Effectiveness of Structured Teaching Program on Knowledge Regarding Risk Factors of Coronary Artery Disease and Its Prevention among Patients with Hypertension

M. Malarvizhi*, Vimala Mary**, Vijayasamundeeswari*, Bhavani***

Abstract

Coronary artery disease is affecting Indians 5-10 years earlier than other communities. Indians also show higher incidence of hospitalization, morbidity, and mortality than other ethnic groups. WHO estimated that, over the next 10 years, India will lose 237 billion US Dollar due to heart disease, stroke and diabetes. Hence, the investigator evaluated the effectiveness of structured teaching program by comparing pre test and post test scores. The findings revealed that in the post test, more than half of the adults 71.67% had attained moderately adequate knowledge, 28.33% had attained adequate knowledge and no one had inadequate knowledge. So, its Nurses role to enhance the knowledge of the patient about hypertension and its risk factors in preventing from further complications.

Keywords: Hypertension; Coronary Artery Disease; Knowledge; Structured Teaching.

Introduction

Hypertension remains standard risk factors associated with coronary artery disease. Hypertension is increasing in urban population, as compared to rural population. In metropolitan cities diabetes mellitus is about 20% in middle age and additional 20% may be having impaired glucose tolerance, even moderate elevation of glucose in Indians is associated with increased risk of coronary artery disease. In contrast to decreasing mean cholesterol levels in the USA, the mean serum cholesterol level in urban Indians rising in Delhi, the mean serum cholesterol level as rising from 160mg/dl in 1982 to 199mg/dl in 1994. Indians with lower levels of serum cholesterol have higher risk of coronary artery disease.

Coronary artery disease is a disease of the artery caused by the accumulation of atheromatous plaques within the walls of the arteries that supply the myocardium. Coronary artery disease present before the age of 55 in men and 65 in women. A healthy lifestyle can help prevent coronary artery disease and help keep it from progressing. A heart-healthy lifestyle includes eating right, regular exercise, maintaining a healthy weight, no smoking, moderate drinking, no recreational drugs, controlling hypertension, and managing stress. Cardiac rehabilitation programs are excellent to help prevent recurring coronary problems for people who are at risk and who have had coronary events and procedures.

Need for the Study

According to World Health Organization (WHO) bulletins, 1.2 million Indians died from heart disease in 1990 and it predicts that by 2010, 100 million Indians will have heart disease (25% of all cardiac patients globally) and by 2020, India will supersede all other nations in terms of coronary artery disease prevalence.

The union budget presented by the Finance Minister of India, allocated 4 million U.S. dollar to the National Program for the prevention of cardiovascular disease, diabetes and stroke. If these looming threats of escalating epidemics of diabetes and cardiovascular disease are neglected, the adverse effect on development are likely to be unaffordable

Author Affiliation: *Lecturer, Faculty of Nursing, Sri Ramachandra University. **Assistant Professor, St. John's College of Nursing, Bangalore. ***Research Scholar, Sri Ramachandra University, Chennai.

Correspondance: M. Malarvizhi, Lecturer, Faculty of Nursing, Sri Ramachandra University, No.1, Ramachandra Nagar, Porur, Chennai, Tamil Nadu 600116.
E-mail: malarvizhi23@gmail.com

for a country that is now on the fast track of economic development and aspire to be a major economic power in the 21ˢᵗ century.

It has been proved effective, that a structured teaching program conducted on a sample of 36 coronary artery disease patients for a period spanning around 12 weeks found to raise the awareness of patient's knowledge regarding the need for adherence to prescribed diets which in turn helped them to lower their cholesterol level and their risk factor level was reduced.

All these findings led the investigator to a conclusion that the nurses are in the key position to provide persons with necessary guidance, help them on the emotionally fatigued time, to bring them back into the normal stream of life.

Objectives of the Study

1. To assess the level of knowledge regarding risk factors of coronary artery disease and its prevention among patients with hypertension

2. To evaluate the effectiveness of structured teaching program by comparing pre test and post test scores.

3. To determine the association between knowledge regarding risk factors of coronary artery disease and its prevention among adults with selected demographic variables.

