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A Study To Assess The Effectiveness Of Self-Instructional Module On The Knowledge On Prevention Of Complications Anong Patient With Coronary Artery Disease At Selected Hospitals In Banglore

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ABSTRACT

Background: Cardiovascular disease is the leading cause of death in both men and women in the United States, and is a major cause of death throughout the world. According to the Canters for Disease Control and Prevention (CDC), approximately 61 million people in the United States have heart disease, and according to the World Health Organization (WHO), 29 percent of all deaths worldwide are related to the condition.[4]

With over 3 million deaths owing to cardiovascular diseases every year, India is set to be the 'heart disease capital of the world' in few years, said doctors on the eve of World Heart Day. It is estimated that by 2020 cardiovascular disease will be the cause of over 40 per cent deaths in India as compared to 24 per cent in 1990. Globally, it causes 17.3 million deaths annually.[5]

The detection rate of cardiovascular diseases has also increased in the country with more diagnostic labs coming up in the rural areas. The prevalence of coronary artery disease in rural India is estimated to be up to 7 per cent as compared to the urban areas where the incidence is up to 12 per cent. The main reasons for this epidemic are lifestyle changes such as sedentary jobs, improvement in socioeconomic status leading to unhealthy diets rich in fats, high stress jobs and the addictions like smoking and tobacco chewing.

Need of the study: In the Global Burden Disease Study, reported that a total of 9.4 million deaths in India in 1990, cardiovascular diseases caused 2.3 million deaths (25%), 1.2 million deaths were due to coronary heart disease and 0.5 million dues to stroke. Developing countries contributed 3.5 million of the 6.2 million global deaths from coronary heart disease in 1990. The projections estimate that these countries will account for 7.8 million of the 11.1 million deaths due to coronary heart disease by 2020. The aging population has raised concerns about the social and economic resources that may be necessary to manage the growing number of elderly persons with Cardio Vascular Disease. Coronary Artery Disease is the major cause of death both elderly men and women. [12]

Poor diet and physical activity are the most common risk factors for heart disease. The role of diet and nutrition is influenced by a range of social, cultural, economic and physiological factors. Overweight and obesity are established risk factors for heart disease, 13

According to Bangalore statistics total of nearly 25.7% of coronary artery disease are identified in the year 2011. The factors they consider are due to rapid urbanization and south Indian diet, that is predominantly rice and carbohydrate increases the risk of cardiovascular problems. Men in 30 to 49 age group were highest at risk for heart diseases, while women between 50-59 years were at risk. In men, central obesity, lack of physical activity and change in dietary habits were the main reasons for dyslipidemia, while in women it was mainly hormonal changes brought on by menopause.

A study was conducted to assess the prevalence and risk factors of coronary artery decease (CAD) in a native urban South Indian population. 1262 persons participated in the study. All the study respondents underwent a glucose tolerance test and were categorized as having normal glucose tolerance, impaired glucose tolerance as diabetes. Coronary artery disease was diagnosed by medical history & ECG findings. The result showed that the overall prevalence sate of CAD is 11%. The prevalence of rate of CAD were 9.1% in normal glucose tolerance test and 14.9% in patient with impaired glucose tolerance test. In diabetic patient CAD prevalence were 21.4% study also points out that prevalence of CAD increased with an increase in total cholesterol, low density lipoprotein, triglycerides and total cholesterol. Above statistics lead to a conclusion that the prevalence of CAD is rising rapidly in urban India.[17]

Material and method: Pre-experimental one-group pre-test - post-test research design was used to conduct the study. Based on the investigator's familiarity with the setting and availability of the samples the present study was conducted in General hospital Yelahanka, Bangalore. The sample size of the present study consists of 60 patients admitted to the selected hospital with coronary artery disease.

