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A Study to Assess the Effectiveness of Information Booklet on Knowledge of Middle Age Population Regarding Preventive Measures of Coronary Artery Disease in Selected Area at Kollam City, Kerala

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Abstract: ***A study to assess the effectiveness of information booklet on knowledge of middle age population regarding preventive measures of coronary artery disease in selected area at Kollam city, Kerala with the objective to assess the effectiveness of information booklet on knowledge of middle age population regarding preventive measures of coronary artery disease. The conceptual framework was done based on Conceptual Framework based on general system theory as postulated by Von Ludwig Bertalanffy (1968). To accomplish the objectives of the study, a pre - experimental one group pretest posttest study design was adopted. In this study, the sample consists of 60 middle age population who fulfilled the inclusion criteria for the study. The non - probability convenient sampling technique was used for this study. A structured socio demographic data, and Questionnaire to assess the knowledge regarding preventive measures of coronary artery disease were selected on the basis of the objectives of the study. In pretest the 10 (16.7%) samples knowledge level was adequate, and it became 52 (86.7%) in the posttest regarding preventive measures of coronary artery disease. There is significant difference between pretest and posttest symptoms scores as the t value is higher than the tabulated value in the p value 0.05 level of significance. It shows that there is a significant effectiveness on the administration of information booklet on knowledge regarding coronary artery disease. Therefore, the H_1 is accepted. The chi - square table explains that there is no significant association between socio demographic variables and knowledge level among middle age population as the chi - square value is lower than the tabulated value at 0.05 level of significance ($p<0.05$). Therefore, the H_2 is not accepted.***

Keywords: Information booklet; middle age population; and coronary artery disease

1. Introduction

Middle age is the period of age beyond young adulthood but before the onset of old age. 1 one of the risk factors for coronary artery disease is middle age. Getting older increases risk of damaged and narrowed arteries. Coronary artery disease is the buildup of plaque in the arteries that supply oxygen - rich blood to your heart. Plaque causes a narrowing or blockage that could result in a heart attack. Coronary artery disease is caused by atherosclerosis. As plaque continues to collect on artery walls, arteries narrow and stiffen. Plaque can clog or damage arteries, which limits or stops blood flow to heart muscle. If heart does not get enough blood, it can't get the oxygen and nutrients it needs to work properly. 2

Symptoms include chest pain or discomfort and shortness of breath. The most common symptoms are chest pain or shortness of breath, especially after light physical activity like walking upstairs, but even at rest. Diagnostic tests may include Electrocardiograph tests (EKG), Exercise stress tests: Pharmacologic stress test: I, Coronary calcium scan, Echocardiogram, Blood tests, Cardiac catheterization, Nuclear imaging and Computed tomography angiogram. 3

Coronary artery disease can lead to the following other heart conditions: Angina. Heart attack. Heart rhythm problems. Heart failure. Cardiogenic shock. Sudden cardiac arrest. You can reduce your chance of developing these heart conditions if you follow your cardiologist's treatment plan. 4

Treatments include lifestyle changes and medications that target your risk factors and/or possibly surgery. The first step in treating coronary artery disease is to reduce your risk factors. This involves making changes in your lifestyle. Limit alcohol use. Medication to lower your cholesterol levels, such as statins, bile acid sequestrants, niacin and fibrates. Medications to stop angina, such as nitrates/ nitroglycerin or ranolazine. Interventional procedures are nonsurgical treatments to get rid of plaque buildup in the arteries and prevent blockages. Common procedures are balloon angioplasty and stenting. Coronary artery bypass graft (CABG) surgery involves creating a new path for blood to flow when there is a blockage in the coronary arteries. 5

2. Need for study

Coronary artery disease (CAD) is the most common form of heart disease. It is the result of atheromatous changes in the vessels supplying the heart. CAD is used to describe a range of clinical disorders from asymptomatic atherosclerosis and stable angina to acute coronary syndrome (unstable angina, NSTEMI, STEMI). In India, it is still one of the leading causes of mortality. Initial evaluation of risk factors is the first step in the prevention of coronary artery diseases. 6

While the prevalence and mortality due to CHD is declining in the developed nations 2 the same cannot be held true for developing countries. There has been an alarming increase

over the past two decades in the prevalence of CHD and cardiovascular mortality in India and other south Asian countries. India is going through an epidemiologic transition whereby the burden of communicable diseases have declined slowly, but that of non - communicable diseases (NCD) has risen rapidly, thus leading to a dual burden. There has been a 4 - fold rise of CHD prevalence in India during the past 40 years. Current estimates from epidemiologic studies from various parts of the country indicate a prevalence of CHD to be between 7% and 13% in urban3–5 and 2% and 7% in rural6, 7 populations. 7

In the United States, cardiovascular disease is one of the leading causes of mortality, morbidity, and increased healthcare cost. According to the AHA, in 2018, 16.5 million people over 20 years of age have coronary artery disease. Mortality rates due to ischemic heart diseases are decreasing in developed countries like the United States and the United Kingdom. This decline is attributable to increased awareness of disease prevention 8

In a community - based cross - sectional study the overall age - adjusted prevalence of definite CAD was 3.5 %: men 4.8 %, women 2.6 % ($p < 0.001$). The prevalence of definite CAD in Kerala increased nearly three times since 1993 without any difference in urban and rural areas among middle aged population. 9 Therefore the researcher gave important to do this study to help the middle - aged population to understand about the preventive measures of coronary artery disease.

