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A Study To Evaluate The Effectiveness Of Structured Teaching Programme On Knowledge Regardng Early Sign And Symptoms And Early Detection Of Myocardial Infarction Among Middle Age Adult (36-60 Years) At Selected Hospital Ghaziabad,U.P.

Mrs. Swati Sinha
Assistant Professor, Nursing Department,
Misra Nursing Institute of Asansol, Asansol, India

Abstract: Myocardial infarction are common problem among middle age adults. Mortality data from global burden of disease studies show that cardiovascular diseases ,particularly coronary heart disease, are the leading cause of death in India. Globally, of the 17.5 million deaths caused by cardio vascular diseases, 20% death occurred in high income countries, 8% in upper middle income countries, 37% in lower middle income countries and 35% in low income countries ,including India. The study was used a quantitative approach with quasi experimental design among 60 middle age adult in each group. The structured knowledge questionaries' tool was prepared and utilized to find the early signs and symptoms and early detection of myocardial infarction. The result of reliability of knowledge questionnaire was 0.97. The main study result revealed that the mean posttest knowledge score (25.77±2.90) of experimental group was higher than the mean pretest knowledge score (13.94). It was found that statistically significant ($p<0.000$) and mean posttest knowledge score (25.77±2.90) of control group was higher than the mean pretest knowledge score (13.54). .It was found that statistically not significant. The study concluded that structured teaching programme is necessary to improve the knowledge regarding early signs and symptoms and early detection of myocardial infarction there by promoting overall health.

I. INTRODUCTION

A heart is important parts which integrate the coronary artery for the process of oxygen supply and demand in order to function properly. Acute myocardial infarction is also known as heart attack is caused by reduces the diameter of lumen of coronary arteries through which there may cause a decrease in blood flow and oxygen delivery to the myocardium layer of the heart which is life threatening condition. Myocardial infarction silent and go undetected it is being notice that nearly 95 % of people who fatal cardiovascular diseases cleared the major risk factors: high blood pressure, smoking, sedentary life style, and diabetes beside a poor diet and over weight of MI through which the Atherosclerotic plaque and subsequent thrombus formations are the most common causes of MI. A 2019 study estimated that CVD's including MI caused over 80% of deaths in India, with an estimated 17 million annual deaths . According to WHO estimated 17.9 million people died from CVDs in 2019, representing 32% of all global deaths. of these deaths, 85% were due to heart attack and stroke. Over three quarters of CVD deaths take place in low- and middle-income countries

According to WHO reported that the cardiovascular diseases are one of the world's largest killer or life Taking disease. A study was conducted in New Delhi regarding changing lifestyles and less physical activities are critical approaches of myocardial infarctions, but nearly 76 percent people have never done a cardiac checkup to assess the hazard they face. around 60 percent of people between the ages 20 and 65 do not feel they have any path finder of myocardial infarction, even though nearly 20 percent already have a family history of heart attack. With the changing average rate it is being observed and clarify that the person suffering from MI has decrease with aspect rate of 40 to 30 years. It's a great matter concern for India.

II. NEED FOR THE STUDY

According to American health association, there are 32.4 million having Myocardial Infarction worldwide every day. Braunwald 2025 reported that by 2020, the rate of Myocardial Infarction will claim 25 million live annually. Myocardial infarction is the leading cause of death in the middle age adult population in the united states. cardiovascular disease are major and growing contribution to mortality and disability in south Asia. Young adults with hyperlipidemia, hypertension and diabetes are at increased risk of developing heart disease later in life. According to health statistics report 2025 prevalence of heart disease in rural area of kerala 7%. which include diabetes 20%, high blood pressure 42%, high cholesterol (>200mg/dl) 72%, smoking 42% and obesity 40%, cardiovascular is the foremost killer of people with diabetes. Myocardial Infarction is one of the leading causes of deaths in the developing countries like India. A study was conducted a hospital-based case-control study and collected data from the350 cases which has history of acute myocardial infarction and 700 controls matched on age, gender, and hospital in New Delhi and Bangalore.. The analysis, mainly focused on

the question of physical activity at work, showed that the overall corrected death rates are somewhat higher in men with heavy work, as compared with moderate and sedentary workers. The same applies to several other causes of death, individually considered, like "other degenerative heart disease" (excluding true coronary), "chronic bronchitis," and "violence." The only cause of death which definitely prevails in sedentary and moderate workers, as compared to the heavy ones, is coronary heart disease, defined by "myocardial infarction and sudden death of probable coronary origin," differences being statistically highly significant. From 2020 to 2024, statistic shows that cardiovascular disease including MI remains a Leading Cause of Death Globally and in India. The statistic expected to continue growing , reaching 2.94 billion by 2029.

