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Knowledge, Attitude, And Practice of Risk Factor Changes in Patients Who Recently Underwent Angioplasty

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ABSTRACT

Introduction: Coronary artery disease is a leading health problem in India with increasing incident rates and high treatment and management costs. Improving knowledge attitude and practice on risk factor modification and their early detection will reduce further risk of heart attack or stroke and will enhances overall well-being and daily functioning. The practice of risk factors modification is what the main factor which lacks after angioplasty.

Methods and materials: To ascertain the knowledge, attitude, and behaviour towards risk factor modification in patients who had recently undergone angioplasty, a cross-sectional study was done. Patients who underwent angioplasty within 3 months were selected for the study and told to fill out the forms.

Results: Out of 150 participants, 100 (66.6%) had a good understanding of cardiovascular disease and its risk factors, with a mean knowledge score of 7.321.87; 55 (36.6%) exhibited a favourable attitude toward modifying risk factors, with a mean attitude score of 10.52.17; and only 23 (15.3%) demonstrated appropriate practice of doing so, with a mean practice score of 7.084.31.

Conclusion: In order to stop the disease from progressing further, the study advised individuals to enhance their degree of practise in risk factor reduction. Although the knowledge level is relatively high, attitude and practise levels are unrelated. While there is a considerable difference in attitude and practise between males and females, there is a big difference in knowledge between the age groups. Although there is good knowledge, practise and a positive mindset are lacking.

Keywords: *Cardiovascular disorder, Coronary heart disease, Percutaneous coronary intervention, myocardial infarction, smoking, epicardial revascularization*

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1. INTRODUCTION

India's leading cause of death is coronary artery disease (CAD). It is also a major contributor to physical disability in an aging population that is expanding quickly.[1] In India, the prevalence of coronary artery disease (CAD) ranges from 1% to 9–10% among metropolitan residents. In rural areas of the nation, the prevalence of CAD ranges from 1% to 4% to 6%. In India, the annual age-standardized mortality rates associated with cardiovascular diseases (CVD) are 20.3% for men and 16.9% for women.[2] Given these statistics, it is crucial for the general public to recognize the risk factors for CAD and to take steps to reduce those risks, which will enhance their standard of living and lengthen their lifespan. Most angioplasty patients have a negative attitude towards risk factor modification as they are convinced that following the procedure is complete, the condition is treated and no further risk factor adjustment is necessary. This study aimed to assess the extent of knowledge, attitude, and practice regarding risk factor modification among angioplasty patients.

Evidence suggests that large lifestyle modifications can greatly reduce the progression of this disease or perhaps possibly reverse it. Therefore, after angioplasty, patients may gain advantages from their responses to giving up bad behaviours and embracing a heart-healthy lifestyle. The researchers made the assumption that because angioplasty patients recover from their surgery with less discomfort than CABG patients do, have lower hospital costs, and return to work sooner, they might not be as motivated to modify their lifestyles.[3] Studies show that there is up to an 80% fall in the coronary mortality rate caused by changes in risk factors. [4] While unhealthy eating is usually associated with conditions including high blood cholesterol, obesity, and hypertension, smoking, inactivity, and incorrect "stress" management are avoidable habits.[5] Anxiety, depression, irritability, and fatigue are the most common complaint in the weeks following angioplasty, management of these becomes difficult.[6] Because healthy eating, quitting smoking, regular exercise, and behavioural changes improve outcomes in patients with coronary artery disease (CAD), secondary prevention must include patient education about lifestyle changes, implementation strategies, and ongoing follow-up. Understanding the risk factors is a necessary prerequisite prior to making behavioural changes to prevent coronary artery disease (CAD). Preventive measures and lifestyle changes appear to be the sole crucial weapon in nations like India where the resources and facilities to battle diseases successfully are scarce. Major obstacles in preventive care are preventing further cardiac episodes and maintaining physical functionality in these patients.[7] Patients who have endured a heart attack or other cardiac incident and stop smoking have lower mortality rates and a about halved reduced risk of experiencing another cardiac event in the future. Despite this result, many patients with cardiovascular disease still smoke [8]. Post-PTCA patients spend very little time as inpatients, and it is obvious that health promotion activities are not well integrated into hospital care [9]. Smoking is one of the things that can affect one's standard of living following angioplasty. Evidence indicates that adhering to percutaneous and surgical coronary revascularization, smokers had increased long-term risks of heart attack and death compared to non-smokers.[10] Recent studies found that continued smoking was an independent predictor of restenosis.[11] Additionally, smoking is linked to a malfunction of the microvascular endothelium, which may restrict the capacity of epicardial revascularization to return normal coronary blood flow. According to recent research, smoking is linked to a lower tolerance for exercise following angioplasty.[10] All the recommendations on reducing the risk of coronary artery disease focuses attention on smoking cessation in reduction of the risk of death and non-fatal coronary events.[12] Education, ingrained habits, and possibly genetics all influence lifestyle choices rather than intelligence in many ways. As the patient spends very less time in the in-patient department health education becomes an important factor to gain a healthy lifestyle ahead. Making positive changes to risk variables can potentially lengthen life and reduce the chance of having another heart attack. In order to help patients return to work and uphold healthy living after an angioplasty treatment, it is crucial to understand the predisposing factors for coronary artery disease (CAD) and how to modify one's lifestyle. [7] Accurate recognition of coronary artery disease or Early presentation is crucial for healthcare providers, both in hospital and community settings, to reduce mortality and morbidity. [13] Awareness of risk factors among the younger generation is crucial in reducing the prevalence of the disease; consequently, it is reasonable to expect that they will maintain healthy lifestyles. It is essential to evaluate the baseline Knowledge, Attitude, and Practise (KAP) of individuals who had angioplasty surgery regarding risk factors. Research has indicated that individuals with a history of myocardial infarction have a higher chance of surviving and a lower chance of having another myocardial infarction when they smoke as opposed to not smoking and when they quit as opposed to continuing to smoke.[14]

