifestyle choices such as smoking, lack of exercise. In addition, such kinds of disorders include managing CVD burden in the treatment complication perspective. This concern

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has also been provoked through other co-morbidities such as diabetics, obesity, and hypertension.^{13,14} Countries, like Pakistan, do not have proper health systems and patients have not yet effectively reacted, even then reports show that 15% of cardiac patients are being identified and remedied for anxiety and depression as well.¹⁵

There is limited data on depression and anxiety prevalence among CVD patients in lower middle-class nations. This situation is likewise applicable to Pakistan, where depression and anxiety issues are normally not acknowledged, identified, or addressed, despite their higher prevalence. Un-addressed depression and anxiety treatment ought to be an essential obstruction in the CVD successful management in Pakistan, where, as other parts of the globe, CVD happens to be the leading death cause.¹⁶

Based on two recent meta-analyses, depression was found to be linked with both coronary heart disease and stroke. However, the inability of the retrospective trials, to account for confounders, was pointed out in the research by Nicholson et al. (2006) on the relationship between depression and CHD as a methodological constraint too serious to have skewed the findings.¹⁷ Therefore, it is yet to be determined if depression is an individual risk factor that triggers CVD. For women and younger men, a moderate common genetic risk between major depression and coronary artery disease status has previously been identified. The specific study was planned to determine the frequency of anxiety and depression among the patients suffering from cardiovascular diseases.

Materials and Methods

The study design was quantitative cross-sectional research survey. A non-probability sampling technique was used, and the selection of the population was done through purposive sampling while using the practice of key informant. Before conducting research, ethical issues were kept in view, by taking written permission from the management of the hospital. In the process of data collection informed consent was taken, while keeping the anonymity and treating people with respect, consideration, and concern. The research was hospital based, carried out for those patients who consecutively enrolled in cardiac surgery and

cardiology department of Hearts International Hospital, Rawalpindi. The sample size taken was 50 patients. The data was collected from the time of March 2019 to May 2019.

The inclusion criteria were set for the patients. Age limit was between 30 to 80 years. Had been through an active or recently revealed cardiac analysis. Hospitalized in from March 2019 to May 2019. The patients who had normal cardiac catheterization (CATH), experienced any stroke in past, end-stage kidney disorder, cognitive impairment, severe co-morbidity which affected mental fitness and had neurological disorders were excluded from study.

A structured questionnaire was the base of data which had two parts, as mentioned in Table I and Table II. In the first part, there were details of clinical information and socio-demographics based on medical and administrative record of the patients. Private interviews were conducted in the second part of the data collection. After strict screening it was demonstrated that these validated tools were suitable while assessing anxiety and depression symptoms, PTSD (post-traumatic stress disorder), self-esteem, lifestyle behaviors, and social support, etc. for the ease of patients, the questionnaire was translated from English to Urdu and vice versa.

Table I: Predictor Tools and Variables

Predictor Tool	Variables
Psychosocial Elements	Quality of life (based on SF-12-Health Questionnaire*), Self-esteem (based on Self-esteem Stability Scale), PTSD (based on PCL-C**), Resilience (based on RS -14 Resilience Scale***) and Social Support Instrument (ESSI****)
Factors of Lifestyle	Obesity level, smoking or not, fruits and vegetable consumption, body mass index
Clinical Elements	Treatment of Cardiac (on enrollment in hospital), history of quality of life and CVD, somatic system (PHQ -15****) cardiac disease history, co-morbidities, medications, etc.
Socio-demographic Elements	Age of patients, marital status, gender, level of education, profession, etc.

The four predictor tools examined regarding connection with anxiety and depression have been elements of socio-demography, psychosocial tools, clinical elements as well as the factors of lifestyle. Predictors and endpoints were characterized as SD (standard deviations) and means concerning quantitative variables, while for categorical

Table II: Instruments used and Details.

