

A STUDY TO EVALUATE THE EFFECTIVENESS OF VIDEO ASSISTED TEACHING PROGRAM ON KNOWLEDGE REGARDING PREVENTION OF CORONARY ARTERY DISEASE AMONG ADULTS AT SELECTED RURAL AREA MEERUT

Mr. Narottam Soni¹, Dr. Aayushi Bansal², Dr. Tanvir Bano³, Prof. Dr. S. Balamani Bose⁴, Mr. Shishir Kumar⁵

¹ M.Sc. Nursing Student, College of Nursing, LLRM Medical College, Meerut, Uttar Pradesh, India. E-MAIL ID: narottamsoni17@gmail.com ORCHID ID- 0009-0005-5660-211X.

² Professor & HOD, College of Nursing, LLRM Medical College, Department of Community Health Nursing, Meerut, Uttar Pradesh, India E-MAIL ID: aayushichaudhary123@gmail.com ORCHID ID- 0000-0002-2864-2801

³ Professor, Department of Community Medicine (SPM), LLRM Medical College, Meerut, Uttar Pradesh, India E-MAIL ID: tanveerbano1970@gmail.com ORCHID ID- 0000-0003-2266-3406

⁴ Principal, College of Nursing, LLRM Medical College, Meerut, Uttar Pradesh, E-MAIL ID: balabosejeeva@gmail.com ORCHID ID- 0009-0000-2983-1789

⁵ Mr Shishir Kumar, Associate Professor, Department of Community Health Nursing, College of Nursing, LLRM Medical College, Meerut, Uttar Pradesh, India Email ID: shishirthakur.1990@gmail.com, ORCID ID: 0009-0007-3484-2395

*Corresponding Author: Prof. Dr S. Balamani Bose.

ABSTRACT

Introduction: Coronary artery disease (CAD) remains a leading cause of morbidity and mortality worldwide. Despite being largely preventable through lifestyle modification, awareness regarding CAD prevention remains inadequate among rural populations. Educational interventions such as video-assisted teaching programs may improve knowledge and promote preventive practices.

Objective: To evaluate the effectiveness of a video-assisted teaching program on knowledge regarding prevention of coronary artery disease among adults residing in a rural area of Meerut District.

Methods: A quantitative pre-experimental one-group pre-test post-test design was adopted. Sixty adults aged 30–60 years were selected using purposive sampling from a rural community in Meerut District, Uttar Pradesh, India. Data were collected using a structured knowledge questionnaire. Following the pre-test, participants received a video-assisted teaching program on CAD prevention. A post-test was conducted after seven days. Descriptive statistics and inferential statistics (paired t-test and chi-square test) were used for data analysis.

Results: The mean pre-test knowledge score was 12.12 ± 3.83 , which increased to 18.10 ± 2.63 in the post-test. The calculated paired t-value was 14.45 ($p < 0.001$), indicating a statistically significant improvement in knowledge following the intervention. Among the selected demographic variables, physical activity showed a significant association with pre-test knowledge levels ($\chi^2 = 14.93$, $p = 0.02$), whereas age, gender, education, occupation, income, marital status, family history of heart disease, bad habits, and weight showed no significant association.

Conclusion: The video-assisted teaching program was effective in improving knowledge regarding prevention of coronary artery disease among adults in the rural community. Community-based educational interventions can play a significant role in strengthening cardiovascular disease prevention strategies.

KEYWORDS: Coronary Artery Disease; Video-Assisted Teaching Program; Knowledge; Prevention; Adults; Rural Community; Health Education

INTRODUCTION

According to the World Health Organization (WHO) and related data, coronary artery disease (CAD) is the leading global killer, causing about 9 million deaths annually (as of 2016 data), with 85% of cardiovascular deaths from heart attack and stroke, and over 75% of deaths occurring in low/middle-income countries. Prevalence is rising globally, especially in developing nations due to lifestyle changes, affecting millions (e.g., 315 million cases globally in 2022), with significant variations by region, age, and gender, showing higher trends in urban areas and among women post-menopause.