III. METHODOLOGY

The methodology is the general pattern of organizing the procedure of gathering valid reliable data for the problem under investigation.The methodology of research refers to controlled investigation of the way of obtaining, organizing and analysis data. Methodological studies address the development, validation, and evaluation of research tools and techniques .

Research Approach

A quantitative approach was used for the study.

Research Design

The study was carried with quasi experimental design with non -randomized control group design.

Variable of the Study

Independent variable – Structured teaching program on early sign and symptoms and early detection of MI.
Dependent variable – knowledge on MI among middle aged person.

Accessible Population

Middle aged adults admitted patients in selected hospital at Ghaziabad

Sample & Sampling Technique

Middle aged adult (36 to 60 years) admitted patient's in selected hospital at Ghaziabad by purposive sampling technique used for the study.

SAMPLECRITERIA:-Inclusion Criteria:-

- Middle age Adults, who are willing to participate in the research.
- Middle age Adults, who can read, write and speak Hindi and English.
- Middle age Adults, who are high risk of myocardial infarction

Exclusion Criteria:-

- Middle age Adults, who are not available during the data collection time.
- Middle age Adults, who are admitted in hospital .

DESCRIPTION OF DATA TOOL:-

The study questionnaire were proposed based on the review of literature, consultation express to assess the knowledge of MI. A structured questionnaire was developed to assess the knowledge on middle aged adults on early sign and symptoms and early detection of MI.

DEVELOPMENT OF THE TOOL:-

The research tool was consists of two part.

Part-A : DEMOGRAPHIC DATA

The study was included the demographic data such as age in year, gender, education, marital status, family income, occupation, dietary pattern, habit, exercise ,types of family, religion, residence , BMI calculator, presence of disease, family history of heart attack.

Part-B : KNOWLEDGE SCORE

In the study used questions to find the information regarding knowledge about early sign and symptoms and early detection of MI. Each Question Had four Choice and the score for each right answer was 1 and for wrong answer 0 marks. In the current study for The knowledge score was divided in the adequate for those who scored > 75%, those who scored moderate knowledge 40 to 74%, inadequate knowledge below 39%.

Part-C : KNOWLEDGE RISK FACTOR

Tool carried out regarding their knowledge of risk factor for MI , in which items were measured on a three point scale(yes, No, don't know)

After the initial draft the questionnaires, it was sent for a Hindi translation to translator experts.

Content validity

The content validity was established by asking experts in the fields to evaluate the questionnaire

Ethical approval & in termed consent

The study was approved by the Institutional ethical committee and formal administrative approval was obtained from the hospital and additional, written in termed consent obtained from the participants

Pilot study

The pilot study was conducted from 16/1/2017 to 22/1/2017 , after prior permission from concerned authority of hospital, 36 to 60 years middle aged adult patients were selected by purposive sampling techniques from selected hospital to ensure the conceptual understanding of the questionnaire and to start the plan for analysis

Reliability

The reliability of the questionnaire was determined by using Cronbach's alpha to knowledge of risk factor was termed to be reliable 0.85 and Karl Pearson's correlation coefficient was used for structured knowledge questionaries' of early sign and symptoms and early detection , it was found to be reliable 0 .97. Hence it is statistically significant and reliable.

DATA COLLECTION PROCEDURE

Permission was obtained from the Medical superintendent and nursing superintendent of Yashoda hospital. Then I introduced myself to the participant regarding the tool and questionnaire. Pre survey was done to find out the high risk group.

Phase1

Pretest was conducted to assess the knowledge regarding early sign and symptom and early detection of MI using an administered questionnaire. Pre-test was conducted among the middle age adults of both experimental and control group on 4/2/2017 and 5/2/2017 by using the multiple choice questionnaires.

Phase2

Immediately after pretest, structured teaching programe regarding early sign and symptom of myocardial infarction was presented to experimental group. Time period was approximately 20 minute in hospital.

Phase3

After one week post test was administered to assess the knowledge with the help of same questionnaire in both experimental and control group

IV. ANALYSIS AND INTERPRETATION

Analysis is the process of systematic arranging and analysis the data so as find answer of research questions & test hypothesis.

