



DEPRESSION, ANXIETY, AND STRESS IN POST CORONARY ARTERY BYPASS GRAFT (CABG) SURGERY PATIENTS

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ABSTRACT

Background: Coronary Artery Bypass Graft (CABG) surgery trigger off specific physiological and emotional responses of cardiac patients. Instead of the positive effects of the surgery, the occurrence of depression, anxiety, and stress in post CABG patients worsens their psychosocial functioning. It is the prospective study of depression, anxiety, and stress planned for post-CABG patients.

Objective: To comparatively analyze depression, anxiety, and stress among post-CABG patients.

Methodology: Cross-Sectional study design has been used. Overall, 100 patients participated in the survey (49% female patients) within the age range of 20 to 75 from the outpatient and inpatient care departments. The study used highly reliable and valid DASS-21 to assess the patients' symptoms.

Results: Post-CABG patients showed moderate depression (13.68), moderate stress (22.24), but severe anxiety (15.16).

Conclusion: The study showed that some patients come under the umbrella of psychological problems after CABG surgery. It is important to provide counseling to patients after their surgery so that emotional disturbances related to their delayed healing process can be diminished.

Keywords

Coronary Artery Bypass Graft surgery; Depression; Anxiety; Stress; a descriptive study

INTRODUCTION

World Health Organization states that health is the condition of proper physical, psychological and social well-being and not just the absence of infirmity (Gotlib, 2015). Psychosomatic medicines create the bridge between psychiatry and medicines. Conceptually, the mind-body link has captivated the medical man that good treatment will be valued by the mind, not by the body (Bunz et al., 2015). Psychocardiology is the emerging field that addresses the psychological needs of cardiac patients by breaking the vicious cycle. A vicious cycle is a process when heart disease leads to depression and anxiety and, in turn, maximizes the patient's chances of getting another cardiac event. Therefore, the inventive blend of cardiology and psychology is beneficial for cardiac patients (Alvarenga & Byrne, 2015). Coronary artery bypass grafting (CABG) is the most common cardiac surgical procedure that is practiced throughout the world. Approximately 200,000 surgical procedures are only performed in the United States every year, showing the frequent use of this procedure in cardiac patients (Roger et al., 2011). Depression and cardiac diseases are the most common comorbid conditions, with the commodity range from 14% to 47% (Blumenthal et al., 2003). A study reported that many patients who pass through cardiac surgery suffer from depression (Simha et al., 2013).

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Patients come across surgical procedures in severe cases that improve blood flow to the heart, known as Coronary Artery bypass graft surgery (CABG) (Byrne & Leacche, 2017). In this method, the healthy vein from the body is grafted to the blocked coronary artery (Alexander & Smith, 2016). Even though, CABG patients have thoughts of being disabled, impending doom, and continued palpitations, the generalized muscular tension is linked to their inability to breathe and relax properly and associated with sleep disturbance (Nguyen et al., 2016). Such sort of symptoms causes psychological signs that can never be ignored. These symptoms become adverse and reflect poorer outcomes after surgery (Krannich et al., 2007).

Chaudhury et al. (2016) stated that anxiety causes cardiac problems that lead towards the higher autonomic arousal that comes up in the form of a delayed healing process in CABG surgery patients. Rutledge et al. (2006) showed that the prevalence rate of depression is high in females than males, with a point estimate of 32.7% for females and 26.1% for males. The range was from 11% to 67% for females, while 7% to 63% was for males.

Depression after CABG is determined by somatic conditions, socioeconomic conditions, and psychological factors. The study showed that depression after CABG occurs mostly in those patients who show symptoms of depression before the surgery (Rymaszewska et al., 2003). The significant factors that promote depression after CABG are the low social support, low educational level, the prevalence of stressful situations within one year before the surgery, limited medical assistance, protracted intensive care after CABG (Pirraglia et al., 1999). In addition, the study showed that little family support before surgery might increase the chances of the onset of depression after the surgical procedure (Okkonen & Vanhanen, 2006).

The present study has been conducted on the psychological issues associated with CABG because it declines mental well-being and prognoses of patients (Lindquist et al., 2003). The 12-year follow-up study reported that the patients with depressive symptoms after six months of their cardiac surgeries, their death risks were double compared to the patients without depressive symptoms (Blumenthal et al., 2003). In the previous studies, the psychological issue of depression is highlighted, but the present research collectively explore depression, anxiety and stress. Thus, the present research fills the research gap of previous studies by giving the prospective view of major psychological issues of the post-CABG surgery patients.