Coronary Artery Disease (CAD) represents a significant global health burden, accounting for approximately 17.9 million deaths annually according to WHO 2023 data. In India, the prevalence of CAD has risen dramatically over the past two decades, with rural areas witnessing a sharper increase (from 2% in 1970 to 10-15% currently). This epidemiological transition is attributed to rapid urbanization of rural lifestyles, dietary changes, increased tobacco use, and sedentary occupations. Every year five million people in India experience a sudden cardiac event. There are about 25 million cases of cardiovascular diseases in India. The prevalence of CAD in different countries varies from 10 per cent to 40 per cent. Epidemiological studies show that there were 29.8 million CAD patients in the year 2004 that are projected to increase to 46.9 million in 2010 and 61.5 million in 2015 according to the Indian National Commission on Macroeconomics a Health

and Global burden of disease studies. Another major concern is occurrence of first event at a younger age in Indians and presence of coronary artery disease at presentation. Over 80% of deaths and 85% of disability from CAD occur in low- and middle-income countries. The Indian subcontinent is home to 20% of the world 's population and may be one of the regions with the highest burden of CAD in the world.

OBJECTIVES OF THE STUDY WERE:

1. To assess the pre and post-test knowledge level regarding prevention of coronary artery disease (CAD) among adults.
2. To evaluate the effectiveness of the video-assisted teaching program on knowledge scores regarding coronary artery disease (CAD) prevention among adults.
3. To determine the association between the pre-test level of knowledge regarding prevention of coronary artery disease (CAD) among adults with selected demographic variables.

METHODOLOGY

A quantitative research approach with a pre-experimental one-group pre-test post-test design was adopted to evaluate the effectiveness of a Video-Assisted Teaching Programme (VATP) on knowledge regarding prevention of coronary artery disease (CAD) among adults. The study was conducted in a selected rural area of Machhra Block, Meerut District, Uttar Pradesh, India. The study population comprised adults residing in the selected rural area. A total of 60 adults aged 30–60 years were recruited using a non-probability purposive sampling technique. Eligible participants were those aged 30–60 years, residing in the selected rural area, willing to participate, available throughout the intervention and follow-up period, and able to understand Hindi. Individuals with a known diagnosis of coronary artery disease, healthcare professionals, critically ill adults, and those unwilling to participate were excluded from the study. Written informed consent was obtained from all participants after explaining the purpose of the study and assuring confidentiality of the information provided. Data were collected using a structured knowledge questionnaire comprising demographic variables and items related to the prevention of coronary artery disease. After obtaining ethical clearance from the Institutional Ethics Committee and administrative permission from the concerned authorities, a pre-test was conducted to assess participants' baseline knowledge regarding prevention of coronary artery disease. Subsequently, the Video-Assisted Teaching Programme was administered, covering the definition, risk factors, signs and symptoms, complications, preventive measures, healthy dietary habits, physical activity, weight management, smoking cessation, and stress management related to coronary artery disease. A post-test was conducted seven days after the intervention using the same structured questionnaire. Data were analysed using descriptive and inferential statistics. The effectiveness of the Video-Assisted Teaching Programme was determined by comparing pre-test and post-test knowledge scores. A p-value of less than 0.05 was considered statistically significant.

RESULTS

The findings of the study are presented according to the objectives of the study. The data were organized and analyzed using descriptive and inferential statistics.

Table 1: Frequency and Percentage Distribution Table of Socio-Demographic Variables Among Adults
N=60

Demographic Variable		Frequency	Percentage
AGE			
A	30-40 Yrs	25	41.67%
B	41-50 Yrs	18	30.00%
C	51-60 Yrs	13	21.67%
D	> 60 Yrs	4	6.67%
GENDER			
A	Male	38	63.33%
B	Female	22	36.67%
C	Other	0	0
EDUCATION			
A	No formal education	10	16.67%
B	Primary	23	38.33%
C	Intermediate	13	21.67%
D	Graduation & above	14	23.33%
OCCUPATION			
A	Self-employed	25	41.67%
B	Government employed	9	15%
C	Private job	11	18.33%

