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A Study to Evaluate the Effectiveness of Structured Teaching Programme on Knowledge Regarding Prevention of Coronary Artery Disease among Adults in Kale Village Karad

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Abstract: ***In India, coronary artery disease is one of the leading causes of death. Evidence based guidelines are recommending multiple drug therapy (statins, aspirin, ACE-I and beta-blockers) for the prevention of CAD. Clinical data for the secondary prevention of CAD are endorsing significant mortality benefits with these evidence based therapy. In real life clinical practice, there is inadequacy of knowledge regarding coronary artery disease so researcher planned to provide structured teaching programme. Aim & Objectives: To evaluate the effectiveness of structure teaching programme on knowledge regarding prevention of coronary artery disease among adults in kale village karad .Material & Methods: Evaluative study was conducted on 30 adult of Kale rural population by using interview schedule method. The data was collected tabulated and analyzed in terms of objectives of the study, using descriptive and inferential statistics. Results: It was found that there was deficit in knowledge about coronary Artery Disease among adults during pre test percentage (46.17%), and post test knowledge percentage (70 %), and actual gain score was 23.83 The mean post –test knowledge score was found to be significantly higher than the pre test score that the gain in knowledge score is statistically significant P value < 0.0001 levels. There for the structured teaching programme on Prevention of CAD is effective in improving the knowledge of adults.***

Keywords: Prevention, Evaluate, structured teaching programme (STP), Knowledge

1. Introduction

"As the arteries grow hard, the heart grows soft". *(willium benkinson)* The heart is the engine of human life. Beating almost 100,000 times a day, more than 36 million times each year, Endlessly Beating examines the heart as a muscle, pushing approximately five quarts of blood in an endless course to deliver oxygen to every cell of the human body. [1]

Coronary artery disease (CAD) continues to be a major cause of morbidity and mortality in Western societies. Approximately two out of every three incidents of myocardial infarction (MI) occur without warning and of note, one third of first MIs are fatal; 20% of patients die out of hospital and 13% die within the first 24 to 48 hours of hospitalization. [2]

Coronary artery disease is a condition in which the blood supply to the heart muscle is partially or completely blocked. The heart muscle needs a constant supply of oxygen-rich blood. The coronary arteries, which branch off the aorta just after it leaves the heart, deliver this blood. Coronary artery disease can block blood flow, causing chest pain (angina) or a heart attack (also called myocardial infarction). [3] Coronary artery disease was once widely thought to be a man's disease. On average, men develop it about 10 years earlier than women because, until menopause, women are protected by high levels of estrogen. However, after menopause, coronary artery disease becomes more common among women. Among people aged 75 and older, a higher proportion of women have the disease, because women live longer [4].

In developed countries, coronary artery disease is the leading cause of death in both men and women. Coronary artery disease, specifically coronary atherosclerosis (literally "hardening of the arteries," which involves fatty deposits in the artery walls and may progress to narrowing and even blockage of blood flow in the artery), occurs in about 5 to 9% (depending on sex and race) of people aged 20 and older [5]. The death rate increases with age and overall is higher for men than for women, particularly between the ages of 35 and 55. After age 55, the death rate for men declines, and the rate for women continues to climb. After age 70 to 75, the death rate for women exceeds that for men who are the same age [6]. Coronary artery disease affects people of all races, but the incidence is extremely high among blacks and Southeast Asians. The death rate is higher for black men than for white men until age 60 and is higher for black women than for white women until age 75. Having one or two drinks of alcohol a day appears to slightly reduce the risk of coronary artery disease (while slightly increasing that of stroke). However, having more than two drinks a day increases the risk, and the larger the amount, the greater the risk [7]

2. Literature Survey

1.M Sadeghi MD, H.Ruhafza etal 2006, conducted study on the prevalence of CAD. Cross sectional study 6498 people aged above 35 yrs, multy stage cluster sampling was conducted in the provincial cities of Isfahan. 3338 women and 3160 men participated in the study. The prevalence of CAD based on the Rose questioner and Minnesota coding was 37.5% in women and 22.2% in men. The prevalence of definite possible MI based on ECG was higher in men, however a higher prevalence of possible and definite ischemia was found in women.

2. Rosanne Crouch 2008 conducted a descriptive study on perception knowledge and awareness of coronary artery disease among rural Australian women 25 to 65 yrs of age. The study included sixty five women participants. Only 13% (n = 8) of participant identified heart disease as the most significant health problem for women sixty four percent of women participating in the study reported that breast cancer claims more lives than heart disease . life style modifications can substantially after morbidity and mortality from CAD.