OBJECTIVES OF THE STUDY

- To study the prevalence of depression, anxiety, and stress among post-CABG surgery patients.
- To comparatively analyze depression, anxiety, and stress among post-CABG surgery patients.
- To study gender differences in depression, anxiety, and stress.

METHODOLOGY

A quantitative research approach, descriptive research design, primary sources of data, and cross-sectional methods have been used. The study was conducted at the Armed Forces Institute of Cardiology / National Institute of Heart Diseases, Rawalpindi, Pakistan. Inclusion Criteria of the study was the patients who passed through the surgical procedure of Coronary Artery Bypass Grafting. The age range of the participants is 20 to 75 from inpatients, and outpatients care

departments. Both stable patients have been included in the present research who can respond to the questionnaire.

The measurement data on the demographic characteristics, depression, anxiety, and stress were collected from the patients through a questionnaire. Depression, Anxiety, and Stress Scales (DASS-21) have been used in the present research. DASS-21 is based on a 4-point Likert Scale. The scale is sub-divided into three dimensions, including Depression, Anxiety, and Stress, with each sub-dimension, have seven questions. It is based on the categorical conception of psychological disorders rather than the dimensional. Therefore, it is a highly reliable and valid instrument developed especially for cardiac patients.

Informed consent was taken from the patients before collecting data for the research. At first, the motive of the research was orally narrated to the patients, and once they have given their consent, the written consent was taken. Patients were clarified that their shared information would remain confidential and only be used for the research purpose. The data collection took place in two steps as the repo-building was the first step so that patients can build trust and share the information only that was done through the individual interviews. In the second step, data were collected through DASS-21. The data is collected after getting approval from the Institutional Ethical Review Board of Armed Forces Institute of Cardiology and the National Institute of Heart Diseases (AFIC-NIHD).

STATISTICAL ANALYSIS

The study used SPSS 21 version to explore the prevalence rate of demographics and gender differences have been studied with the help of t-test.

RESULTS

Table 1

Variables	f (%)	Mean (S.D.)	<i>Demographic variables of the study (N=100)</i>
Age		51.43 (13.41)	
Gender-	Male Female	49 (49%) 51 (51%)	
Education-	Illiterate Primary Middle Matric Inter Graduation Master MBBS	22 (22%) 8 (8%) 15 (15%) 28 (28%) 10 (10%) 12 (12%) 4 (4%) 1 (1%)	
Marital Status-	Single Married	5 (5%) 95 (95%)	
Geographic Location-	Urban Rural	43 (43%) 57 (57%)	

f = Frequency, %= percentage

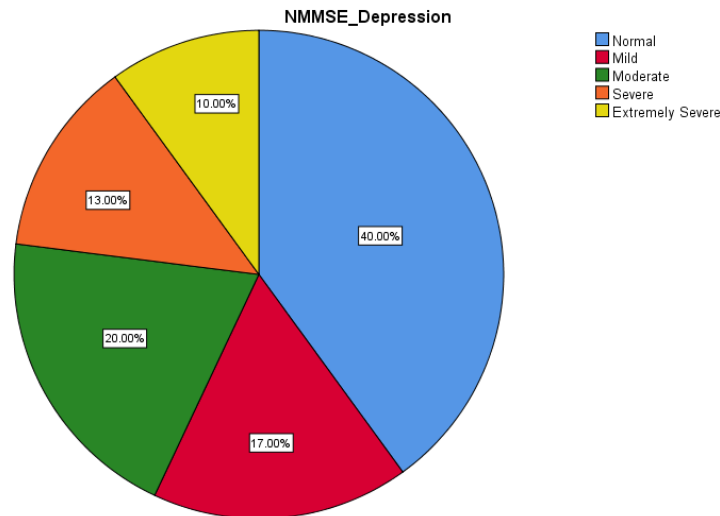
Table 1 shows the age, gender, education, marital status, and geographic location of patients with post-CABG surgery.