Demographic Variable		Frequency	Percentage
D	Unemployed	15	25%
FAMILY INCOME PER MONTH(INR)			
A	< 10,000	26	43.33%
B	10,001–20,000	8	13.33%
C	20,001–30,000	6	10.00%
D	30,000- 40,000	11	18.33%
E	> 40,000	9	15%
MARITAL STATUS			
A	Married	42	70%
B	Unmarried	17	28.33%
C	Divorced	1	1.67%
D	Separated	0	0
"FAMILY HISTORY OF HEART DISEASE"			
A	Present	35	58.33%
B	Absent	25	41.67%
BAD HABIT			
A	Smoking	15	25%
B	Tobacco	9	15%
C	Alcohol	7	11.67%
D	None	29	48.33%
PHYSICAL ACTIVITY			
A	Sedentary (mostly sitting/lying).	15	25%
B	Light (walking, household work).	27	45%
C	Moderate (cycling, farming).	14	23.33%
D	Heavy (lifting, hard work).	4	6.67%
WEIGHT			
A	45-50 kg	6	10%
B	51-60 kg	15	25%
C	61-70 kg	18	30%
D	71-80 kg	15	25%
E	> 80 kg	6	10%

Table 2: Assess the pre-test knowledge level regarding prevention of coronary artery disease (CAD) among adults.N= 60

Level of Knowledge	Frequency	Percentage
Inadequate Knowledge	11	18.34%
Moderate Knowledge	38	63.33%
Adequate Knowledge	11	18.33%
Grand Total	60	100%

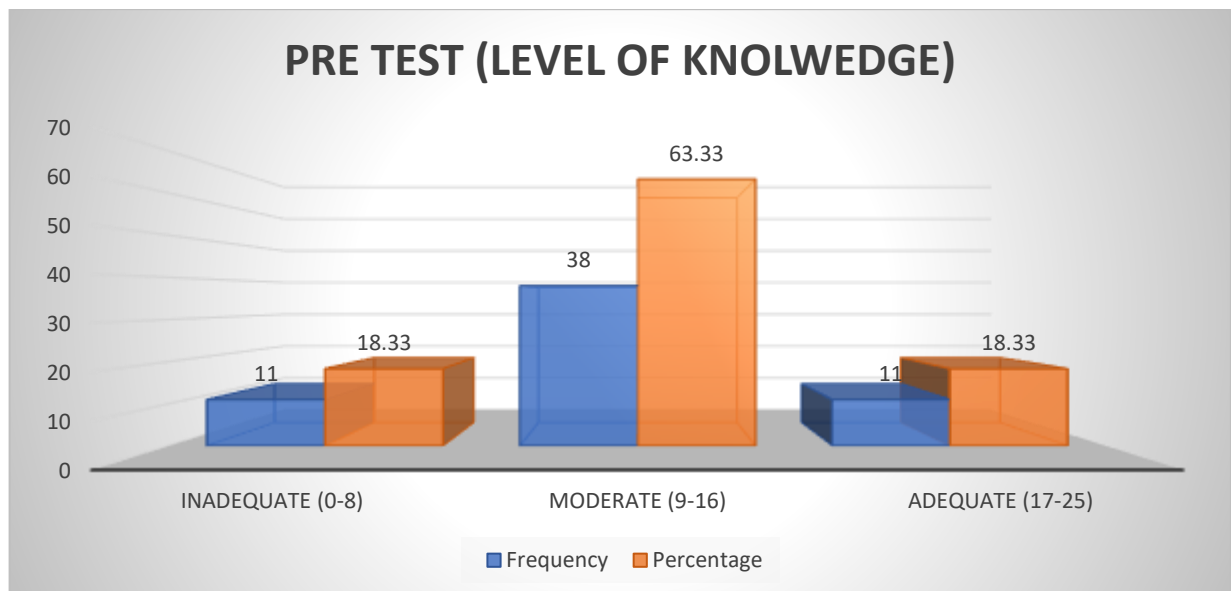


Fig.11 Shows frequency & percentage distribution of pre-test knowledge level regarding prevention of coronary artery disease (CAD) among adults.

Table 3: Frequency & Percentage Distribution of post-test knowledge scores regarding CAD prevention among adults. N=60

Level of knowledge	Frequency	Percentage
Inadequate Knowledge	9	15%
Moderate Knowledge	46	76.67%
Adequate Knowledge	5	8.33%
Grand Total	60	100%