Percutaneous transluminal coronary angioplasty (PTCA):

Angioplasty also known as PTCA is an invasive medical procedure which reopens the stenosed coronary artery and restores the blood flow to the heart. [15]. A Percutaneous transluminal coronary angioplasty (PTCA) is a standard treatment for patients with coronary artery disease. [16] The morbidity and death from coronary artery disease have significantly lowered in the last 20 years after PTCA was introduced. [17] PTCA procedure do not subject the patient to excessive distress as in coronary bypass surgery.[18] There is a false belief that angioplasty cures coronary artery disease.[19] Awareness of the younger generation about cardiovascular disease, risk actors and importance of modification is very significant to reduce its prevalence and progress.[20] Lifestyle modification demands more than mere information and attitude. According to research, a limited proportion of people practise healthy habits despite having strong knowledge and attitudes regarding exercise and a balanced diet to prevent cardiovascular disease.[21] Despite a broad consensus that behaviour change is important for angioplasty patients, they struggle to practice these modifications.[22] A thorough evaluation of Knowledge, Attitude, and Practise (KAP), together with its determinants and comprehension, is essential in averting and demanding the adoption of a lifelong healthy lifestyle.

2. MATERIAL AND METHODS

This is a cross-sectional descriptive and analytical study to assess the KAP regarding risk factors of CVD among patients of Karad, Maharashtra who underwent recent angioplasty. Data collection commenced following approval from the Institutional Ethics Committee of Krishna Vishwa Vidyapeeth, Karad, to proceed with the study. This research was carried out in Karad for 6 months of duration. The present short research examined the degree of awareness, perspective, and application of risk factor adjustment following angioplasty. On Google Forms, a set of KAP questionnaires was created and distributed to the patients. Thirty questions centered around a study topic were incorporated into the questionnaire

along with demographic information. The questionnaire, used for data collection, was originally prepared in English and later translated into the local language. The demographic variables collected were name, gender, and age. The questionnaire included an item asking, "Have you recently undergone angioplasty?" Another section comprised questions related to the study topic. The study was conducted among150 people which was calculated sample size. Google forms were circulated to each individual and asked to fill them. Every applicant who agreed to take part in the research completed the survey.

3. RESULTS

This study evaluated the knowledge, attitudes, and practices of 150 patients regarding risk factor management following recent angioplasty. Among the participants, 53.3% were male and 46.7% female, with the majority aged between 41 and 70 years. Most participants (86%) had undergone angioplasty recently. Knowledge assessment showed that participants were generally aware of cardiovascular risk factors and preventive measures: 88% recognized cardiovascular disease as a leading cause of death in India, 82% acknowledged the role of exercise in preventing recurrent cardiac events, and 84% understood the benefits of tobacco cessation. Nevertheless, gaps were evident, as only 42% correctly identified that household chores were insufficient for exercise, and nearly 40% incorrectly believed that angioplasty alone prevents further heart problems. Attitude evaluation revealed largely positive perspectives, with 85% agreeing that physical activity supports a healthy lifestyle and 80.7% acknowledging the risks of smoking, alcohol, and sedentary behaviour. Despite favourable attitudes, adherence challenges were noted: 58% reported occasional "cheating days" in diet or exercise, and 66% found it difficult to perform 45 minutes of daily exercise consistently. Practice assessment indicated that 66.7% engaged in moderate-to-vigorous physical activity regularly, 60.9% walked short distances routinely, and 68.7% followed prescribed cardiac rehabilitation exercises; however, some participants continued smoking (36%) and alcohol consumption (44.7%). Comparisons across gender and age revealed that males generally scored higher in knowledge, attitudes, and practices than females, and younger participants (35–50 years) performed better than older groups. All differences were statistically significant ($P < 0.0001$), highlighting that although participants possessed substantial knowledge and generally positive attitudes, translation into consistent health-promoting behaviours was suboptimal.