Instruments	Details
CDS (Cardiac Depression)	Cardiac Depression Scale (by Hare et al. which consists of a 26 -item questionnaire). Its range starting from 26 to 182 with 7 points Likert Scale (from strongly disagree to strongly agree). Mild to moderate level of depression has been defined in this study with the score from 90-100 and severe depression at >100, on the other hand, a score below 90 mentioned minimal depression).
Anxiety, Depression & Stress (HADS)	Depression and Anxiety stress has been measured through HADS (Hamilton Anxiety and Depression Scale)
QoL (SF-12)	SF-12 is a short form survey of health, basically contained on the score of Mental Component Summary (MCS) and on the score of Physical Component Summary (PCS)
Post-Traumatic Stress Disorder (PCL-S)	PCL-S has been used for Post -Traumatic Stress Disorder; it is basically a 17-items scale to analyze PTSD in patients.
Self-Esteem	Single-item Self Esteem Stability Scale has been used to analyze Self-Esteem level.
Resilience	RS-14 (which is the 14 -item questionnaire) has been used to analyze the Resilience Scale in the populace.
Social Support (through ESSI)	Typically, ESSI is based on a seven -item scale, extracted from MOS (Medical Outcomes Survey)

variables' absolute values as well as percentages again standard deviations were used. Variances in the predictor elements in accordance with the absence or presence of anxiety and depression signs were examined with the help of the chi-squared test. In case of those frequencies which were below five; Fisher's exact test had been used. In order to discover an independent link between anxiety or depression signs and predictor variables, multivariate ordered logistic regression comparisons were carried out. All the variables had been approached in every one of the patterns immediately.

With the OR (odds ratio) and CI (confidence intervals 95%), all outcomes were delivering in distinct anxiety and depression models. As per the consistent and standardized cut-offs, all cut-offs' results were severe or highly severe, moderate or mild and normal. Correlations in between other tools and impact variables applied in this research had been evaluated while operating "Spearman's rank

correlation coefficient." All statistical examinations have been defined with either side *p-value* < 0.05.

Results

The data induced was from 50 patients, that were in accordance with the inclusive criteria for a specific criteria interview. Ninety six percent (n=48) consented to take part in this research.

Table III: Factors of Socio-Demography

Variables	Number of Patients (n)
Factors of Socio-Demography	
Age (Mean±Standard Deviation)	55.8±
Gender	
Female	16
Male	32
Residence	
Urban	22
Rural	26
Level of Education	
Matric	28
Intermediate	12
Graduate	6
Masters	2
Marital Status	
Married	40
Un-married	8
Profession	
• Professional (having job)	22
• Non-profession (without a job)	8
Retired	10
Housewife	8

Table IV: Psychosocial Factors of the Patients

Psycho-Social Factors	
Resilience	
Extremely low	4
Low	6
Low End	10
Moderate	15
Moderate-High	7
High	6
Post-Traumatic Stress Disorder	
Marginal Level	19
Some	12
Moderate	10
High Level	7
ESSI (Social Support)	
Low Level	28
High Level	20
SE (Self-esteem)	
Score of Self-esteem (SD)	5.4±
Clinical Elements – Cardiac	
CAD	24
Angina	12
MI	8
Others	4

Clinical Elements – Previous History of Cardiac Disease	29
YES	19
NO	
Co-morbidities	
One	16
Two or more	20
None	12
Details of Medication	
1 – 2	13
3 – 4	12
No medication	23
Cardiac Family History	
No	20
Yes	28
Factors of Lifestyle (Fat Consumption)	
High	24
Medium	16
Low	8
Factors of Lifestyle (Smoking)	
Present smoker	18
Never	30
Factors of Lifestyle (Vegetable consumption)	
Low	16
Medium	14
High	18

Study Population Characterization

In Table III, the population characterization defined:

Factors of Socio Demography

From all 48 patients, 16 were female and 32 were males. Forty were married and 8 were unmarried. The major part of the populace lived in the rural area (26) and the remaining 22 were in urban residents. Level of education of patients was: Metric 28; Intermediate 12; Graduate 6 and having master's degree were 2. The details of participant's professions were employed 22, jobless 8, retired 10 and housewife 8.

Psychosocial Factors

Among 48 patients' level of resilience was: extremely low-level patients were 4; low level 6; low end 10; moderate 15; moderate-high 7 and high-level patients were 6. Accordingly, the PTSD level was marginal level patients were 19, some 12; moderate 10 and high-level patients were 7. ESSI or Social support level was low level 28 patients and high level 20 patients. The score of SE (Self-esteem) was (standard deviation) 5.4 ±.