Review of Literature

Ashfaq F, Goel PK, Sethi R, Khan MI,et al. (2013). A cross sectional study was conducted on North Indian patients. Aim to evaluate lipoprotein (a) levels in relation to severity of coronary artery disease. A total of 360 patients presenting with chest pain selected, multivariate analysis was done. Result shows that lipoprotein (a) 21.0 mg/dL is associated with the presence of coronary lesions (P = 0.0001). A highly significant difference in lipoprotein (a) levels was observed between normal coronaries vs. single-vessel disease, double-and triple-vessel disease (P < 0.0001). Body mass index (BMI) was significantly raised in coronary artery disease group compared to normal coronary. Study concludes that lipoprotein (a) was considered an independent predictor for severity of CAD and lipoprotein (a) levels 21.0 mg/dL are associated with severe patterns of coronary atherosclerosis.

Murthy PD, Prasad KT, Gopal PV, Rao KV, Rao RM.(2012). A cross sectional community based study was conducted on prevalence of coronary artery disease and its risk factors in an urban population in Andhra Pradesh. A total of 534 people selected, multiple logistic regression analysis was done. Result shows that. Prevalence of CAD increased with an increase in total cholesterol (P < 0.01), serum triglycerides (P < 0.01) low density lipoprotein (LDL) cholesterol (P < 0.01) and total cholesterol/high density lipoprotein cholesterol ratio (P < 0.01). Study conclude that prevalence of CAD in urban Andhra Pradesh is alarmingly high as observed in other parts of India and urgent steps are to be taken to adopt life style changes to control risk factors.

Driscol J. M, Shavel R, Cushion C J. (2007). experimental study was conducted on a patient population of 100 for finding out the effective patient education system and the conclusion of the experimental study was structured teaching program was found to be effective and the patient population to be educated must not exceed a particular limit of more than 10-15 in order to reduce the chance of decreased attention to the patient during the education process.

Methodology

The research design chosen for the study was descriptive in nature with 60 patients. The target population of study includes both male and female patients who are admitted in medical ward, Sri Ramachandra hospital. The samples were selected through convenience sampling technique.

Results

Table 1: Frequency and Percentage distribution of patients with hypertension on Knowledge regarding Risk Factors of Coronary Artery Disease and its Prevention   (N=60)

Age in Years	Frequency	Percentage
a. 26-35years	13	21.67
b. 36-45years	24	40.00
c. 46- 55years	16	26.67
d. 56-65years	7	11.67
e. 66 and above	0	0.00
Gender		
a. Male	36	60.00

b. Female	24	40.00
Educational status		
a. Illiterate	0	0.00
b. Primary	16	26.67
c. Secondary	14	23.33
d. Higher secondary	20	33.33
e. Graduate and above	10	16.67
Habits		
a. Smoking	24	40.00
b. Alcoholism	14	23.33
c. Tobacco Chewing	5	8.33
d. None	17	28.33
Food Pattern		
a. Vegetarian	23	38.33
b. Non-Vegetarian	37	61.67
Previous knowledge regarding risk factors of		
coronary artery disease and its prevention		
a. Yes	18	30.00
b. No	42	70.00
Source of Information		
a. Family	9	15.00
b. Friends	13	21.67
c. Mass Media	28	46.67
d. Others	10	16.67

Table 2: Frequency and Percentage distribution of level of knowledge on Risk
Factors of Coronary Artery Disease and its Prevention   (N=60)

Level of knowledge	Pre test		Post test	
	No	%	No	%
Inadequate (<50%)	46	76.67	0	0
Moderate (50--75%)	14	23.33	43	71.67
Adequate (>75%)	0	0	17	28.33

The above tablecompares the pre and post test knowledge of adults regarding risk factors of coronary artery disease and its prevention. The frequency and percentage distribution of knowledge on pre test were, more than half of adults 76.67% had inadequate knowledge, 23.33% had moderately adequate and no one had adequate knowledge. And in post test, of the adults 71.67% had attained moderately adequate knowledge, 28.33% had attained adequate knowledge and no one had inadequate knowledge.