3.Dariush Mozaffarian , Renata Micha, Sarah Wallace 2009 conducted study on coronary Heart Disease of increasing poly unsaturated fat in place of saturated fat . A systolic review and meta analysis of randomised controlled trials. In study investigate included population characteristics , control and intervention diets, follow up duration, types of events , risk ratio and SEs pooled effects were calculated using inverse variance weighted random effects meta analysis from 346 identified abstract , eight trials met inclusion criteria totalling 13. 614 participates with 1,042 CHD events . Average weighted PUF consumption was 14.9 % energy (range 8.0 % - 20.7%) in intervention groups versus 5.0 % energy (range 4.0 % - 6.4%) in control . the overall pooled risk reduction was 19 % (RR = 0.81,95 % confidence interval [CI] 0.70-0.95, P=0.008) corresponding to 10% reduced CHD risk (RR = 0.90,95% CI = 0.83-0.97) for each 5% energy of increased PUFA without evidence for statistical heterogeneity (Q statistic P = 0.13 , I^2 = 37%) . Meta regression identified study duration as an independent determinant of risk reduction P = 0.017 with studies of longer duration showing greater benefits. These finding provide evidence that consuming PUFA in place of SFA reduces CHD events in RCTs . this suggest that rather than trying to lower PUFA consumption a shift towards greater population PUFA consumption in place of SFA would significantly reduce rate of CHD.

Objectives of the Study

1) To assess the knowledge of adults of kale village regarding prevention of coronary artery disease before the administration of structured teaching programme.
2) To evaluate the effectiveness of structured teaching programme regarding prevention of coronary artery disease in the adults of kale village, Karad.
3) To find the association the post test knowledge score of adults with selected socio demographic data.

3. Materials and Methods

The investigator carried out the study in 30 subjects from Kale rural population by using interview schedule method. The study was conducted in year 2012 in month of October. Purposive sampling technique was used. Institutional ethics Committee approval and informed consent from the subjects were taken before the study. The tool consisted of structured questionnaire .The structured questionnaire was constructed by the investigator to assess the knowledge oral health hazards. SECTION I: Socio demographic data. (Total items were 11) SECTION II: Questionnaire on personal history regarding health habits & other history (Total items were 20) The STP was titled "prevention of coronary artery disease**"** calculated paired't' value (t=14.687) is greater hence H1 is to be accepted. This indicates that the gain in knowledge score is statistically significant P value < 0.0001 levels. There for the structured teaching programme on Prevention of CAD is effective in improving the knowledge of adults.

4. Results

Table 1: Frequency and percentage distribution of adult according to demographic variable. N=30

Sr. No	Demographic variable	Frequency	%
1	**Age**		
	31-40 years	**13**	**43.3**
	41- 50 years	**17**	**56.6**
	51- 60 years	-	-
	61-70years	-	-
2	**Gender**		
	Female	**25**	**83.3**
	Male	**5**	**16.6**
3	**Education**		
	Illiterate	**8**	**26.6**
	Primary	**11**	**37**
	Secondary	**7**	**23.3**
	Graduation & Post Graduate	**4**	**13.3**
4	**Occupation**		
	House Wife	**21**	**70**
	Employed	**1**	**3.3**
	Farmer	**7**	**23.3**
	Self employed	**1**	**3.3**
5	**Family**		
	Nuclear	**23**	**76.6**
	Joint	**7**	**23.3**
6	**Religion**		
	Hindu	**21**	**70**
	Muslim	**7**	**23.3**
	Baudh	**1**	**3.3**
	Others	**1**	**3.3**
7	**Diet**		
	Vegetarian	**7**	**23.3**
	Non Vegetarian	**1**	**3.3**
	Mixed	**22**	**73.3**
8	**Income**		
	Less than Rs. 2000	**13**	**43.3**
	Rs. 2001-3000	**9**	**30**
	Rs. 3001-4000	**7**	**23.3**
	Rs. 5000and Above	**1**	**3.3**

The data presented in table 1 indicates that in 17 (56.6 %) belongs to 41- 50 yrs of age . Majority adults 25 (83.3%) females . Majority adults 11 (37 %) were educated up to primary education and 4 (13.3%) were post graduate .

Maximum number that 23 (76.6 %) from nuclear 7 (23.3 %) from joint family . Majority adults 21 (70%) were house wife and 1 (3.3%) were doing job. Maximum adults 21 (70%) are belongs to Hindu religion 1 (3.3%) were belongs to other religion . Maximum adults 22 (73.3%) are consuming mixed type of diet and 1 (3.3%) are having non-vegetarian diets . Maximum ADULTS 13(43.3%) having monthly incom Rs. 2000 and less and 1 (3.3%) were Rs. 4001 – 5000 more.

Table 2: Frequency and percentage distribution of adult according to habit variable.N=30

Sr. No	*Habit variable*	*Frequency*	*%*
1	**Disease condition**		
	Heart Attack	**5**	**16.6**
	Diabetic Mellitus	-	-
	Cancer	-	-
	No any other disease	**25**	**83.3**
2	**Sigaret smoking**		
	Every Day	-	-
	Very ofenly	-	-
	Alternet day	-	-
	No	**30**	**100**
3	**Alcoholic**		
	Every Day	-	-
	Very ofenly	-	-
	Alternet day	-	-
	No	**30**	**100**
4	**Tobacco Chewing**		
	Every Day	**16**	**53.3**
	Very ofenly	-	-
	Alternet day	-	-
	No	**14**	**46.6**

Table 3: Area wise frequency and percentage distribution of pre test level of knowledge on prevention of coronary artery disease, = **30**

Knowledge area on prevention of CAD	**Good**		**Average**		**Poor**	
	F	**%**	**F**	**%**	**F**	**%**
	6	20	20	66.67	4	13.33

Out of 30 samples of adults in order to assess the knowledge of prevention of coronary artery disease 6 (20%) are having good knowledge, 20 (66.67%) of the subject are having average knowledge, 4(13.33%) of the subject having poor knowledge.