Clinical Elements

Cardiac elements of Forty-eight patients were:

having CAD 24, angina patients were 12, MI were 8 and 4 having other cardiac ailments. Accordingly, the previous history of cardiac ailment was as 29 patients have this issue while 19 have no previous history. Out of 48 patients, 16 have one co-morbidity, 20 have two or more than two and 12 have no other disorder. One to two medicines have been used by 13 patients while three to four have been used by 12 and the remaining 23 have no medication history. Twenty patients have no cardiac ailments in their family previously while 28 have a cardiac history.

Factors of Lifestyle

Among forty-eight patients, 24 have high-fat consumption rate while medium and low were 16 and 8 respectively. Similarly, 30 patients never smoke while 18 were smoking regularly and finally, high vegetable consumers were 18, the medium was 14 and on the low level were 16.

Anxiety and Depression Signs Proportion of Patients with Different Levels

The different levels of depression (CDS) signs and patients' proportion about anxiety and depression. According to findings the standard deviation (SD±) 10.1, as per the cutoff values, the sample was no severe to very and mild to moderate signs of depression.

Discussion

It was found that the levels of anxiety and depression, which called in the attention the necessity for the psychological care of cardiac disease sufferers. It is actually significant that a number of aspects discovered to be related along with anxiety and depression may perhaps suffice as examining as well as potentially as interference objectives. Mental health issues' rates revealed in preceding scientific studies for individuals with a variety of cardiac medical determinations as well as in various social and health arrangement settings varied from fourteen to seventy-three percent for depressing signs and fifteen to forty-eight percent anxiety signs.⁷

Pakistan's rate of depression is 14%, which corresponds with numerous other countries notwithstanding variations in sample measurements, the tools pre-owned as well as cutoffs applied for separating anxiety and depression and the form of cardiac disease were taken into account. Minor depression rates have been

grounded when compared with USA 15%, Norway 14%, and India 15%, but observed high as compared to Bangladesh 4.4%⁶.

Similar to the scientific studies, the most popular mental tool which is helpful in depression and anxiety may not necessarily identical for all cardiac patients. After observing different countries, we found that the problems of mental health are usually at their large in the population of Pakistan. It is because there is no basic healthy control group active in Pakistan. The study output may not permit to determine that anxiety and depression are additionally frequent in patients having cardiac ailments. Cardiac patients belong to a special requirement for anxiety and depression considering that established research points to the undesirable influence on heart disease.^{23,24}

Moreover, cardiac therapy might be an effective start line to deal with mental health dilemmas as well as the sufferer and to the extended family or social network. Considered the shortage of services of mental health with the worst overall economic situation in Pakistan, there is a need to take provisional measures for additional services in cost-effective ways. The recognition of cardiac patients' subgroups upon advanced threat of anxiety and depression may assist in evaluation and treatments.^{3,7} Specifically, while screening the mental health perspective in cardiac patients, concentration might be offered to less educated patients and to females. Depression and anxiety higher rate observed in such kinds of sub-groups had been formerly explained in this study and female patients observed more insecure towards the trauma due to cardiac events which direct towards a decline in anxiety and depression signs.⁷

According to some other studies, social status and gender link might not exactly be immediate as mentioned by the disappearing of social status and gender variations in thoroughly adapted models. The existence in the following excessive attributes in cardiac patients should really be a source of concern for cardiologists while considering the care of mental health in cardiac cognition: PTSD signs, self-esteem low levels, low QoL elements, somatic signs, live smoking, longer existence of disease and physical inactivity. On the other hand, an elevated resilience level demonstrates to decrease signs of

psychological dilemmas, according to earlier notices in patients with cardiac disease. As opposed to the discoveries revealed previously, comorbidities have not been persistently considerably prevalent in the existence of mental health ailments.^{16,24}

Conclusion

Significantly elevated rates of anxiety and depression in CVD patients underscore the importance of mental health care in cardiac rehabilitation.

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