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ASSESSMENT OF HEALTH RELATED QUALITY OF LIFE AMONG CORONARY ARTERY DISEASE PATIENTS AND THE IMPACT OF DEPRESSION AMONG THEM

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ABSTRACT **INTRODUCTION:** Quality of life is a multifaceted notion that includes subjective assessments of both good and negative aspects of life. Patients with cardiac problems, with or without comorbidities such as depression, other psychosocial issues and a variety of chronic non-communicable diseases, have a good quality of life. SF-12 is the most widely used tool for assessing HRQOL.PHQ-9 questionnaire is used for assessing the severity of depression. This study aims to assess HRQOL among CAD patients and the impact of depression among these patients by using SF-12 and PHQ 9 questionnaires. **METHODS:** This is a cross-sectional observational study carried out for a period of 6 months involving 250 CAD patients with or without depression carried out at a single study site in a tertiary care hospital. HRQOL among CAD patients is assessed by using SF-12 and depression severity by PHQ-9 questionnaire. **RESULTS:** Our study results had shown that among 250 CAD patients' males at the age group of 51-60 years are predominant. Patients without family history are more. Majority of the people are having 2 comorbidities with HTN and DM as the most common comorbidities. Student T-test was performed and the P values for different variables shown that there is significant association between HRQOL and gender, age and depression and there is no significant association between HRQOL and no. of comorbidities. Pearson correlation shows that there is no association between PCS & MCS scores. **DISCUSSION & CONCLUSION:** Since cardiovascular problems are the leading cause of morbidity and mortality among patients assessment of HRQOL will improve therapeutic outcomes among them.QOL of CAD patients can be improved by identification of certain psychiatric problems like depression and anxiety.

KEYWORDS : Coronary artery disease, health related quality of life, depression, Hypertension and Diabetes Mellitus

BACKGROUND:

Quality of life includes assessment of positive and negative aspects of life and it reflects the impact of different phases of disease on health condition of a patient [1]. Patients with cardiac problems, with or without other conditions like depression and other psychological issues have good quality of life. Depression can result in poor Quality of Life (QOL) among Coronary Artery Disease (CAD) patients and early identification can improve the condition and prognosis [2]. SF-12 is the most extensively used measure for Health Related Quality of Life (HRQOL) and it provides quick and easy wat to assess health status and it includes symptoms related to anxiety and depression. Physical Health Questionery-9 (PHQ-9) is useful tool for diagnosing and assessing the severity of depression which includes nine items for measuring the severity of depression [3]. It is the commonly used questionnaire in community based settings, and patients physical illness.It includes symptoms related to depression and the total score ranges between 0 - 27. Based on the severity of symptoms there are 4 different categories among the patients: minimum (0-4), mild (5-9), moderate (10-14), moderately severe (15-19), severe (20-27) [4].

Coronary artery disease is the leading cause of mortality and elderly people are at greater risk and the severity is also higher in them. Different modifiable and non-modifiable risk factors can cause CAD including Diabetes, hypertension, age, gender, family history, obesity, smoking [5].The current treatment aims at identifying modifiable risk factors and improving life style among the CAD patients.CAD can result in Myocardial infarction and finally lead to death and it is manifested as Angina pectoris with or without changes in ST-segment in ECG [6].Symptoms include chest pain, SOB, nausea. Different diagnostic tests are present for CAD including ECG, CT scan, MRI scan, Chest X-ray, PET scan etc. Different treatment options include thrombolytic agents, Anti platelet agents for blood coagulation, ACE inhibitors, Beta blockers, CCBs for HTN. Surgical procedures include PTCA, CABG, heart transplant, trans-myocardial revascularization etc [7].

Depression has major impact on physical health which results in weight changes and sometimes chronic conditions like heart disease, kidney problems etc. Depression in elder patients results in death and diminishing physical health and greater life loss and impaired social functioning [8]. Depression is related with decreased family relationship, diminished educational status and increased chances of suicide and mostly affects adults. Depression affects almost 16% of people and the third most common illness and have a male-to-female ratio of 2:5.There is no specific mechanism for development of depression, it may involve brain chemistry, genetics.Risk factors include gender, Age, Race and ethnicity, sleep problems, stress, female sex hormones.Depression can greatly effect females because of their hormonal changes and it is the major leading cause of disability among whole world [9].

Symptoms include trouble sleeping or oversleeping, loss of appetite, difficulty in concentrating, thoughts of death or suicide.Depression can be diagnosed by using PHQ-9, Beck depression scales. Functional assessment can be done by examining weight changes, other daily activities.Antidepressants are the primary treatment options for depression. Treatment options include pharmacological treatment with TCAs, MAOIs, SSRIs, SNRIs etc and psychotherapies like Cognitive behavioural therapies, interpersonal psychotherapy(IPT) and sociotherapy.Life style changes like smoking cessation, Quitting alcohol, exercise, and dietary changes are useful.Other treatments include exercise, yoga, massage, acupuncture etc[10].