It is also defined as 'the process of systematically applying statistical and logical techniques to describe, summarize and compare data'

RESULTS:

SECTION A

Table:1 Allotment of score

S NO	DESCRIPTION	MAX. SCORE	ADEQUATE	MODERATE	INADEQUATE
1.	Knowledge	30 (100%)	21-30 (75-100%)	11-20 (40-74%)	BELOW11 (<39%)

The table indicates the assessment of knowledge by asking total 30 questions to middle age adults regarding early sign and symptoms of MI before and after giving the structured teaching program. Scores are categorized into three categories; adequate, moderate and inadequate. The middle age adults scoring between 21-30 (75-100%) will be categorized in adequate knowledge, middle age adults scoring between 11-20(40-74%) will be categorized in moderate knowledge and middle age adults scoring below 11 (<39) will be categorized in inadequate knowledge. Maximum score is 30 (100%).

SECTION A

TABLE 2: High risk group of MI among middle age adults

N=116

S.no.	Groups	Frequency	Percentage
1.	High risk group	65	56.04%
2.	Moderate risk group	20	17.26%
3.	Low risk group	31	26.70%

SECTION B

DEMOGRAPHIC PROFILE

Table3: Frequency and percentage distribution of Respondents by Age

S.no	Demographic characteristics	Experimental group		Control group	
1.	**Age**	**Frequency**	**Percentage**	**Frequency**	**Percentage**
	36year-40 year	4	13.34	1	3.33
	41year-45 year	5	16.65	6	20
	46year-50 year	4	13.34	4	13.34
	51year–55 year	8	26.67	10	33.33
	56year-60 year	9	30	9	30
2.	**Gender**				
	Male	24	80	24	80
	Female	6	20	6	20
3	**Marital status**				
	Married	27	90	25	83.34
	Unmarried	2	6.67	1	3.33
	Divorce	0	-	2	6.67
	Widow/Widower	1	3.33	2	6.66
4	**Religion**				
	Hindu	24	80	25	83.34
	Non Hindu	6	20	5	16.65
5	**Residence**				
	Rural	5	16.65	8	26.67
	Urban	25	83.34	22	73.33
6.	**Types of family**				
	Nuclear	1	3.33	0	0
	Extended	4	13.34	4	13.34
7	**Education**				
	Secondary	0	0	0	0
	Senior secondary	3	10	2	6.66
	Graduation	7	23.34	8	26.67
	Post-graduation	20	66.67	19	63.34

	Others	0	0	1	3.33
8	**Occupation**				
	Govt. job	20	66.67	20	66.67
	Private job	7	23.34	8	26.67
	House wife	3	10	2	6.66
	Labor work	0	0	0	0
	Unemployed	0	0	0	0
9	**Family Income**				
	5000-10,000	0	-	0	-
	10,001-15,000	2	6.67	2	6.67
	15,001-20,000	1	3.33	1	3.33
	More than 20,000	27	90	27	90
10	**Dietary pattern**				
	Vegetarian	3	10	10	33.33
	Non- vegetarian	27	90	20	66.67
11	**Habit**				
	Smoking	20	66.67	20	66.67
	Alcohol	7	23.34	8	26.67
	Tobacco	3	10	2	6.66
	Others	0	0	0	0
12	**BMI Calculator**				
	Underweight	0	0	0	0
	Normal	1	3.33	8	26.67
	Overweight	27	90	12	40
	Obesity	2	6.67	10	33.33
13	**Exercise**				
	Regular	7	23.34	8	26.67
	Sometimes	10	33.33	11	36.66
	No	13	43.33	11	36.66
14	**Family history of heart attack**				
	Yes	3	10	19	63.34
	No	27	90	11	36.66
15	**Presence of heart disease**				
	Yes	24	80	24	80

	No	6	20	6	20

SECTION C

Level of knowledge among middle age adults in experimental and control group.

Table 4: Frequency and percentage distribution of sample according to their level of knowledge in experimental and control group.

Level of knowledge	Range	Experimental group				Control group			
		Pre-test		Post-test		Pre-test		Post-test	
		f	%	f	%	f	%	f	%
Inadequate	0-10	8	26.67	-	-	6	20	7	23.34
Moderate	11-20	20	66.67	1	3.33	21	70	20	66.67
Adequate	21-30	2	6.66	29	96.67	3	10	3	10

The table 4 indicates that in pre test of experimental group, 66.67% of the middle age adults respondents belonged to the moderate level of knowledge (range 11-20) in pre-test, followed by 26.67% of the middle age adults respondents belonged to the inadequate level of knowledge (range0-10)in pre-test, followed by6.66% of the middle age adults respondents belonged to the adequate level of knowledge (range 21-30) in pre- test.

