



The Impact Of An Instructional Module On Coronary Artery Disease Risk Factors In Assessing Knowledge And Perception Among Adults

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ABSTRACT**Background:**

Coronary artery disease (CAD) is one of the leading causes of morbidity and mortality worldwide. The increasing prevalence of CAD is largely associated with lifestyle-related risk factors such as smoking, hypertension, hyperlipidemia, obesity, and physical inactivity. In many communities, inadequate awareness regarding CAD risk factors contributes to delayed prevention and management. Educational interventions can play a significant role in improving knowledge and perception regarding CAD among adults.

Objectives:

The study aimed to assess the effectiveness of an instructional module on coronary artery disease risk factors in improving knowledge and perception among adults in selected villages.

Methods:

A quantitative research approach with a quasi-experimental pre-test and post-test control group design was adopted. The study was conducted among 60 adults residing in selected villages, with 30 participants in the experimental group and 30 participants in the control group. Participants were selected using a convenience sampling technique. Data were collected using a structured questionnaire to assess knowledge and perception regarding coronary artery disease risk factors. The experimental group received an instructional module on CAD risk factors, while the control group did not receive the intervention. Data were analyzed using descriptive statistics (frequency, percentage, mean, and standard deviation) and inferential statistics including paired t-test, independent t-test, correlation, and chi-square test.

Results:

The findings revealed a significant improvement in knowledge and perception among adults in the experimental group after the implementation of the instructional module. The mean knowledge score increased from **6.63 (33.15%) in the pre-test to 17.40 (87%) in the post-test**, with a mean difference of **10.77**. The paired t-test showed statistically significant improvement in knowledge and perception scores in the experimental group ($p < 0.001$). A positive correlation between knowledge and perception was observed in the experimental group ($r = 0.6$). No significant association was found between knowledge scores and selected demographic variables.

Conclusion:

The study concluded that the instructional module was effective in improving knowledge and perception regarding coronary artery disease risk factors among adults. Educational interventions can therefore be considered an important strategy for promoting awareness and preventing coronary artery disease at the community level.

Keywords:

Coronary artery disease, Instructional module, Knowledge, Perception, Adults, Health education.

BACKGROUND OF THE STUDY

Achieving and maintaining good health is a continuous and dynamic process influenced by the advancement of health care knowledge, medical practices, personal health behaviors, and organized public health interventions. Health is not only maintained through medical treatment and health sciences but also through the efforts of individuals and communities in adopting healthy lifestyles and preventive health practices. Lifestyle choices such as balanced nutrition, regular physical activity, avoidance of harmful habits, and effective stress management play an important role in preventing many chronic diseases and improving overall well-being.

Health professionals emphasize that unhealthy lifestyle behaviors such as smoking, high blood pressure, high cholesterol levels, unhealthy dietary habits, physical inactivity, and obesity are major risk factors for several cardiovascular diseases. Among these conditions, coronary artery disease (CAD) is one of the most significant health concerns worldwide. Coronary artery disease occurs when the coronary arteries become narrowed or blocked due to the accumulation of fatty deposits known as atherosclerotic plaques. This obstruction reduces the blood flow to the heart muscle, resulting in inadequate oxygen supply and impaired cardiac function.

Coronary artery disease, also known as ischemic heart disease, has been defined as the impairment of heart function caused by inadequate blood flow to the myocardium compared with its metabolic needs, usually due to obstructive changes in the coronary circulation. It is considered one of the leading causes of morbidity and mortality across the globe. According to global health reports, coronary artery disease remains the single largest killer of both men and women worldwide.

The burden of coronary artery disease has been increasing rapidly in developing countries such as India due to rapid urbanization, lifestyle changes, and increasing life expectancy. It is estimated that approximately **4.5 million individuals in India are currently affected by coronary artery disease**, making it a major public health challenge. The increasing prevalence of CAD highlights the need for greater awareness, early identification of risk factors, and effective preventive strategies.

Risk factors are defined as characteristics, conditions, or behaviors that increase the likelihood of developing a disease. Several risk factors have been identified for coronary artery disease, and they are broadly categorized into **modifiable and non-modifiable risk factors**. Modifiable risk factors are those that can be prevented or controlled through lifestyle modification and medical management. These include smoking, hypertension, elevated serum cholesterol levels, physical inactivity, obesity, and diabetes mellitus. On the other hand, non-modifiable risk factors are those that cannot be changed, such as age, gender, and family history of cardiovascular diseases.