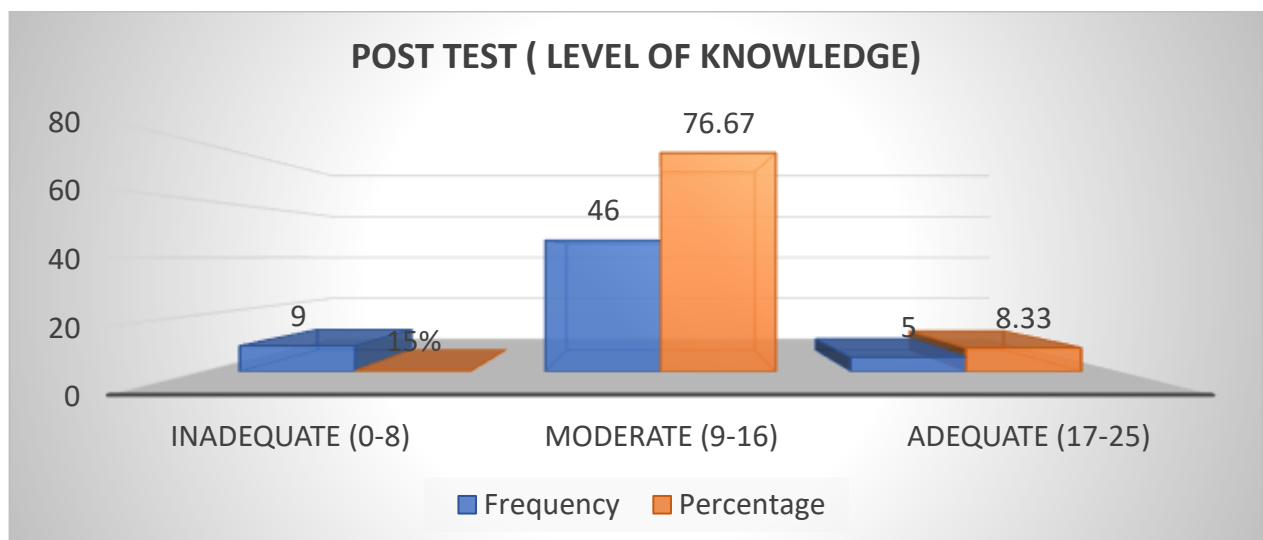


Fig.13 Shows frequency & percentage distribution of post-test knowledge level regarding prevention of coronary artery disease (CAD) among adults.

Table 5: Comparison of Frequency of Knowledge level Prevention of Coronary Artery Disease in pretest and post test

Level of Knowledge	Pre-test		Post-test	
	Frequency	Percentage	Frequency	Percentage
Inadequate Knowledge	11	18.34%	9	15.00%
Moderate Knowledge	38	63.33%	46	76.67%
Adequate Knowledge	11	18.33%	5	8.33%
Grand Total	60	100.00%	60	100%