The table 4 indicates that in post test of experimental group, 96.67% of the middle age adults respondents belonged to the Adequate level of knowledge (range 21- 30) in post-test, followed by 3.33% of the middle age adults respondents belonged to the moderate level of knowledge (range 11-20) in post- test.

The table 4 also indicates that in pre test of control group, 70% of the middle age adults respondents belonged to the moderate level of knowledge (range 11-20) in pre-test, followed by 20% of the middle age adults respondents belonged to the inadequate level of knowledge (range 0-10) in pre- test, followed by 10 % of the middle age adults respondents belonged to the adequate level of knowledge (range 21-30) in pre- test.

The table 4 also indicates that in post test of control group, 66.67% of the middle age adults respondents belonged to the moderate level of knowledge(range11-20)in post-test, followed by 23.34% of the middle age adults respondents belonged to the inadequate level of knowledge (range 0-10) in post- test, followed by 10 % of the middle age adults respondents belonged to the adequate level of knowledge (range 21-30) in post- test.

23.34% of the middle age adults respondents belonged to the inadequate level of knowledge (range 0-10) in post- test, followed by 10 % of the middle age adults respondents belonged to the adequate level of knowledge (range 21-30) in post- test.

SECTION D

Effectiveness of structured teaching program in experimental group. Comparison of pre-test and post-test knowledge scores paired 't' test was used.

Table 5: Mean, standard deviation, mean difference and 't' value of pre-test and post-test knowledge scores in the experimental group.

N=30

Test	Mean Score	Standard deviation	Mean difference	't' value
Pre-test	13.94	5.78	11.83	18.78*
Post-test	25.77	2.90		

T_{29}=1.699, p<0.05 * Significant

The Table 11 indicates that in the pretest the mean score of experimental group was 13.94, the standard deviation was 5.78, in post test mean score was obtained 25.77, the standard deviation was 2.90.The mean difference obtained between the pre test and post test was11.83.The't'value obtained was 18.78 and p< 0.05. It shows that there was a significant difference between pre test knowledge and post test knowledge. Hence the hypothesis was accepted.

SECTION E

Comparisons of post-test knowledge score in the experimental and control group.

To test the statistical significance between the post- test knowledge scores in the experimental and control group In depended' test was computed and the following null hypothesis $H_{02}$was stated.

Table 6: Mean, standard deviation, mean difference and 't' value of post- test knowledge scores of the experimental and control group

N_1=30,N_2=30

Test	Mean score	Standard deviation	Mean difference	't' value
Experimental group	25.77	2.90	12.21	16.44*
Control group	13.56	4.54		

T_{58}=1.671p< 0.05 * Significant

The Table 12 indicates that the mean score of experimental group was 25.77; the standard deviation was 2.90, while the mean score of control group was 13.56, and the standard deviation was 4.54. The mean difference between the post test knowledge score of experimental group and control group 12.21. The't' value obtained was 16.44 and p< 0.05. It shows that there was a significant difference between post test knowledge of experimental group and control group.

SECTION F: Association between pre-test knowledge score and selected demographic variables

The chi Square was computed to determine the significance of association between knowledge regarding early sign and symptoms and early detection of MI with selected demographic variables at level of significance in experimental and control group. It indicates the association between pretest knowledge with selected demographic variables that is age, gender, education, marital status, family income, occupation and presence of disease.

In selected demographic variables that is education and presence of disease is significant. and other selected demographic variable that is age, gender, marital status, family income and job experience is non- significant.

DISCUSSION

"A Study To Evaluate The Effectiveness Of Structured Teaching Programme On Knowledge Regarding Early Signs And Symptoms And Early Detection Of Myocardial Infarction Among Middle Age Adults(36-60 Years) At Selected Hospital Ghaziabad, U.P.

The first objective of the study was to identify the number of middle age adults at high risk of myocardial infarction. The present study reveals that after the pre survey56.04% middle age adultsbelongedtohighriskgroup,17.26%middleageadultsbelongedtomoderateriskgroup, 26.70%middle age adults belonged to low risk group.

The second objective of the study was to assess the knowledge regarding early symptoms of myocardial infarction among middle age adults at high risk for myocardial infarction of selected banks of Moradabad. The study reveals that during pre-test assessment, in experimental group 66.67% of the middle age adults were had moderate knowledge, 26.67% of the bank were had inadequate knowledge, 6.66% of the middle age adults had adequate knowledge. In control group, 70%ofthemiddleageadultswerehadmoderateknowledge20%ofthemiddleageadults were had inadequate knowledge, 10 % of the hospital?

