LIFESTYLE MODIFICATIONS OF POST ANGIOPLASTY PATIENTS

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ABSTRACT

Background: Non-adherence to dietary recommendations, exercise and prescribed drug regimens, in coronary heart disease (CHD) patients following coronary artery angioplasty is a major health care issue worldwide.

Aims and objectives: The primary objective of this study was to investigate the frequency and predictors of non-adherence to lifestyle changes and medication among coronary artery disease patients after undergoing angioplasty.

Methods: The sample of this structured questionnaire study of 80 patients who underwent coronary angioplasty procedure. Adherence was assessed on the basis of patients self-report. Questions like socio-demographic details include patient's age, gender, marital status, education, employment. Co-morbid conditions, dietary intake, physical activity, psychological factors, personal habits, family history of angioplasty and current medication. We approach the patient and interviewed after getting a written informed consent.

Results: Roughly half of the patients were non-adherent to dietary recommendations (n = 53, 66.25%) while about one third (n = 50, 62.5%) were non-adherent to prescribed medications. Reluctance to follow exercise regimen, busy schedule, and fear that exercise will aggravate heart issues were commonly reported as reasons for non-compliance to exercise. As for non-adherence to medication, forgetfulness, affordability of drugs and too many medications to take were important predictors.

Conclusion: Non-adherence to lifestyle modifications and medication is an emerging problem worldwide. Our result demonstrates that intensified lifestyle modification is able to reduce need for further revascularisation procedures after initial successful PTCA in these patients. For psychological distress, offering supportive interventions such as counselling and treatment may help patients to cope effectively with various aspects of disease.

Keywords: Adherene,Angioplasty,coronary artery disease,Lifestyl

INTRODUCTION:

Coronary artery disease is the most common type of heart disease**.** According to World Health Organization (WHO), Coronary artery disease has no geographic, socio-economic or sex boundaries[6].

The annual number of death from coronary artery disease in India is projected to rise from 2.26 million (1990) to 4.77 million (2020)[7].Coronary artery disease prevalence rate in India have been estimated over the past several decades and have ranged from 1.6% to 7.4% in rural population and from 1% to 13.2% in urban population[8]. Coronary artery disease is the narrowing or blockage of coronary artery. This condition is usually caused by build-up of cholesterol and fatty deposits inside arteries called atherosclerosis[9]. These can clog the arteries which limit or stops blood flow to heart muscles. Risk factors include high blood pressure, high blood cholesterol level, tobacco smoking, diabetes mellitus, obesity, inactivity. It leads to angina, heart attack, heart failure, and arrhythmia[5]. Diagnosing for coronary artery disease include electrocardiogram, echocardiogram, stress test, cardiac catheterization.

ANGIOGRAPHY: The test is generally done to see if there's a restriction in blood flow going to the heart[5]. During a coronary angiography, a type of dye that's visible by an X-ray machine is injected into the blood vessels of your heart. The X-ray machine rapidly takes a series of images (angiograms), which is used to look at blood vessels[5]

ANGIOPLASTY:Angioplasty is essentially a minimally-invasive procedure. The interventional cardiologist removes the blockage from the artery for a smooth flow of blood, thus ensuring heart muscles get enough oxygen[3].

LIFESTYLE CHANGES AFTER ANGIOPLASTY:

Life can go back to the normal routine post any procedure; it can never truly be the same. You need to change your lifestyle to a great extent, to reduce any future incidents that can have a more severe effect on your body[1]. For instance, people who go through an angioplasty have to make some radical lifestyle changes[1]. Based on these findings, a healthy lifestyle (regular physical exercise, no smoking, limit alcohol intake and a well balanced diet) has become the backbone of consensus statements for primary prevention of CAD. In secondary prevention of CAD, despite the obvious benefits of drug therapy with beta-blockers, aspirin, or statins, lifestyle still remains central to the treatment of patients. An excellent way to manage stress is to practice relaxation techniques such as yoga and meditation or take up hobbies that can reduce overall stress and assist in maintaining heart health[3]. Patients who undergo angioplasty must ensure that they follow up with their doctors regularly.

METHODOLOGY:

In this structured questionnaire , patients who underwent coronary angioplasty in general population were included. This study was conducted during a 6-month period from January 2021 to June 2021 after getting approval from the Institutional Ethical committee in Dr.M.G.R Educational & Research Institute.Patients who underwent coronary angioplasty over 40 to 80 years of age including both sexes are included in this study.. Patients with unfavourable short term prognosis such as cancer patients or patients with end stage renal disease; subjects with pre-existing medical conditions, other than diabetes, hypertension or hyperlipidemia, that required the use of additional medications were excluded. Patients with severe degenerative joint disease and documented mental disorder were also excluded from the study.