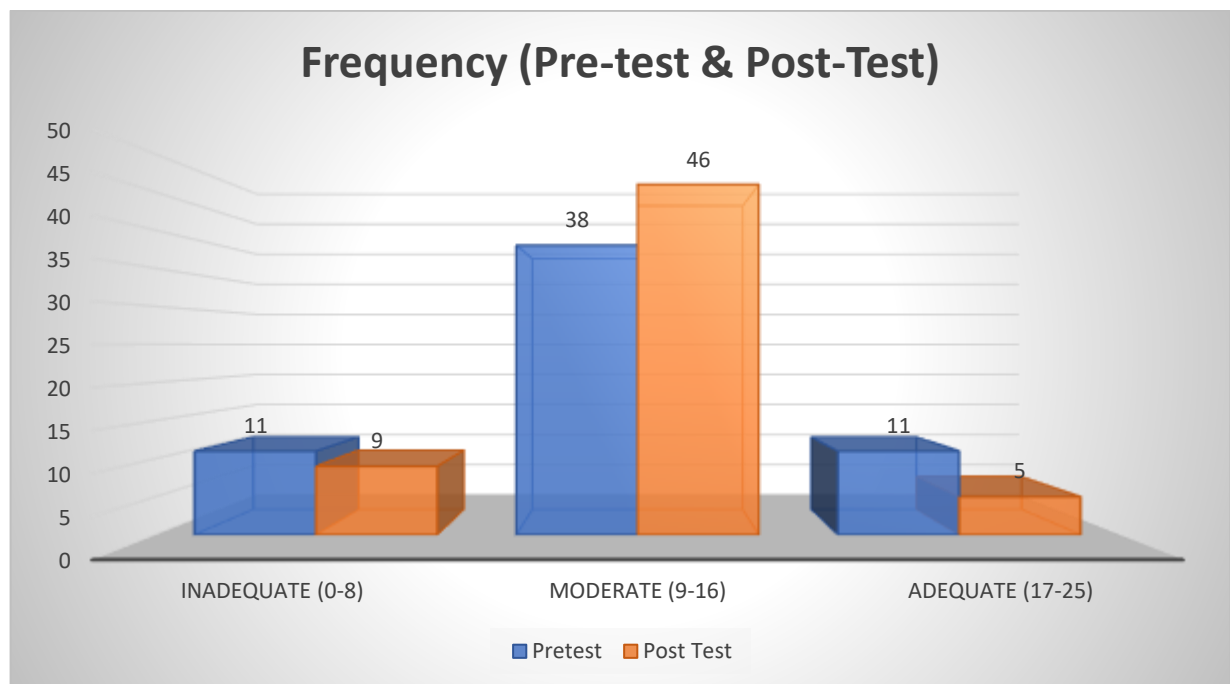


Fig.15: Shows Frequency of Knowledge level in pretest and post test

Table 7: Comparison of Pre-test and Post-test Knowledge Scores Regarding Prevention of Coronary Artery Disease Among Adults N=60

	Mean	SD	Df	t-value.	t- table	P- Value	Significance
Pre test	12.12	3.83	59	14.45	1.67	0.00	S
Post Test	18.10	2.63					

(T (59) = 1.67 at $p < 0.05$, S= significant at $p < 0.05$ level of significance.)

Table 8: Association Between Pre-Test Knowledge Score with Selected Demographic Variables. N=60

Demographic Variable	Inadequate Knowledge	Moderate Knowledge	Adequate Knowledge	dF	Chi Sq calculate	Chi square table	P-value	Significance
AGE								
30-40 Yrs	2	21	2	6	12.30	12.59	0.06	NS
41-50 Yrs	4	11	3					
51-60 Yrs	3	5	5					
> 60 Yrs	2	1	1					
GENDER								
Male	10	21	7	2	4.67	5.99	0.10	NS
Female	1	17	4					
EDUCATION								

No formal education	3	4	3	6	7.05	12.59	0.32	NS
Primary	6	13	4					
Intermediate	0	11	2					
Graduation & above	2	10	2					
OCCUPATION								
Self-employed	5	15	5	6	1.93	12.59	0.93	NS
Government employed	1	6	2					
Private job	1	8	2					
Unemployed	4	9	2					

Demographic Variable	Inadequate Knowledge	Moderate Knowledge	Adequate Knowledge	dF	Chi Sq calculate	Chi square table	P-value	Significance
FAMILY INCOME PER MONTH(INR)								
< 10,000	6	15	5	8	3.63	15.51	0.89	NS
10,001–20,000	2	5	1					
20,001–30,000	1	5	0					
30,000- 40,000	1	7	3					
> 40,000	1	6	2					
MARITAL STATUS								
Married	6	28	8	4	2.47	9.49	0.65	NS
Unmarried	5	9	3					
Divorced	0	1	0					
FAMILY HISTORY OF HEART DISEASE"								

Present	8	19	8	2.00	2.96	5.99	0.23	NS
Absent	3	19	3					
BAD HABIT								
Smoking	4	8	3	6	9.42	12.59	0.15	NS
Tobacco	2	7	0					
Alcohol	3	2	2					
None	2	21	6					
PHYSICAL ACTIVITY								
Sedentary (mostly sitting/lying).	4	11	0	6	14.93	12.59	0.02	S
Light (walking, household work).	2	15	10					
Moderate (cycling, farming).	3	10	1					
Heavy (lifting, hard work).	2	2	0					
WEIGHT								
45-50 kg	0	6	0	8	10.95	15.51	0.20	NS

Demographic Variable	Inadequate Knowledge	Moderate Knowledge	Adequate Knowledge	dF	Chi Sq calculate	Chi square table	P-value	Significance
51-60 kg	4	10	1					
61-70 kg	2	11	5					
71-80 kg	3	7	5					
> 80 kg	2	4	0					

(p<0.05 level of significance) S: significant, NS: Non- significant

Pre-test assessment shows that, the majority of participants (63.33%) had moderate knowledge regarding prevention of coronary artery disease, while 18.33% had inadequate knowledge and only 18.33% had adequate knowledge. The findings indicate the need for educational interventions to improve awareness regarding CAD prevention among adults.