The third objective of the study was to determine the effectiveness of structured teaching programme in term of knowledge regarding early sign and symptoms and early detection of myocardial infarction among middle age adults at high risk of myocardial infarction. The study reveals that In experimental group mean pre-test knowledge value was 13.94, the standard deviation was 5.78, in post test mean score was obtained 25.77, the standard deviation was 2.90. The mean difference obtained between the pretest and post test was 11.83. The't' value obtained was 18.78.Which is statistically significant at 0.05level of significance. Effectiveness of health awareness program was effective in increasing the knowledge level of middle age adults in experimental group.

The post test mean score of experimental group was 25.77, the standard deviation was 2.90,while the mean score of control group was 13.56, and the standard deviation was 4.54. The mean difference between the post test knowledge score of experimental group and control group12.21. The‘t’ value obtained was 16.44 and p< 0.05. It shows that there was a significant difference between post test knowledge of experimental group and control group.

Fourth objective of present study was to determine the association between the knowledge of middle age adults on early sign and symptoms and early detection of myocardial infarction, with their selected socio-demographic variables. The present study findings revealed that there is significant association between knowledge regarding early symptoms of MI with their selected demographic variables is self education and presence of disease.

The finding was supported by following studies:

Lele Pallaviet. al (2014) conducted a study to assess the Effectiveness of planned teaching on knowledge of early signs and symptoms and immediate treatment of MI among patients .Result reveals that Majority 38% sample were51-60 years of age group,82%males.It was state Samples had alcohol habits , chewing tobacco, and. Smoking. Samples were having Ischemic Heart Disease 72% and Diabetes with Ischemic Heart Disease28%. In posttest evaluation 80 to 100% samples were knowledge of the heart structure and function, disease process, risk factors, disease meaning and also about the signs and symptoms, medications, action of drugs, doses of drugs and complications of MI. Most samples became knowledge of the modification in exercise, diet, regular medicine and follow up.

Robertaet.al (2009) Conducted A cohort study on total 1,047 workers with a socio demographic interview to identify cardiovascular risk factors. In the study 87% were male with 36-38 years mean age. 83%was sedentary lifestyle and 63% was overweight, 45% were in the pre- hypertension range. Result of this study was sedentary lifestyle and Overweight is risk factors of cardiovascular disease in a industry workers population.

The findings has dealt with analysis, interpretation and discussion of the collected on 60 middle age adults. Descriptive and inferential statistics were used for analysis. Tables used to depict the findings. Relationship and comparison between certain were tested by computing‘t’ value and chi-square.

CONCLUSION

The focus of this study was to evaluate the effectiveness of structured teaching programme regarding knowledge of early sign and symptoms and early detection of MI among middle age adults in selected hospital of Ghaziabad , U.P. Quasi experimental method was used in study. data was collected from 60 sample (30 in experimental group and 30 in control group) through non-probability sampling technique- purposive sampling method was used to select the sample for experimental and control group.

In experimental group majority of respondents had moderate knowledge percentage 66.67% followed by 26.67% inadequate knowledge followed by 6.66% of the middle age adults respondents belonged to the adequate level of knowledge in pre- test. Whereas 96.67% respondents had adequate knowledge followed by 3.33% respondents had moderate level of knowledge in post test.

In control group, 70% respondents had moderate knowledge, followed by 20% respondents had inadequate knowledge, followed by 10 % respondents had adequate knowledge in pre- test. Whereas 66.67% respondents had moderate knowledge followed by 23.34% respondents belonged inadequate knowledge, followed by10 % respondents adequate knowledge in post- test.

From the finding of the study in experimental group the mean post test knowledge scores25.77 of middle age adults was higher than the pre- test knowledge scores of 13.94 The obtained mean difference 11.83 mean, while, the 't' value of for df (29) was significant at 0.05 level. In comparison between the mean score of experimental group were 25.77, while the mean score ofcontrolgroupwas13.56.The mean difference between the posttest knowledge score of experimental group and control group 12.21. The't' value obtained was 16.44 and $p< 0.05$. It shows that there was a significant difference between post test knowledge of experimental group and control group.

This indicated the difference obtained in the mean pretest and mean posttest knowledge score in experimental study is true different and not by chance.

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