STUDY METHODS:

Study Design

This was a cross sectional observational prospective study carried out in a Tertiary care hospital from October 2021 to March 2022 for a period of 6 months among 250 coronary artery disease patients. The study was conducted after obtaining approval from Institutional Ethics Committee and informed consent from subjects. Subjects were screened based on exclusion and inclusion criteria. Patients who are

satisfied with inclusion criteria were included in the study. After including the subjects into the study the data was collected in the designed data collection form. In study each participant details like demographic details, comorbidities, family history, cardiac procedures, and standard form questionnaire was asked to assess the health related QOL among CAD patients and also PHQ-9 questionnaire to assess the impact of depression among CAD patients were collected [11]. Later evaluation of QOL among CAD patients and impact of depression among them is done.Collected data will be evaluated and interpreted by using statistical software. Exclusion criteria includesthose patients who are not willing to participate in our study, not given their consent and people below age group of 30 years. Inclusion criteria include; those who are willing to participate in our study, Patients diagnosed with CAD, Patients who have undergone cardiac procedures, all age groups of > 30 years, and both gender people were included.

STUDY OPERATION:

SF-12 questionnaire was used to assess health related QOL among patients with CAD. Based on the PCS and MCS scores obtained patient QOL has been assessed. Also PHQ-9 questionnaire which includes 9 questions were used and scoring was given. Based on the scores obtained patients have been categorized into none (0-4), mild (5-9), moderate (10-14), moderately severe (15-19), severe (20-24).[12]

STATISTICALANALYSIS:

Data was entered into Microsoft office excel and were analyses using student T-test. Frequencies and means were calculated. P<0.05 was considered statistically significant. Pearson correlation was done to determine the association between PCS and MCS scores.

SOURCES OF DATA:

Data extracted from the inpatient and outpatient files of cardiology department at tertiary care hospital. We had explained to the patient as well as patient representatives regarding the study those who are willing to provide informed consent form to our study those subjects are considered and stored in google spreadsheets.

RESULTS:

In the study report have included 250 CAD patients with or without depression and measured QOL among them by using different questionnaires like SF-12 for assessment of HRQOL and PHQ9 for assessment of depression and we got the results as follows:

CATEGORY	n	PERCENTAGE %	PCS	MCS	P-VALUE
GENDER					
MALES	175	70	37.844 (9.81)	56.317 (8.063)	0.0021
FEMALES	75	30	35.36 (8.264)	55.663 (7.874)	
AGE					
30-40	10	4	44.196 (9.411)	51.367 (8.198)	0.4888
41-50	49	19.6	9.167 (11.629)	5.055 (6.663)	
51-60	82	32.8	7.436 (8.188)	6.005 (7.969)	
61-70	72	28.8	7.308 (8.06)	6.0 (7.011)	
>70	37	14.8	4.27 (5.906)	5.655 (6.064)	
NO.OF COMORBIDITIES					
0	19	7.6	40.538 (8.975)	54.587 (9.798)	1.3094
1	69	27.6	39.092 (10.621)	57.724 (5.909)	
2	111	44.4	35.975 (8.919)	56.995 (7.937)	
3	28	11.2	35.518 (7.517)	54.991 (7.743)	
MULTIPLE	20	8	34.338 (8.683)	48.305 (9.3)	
PHQ-9 CATEGORIES					
NONE	108	43.2	39.862 (10.593)	58.246 (6.777)	0.1957
MILD	119	47.6	38.602 (8.228)	55.77 (8.456)	
MODERATE	21	8.4	36.862 (5.446)	48.437 (5.486)	
MODERATELY SEVERE	2	0.8	34.155 (8.379)	46.15 (1.301)	
SEVERE	0	0	0	0	

DISCUSSION:

Among 250 CAD patients males (70%) are predominant at the age group of 51-60 (32.8%).Majority of the patients are without any family history (88.4%). Most of the patients are having 2 comorbidities (44.4%) among them HTN & DM (32.8%) are more predominant.

Greater percentage of the patients are done with CABG procedure (75.6%).By taking SF-12 mean and standard deviation values and by considering different variables, results shows that females with CAD have poor QOL when compared to males.With increase in age the QOL of patients was decreasing.

With increasing no of comorbidities QOL decreases. PCS&MCS scores decreases with increasing severity of depression which indicates that HRQOL among CAD patients worsened with increasing severity of depression.

In our study we have used student T-test for statistical analysis and different p values were obtained and the values shows that there is significant association between HRQOL and gender (p=0.0021), age (p=0.4888), depression (p=0.1957) and there is no significant association between HRQOL and no of comorbidities (p=1.3094).

Bivariate correlation analysis showed a partition coefficient (r) of -0.122, i.e, there is negative correlation between HRQOL and depression.Chi square test was performed which shows that there is no association between clinical depression level and gender (p=1).

CONCLUSION:

Our study has concluded that psychosocial factors such as depression and comorbidities worsen physical and mental quality of life among CAD patients. Males are more prone to cardiovascular disorders than females and people at the age group of 51-60 are greatly affected. Patients with 2 comorbidities are more and HTN & DM are most commonly observed comorbidities among study population.

Patients without family history are mostly observed and majority of people were done with CABG.There were significantly age and gender effects on HRQOL.With increase in age both PCS & MCS scores are decreasing indicating that HRQOL among CAD patients were decreasing with increasing age.

There was no significant correlation between no. of comorbidities and HRQOL. Also with increasing severity of depression both PCS & MCS scores get worsened which shows that severity of depression may affect the QOL among CAD patients. Proper treatment must be provided for depression in all age groups of patients with CAD.

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