Result: pre-test majority of them 40(66.67%) had moderate knowledge, 2(3.33%) had adequate knowledge and 18(30) had inadequate knowledge. In the post-test 16(26.67%) had moderate knowledge, 2(3.33%) had inadequate knowledge and 42(70) had adequate knowledge. the range, mean, SD, enhancement and paired 't' test value of knowledge score on prevention of complications of coronary artery disease in the pre-test and post-test. The obtained post-test Mean value 29 was higher than the pre-test 18.17. The enhancement between pre-test and post-test was 3.89 and obtained paired 't' test value was 21.76, it was highly significant at 5% level. Hence it is inferred that there is significant increase in the knowledge level of the respondents on prevention of complications of coronary artery disease after the administering self-instructional module.

Conclusion: Coronary artery disease is a growing epidemic. Predictions by many cardiologists suggest that India will be the heart attack capital by 2020. One of the main aims of the nursing research is to contribute knowledge to the body of nursing to expand and broaden the scope of nursing. This is possible only if nurses are taking initiative to conduct further research. There is great need of nursing research in the area of public education, particularly with more emphasis on CAD and its prevention, since it is one of the leading causes of morbidity and mortality. Health-related studies need to concentrate on behaviour modification of people by developing unique teaching materials. Therefore, it is necessary to explore the knowledge of people with sedentary lifestyle and job patterns. This in turn will help the nurses to provide apt and prompt information to the public in the prevention of non-communicable diseases like CAD.

Key words: The effectiveness of self-instructional module on the knowledge on prevention of complications among patient with coronary artery disease at selected hospitals in Bangalore.

I. INTRODUCTION

In an average lifetime, the heart beats more than two and a half billion times, without ever pausing to rest. The heart provides the power needed for life. Heart starts working as soon as the 21st day of conception in the mother's womb and goes on till the last breathe of life. It keeps pumping the blood to the cells of the human body, spending sleepless nights and days in a life time. However, even though the importance of heart is countless, heart is we often casually.

The primary function of the heart is to pump 24 hours a day, approximately 70-80 times a minute. During each beat, the heart pumps blood that delivers life sustaining oxygen and nutrients to 300 trillion cells. The heart is supplied with arterial blood and oxygen by the coronary arteries, which wind across the surface of the heart.

The term "heart disease" can be used to describe any disorder of the cardiovascular system (i.e., the heart and blood vessels) that affects the heart's ability to function normally. Heart disease is also called cardiovascular disease, coronary heart disease (CHD), and coronary artery disease.

The heart has three coronary arteries, with 60-70 per cent of blood supply coming from the left artery system. Until recently, any narrowing in the three or more vessels in a diabetic patient was considered as an indication for bypass surgery and angioplasty was considered too risky to be undertaken in such patients. Today, however, such procedures have become safe and effective. Angioplasty in such a patient can be performed and help them live a better life with very little recovery period as well. Moreover, the patient is saved all the complications of a major open-heart surgery and can be discharged from the hospital in 48 hours. However, 80 per cent to 90 per cent of such cases can be prevented by controlling risk factors like tobacco consumption, alcohol abuse, etc. and following a healthy lifestyle that includes a healthy diet, control over high blood pressure and blood cholesterol and regular preventive health check-ups."

A study was conducted among 1982 rural and 1415 urban Indian men in Jaipur to determine the prevalence of various life style risk factors and their association with CAD prevalence A doctor administered questionnaire, physical examination and electrocardiography was used to diagnose CAD. Reports had shown that CAD was significantly more in urban men (urban 6.0% vs rural 3.4%, $P<0.001$). Odds ratios (95% confidence interval) for CAD and life style risk factors showed significant positive associations with sedentary life style and smoking."

A population-based survey conducted in India shown that old surveys printed to a low incidence of Ischemic Heart Disease [IHD] 1%-4%. Whereas recent surveys shows a figure of nearly 10% (96.7/1000). Hospital statistics indicating that the data from Christian Medical College, Vellore. All India Institute of Medical Sciences, New Delhi over a period of 30 years shows a decline in admission for Rheumatic heart disease (RHD) and an increase in admission for coronary artery disease. Clinical impression alone suggests that these have been phenomenal increase in IHD throughout India. The main reason for this is increase in life expectancy, smoking, a western style diet (with increase in saturated fat, salt, calories and lessintake of fiber) and decreased physical activity resulting in obesity."