Table 1: Demographic data

Variable	Categories	Frequency(n)	Percentage (%)
Age	35-50 51-65 Above 66	51 54 45	34% 36% 45%
Sex	Male Female	80 70	53.3% 46.7%
Have undergone recent angioplasty	Yes No	129 21	86% 14%

Table 2: Knowledge assessment of risk factor modification in patients undergone recent angioplasty.

Sr no.	Knowledge question	Correct response n (%)	Incorrect response n (%)
1	In India, cardiovascular disease is the main cause of death.	132(88%)	18(12%)
2	Adequate exercise can prevent the risk of another heart attack.	123(82%)	27(18%)
3	Tobacco cessation programme can reduce further complications of heart disease.	127(84%)	23(15.3%)

4	Junk food has no harmful effects on your health after angioplasty.	83(55%)	68(45)
5	Doing household chores as exercise is enough for a day.	63(42%)	87(58%)
6	Exercise on a daily basis is not necessary if your physique is slender.	78(52%)	72(48%)
7	You can reduce risk of heart attack or stroke by following life style modification.	117(78%)	33(22%)
8	Even after angioplasty, people who quit smoking by 60, add 5 years to their life.	107(71%)	43(28.7%)
9	After angioplasty proper exercise regime should be followed for weight reduction.	116(76.8%)	35(23.2%)
10	Angioplasty is the final solution and it prevents further heart problems.	89(59.7%)	60(40.3%)

Table 3: Attitude assessment of risk factor modification in patients undergone recent angioplasty.

Sr no.	Attitude questions	Agree	Disagree	uncertain
1	Being active itself helps to maintain a healthy lifestyle.	128(85%)	14(9.3%)	8(5.3%)
2	I prefer to walk over other forms of transportation when I need to get somewhere nearby.	106(70.7%)	23(15.3%)	21(14%)
3	Smoking, alcoholism and sedentary lifestyle is bad for heart.	121(80.7%)	18(12%)	11(7.3)
4	Will you prefer to have cheating days in your exercise and eating regime.	87(58%)	29(19.3%)	34(22.7%)

5	I should take low oil and high fibre food after angioplasty.	100(66.7%)	22(14.7%)	28(18.7%)
6	Stress is unavoidable in life so management is difficult.	93(62%)	40(26.7%)	17(11.3%)
7	You should have set timing for your exercise and eating schedule.	116(77.3%)	17(11.3%)	17(11.3%)
8	Walking regularly on your own pace is effective for heart.	116(77.3%)	22(14.7%)	12(8%)
9	A balanced diet is difficult to follow.	87(58%)	34(22.7%)	29(19.3%)
10	Exercising 45 minutes a day is very difficult in busy life.	99(66%)	37(24.7%)	14(9.3%)

Table 4: Practice assessment of risk factor modification in patients undergone recent angioplasty.

Sr no.	Practise question	Never	Always	Frequently
1	Does your daily activity involve moderate to vigorous activities.	39(26%)	11(7.3%)	100(66.7%)
2	Do you walk for mini mal distance places such as nearby temple, shop etc.	23(15.2%)	36(23.8%)	92(60.9%)
3	Did you modify your diet into special diet? Eg. Olive oil, oat diet etc	56(37.3%)	27(18%)	67(44.7%)
4	Do you rest at least 20 minutes per day?	21(13.8%)	57(37.5%)	74(48.7%)
5	How often do you take fruits and fresh vegetables in your diet?	14(9.3%)	42(28%)	94(62.7%)
6	As your main course, do you like fried or heavy food?	33(22%)	18(12%)	99(66%)
7	Do you lead stressful life? (In personal, profession)	38(25.2%)	33(21.9%)	80(53%)
8	How often do you smoke?	79(52.7%)	17(11.3%)	54(36%)

9	How often do you consume alcohol?	72(48%)	11(7.3%)	67(44.7%)
10	Do you follow the exercise regime prescribed for cardiac rehabilitation?	16(10.7%)	31(20.7%)	103(68.7%)

Table 5: Comparison of knowledge outcomes across gender and age categories.

Variable	Category	Knowledge Good (n)	poor (n)	P- value
Gender	Male	55(68.75%)	25(31.25%)	<0.0001
	Female	45(64.2%)	25(35.7%)	<0.0001
Age	35-50	26(45.6%)	29(56.8%)	<0.0001
	51-65	13(24.0%)	45(83.3%)	<0.0001
	Above 66	8(17.7%)	29(64.4%)	<0.0001

Table 6: Comparison of attitude findings across age and gender categories.