Discussion

Major Findings in the Study

According to Age

21.67% were belongs to the age of 26-35yrs, 40% were within the age group of 36-45yrs, 26.67% of adults were 46-55yrs,11.67% of adults were 56-65yrs.

According to Gender

60% were males and the rest 40 % were females.

According to the Religion

56.67% were Hindu, 26.67% were Muslims and 16.67% were Christian.

Regarding the Economic Status

8.33% were having below 2000 rupees, 16.67% were with in 2001 and 4000 rupees, 33.33% were with in 4001 and 5000 rupees and 41.67% were having the family income of above 5001 rupees.

On the Basis of Educational Status

0% were illiterate, 26.67% have attended primary schools, 23.33% have their high school certificate, 33.33% have higher secondary level of education and only 16.67% were graduates and above.

According to Occupation of Adults

8.33% were Unemployed, 25% were Government employees, 28.33% were private employees and 11.67% of the adults were coolies. Meanwhile, 26.67% of adults are working in other sectors.

Regarding Habits of Adults

40% were smoker, 23.33% were alcoholics, 8.33%

were tobacco chewers, and remaining 28.33% were none of the habits.

According the Food Pattern of Adults

38.33% were Vegetarian and 61.67% were Non-vegetarian.

Regarding Previous Knowledge

30% of adults had some awareness regarding risk factors of coronary artery disease and its prevention, and remaining 70% did not attend any classes regarding risk factors of coronary artery disease and its prevention.

Regarding the Source of Information

15% were got the information from family, 21.67% attained information from friends, and 46.67% of adults got information from mass media remaining 16.67% got information from other sources.

Pre Test Knowledge Regarding Risk Factors of Coronary Artery Disease and its Prevention

The levels of knowledge were seen into 3categories, inadequate, moderate and adequate. In pre test more than two third of the adults 76.67% had inadequate knowledge, 23.33% had moderately adequate knowledge and no one had adequate knowledge.

Post Test Knowledge Regarding Risk Factors of Coronary Artery Disease and its Prevention

In the post test, more than half of the adults 71.67% had attained moderately adequate knowledge, 28.33% had attained adequate knowledge and no one had inadequate knowledge.

Evaluating the Effectiveness of STP Regarding Risk Factors of Coronary Artery Disease and its Prevention

Therefore t value is found to be extremely statistically significant. And the research hypothesis stated that there will be significant difference between the pre test and post test level of knowledge of adults regarding risk factors of coronary artery disease and its preventionwas accepted. This supports that the STP was effective

Association of Knowledge Regardingrisk Factors of Coronary Artery Disease and its Prevention and Selected Socio-Demographic Variables

The results of Chi-square analysis indicate that there was significant association between knowledge with age of the adult,gender,religion, food pattern, previous knowledge of adult regarding risk factors of coronary artery disease and its prevention. The rest of the socio demographic variables were not significantly associated with knowledge regarding risk factors of coronary artery disease and its prevention.

Conclusion

Coronary artery disease is the most common form of heart disease in the Western world. Prevention centers on the modifiable risk factors, which include decreasing cholesterol levels, addressing obesity and hypertension, avoiding a sedentary lifestyle, making healthy dietary choices, and stopping smoking. There is some evidence that lowering homocysteine levels may contribute to more heart attacks. In diabetes mellitus, there is little evidence that very tight blood sugar control actually improves cardiac risk although improved sugar control appears to decrease other undesirable problems like kidney failure and blindness. Some recommend a diet rich in omega-3 fatty acids and vitamin C. The World Health Organization (WHO) recommends "low to moderate alcohol intake" to reduce risk of coronary artery disease although this remains without scientific cause and effect proof.

A healthy lifestyle can help prevent coronary artery disease and help keep it from progressing. A heart-healthy lifestyle includes eating right, regular exercise, maintaining a healthy weight, no smoking, moderate drinking, no recreational drugs, controlling hypertension, and managing stress. Cardiac rehabilitation programs are excellent to help prevent recurring coronary problems for people who are at risk and who have had coronary events and procedures.

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