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"The Impact Of An Instructional Module On Coronary Artery Disease Risk Factors In Enhancing Knowledge And Perception Among Adults: A Quasi-Experimental Study"

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ABSTRACT

Background: Coronary artery disease (CAD) remains the leading cause of morbidity and mortality in India. Lack of awareness regarding CAD risk factors contributes significantly to the increasing burden of disease.

Aim: To evaluate the effectiveness of an instructional module on CAD risk factors in improving knowledge and perception among adults residing in selected villages of Chhattisgarh.

Methods: A quasi-experimental pre-test post-test control group design was used. A total of 60 adults were selected using convenience sampling and allocated into experimental (n = 30) and control groups (n = 30). A structured self-administered questionnaire and a 3-point Likert perception scale were used. The experimental group received an instructional module on CAD risk factors, whereas the control group received no intervention. Data were analyzed using descriptive and inferential statistics.

Results: The experimental group showed a significant improvement in knowledge scores from a pre-test mean of 6.63 to a post-test mean of 17.1. The control group demonstrated negligible change (pre-test mean = 8.13; post-test mean = 8.26). Perception scores also improved considerably in the experimental group. Independent t-test results showed statistically significant differences between experimental and control groups ($p < 0.001$). Positive correlation between knowledge and perception was observed in the experimental group ($r = 0.6$).

Conclusion: The instructional module was highly effective in enhancing knowledge and perception regarding CAD risk factors among adults. Community-based educational interventions can play a vital role in reducing CAD burden.

Keywords: Coronary artery disease, instructional module, knowledge, perception, risk factors, adults.

1. INTRODUCTION

Coronary artery disease (CAD) is one of the leading public health concerns worldwide and remains the foremost cause of mortality and disability. It occurs when the coronary arteries become narrowed or obstructed, resulting in diminished blood flow to the myocardium and subsequent impairment of cardiac function. In India, the prevalence of CAD has risen sharply over the past few decades, with an estimated 4.5 million individuals currently affected. This escalating burden is strongly linked to rapid urbanization, sedentary lifestyles, dietary transitions, stress, and increased life expectancy.

CAD develops primarily due to the cumulative impact of multiple risk factors. These include **modifiable risk factors** such as smoking, hypertension, elevated serum cholesterol, obesity, physical inactivity, unhealthy dietary habits, and diabetes mellitus. In contrast, **non-modifiable risk factors**—including age, sex, and family history—cannot be altered but increase an individual's baseline susceptibility. Addressing modifiable risk factors through lifestyle modification and health education remains the most effective strategy in preventing CAD and reducing associated complications.

Although advancements in diagnostic technologies and therapeutic interventions have contributed to improved outcomes, awareness and understanding of CAD risk factors among the general population—particularly among rural communities—remain insufficient. Lack of knowledge can lead to delayed recognition of symptoms, poor health-seeking behavior, and inadequate adoption of preventive practices. Given that many risk factors are behavioral and lifestyle related, enhancing community awareness becomes essential for reducing the disease burden.

Educational interventions, such as instructional modules, have proven to be cost-effective and efficient tools in promoting health literacy. They enable individuals to understand disease processes, recognize risk factors, and adopt appropriate preventive measures. Such structured teaching approaches are especially valuable in rural areas, where access to health information is limited.

Therefore, the present study was undertaken to evaluate the impact of a systematically developed instructional module on the knowledge and perception of adults regarding CAD risk factors in selected villages. By empowering individuals through health education, the study aims to contribute toward the broader goal of preventing CAD and improving community health outcomes.

2. NEED FOR THE STUDY

Coronary artery disease (CAD) has emerged as a major contributor to premature morbidity and mortality in India, with its prevalence rising significantly in both urban and rural populations. Although CAD is largely preventable through timely modification of lifestyle-related risk factors, many individuals—particularly those residing in rural communities—remain unaware of the disease, its risk determinants, early warning signs, and preventive strategies. Limited access to health information, low health literacy, and inadequate community-based awareness programs further magnify their vulnerability.

Observations during field practice revealed that adults in rural areas often do not recognize how daily habits such as unhealthy diet, physical inactivity, tobacco use, and unmanaged hypertension contribute to CAD. Moreover, misconceptions and lack of knowledge lead to delayed health-seeking behavior, resulting in late diagnosis and increased complications. This gap between existing knowledge and required preventive behavior highlights the urgent need for effective health education interventions.