Table 2

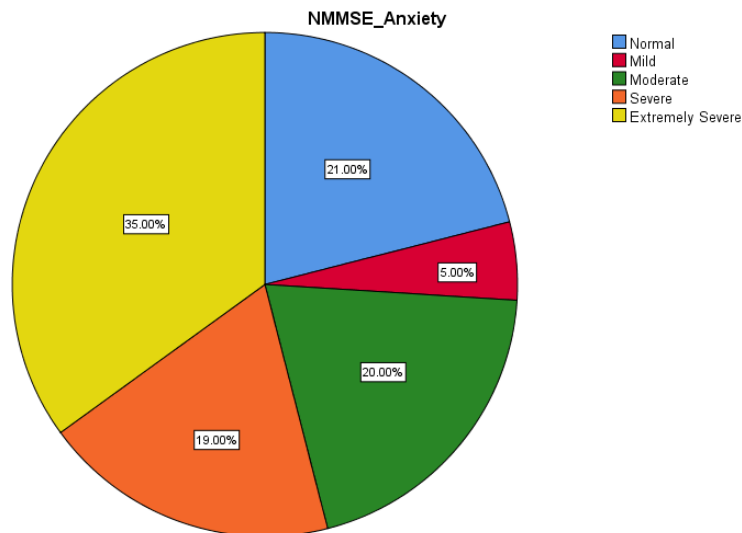
Prevalence of depression, anxiety, and stress among Post-CABG Patients (N=100)

Variables	Prevalence	Level
Depression	13.68	Moderate
Anxiety	15.16	Severe
Stress	22.24	Moderate

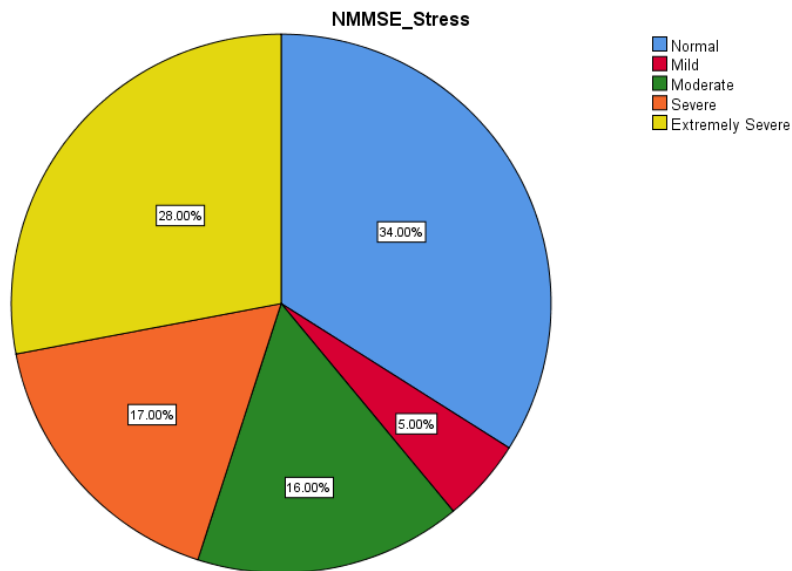
Table 2 shows the prevalence of depression, anxiety, and stress among patients after Coronary Artery Bypass Grafting. In addition, it shows moderate depression, server anxiety, and moderate stress, which criteria established by DASS-21 evaluates.



Graph 1 – Prevalence of Depression among Post-CABG Surgery patients



Graph 2 – Prevalence of Anxiety among Post-CABG Surgery Patients



Graph 3 – Prevalence of Stress among Post-CABG Surgery Patients

Table 3

Mean, Standard Deviation, and t-values for male and female patients after CABG on Depression, Anxiety, and Stress (N=100)

Variables	Male		Female		t	p	95% CI		Cohen's d
	M	S.D.	M	S.D.			UL	LL	
Depression	10.20	5.82	17.02	8.47	-4.67	.000	-3.92	-9.71	0.94

Anxiety	11.83	7.01	18.35	7.89	-4.36	.000	-3.55	-9.47	0.87
Stress	17.88	11.79	26.43	12.36	-3.54	.001	-3.76	-13.35	0.71

Note: CI=Confidence Interval, UL=Upper Limit, LL= Lower limit

Table 3 indicates means, standard deviations, and t-values on depression, anxiety, and stress. Depression is significantly less in male patients (M=10.20, SD=5.82) than in female patients (M=17.02, SD=8.47). Likewise, anxiety is significantly less in male patients (M=11.83, SD=7.01) than in female patients (M=18.35, SD=7.89). Finally, stress is significantly less in male patients (M=17.88, SD=11.79) than in female patients (M=26.43, SD=12.36).