Understanding these risk factors and increasing awareness among adults is essential for preventing the occurrence and progression of coronary artery disease. Health education plays a crucial role in improving knowledge and perception about these risk factors and promoting healthy behaviors among individuals. Educational interventions, such as instructional modules, can effectively enhance awareness and encourage adults to adopt preventive measures that reduce the risk of coronary artery disease.

NEED FOR THE STUDY

Coronary artery disease (CAD) has become one of the leading causes of morbidity and mortality worldwide. The increasing prevalence of CAD is largely associated with unhealthy lifestyle practices such as smoking, poor dietary habits, physical inactivity, obesity, and stress. In developing countries like India, rapid urbanization, sedentary lifestyle patterns, and lack of awareness about cardiovascular risk factors have contributed significantly to the rising burden of coronary artery disease.

A review of the existing literature indicates that many individuals in the community have **inadequate knowledge and poor perception regarding coronary artery disease and its risk factors**. Lack of awareness about preventive measures often leads to delayed diagnosis, increased complications, and higher mortality rates. Therefore, it is essential to improve public awareness regarding the causes, risk factors, and preventive strategies of coronary artery disease.

During community interactions and health awareness activities, the researcher observed that many adults were either unaware of coronary artery disease or had limited knowledge regarding its risk factors and preventive measures. Several individuals were found to be suffering from coronary artery disease without having adequate knowledge about lifestyle modifications that could help prevent or control the disease. This observation highlighted the need for effective health education programs targeting adults in the community.

Nurses play a crucial role in health promotion and disease prevention by educating individuals, families, and communities about healthy lifestyle practices. Through structured educational interventions such as instructional modules, nurses can improve the knowledge and perception of adults regarding coronary artery disease and encourage them to adopt healthier behaviors. Education helps individuals recognize risk factors early and motivates them to take preventive actions that reduce the likelihood of developing cardiovascular diseases.

Since prevention is better than cure, many health problems including coronary artery disease can be prevented or controlled through early awareness and lifestyle modification. Therefore, the researcher felt the need to assess the knowledge and perception regarding coronary artery disease risk factors among adults and to evaluate the effectiveness of an instructional module in improving their awareness.

The findings of this study may help in developing effective educational strategies for community health promotion and contribute to the prevention and control of coronary artery disease among adults.

STATEMENT OF THE PROBLEM

A study to evaluate the **impact of an instructional module on coronary artery disease risk factors in assessing knowledge and perception among adults in selected villages of Chhattisgarh.**

OBJECTIVES OF THE STUDY

1. To assess the **knowledge and perception regarding coronary artery disease risk factors** before and after the instructional module among adults in the control and experimental groups.
2. To determine the **effectiveness of the instructional module** by comparing pre-test and post-test knowledge and perception scores in the control and experimental groups.
3. To compare the **post-test knowledge and perception scores** between the control and experimental groups.
4. To determine the **correlation between knowledge and perception** regarding coronary artery disease risk factors among adults.
5. To find the **association between knowledge and perception scores and selected demographic variables** among adults.

HYPOTHESES

H1: There will be a significant difference between the **pre-test and post-test scores of knowledge and perception** among adults in the control and experimental groups.

H2: The **mean post-test knowledge and perception scores** will be significantly higher than the pre-test scores in the experimental group.

H3: The **post-test scores of knowledge and perception** will be significantly higher among adults who received the instructional module than those who did not receive it.

H4: There will be a **significant correlation between knowledge and perception** regarding coronary artery disease risk factors among adults.

H5: There will be a **significant association between knowledge and perception scores and selected demographic variables.**

ASSUMPTIONS

The study assumed that:

- Adults may have some **basic knowledge regarding coronary artery disease risk factors.**
- The **instructional module would improve the knowledge and perception of adults** regarding CAD.

- Knowledge and perception may vary depending on **demographic variables such as age, education, and occupation.**

DELIMITATIONS

The study was limited to:

- Adults residing in **selected villages.**
- Assessment of **knowledge and perception only.**
- Participants who were **willing to participate** in the study.
- Data collected using a **structured questionnaire.**
- **Convenience sampling**, which may limit generalization of findings.

RESEARCH METHODOLOGY

Research Approach

A **quantitative research approach** was adopted for the present study. This approach was considered appropriate as it enables the researcher to measure the effectiveness of an instructional module on coronary artery disease risk factors by quantifying the changes in knowledge and perception among adults.

Research Design

The study employed a **quasi-experimental pre-test and post-test control group design**. In this design, participants were divided into two groups: an experimental group and a control group. The experimental group received the instructional module on coronary artery disease risk factors, whereas the control group did not receive the intervention. Pre-test and post-test assessments were conducted to evaluate the changes in knowledge and perception among the participants.