Thus coronary artery disease is taking lives of millions each year. Taking measures to prevent the disease is of importance at the mean time adequate measures need to be taken to prevent its complication for the people who are already suffering from it. If not treated in time, experts opine that the coronary artery disease could lead to angina, heart attack and even death.

II. MATERIAL AND METHODS

Pre-experimental one-group pre-test - post-test research design was used to conduct the study. Based on the investigator's familiarity with the setting and availability of the samples the present study was conducted in General hospital Yelahanka, Bangalore. The sample size of the present study consists of 60 patients admitted to the selected hospital with coronary artery disease.

III. RESULTS

Table 1: Frequency and percentage distribution of respondents according to age, gender, qualification, years of experience, occupation dietary habit diagnostic procedures on prenatal.

Sr. No	Demographic Variables	Category	Frequency (f)	Percentage (%)
1	Age in years	31–44 years	34	56.67%
		45–57 years	14	23.33%
		58–70 years	12	20.00%
2	Gender	Male	16	26.67%
		Female	44	73.33%
3	Religion	Hindu	14	23.34%
		Muslim	35	58.33%
		Christian	11	18.33%
		Others	0	0.00%
4	Education	Primary education	0	0.00%
		Secondary education	20	33.34%
		Higher secondary	29	48.33%
		Graduate	11	18.33%
5	Occupation	Government	20	33.34%
		Private	29	48.33%
		Unemployed	11	18.33%
6	Dietary Habit	Vegetarian	14	23.33%
		Mixed Diet	46	76.67%
7	Family Income per month	≤ 10,000	17	28.33%
		10,001 – 15,000	31	51.67%
		≥ 15,001	12	20.00%

8	Duration of illness	a) Since one year or lesser	14	23.33%
		b) Since 2 years	13	21.67%
		c) Since 3 year or more	33	55.00%

The data given in table 1: depicts the frequency and percentage distribution of respondents by age, gender, religion, education, occupation, dietary habit, family income per month and duration of illness.

Out of 60 respondents with regard to age, majority 56.67% (34) were aged between 31-44 yrs., 23.33% (14) were aged between 45- 57 yrs., 20% (12) were between the age group of 58-70 yrs.

Considering the gender 73.33% (44) were female respondents and 26.67 %(16) were male respondents.

Considering the religion58.33% (35) were Muslims, 23.34% (14) were Hindus and 18.33% (11) were Christians

Considering the education maximum number of respondents 48.33% (29) had completed higher secondary, 33.34% (20) had completed secondary, 18.33%(11) had completed graduate and above respectively.

Considering the occupation the maximum number of respondents 48.33% (29) were working in Private sector, 33.34%(20) at government sector and 18.33%(11) were unemployed.

Considering the dietary habit, majority of respondents and 76.67%(46) were on mixed diet and 23.33%(14) were vegetarian respectively.

Considering family income per month majority of the respondents 51.67% (31) had Rs. 10,000, 28.33% (17) had between Rs.10, 001Rs.15, 000 and 20% had Rs. 15,000 respectively.
Considering the duration of illness majority of respondents 55% (33) were ill since 3yrs. Or more, 23.33% (14) were ill since l year or lesser and 21.67%(13) were ill since 2yrs.

TABLE 2: Frequency and percentage distribution of respondents on prevention of complications of coronary artery disease according to their level of knowledge in pre and post-test.

(N=60)

Level of knowledge	**Pre-test frequency**	**Pre-test %**	**Post-test frequency**	**Post-test %**
Inadequate knowledge (> 75%)	18	30	2	3.33
Moderate knowledge (51-75%)	40	66.67	16	26.67
Adequate knowledge (< 50%)	2	3.33	42	70

The above table 2 shows in the pre-test majority of them 40(66.67%) had moderate knowledge, 2(3.33%) had adequate knowledge and 18(30) had inadequate knowledge. In the post-test 16(26.67%) had moderate knowledge, 2(3.33%) had inadequate knowledge and 42(70) had adequate knowledge.