Nurses, being at the forefront of community healthcare delivery, play a pivotal role in promoting cardiovascular health. Their involvement in education, screening, and counseling is essential for empowering individuals to take responsibility for their health. Structured instructional modules serve as an efficient and

practical tool to disseminate accurate, evidence-based information and motivate adults to adopt healthier lifestyles.

The review of literature and firsthand observations confirmed a substantial knowledge deficit related to CAD risk factors among adults. Therefore, the development and administration of a targeted instructional module was deemed essential to bridge this gap. Evaluating its effectiveness would provide valuable insights into how educational interventions can enhance community awareness and contribute to reducing the burden of CAD in underserved rural populations.

3. OBJECTIVES

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

4. HYPOTHESES

H1: There is a significant difference between pre-test and post-test scores of knowledge and perception in the experimental group.
H2: Post-test scores of the experimental group will be significantly higher than those of the control group.
H3: There is a significant correlation between knowledge and perception scores regarding CAD risk factors.
H4: There is a significant association between demographic variables and knowledge/perception scores.

Research Design

A **quasi-experimental pre-test post-test control group design** was adopted to evaluate the effectiveness of an instructional module on knowledge and perception regarding coronary artery disease (CAD) risk factors among adults.

Research Setting

The study was conducted in **Village Morat Hat**, located in the rural areas of **Indore, Madhya Pradesh**. This village was selected due to the observed lack of awareness regarding CAD, the feasibility of community engagement, and cooperation from local authorities.

Population

The target population consisted of **adults aged 20–60 years** residing in Village Morat Hat. This age range was selected as adults in this bracket are at increasing risk of developing CAD, and preventive education during this stage is highly beneficial.

Sample Size

A total of **60 adults** participated in the study:

- **Experimental group:** 30 adults
- **Control group:** 30 adults

The sample size was considered adequate to assess significant differences in knowledge and perception following the intervention.

Sampling Technique

A **convenience sampling technique** was used to recruit adults who met the inclusion criteria and were available at the time of data collection.

Inclusion Criteria

- Adults aged **20–60 years**
- Residents of Village **Morat Hat**
- Willing to participate and provide informed consent
- Available during both pre-test and post-test assessments

Exclusion Criteria

- Individuals unwilling to participate
- Adults with severe illness affecting participation
- Those who had previously received formal education on CAD

Research Instruments

1. Demographic Proforma

Collected data on age, gender, education, occupation, monthly income, marital status, and type of work.

2. Structured Knowledge Questionnaire

Included multiple-choice questions assessing understanding of CAD, risk factors, symptoms, prevention, and lifestyle practices.

3. Perception Scale

A **3-point Likert scale** (Agree/Neutral/Disagree) measuring participants' perception of CAD risk factors and preventive behaviors.

All tools were validated by subject experts, and reliability was confirmed through a pilot study.

Tools Used

- Structured knowledge questionnaire
- Perception scale (3-point Likert)
  Both were validated and found reliable.

Intervention

An instructional module covering:

- Introduction to CAD
- Modifiable & non-modifiable risk factors
- Prevention strategies
- Importance of lifestyle modifications

The module was delivered only to the experimental group.

Data Analysis

- Descriptive statistics: frequency, percentage, mean, SD
- Inferential statistics: paired t-test, independent t-test, chi-square, correlation