Table 4: Area wise frequency and percentage distribution of post test level of knowledge on prevention of coronary artery disease N= 30

Knowledge area on prevention of CAD	**Good**		**Average**		**Poor**	
	F	**%**	**F**	**%**	**F**	**%**
	7	23.33	20	66.67	3	10

Data in table 4 indicates that Out of 30 samples of adults in order to assess the post test level knowledge of prevention of coronary artery disease 7 (23.33%) are having good knowledge, 20 (66.67%) of the subject are having average knowledge, 3 (10 %) of the subject having poor knowledge .

Table 5 Mean, Median, standard deviation of knowledge of adults on prevention of CAD. N=30

Sr. No	Parameters	Pre test	Post test	Difference
1	Mean	7.57	14	6.43
2	Median	7	14	7
3	Standard deviation	2.16	1.91	0.25

Table 6: Data showing difference between pre test and post test mean and t values of knowledge score.

Sr. No		**Mean**	**SD**	**t Value**	**p Value**	**Inference**
1	**Pre test**	**7.57**	**2.16**	**14.687**	**<0.0001**	**HS**
2	**Post test**	**14**	**1.91**			
HS= Highly Significant						

Table 6 reveals that the calculated paired‘t’ value (t=14.687) is greater hence H1 is to be accepted. This indicates that the gain in knowledge score is statistically significant P value < 0.0001 levels. There for the structured teaching programme on Prevention of CAD is effective in improving the knowledge of adults

Table 7: Association between post score knowledge and selected demographic variables of coronary artery disease

Post test knowledge							
S. No	**Variables**	**Good**	**Average**	**Poor**	**Chi-square**	P Value	Df
1	**Age in year**				**1.921**		
	31- 40 years	**1**	**9**	**3**			
	41- 50 year	**2**	**14**	**1**		0.383	2
2	**Gender**				**1.425**		
	Female	**0**	**4**	**1**			
	Male	**3**	**19**	**4**		0.491	2
3	**Occupation +**				**3.913**		
	House wife	**3**	**14**	**4**			
	Employed	**0**	**9**	**0**		0.141	2
4	**Religion ***				**5.311**		
	Hindu	**3**	**17**	**11**			
	Muslim	**0**	**6**	**3**		0.07	2
5	**Education@**				**5.801**		
	Below secondary	**0**	**16**	**3**			
	Above Secondary	**3**	**7**	**1**		0.055	2
6	**Diet #**				**2.779**		
	Vegetarian	**0**	**7**	**0**			
	Mixed	**3**	**16**	**4**		0.249	2

Key:-+ : Indicate that occupation House wife and employed has compiled and farming and business has complied for analysis purpose.
*Indicates religion Muslim, Boudh and other has complied for analysis purpose.
@ Indicates Primary and secondary complied in to below secondary and higher secondary graduation and post graduation complied in to above secondary for analysis purpose.
# Indicates that diet vegetarian and non vegetarian has complied for analysis purpose.

The findings in tables 7 reveals that there was no statistical significant association between post test knowledge and socio demographic variables so H0 is accepted.

5. Discussion

There were no contradictory /similar results are found to support the study. William B. Kannel, MD shown their findings recommended guidelines of blood pressure, total cholesterol, and LDL cholesterol effectively predict CHD risk in a middle-aged while population sample. A simple coronary disease prediction algorithm was developed using categorical variables, which allows physicians to predict multivariate CHD risk in patients without overt CHD. **H.Ruhafza etal 2006**, conducted study on the prevalence of CAD. The prevalence of definite possible MI based on ECG was higher in men, however a higher prevalence of possible and definite ischemia was found in women.

6. Conclusion

The mean post –test knowledge score was found to be significantly higher than the pre test score**.** Post test showed significant improvement in the level of knowledge on prevention of CAD. Thus it be calculated that STP is an effective method of teaching in adults to improve the knowledge regarding CAD.

7. Future Scope

Nursing Practice: Since the present study showed that most of the adults had average knowledge on prevention of CAD , this present study will enable them to become aware about prevention of CAD and cure the disease in the society . so the nurses can take help from the study and practice health education using STP.

Nursing Administration: This study emphasizes the need for health education programme on prevention of CAD to improve the knowledge of adults in their day today life. The STP and tool can be used while giving health education.

Nursing Education: Nursing education has an ample opportunity to educate regarding prevention of CAD. The finding of the study and the STP can be used as reference material for student nurses.

Nursing Research: Their is a growing need for furnishing nursing research in all areas of health care. The nurses researcher especially beginner need to enhance their knowledge. The nuse researcher may effectively use the result of available studies and recommended on the importance of early identification and prevention of further illness.

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