A total of 80 post coronary angioplasty patients were included during the study time period. Therefore, the co-operation rate was 94.6%. Participants who met the eligibility criteria were provided detailed information about the study. A pre-coded questionnaire was handed out to the patients. For assistance of patients who found it difficult to fill out the questionnaire, two interviewers who remained unaware of the outcome of interest were trained to carry out the task so as to minimize interviewer bias.

The questionnaire was divided into 4 sections. The first section inquired about patient's demographic and baseline characteristics including age, gender, marital status, use of tobacco. Patient's medical records were reviewed to seek data on co-morbidities such as Diabetes, Hypertension and Hyperlipidaemia. In the second section, patient's adherence to dietary modification was assessed. Third section of the questionnaire deals with determining adherence to exercise prescription. In fourth section, patient adherence to medications following and psychological factors were assessed.

RESULTS:

A total of 80 patients are participated in this study, focused on age group from 40-80 years; including both sexes. Study focused on patient experience after coronary angioplasty. On the basis of gender compared with diet.48.75% of male and 17.50% of female patients were taking mixed diet. Also 21.25% of male and 12.50% of female patients were taking vegetarian diet. Based on physical activity, 31.25% of patients reported of walking, 68.75% of patients were not reported of walking. While 31.25% of patients reported of exercising, and 68.75% of patients were not reported of exercising. 13.75% of patients reported of doing yoga, and 26.25% of patients not reported of doing yoga.

Characteristics	
Male (%)	56(70)
Female (%)	24(30)
Age n (%)	
40-49yrs	19(23.8)
50-59yrs	30(37.5)
60-69yrs	24(30)
Above 70yrs	7(8.8)
BMI n (%)	
Normal	49(61.3)
Pre-obesity	25(31.3)
Obesity class I	6(7.5)
Type of diet n(%)	
Mixed	53(66.25)
Veg	27(33.75)
Family history of angioplasty n (%)	32(40)
Personal habits n (%)	
Smoking	17(21.3)
Alcohol	17(21.3)
Both	17(21.3)
None	29(36.3)
Physical activity n (%)	
Walking	26(32.5)
Exercise	25(31.25)
Yoga	11(13.75)
Co-morbidities n (%)	
Diabetes mellitus	44(55)
Hypertension	43(53.8)
Hyperlipidemia	10(12.5)
Psychological factors n (%)	
Anxiety	29(36.3)
Stress	51(63.7)
Depression	37(46.2)
Medications n (%)	
Following	30(37.5)
Not following	50(62.50

Table 3.1: Distribution of post angioplasty patients according to Gender and Diet

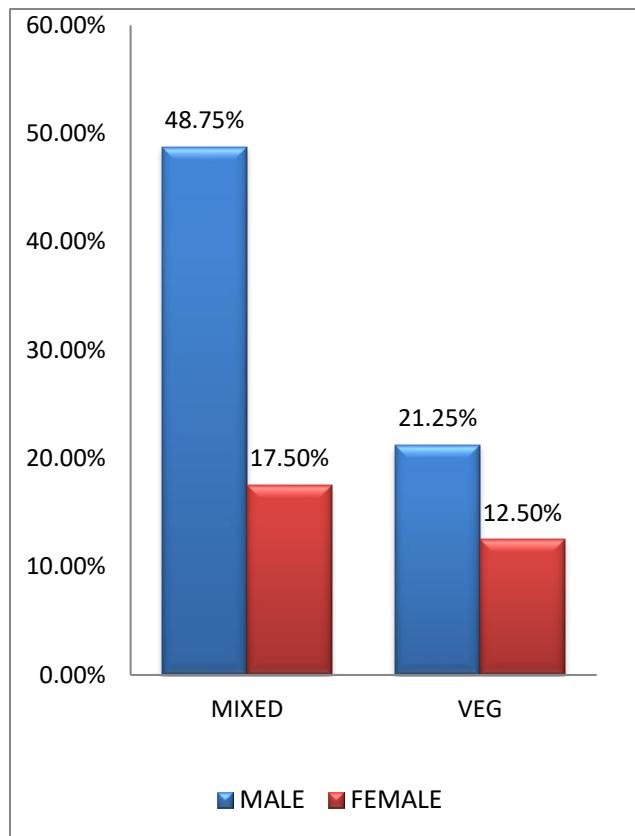| Gender	Diet			
	Mixed		Veg	
	n	%	n	%
Male	39	48.75	17	21.25
Female	14	17.5	10	12.5