DISCUSSION

The purpose of the study was to comparatively analyze depression, anxiety, and stress of post-CABG surgery patients. Many patients experience low mood, lack of interest, hopelessness, lack of involvement, dysphoria, anhedonia, and self-depreciation after CABG, but they never know that their condition falls in the psychological issue of depression. Approximately 40% of patients have no or normal level of depression after the surgical procedure that does not affect their health or treatment. It shows that most of the inpatient and outpatient departments have strong willpower that does not lead them toward dysphoria, hopelessness, and lack of involvement. In addition, the study showed that 17% of patients have a mild level of depression that also does not affect their way of living. Every condition is problematic if the patient’s social activities are disturbed. There were 20% having moderate level of depression, reflecting that the surgical procedure causes low mood, lack of interest, anger, irritability, and sleep problems.

The present study has also explored the prevalence of anxiety among post-CABG patients. Most of the patients seem nervous, restless, and tense after the surgical procedure. They even felt impending danger before, probably related to their upcoming CABG surgery. They feel weak and tired, trouble concentrating on other things except for their present condition. Experiencing occasional anxiety is a part of everyone's life, but when the patients start experiencing it in every state, then it is harmful. It is an alarming situation for cardiac hospitals that patients face a lot of anxiety after the surgical procedure that interferes with their daily activities. Therefore, it is crucial to develop effective strategies so that the patient’s anxiety level can be controlled. If anxiety is not dealt with after the surgery, it will lead to problems at the workplace, and patients will have a poor quality of life.

Stress is another well-recognized factor that must be detected and treated. Recent studies reported that symptoms of stress are associated with worsening outcomes after CABG (Blumenthal et al., 2003). Therefore, it is necessary to carefully evaluate these symptoms to identify the stressors in the patient’s life to improve the surgical prognosis and the quality of life. The study showed that 16% of patients have a moderate level of stress that needs to be tackled. After surgery, patients need proper care and relaxation, but when patients are in a state of stress, they cannot focus on their health, resulting in declining health every coming day.

The chances for anxiety are higher in post-surgery patients compared to depression and stress. Thus, even though post-CABG patients pass through the very critical stage, it is obvious that psychological issues may emerge. The point to ponder here is that it is the responsibility of the health care providers to counsel the patients regarding their stress. The study reported that stress arises in the patients after CABG due to discomfort or being in pain. Patients are away from their

home and workplace, and their daily routine is disturbed due to their illness that results in severe stress. Most of the time, patients fear that they will not bear this pain and will die if not recovered from surgery. The resuming lifestyle is the most evident factor that results in psychological issues. Patients sleep in unusual beds within the hospitals, which stresses upon them that they are away from the home environment. Patients start thinking that now things are difficult to manage, and they are losing their income too. Therefore, proper care is crucial for post-CABG patients to keep themselves away from the harsh outcomes. The role of family and health care practitioners emerges here because their mutual role is the only solution dealing with the psychological problems of depression, anxiety, and stress.

CONCLUSION

Post-CABG Depression, anxiety and stress are the common conditions that affect the patient's treatment and outcome. The presence of symptoms of psychological issues may involve difficulties for the physician during the treatment, which includes many circumstances such as insufficient cooperation among the patients in terms of drug administration. Due to the psychological problems, patients have frequent admissions to the emergency departments merely because of the undiagnosed symptoms. Most of the patients never know that their symptoms fall into depression, anxiety, and stress which results in less treatment. The present research is an invitation to treat the psychological issues in patients after CABG and enhance cooperation between psychologists, cardiologists, and surgeons.

LIMITATIONS

The study included a large age range, so it is not possible to generalize the results in any specific age group like the young adults, middle-aged adults, older adults, older, and elderly. The data is collected from only one hospital that is the biggest limitation of the study. It is recommended to future researchers to collect data from more than one hospital so that the data would be comparatively analyzed. Psychologists should be recruited in the cardiac hospitals to provide counseling and psychotherapies to the post-CABG patients to keep them away from the psychological issues.

CONFLICT OF INTEREST

There was no conflict of interest in the study.

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