Variables

Independent Variable

Instructional module on coronary artery disease risk factors.

Dependent Variable

Knowledge and perception regarding coronary artery disease risk factors among adults.

Sample

The sample consisted of **adults residing in selected villages** who met the inclusion criteria and were willing to participate in the study.

Sample Size

The total sample size for the study was **60 adults**, of which **30 participants** were assigned to the **experimental group** and **30 participants** were assigned to the **control group**.

Sampling Technique

A **convenience sampling technique** was used to select the participants for the study.

Sample Selection Criteria

Inclusion Criteria

- Adults aged **20–60 years**
- Both **male and female participants**
- Adults who were **willing to participate in the study**

Exclusion Criteria

- Adults who were **not willing to participate** in the study
- Adults who were **not available during the period of data collection**

RESULTS

Section A: Distribution of Adults Based on Socio-Demographic Variables

The study included **60 adults**, with **30 participants** in the **control group** and **30 participants** in the **experimental group**.

Monthly Income Distribution

Monthly Income	Control Group (n=30)	Experimental Group (n=30)
Nil	7 (23%)	4 (13%)
Rs. 3000–5000	6 (20%)	5 (17%)
Rs. 5000–8000	4 (13%)	7 (23%)
Rs. 8000–10000	10 (34%)	5 (17%)
Above Rs. 10000	3 (10%)	9 (30%)

The table shows that in the **control group**, the majority of participants (34%) had a monthly income between **Rs. 8000–10000**, whereas in the **experimental group**, 30% had an income **above Rs. 10000**.

Type of Work

Type of Work	Control Group (n=30)	Experimental Group (n=30)
Sedentary Work	7 (23%)	10 (33%)
Moderate Work	21 (70%)	20 (67%)
Heavy Work	2 (7%)	0 (0%)

The majority of adults in both groups were involved in **moderate type of work**, with **70% in the control group and 67% in the experimental group**.

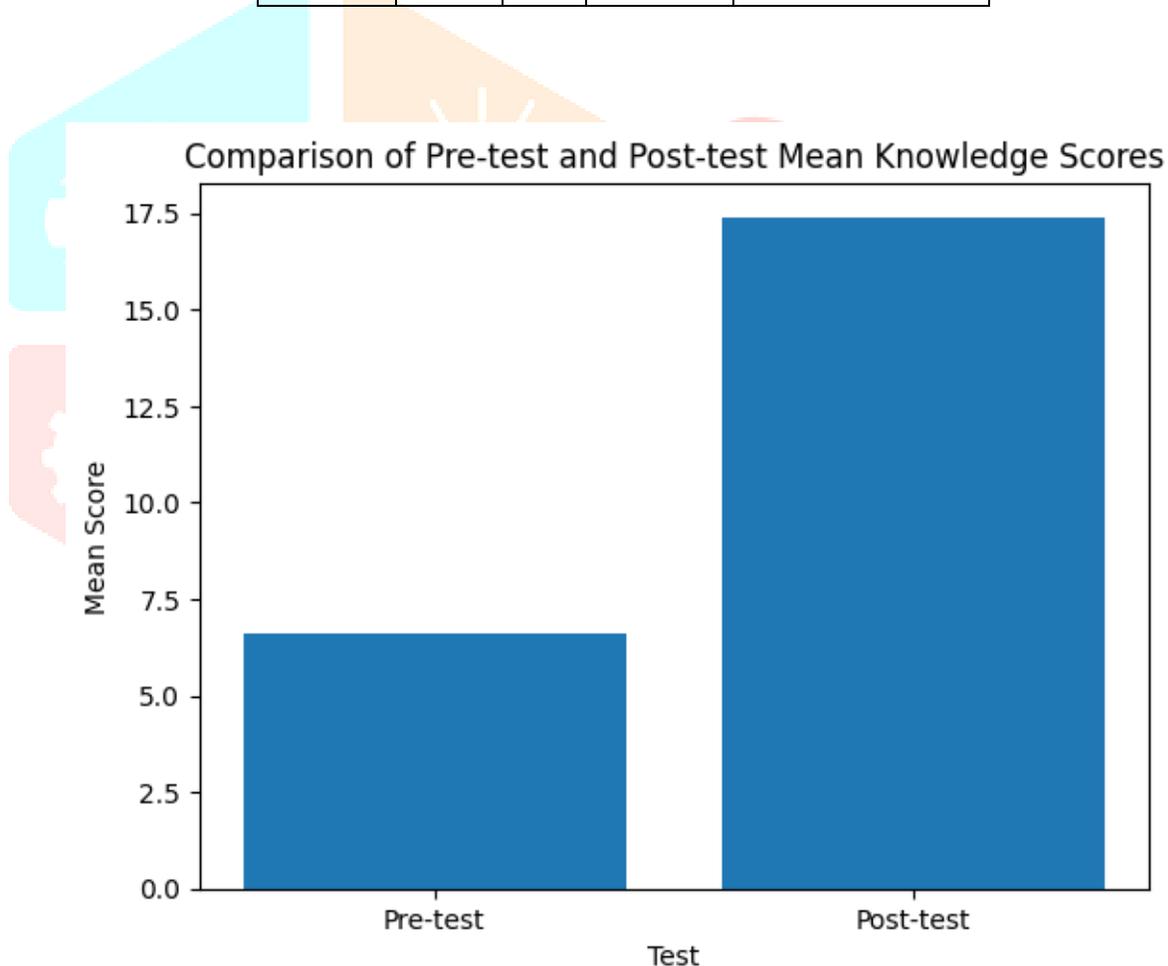
Section B: Mean Score Difference of Knowledge Between Pre-Test and Post-Test