Table-3: Distribution of improvement score with Range, Mean and SD for overall level of knowledge among respondents on prevention of coronary artery disease.

Level of Knowledge	**Pre-test Frequency**	**Pre-test %**	**Post-test Frequency**	**Post-test %**
Inadequate knowledge (> 75%)	18	30	2	3.33
Moderate knowledge (51-75%)	40	66.67	16	26.67
Adequate knowledge (< 50%)	2	3.33	42	70

The above table-3 depicts the range, mean, SD, enhancement and paired 't' test value of knowledge score on prevention of complications of coronary artery disease in the pre-test and post-test. The obtained post-test Mean value 29 was higher than the pre-test 18.17. The enhancement between pre-test and post-test was 3.89 and obtained paired 't' test value was 21.76, it was highly significant at 5% level. Hence it is inferred that there is significant increase in the knowledge level of the respondents on prevention of complications of coronary artery disease after the administering self-instructional module.

Hence H: There will be a significant difference between the pre-test and post-test knowledge scores regarding prevention of complications of coronary artery disease is accepted.

IV. DISCUSSION

that the post-test mean score was higher than pre-test mean score in all the aspects of knowledge such Basic information related to Coronary artery disease mean score was (52, 79.67) with SD (1.14,1.02), Complications of coronary artery disease mean score was (53.89,81.44) with SD (2.53,1.42Treatment mean score was (49.2,80.3) with SD (1.69,1.29) and Prevention mean score was (47.55,80.45) with SD (1.81, 1.74).

The overall mean score was higher in the post-test 80.56with SD 4.23 than the pre-test mean 50.47and with SD 3.91

The above findings are consistent with a prospective study conducted in Mississippi among school aged children to test student's knowledge of cardiovascular disease. The total mean percentage of post test knowledge score was 97.1% with enhancement of 46.9% which showed gain in knowledge after planned teaching programme. [58]

V. CONCLUSION

The focus of study was conducted to evaluate the effectiveness of self-instructional module regarding prevention of complications of coronary artery disease among patients in Government Hospital, Yelahanka, Bangalore,

The study involved selection of 60 samples by the non-probability convenience sampling technique and collection of data by structured interview schedule. One group pre-test post-test design and evaluative approach was adopted to conduct the study. Data was analysed and interpreted by using descriptive and inferential statistics. The conclusions were drawn on the basis of the study findings, it includes

Respondents possess an average knowledge regarding complications o0f coronary artery disease. There was a considerable improvement of knowledge after self-instructional module.

The present study shows that there is significant association between knowledge scores of respondents regarding prevention of complications of coronary artery disease and variables like age, gender, education, religion, occupation, dietary habit, family income per month and duration of illness regarding prevention of complications of coronary artery disease among.

Implications of the Study

The findings of this study have implications for nursing practice, nursing education, nursing administration and nursing research.

Nursing Practice

The nurse can play an important role in the prevention of CAD. She can help people to cope with the problems associated with this and improve the quality of life of the people as a teacher, counselor, and facilitator

Nursing Education

Nursing education should focus more attention in giving health education to non-medical professionals and other categories of working people. The student nurse should be well prepared with adequate knowledge to give prompt information to public on non-communicable diseases and its prevention by using various methods of teaching like role play, puppet show and street play. They can motivate people regarding unhealthy lifestyles and habits and how they contribute to the development of CAD. In service education can be planned to nurses at various levels to enable them to improve their knowledge and also to gain skill in self assessment of risk factors of CAD.

Nursing Administration

Nurse administrators may use the study findings to improve the quality of care in the community. The concept of extended role of nurse offers many opportunities for a nurse administrator to improve the quality of life of the public. The nurse administrators in the higher level of authority must hold discussions and meetings.

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