Post -test assessment was conducted after administration of the Video-Assisted Teaching Programme, which shows that, none of the participants had inadequate knowledge. The majority of adults (75.00%) achieved adequate knowledge, while 25.00% demonstrated moderate knowledge. These findings suggest a substantial improvement in knowledge following the educational intervention.

Comparison of pre-test and post-test knowledge scores among adults revealed that the mean pre-test knowledge score was 12.12 ± 3.83 , whereas the mean post-test score increased to 18.10 ± 2.63 . The calculated paired t-value was 14.45, which was statistically significant ($p < 0.001$). This finding confirms that the Video-Assisted Teaching Programme was effective in improving knowledge regarding prevention of coronary artery disease. Chi-square analysis revealed that physical activity showed a statistically significant association with knowledge levels ($\chi^2 = 14.93$, $p = 0.02$). However, age, gender, educational status, occupation, monthly family income, marital status, family history of heart disease, smoking/alcohol habits, and body weight were not significantly associated with pre-test knowledge scores ($p > 0.05$).

DISCUSSION

The findings of the present study revealed that adults in selected rural areas of Meerut District had moderate baseline knowledge regarding prevention of coronary artery disease before the intervention. After administration of the video-assisted teaching programme, there was a marked improvement in knowledge scores among the participants. In the pre-test, 18.33% of adults had inadequate knowledge, 63.33% had moderate knowledge, and 18.33% had adequate knowledge

regarding CAD prevention. However, in the post-test, no participant had inadequate knowledge, while 75.00% achieved adequate knowledge. The mean knowledge score increased from 12.12 ± 3.83 in the pre-test to 18.10 ± 2.63 in the post-test. The calculated t-value of 14.45 showed that the improvement was statistically highly significant. These findings indicate that the video-assisted teaching programme was effective in improving knowledge regarding prevention of coronary artery disease among adults.

The present findings are also consistent with Ray and Clement (2024), who reported that adequate knowledge regarding CAD risk factors increased significantly among hypertensive patients after video-assisted teaching. Vinil Upendrababu et al. (2025) also observed statistically significant improvement in post-test knowledge scores among hospitalized patients after implementation of a structured teaching module regarding CAD prevention. Similarly, Sankalp Gaikwad et al. (2026) found that structured teaching programmes significantly improved knowledge, attitude, and preventive health behaviours among nursing students regarding coronary artery disease prevention. The study further revealed that physical activity had a statistically significant association with pre-test knowledge scores regarding CAD prevention, whereas other demographic variables did not show significant association. Similar findings were reported by Sibhatu et al. (2025), who found associations between demographic variables and preventive practices related to coronary artery disease. Adhikary et al. (2022) also highlighted physical inactivity as one of the major predictors of coronary artery disease.

Overall, the findings of the present study and supporting literature confirm that video-assisted teaching programmes and structured educational interventions are effective methods for improving awareness, knowledge, and preventive practices regarding coronary artery disease among adults. Therefore, continuous health education programmes should be encouraged to promote healthy lifestyle behaviours and reduce the burden of coronary artery disease in the community.

NURSING IMPLICATIONS

Nursing Education

The findings of the study emphasize the importance of incorporating coronary artery disease prevention and health promotion strategies into nursing education. Nursing students should be educated regarding risk factors, preventive measures, and lifestyle modifications related to coronary artery disease. Innovative teaching methods such as video-assisted teaching, simulation, and health education programmes should be integrated into nursing curricula to enhance knowledge and teaching skills.

Nursing Practice

Based on the study findings, nurses can implement health education programmes focusing on prevention of coronary artery disease among adults. Community health nurses can utilize video-assisted teaching programmes during community visits, health camps, and outpatient services. Nurses should encourage healthy dietary habits, regular physical activity, smoking cessation, stress management, and routine health screening to reduce the risk of coronary artery disease.

Nursing Administration

Nursing administrators should encourage the organization of community-based awareness programmes on prevention of coronary artery disease. Adequate audiovisual teaching materials and educational resources should be made available in healthcare settings. Continuing nursing education programmes can be conducted to update nurses regarding current strategies for cardiovascular disease prevention and health promotion.

Nursing Research

The findings of the study provide a basis for further research in the area of coronary artery disease prevention. Experimental studies with larger sample sizes can be conducted to evaluate the effectiveness of educational interventions. Longitudinal studies may be undertaken to assess long-term retention of knowledge and behavioural changes. Comparative studies can also be conducted to evaluate different teaching methods for improving awareness regarding prevention of coronary artery disease.