Control Group (n = 30)

The mean difference between pre-test and post-test knowledge scores in the control group was **0.13**, indicating **minimal improvement in knowledge** among participants who did not receive the instructional module.

Experimental Group (n = 30)

Test	Mean	SD	Mean %	Mean Difference
Pre-test	6.63	2.08	33.15%	
Post-test	17.40	1.54	87%	10.77



The findings show a **significant increase in knowledge scores after the instructional module**, with the mean score increasing from **6.63 (33.15%) in the pre-test to 17.40 (87%) in the post-test**.

This indicates that the **instructional module was effective in improving the knowledge of adults regarding coronary artery disease risk factors**.

Section C: Correlation Between Knowledge and Perception

Control Group

The relationship between knowledge and perception among adults in the control group showed a **negative correlation ($r = 0$)** in the post-test scores.

This indicates that there was **no significant relationship between knowledge and perception in the control group**. Therefore, **research hypothesis H4 was not accepted** for the control group.

Experimental Group

In the experimental group, the analysis showed a **positive correlation between knowledge and perception ($r = 0.6$)** in the post-test scores.

This indicates that **higher knowledge levels were associated with better perception regarding coronary artery disease risk factors** among the adults who received the instructional module. Hence, **research hypothesis H4 was accepted** for the experimental group.

Section D: Association Between Knowledge and Selected Demographic Variables

The association between knowledge scores and selected demographic variables was analyzed using the **Chi-square test**.

Control Group

The analysis showed **no statistically significant association** between knowledge scores and demographic variables such as:

- Age ($\chi^2 = 2.214$, $p = 0.899$)
- Gender ($\chi^2 = 0.66$, $p = 0.718$)
- Religion ($\chi^2 = 3.721$, $p = 0.714$)
- Marital status ($\chi^2 = 0.069$, $p = 1.00$)
- Educational status ($\chi^2 = 0.429$, $p = 0.999$)
- Occupation ($\chi^2 = 3.512$, $p = 0.898$)
- Monthly income ($\chi^2 = 5.555$, $p = 0.696$)
- Type of work ($\chi^2 = 0.526$, $p = 0.970$)

Thus, the results indicate that **knowledge regarding coronary artery disease risk factors was not significantly associated with the selected demographic variables in the control group**.

Experimental Group

Similarly, in the experimental group, the Chi-square analysis showed **no statistically significant association** between knowledge scores and demographic variables including age, gender, religion, marital status, education, occupation, monthly income, and type of work.

The p-values for all variables were **greater than 0.05**, indicating **no significant association between demographic variables and knowledge scores**.

CONCLUSION

The present study highlights the importance of educational interventions in improving awareness of coronary artery disease risk factors among adults.

The findings revealed that most participants initially had **inadequate knowledge and perception regarding coronary artery disease**. However, after the implementation of the instructional module, there was a **significant improvement in both knowledge and perception levels**.

Pre-test results showed that **93% of adults had inadequate knowledge**, whereas after the intervention **86.6% of adults demonstrated adequate knowledge**. Similarly, perception levels improved significantly after the instructional module.

These findings indicate that **instructional modules are effective tools for health education and can significantly enhance awareness and preventive practices related to coronary artery disease**.

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