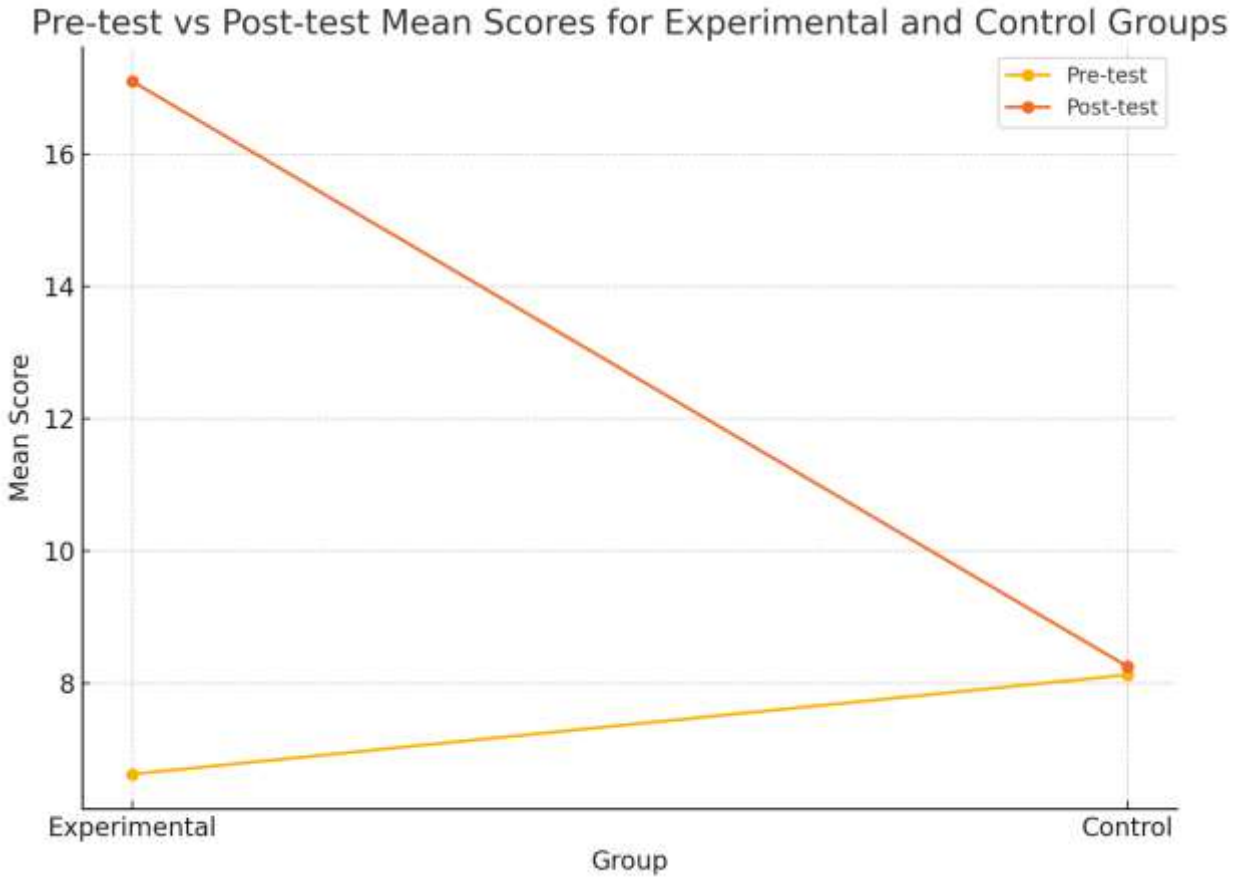
6. RESULTS

Demographic Characteristics

Participants were evenly distributed across gender, age groups, education levels, and occupations (page 6 of PDF).

Knowledge Improvements

Group	Pre-test Mean	Post-test Mean	Improvement
Experimental	6.63	17.1	**+10.47**
Control	8.13	8.26	**+0.13**



Perception Improvements

Experimental group showed **100% adequate perception** after intervention.

Between-group Comparison

Independent t-test value:

- Knowledge: **t = 23.6, p < 0.001**
- Perception: **t = 23.8, p < 0.001**

Correlation

- Experimental group: **positive correlation (r = 0.6)**
- Control group: negligible correlation

Association with Demographics

No significant association found between demographic variables and knowledge/perception.

7. DISCUSSION

The results demonstrate that the instructional module effectively enhanced knowledge and perception concerning CAD risk factors. This aligns with previous studies indicating that structured educational programs significantly improve awareness and preventive behavior in community settings. The negligible improvement in the control group confirms that natural learning without intervention is insufficient.

The strong correlation between knowledge and perception in the experimental group suggests that increasing knowledge influences health beliefs and attitudes, leading to better preventive behaviors.

8. CONCLUSION

The instructional module was highly effective in improving both knowledge and perception of CAD risk factors among adults. Community-based health education programs should be routinely implemented to reduce CAD burden. Nurses play a crucial role in disseminating preventive health information.

9. RECOMMENDATIONS

1. Implement CAD awareness modules in community health programs.
2. Conduct long-term follow-up studies to measure behavior change.
3. Use digital platforms to disseminate health education.
4. Replicate the study with larger, randomized samples for generalizability.

10. LIMITATIONS

- Small sample size
- Convenience sampling
- Short follow-up duration
- Self-reported measures may introduce bias

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