RECOMMENDATION

1. Video-assisted teaching programmes should be used regularly for health education regarding prevention of coronary artery disease.
2. Similar studies may be conducted with a larger sample size to improve generalization of findings.
3. The study may be replicated in different rural and urban communities.
4. Adults with sedentary lifestyle should be given special attention during health education programmes

LIMITATIONS

1. The study was conducted only in selected rural areas of Meerut District.
2. The sample size was limited, so the findings may not be generalized to all adults.
3. The study used a one-group pre-test and post-test design without a control group.
4. Purposive sampling technique was used; therefore, the sample may not fully represent the total population.
5. The study assessed only knowledge regarding prevention of coronary artery disease.
6. The post-test was conducted after a short interval; therefore, long-term retention of knowledge was not assessed.
7. Data were collected through a structured questionnaire, so there may be chances of response bias.
8. The study included only adults who were willing to participate and able to understand Hindi.
9. Clinical parameters such as blood pressure, blood sugar, cholesterol level and body mass index were not assessed.

10. The study did not assess whether improved knowledge resulted in actual lifestyle modification.

CONCLUSION

The present study concluded that video-assisted teaching was an effective educational method for improving knowledge regarding prevention of coronary artery disease among adults in selected rural areas of Meerut District. Before the intervention, most participants had only average knowledge about coronary artery disease prevention. After the video-assisted teaching programme, their knowledge improved noticeably. The study showed that structured audiovisual teaching can help adults understand the importance of preventive measures such as healthy diet, regular physical activity, avoidance of smoking and tobacco, weight control and regular health check-ups. The findings also revealed that physical activity was associated with pre-test knowledge, which indicates the importance of lifestyle-related awareness in the prevention of coronary artery disease. Overall, video-assisted teaching is a simple, practical and useful method for community health education. It can be effectively used by nurses and community health workers to promote awareness, encourage healthy lifestyle practices and support prevention of coronary artery disease among adults in rural communities.

REFERENCES-

1. Maliki, A., & Reza, M. (2019). Prevalence of coronary artery disease and associated risk factors among adults. *Journal of Cardiovascular and Thoracic Research*, 11(2), 123–130.
2. Bauersachs, R., et al. (2019). Burden of coronary artery disease and peripheral artery disease: A systematic review. *European Heart Journal*, 40(20), 1450–1457.
3. Iwasaki, Y., et al. (2011). Prevalence of coronary artery disease in a Japanese population. *Circulation Journal*, 75(5), 1234–1240.
4. Gautam, P. (2024). A Study to Assess the Effectiveness of Structured Teaching Programme on Knowledge Regarding Risk Factors and Prevention of Coronary Artery Disease Among Males Working in Selected Areas of Jaipur. *GFNPSS-IJMR*, 5(10), 2760–2764.
5. Alpert, J. S. (2023). New coronary heart disease risk factors. *The American Journal of Medicine*, 136(4), 331–332.
6. Li, S., Liu, Z., Joseph, P., Hu, B., Yin, L., Tse, L. A., ... & Li, W. (2022). Modifiable risk factors associated with cardiovascular disease and mortality in China: A PURE substudy. *European Heart Journal*, 43(30), 2852–2863.
7. Adhikary, D., Barman, S., Ranjan, R., & Stone, H. (2022). A systematic review of major cardiovascular risk factors: A growing global health concern. *Cureus*, 14(10), e30119.
8. Manoharan, M. P., Raja, R., Jamil, A., Csendes, D., Gutlapalli, S. D., Prakash, K., ... & Bai, M. (2022). Obesity and coronary artery disease: An updated systematic review 2022. *Cureus*, 14(9).
9. Gaikwad, S. (2026). A Study to Evaluate the Effectiveness of Structured Teaching Program on Knowledge Regarding Risk Factors and Prevention of Coronary Artery Diseases Among Third Year BSc Nursing Students of Selected Colleges of The City. *International Journal of Creative Research Thoughts (IJCRT)*, 14(3), h544–h555.
10. Ray, S., & Clement, J. (2024). Effectiveness of video-assisted teaching on knowledge regarding coronary artery disease risk factors among hypertensive patients. *Journal of Health Education Research & Development*, 42(2), 150–155.