Table 3.2: Distribution of post angioplasty patients according to physical activity

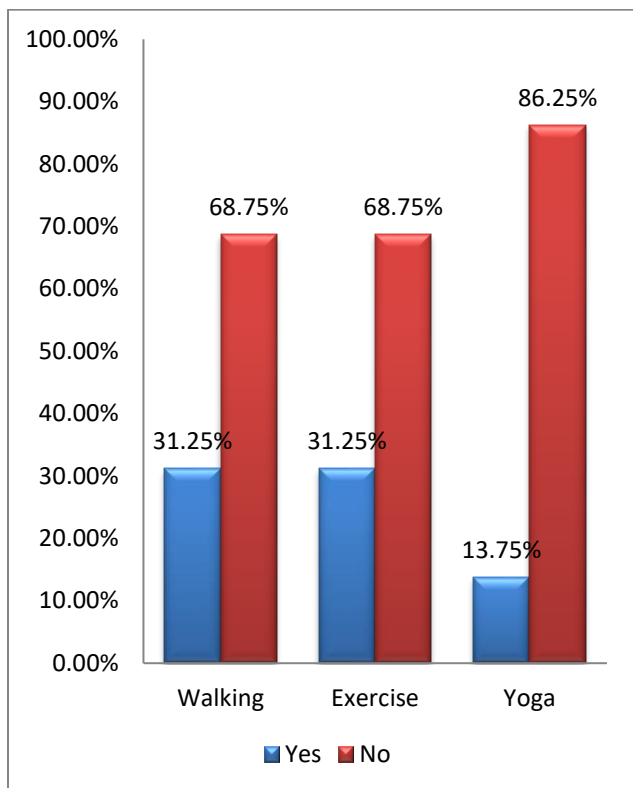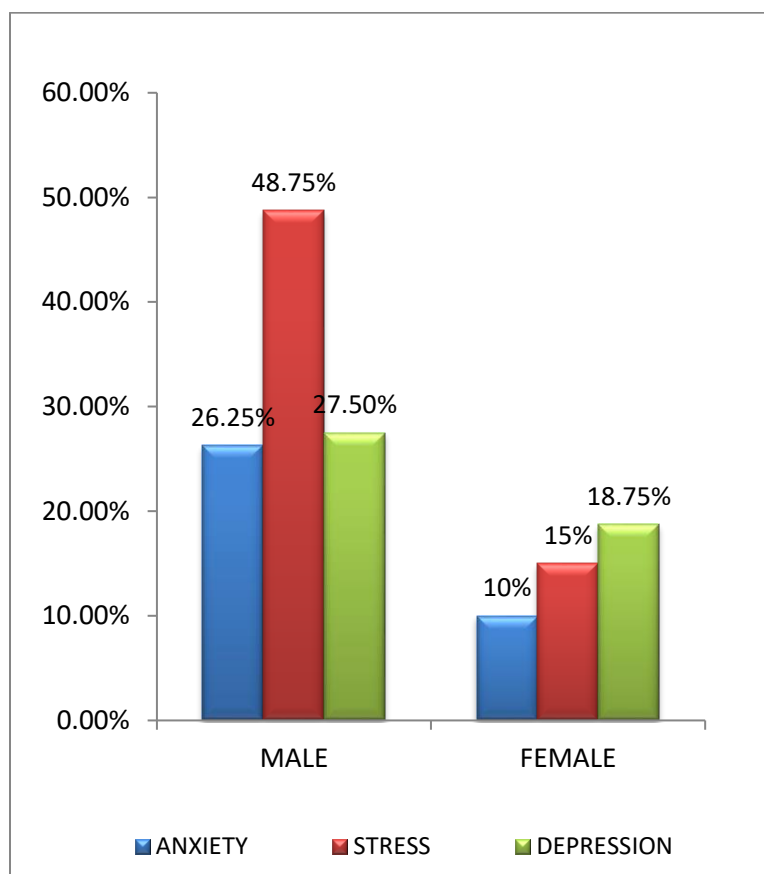| Physical activity	Walking		Exercise		Yoga	
	n	%	n	%	n	%
Yes	25	31.25	25	31.25	11	13.75
No	55	68.75	55	68.75	69	86.25