3. Objectives

1) To assess the pretest and posttest knowledge of middle age population regarding preventive measures of coronary artery disease.
2) To find the significant difference between pretest and post knowledge mean scores.
3) To find a significant association between pretest knowledge level and the selected socio demographic variables.

Hypothesis

H_1: To find the significant difference between pretest and post knowledge mean scores.

H_2: There will be significant association between pretest knowledge level and the selected socio demographic variables.

Assumptions

1) The middle age population may not have knowledge regarding preventive measures of coronary artery disease.
2) This study helps the researcher to provide the knowledge regarding preventive measures of coronary artery disease for the middle age population.

Operational definition

1) **Information booklet:** In this study, it refers that a booklet containing complete information regarding preventive measures of coronary artery disease designed to help middle age population to understand it.
2) **Middle age population:** In this study, it refers that the age between 45 to 65 years, who are all in selected area at Kollam city, Kerala.
3) **Coronary artery disease:** In this study, it refers that the buildup of plaque in the arteries that supply oxygen - rich blood to heart. Plaque causes a narrowing or blockage that could result in a heart attack.

4. Methodology

The conceptual framework was done based on **Conceptual Framework based on general system theory as postulated by Von Ludwig Bertalanffy (1968).** This study was done to assess the effectiveness of information booklet on knowledge of middle age population regarding preventive measures of coronary artery disease in selected area at Kollam city, Kerala. In order to accomplish the objectives of the study, a pre - experimental one group pretest posttest study design was adopted. In this study, the sample consists of 60middle age population who fulfilled the inclusion criteria for the study. The non - probability convenient sampling technique was used for this study. A structured socio demographic data, and Questionnaire to assess the knowledge regarding preventive measures of coronary artery disease were selected on the basis of the objectives of the study. Pilot study was conducted, then the main study was conducted from 07 - 09 - 2021 to 28 - 09 - 2021 at Kollam city, Kerala. The collected data was tabulated according to various parameters and the complete analysis was done with descriptive and inferential statistics.

5. Results

Table 1: Frequency and percentage distribution of socio demographic variables, n=60

S. No.	Variables		Frequency	Percentage
1	Gender	Male	30	50
		Female	30	50
2	Age in years	45 to 50	13	21.7
		50 to 55	16	26.7
		55 to 60	17	28.3
		60 to 65	14	23.3
3	Education	No formal	10	16.7
		Below high school	12	20
		High school	14	23.3
		Pre - degree	15	25
		UG and above	9	15
4	Type of family	Nuclear	33	55
		Joint	21	35
		Others	6	10
5	Income	High	11	18.3
		Middle	32	53.3
		Poor	17	28.3
6	Source of information	News paper	10	16.7
		TV, Radio	11	18.3
		Leaflets	7	11.7
		Health professionals	19	31.7
		Family members	13	21.7
7	Marital status	Single	6	10
		Married	47	78.3
		Widow	3	5
		Divorced	4	6.7
8	Occupation	Unemployed	9	15
		Govt employee	14	23.3

		Private sector	18	30
		Business	19	31.7
9	Are you suffering from any of the cardiac problem?	Yes	21	35
		No	39	65

The above table 1 shows that there was maximum 30 (50%) samples' gender was male and the remaining, 30 (50%) samples' gender was female. Maximum 17 (28.3%) samples' age in years was 55 to 60. Maximum 15 (25%) samples' education was pre - degree. Maximum 33 (55%) samples' type of family was nuclear family. Maximum 32 (53.3%) samples' income was middle income. Maximum 19 (31.7%) samples' source of information was health professionals. Maximum 47 (78.3%) samples' marital status was married. Maximum 19 (31.7%) samples' occupation was business. Maximum 39 (65%) samples are not suffering from any of the cardiac problems.

Table 2: Pretest and posttest knowledge of middle age population regarding preventive measures of coronary artery disease, n=60

Knowledge level	Pretest		Posttest	
	Frequency	Percentage	Frequency	Percentage
Inadequate	34	56.7	2	3.3
Moderate	16	26.7	6	10.0
Adequate	10	16.7	52	86.7

The table 2 shows that in pretest the 10 (16.7%) samples knowledge level was adequate, and it became 52 (86.7%) in the posttest regarding preventive measures of coronary artery disease.