Variable	Category	Attitude Good (n)	Poor (n)	P-value
Gender	Male	65(81.25%)	15(18.75%)	<0.0001
	Female	33(41.1%)	37(52.8%)	<0.0001
Age	35-50	24(47.0%)	31(60.7%)	<0.0001
	51-65	21(38.8%)	37(68.51%)	<0.0001
	Above 66	10(22.2%)	27(60%)	<0.0001

Table 7: Comparison of practice outcomes across age and gender categories.

Variable		Category	Practice		P- value
			Good (n)	Poor (n)	
Gender		Male	12(15%)	68(85%)	<0.0001
		Female	23(32.8%)	47(67.14%)	<0.0001
Age		35-50	10(19.6%)	45(88.2%)	<0.0001
		51-65	8(14.8%)	26(48.1%)	<0.0001
		Above 66	10(22.2%)	29(64.4%)	<0.0001

4. DISCUSSION

This study examined the degree of risk factor knowledge, attitude, and practise among patients who had recently underwent angioplasty. It was beneficial to comprehend the current state of risk factor knowledge, attitudes, and practises. Patients now believe that angioplasty is the cure for their condition and that they don't need to change their way of life. Even after angioplasty, the quality of life must be preserved. Angioplasty is the most commonly performed intervention for the coronary artery disease. About 88% of study population had knowledge about cardiovascular disease and deaths related to it. During balloon angioplasty, a balloon opens the coronary artery and restores blood flow. A stent may be inserted at the same time to preserve optimal blood flow through the injured area. In the current study, 150 individuals with a recent history of angioplasty were selected. The investigation found that patients' understanding of cardiovascular disease and its risk factors is strong. This result is consistent with research conducted by Mardhiah Mahada Ibhrahim et al. (20) and Katha Mukharjee et al. (19). The majority of respondents (59.7%) were aware that angioplasty is not a cure for the condition and cannot stop new cardiac issues from developing. Study shows that 84% patients demonstrated sufficient knowledge of tobacco cessation programs and it can reduce further complication of heart disease.

14% of the patients disagree with the fact that being active will help to maintain a healthy lifestyle. Since majority of the patients in the study had sedentary lifestyles, which is one of the determinants of cardiovascular disease, 66% of the population found that exercising for 45 minutes a day was difficult given their busy schedules. A significant number of patients (62%) acknowledged that stress was inevitable and which was challenging to manage. The results are in agreement with the research done by Mardhiah Mahada Ibhrahim et al. (20) Reducing stress has a significant impact on the risk factor for CVD.

Most of the respondents frequently does vigorous activity (66.7%) this scores are more than compared to the study done by Mardhiah Mahada Ibhrahim et.al. (20), Furthermore, 26% of people never exercise physically. This implies that the individuals who responded to our survey were not very motivated to exercise. This will probably lead to reduced calorie expenditure, which will increase the risk of obesity and cardiovascular disease. Regretfully, fried food was the main dish for 66% of the subjects. excessive consumption of fat and oil, both of which are unhealthy. Of those surveyed, 37.3% never changed to a special diet. Fast food consumption has become more popular as urbanisation has grown, changing people's dietary habits and ultimately contributing to obesity and high cholesterol. Ibhrahim Mardhiah Mahada et al. (20).

This study investigated that males have good knowledge as compared to females i.e 68.5% males and 64% female possessed adequate understanding of risk factors of CVD when we compared age wise knowledge it showed that patients aged above 66 had very poor knowledge (64.4%). And only 17% patients had good knowledge, but when we studied the age group of 35-50 45% people had good knowledge. This study showed that the attitude of the male patients was good than compared to females and patients with young age showed positive attitude than older ones.

Although patients demonstrated good knowledge and attitude it was anticipated that there was good practice. But the results were the opposite, from males only 15% patients practiced risk factor modification and from females 32.8%. that means females were more responsible than males while practicing risk factors modification. The same scenario was with age age group the older the age lesser the practice. Research has indicated that having high knowledge alone was insufficient to ensure behavioural transformation, and knowledge showed no significant correlation with either attitude or practise. Patients find it difficult to adopt and uphold healthy living habits because of their tendency for a sedentary lifestyle, bad

food, lack of physical activity, and stressful lives.

5. CONCLUSION

According to the study, in order to stop the disease from progressing further, individuals should practice risk factor management more frequently. Although the knowledge is at a fairly high level, attitude and practise do not correlate with it. While there exists a considerable difference between males and females with respect to attitude and practise, there is also a big variation in knowledge between the age ranges. Despite having good understanding, there isn't enough of a positive mindset or consistent practice.

6. CONFLICT OF INTEREST

None of the authors report any conflicts of interest.

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