Table 3.3: Distribution of post angioplasty patients according to Gender and Psychological factors

Gender	Anxiety		Stress		Depression	
	n	%	n	%	n	%
Male	21	26.25	39	48.75	22	27.5
Female	8	10	12	15	15	18.75

DISCUSSION:

Coronary artery disease is a most common type of heart disease; it narrows and blocks the coronary artery. Our aim of the study is to evaluate the lifestyle modifications of post angioplasty. Regarding BMI status, 49(61.3%) have normal BMI, 25(31.3%) are pre-obesity, and 6(7.5%) under obesity class I. Comparing BMI with diet, in normal BMI patients 27.50% of were taking mixed diet& 33.75% were taking veg diet.

In pre-obesity patients 31.25 % were taking mixed diet and none of them were taking veg diet. In obesity class-1 7.50% were taking mixed diet and none of them were taking veg diet.

In our study, comparing BMI with physical activity, among normal BMI class, 23.75% of patients reported of walking, 21.25% of patients reported of exercising, and 10% of patients reported of doing yoga. Among pre-obesity, 7.5% of patients reported of walking, 8.75% of patients reported of exercising, and 2.5% of patients reported of doing yoga. Among obesity class I, 1.25% of patients reported of walking, 1.25% of patients reported of exercising, and 1.25% of patients reported of doing yoga. While compared with normal BMI, pre-obesity and obesity class I patients have least percentage in physical activity.

On comparing BMI with medications those who are not following their medications properly are 33.75% are in normal BMI, 22.5% are in pre obesity, 6.25% are in obesity class I. Comparing with normal BMI, pre-obesity and obesity class I patients have least percentage in following their medications. Distribution of post angioplasty patients according to education with physical activity from uneducated class 25% of patients reported of walking, 21.25% of patients reported of exercising and 7.50% of patients reported of doing yoga.

Among educated class 7.50% of patients reported of walking, 10% of patients reported of exercising and 6.25% of patients reported of doing yoga. According to educational qualification with medication, 28.75% of educated patients, 33.75% of uneducated patients were not following their medications. Analysing personal habits, 21.3% were only smokers, 21.3% were only alcoholic, 21.3% were under the category of both and 36.3% have no such habits.

On comparing personal habits with medications those who are not following their medications properly are 20 % of smokers, 21.25% of alcoholics and 21.25% of both.

From the history of co-morbidities, 55% of patients have diabetes mellitus, 53.8% of patients have hypertension and 12.5% of patients have hyperlipidaemia. In our study, comparing personal habits with co-morbidities, among smokers, 12.5% of patients are diabetic, 7.5% of patients are hypertensive, and 0% of patients are hyperlipidemic. Among alcoholic, 11.25 % of patients are diabetic, 12.5% of participants are hypertensive, and 3.75% of patients are hyperlipidemic. Among both, 11.25% of patients are diabetic, 13.75% of patients are hypertensive, and 1.25% of patients are hyperlipidemic.

In this, patients who were smokers have   highest percentage of diabetic history compared with hypertension and hyperlipidemia. Patients who were alcoholics have highest percentage of hypertensive history compared with others. Patients who were under the category of both, have highest percentage of hypertensive history compared with others.

LIMITATIONS:

- ❖ The current study has some limitations, including the fact that number of female post-angioplasty patients is lower than the number of male post angioplasty patients. So, the result is 3:1. if we get same percentage of both gender the result will be 3:3.
- ❖ In given time and due to the covid - 19 pandemic situation, only a sample of 80 patients were collected which might not be the representative of the entire social spectrum.
- ❖ Therefore, the results of this study cannot be generalized to the whole population, and further studies are recommended to be conducted on a multicentric basis to cover different types of hospitals and wider population.

CONCLUSION:

Patients in this study experienced both positive and negative changes after angioplasty. For psychological distress, offering supportive interventions such as counselling and treatment may help patients to cope effectively with various aspects of disease. Patients after PTCA should strongly advised to pursue a suitable modification of lifestyle by mean of dietary changes, regular physical exercise and smoking cessation. Our result demonstrates that intensified lifestyle modification is able to reduce need for further revascularisation procedures after initial successful PTCA in these patients.

Conflicts of Interest: The authors declare no conflict of interest

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