Table 3: Assess the effectiveness of information booklet on knowledge of middle age population regarding preventive measures of coronary artery disease, n=60

Aspects	Standard Error Mean	Mean	SD	df	Students' paired t - test
Introduction	.306	2.733	2.371	59	8.929; P<0.05; S
Risk factors	.354	3.850	2.742	59	10.875; P<0.05; S
Preventive measures	.512	5.617	3.962	59	10.981; P<0.05; S
Overall	1.041	12.200	8.063	59	11.720; P<0.05; S

S=Significant; SD= Standard deviation

The above table 3 shows that there is significant difference between pretest and posttest symptoms scores as the t value is higher than the tabulated value in the p value 0.05 level of significance. It shows that there is a significant effectiveness on the administration of information booklet on knowledge regarding coronary artery disease. Therefore, the H_1 is accepted

Table 4: Assessment of significant association between practice on toilet training and the socio demographic variables, n=60

Socio - demographic Variables			<median	>=median	Total	Df	Chi - Square	Inference
1	Gender	Male	17	13	30	1	1.568	p>0.05NS
		Female	17	13	30			
2	Age in years	45 to 50	6	7	13	3	1.822	p>0.05NS
		50 to 55	11	5	16			
		55 to 60	10	7	17			
		60 to 65	7	7	14			
3	Education	No formal	5	5	10	4	2.692	p>0.05NS
		Below high school	7	5	12			
		High school	7	7	14			
		Pre - degree	11	4	15			
		UG and above	4	5	9			
4	Type of family	Nuclear	16	17	33	2	2.872	p>0.05NS
		Joint	15	6	21			
		Others	3	3	6			
5	Income	High	7	4	11	2	0.952	p>0.05NS
		Middle	19	13	32			
		Poor	8	9	17			
6	Source of information	News paper	7	3	10	4	3.761	p>0.05NS
		TV, Radio	8	3	11			
		Leaflets	4	3	7			
		Health professionals	10	9	19			
		Family members	5	8	13			
7	Marital status	Single	4	2	6	3	1.145	p>0.05NS
		Married	25	22	47			
		Widow	2	1	3			
		Divorced	3	1	4			
8	Occupation	Unemployed	4	5	9	3	1.53	p>0.05NS
		Govt employee	9	5	14			
		Private sector	9	9	18			
		Business	12	7	19			
9	Are you suffering from any of the cardiac problem?	Yes	12	9	21	1	0.003	p>0.05NS
		No	22	17	39			

The above chi - square table 4 explains that there is no significant association between socio demographic variables and knowledge level among middle age population as the chi - square value is lower than the tabulated value at 0.05 level of significance ($p<0.05$). Therefore, the H_2 is not accepted.

6. Discussion & Summary

According to gender the 30 (50%) samples' gender was male and the remaining, 30 (50%) samples' gender was female. Maximum 17 (28.3%) samples' age in years was 55 to 60. Maximum 15 (25%) samples' education was pre - degree. Maximum 33 (55%) samples' type of family was nuclear family. Maximum 32 (53.3%) samples' income was middle income. Maximum 19 (31.7%) samples' source of information was health professionals. Maximum 47 (78.3%) samples' marital status was married. Maximum 19 (31.7%) samples' occupation was business. Maximum 39 (65%) samples are not suffering from any of the cardiac problems.

In pretest the 10 (16.7%) samples knowledge level was adequate, and it became 52 (86.7%) in the posttest regarding preventive measures of coronary artery disease. There is significant difference between pretest and posttest symptoms scores as the t value is higher than the tabulated value in the p value 0.05 level of significance. It shows that there is a significant effectiveness on the administration of information booklet on knowledge regarding coronary artery disease. Therefore, the H_1 is accepted

The chi - square table explains that there is no significant association between socio demographic variables and knowledge level among middle age population as the chi - square value is lower than the tabulated value at 0.05 level of significance ($p<0.05$). Therefore, the H_2 is not accepted.

A supportive study was found. It was a cross - sectional study involved 1122 participants who filled the Heart Disease Fact Questionnaire (HDFQ) to assess the knowledge about risk factors for CVD, diabetes CVD link, and measures to reduce risk for CVD. Scores of ‘less than 50’, ‘between 51 to 70’ and ‘more than 70’ were rated as ‘poor’, ‘moderate’ and ‘good’ respectively. Quantitative data was computed as mean and standard deviation (SD) and was analyzed by independent - t test. This study shows that participants had almost 80% knowledge about modifiable risk factors and < 50 %knowledge about role of non - modifiable risk factors and role of diet and cholesterolin pathogenesis of CVD. Bridging the knowledge gap through educational interventions can improve awareness about CVD prevention and management among young population. 10

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