

Effectiveness of a Structured Teaching Plan on Coronary Artery Disease Risk Factors Among B.Sc. Nursing First-Year Students

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Abstract:

Background: Coronary artery disease (CAD) is described in the source thesis as a major cardiovascular health problem associated with atherosclerosis and multiple modifiable and non-modifiable risk factors. The thesis emphasizes the importance of awareness and lifestyle modification. **Objective:** To evaluate the effectiveness of a structured teaching plan (STP) on knowledge regarding CAD risk factors among B.Sc. Nursing first-year students. **Methods:** The study used an evaluative/pre-experimental approach with a pre-test and post-test design. Forty B.Sc. Nursing first-year students from a selected nursing institution in Jaipur were included using purposive sampling. A structured knowledge questionnaire was used, and an STP was administered.

Results: In the pre-test, 17 (42.5%) students had poor knowledge, 18 (45.0%) had good knowledge, 5 (12.5%) had average knowledge, and none had excellent knowledge. In the post-test, no student had poor knowledge; 5 (12.5%) had good knowledge, 20 (50.0%) had average knowledge, and 15 (37.5%) had excellent knowledge. The mean score increased from 6.8 (SD 2.158) to 13.7 (SD 2.081), an absolute increase of 6.9 points.

Conclusion: The observed improvement in knowledge scores after the teaching programme supports the usefulness of structured education in this sample. The source document, however, does not report the final z statistic or p-value in the results table, so statistical significance cannot be independently quantified from the reported test result.

Keywords: Coronary artery disease; CAD risk factors; structured teaching plan; nursing students; knowledge; pre-test; post-test; health education.

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INTRODUCTION

As the arteries grow hard, the heart grows soft”: The heart is crucial vital organ of the human body which continuously non-stop beat from birth to till death for deliver oxygenated blood to every cell of the human body Today the “silent killer” heart disease has become global phenomenon, due to heart disease million death occur in all over world each year.

Coronary artery disease develops when the coronary arteries become narrowed or blocked, commonly in association with atherosclerotic plaque. The uploaded thesis identifies hypertension, diabetes mellitus, smoking/tobacco use, elevated cholesterol, physical inactivity, obesity and unhealthy lifestyle patterns as important modifiable risk factors, while age, sex and family history are identified as non-modifiable factors. The document also highlights the importance of prevention, health education and lifestyle modification.

The WHO expert committee on prevention of Coronary Artery Disease identified a number of lifestyles and environmental factors as the underlying cause of CHD. These risk factors may be conceptualised as modified able and non-modifiable.

An estimated 17 million people die of CVDs, particularly heart attacks and strokes, every year. these deaths can be

attributed to tobacco smoking, which increases the risk of dying from coronary heart disease and cerebrovascular disease 2–3 fold. Physical inactivity and unhealthy diet are other main risk factors which increase individual risks to cardiovascular diseases Indians have the highest rates of CAD all over the world. It is 2–4 times higher at all ages and 5–10 times higher in those below 40 years of age.

“It is estimated by the year 2020, India will have the largest cardiovascular burden in the world” and among Indians coronary heart diseases tend to occur earlier in life than in any other ethnic group. (Ghaffar A, Reddy KS, Singhi M, 2006)

The article specifically focuses on nursing students and proposes structured education as a means of improving knowledge about CAD risk factors. The rationale is that improved knowledge may support healthier decisions and strengthen the future role of nurses as educators and promoters of cardiovascular health.

AIM AND OBJECTIVES

The stated aim was to evaluate the effectiveness of a structured teaching plan on coronary artery disease risk factors in assessing knowledge and perception among B.Sc. Nursing first-year students in a selected nursing college at Jaipur, Rajasthan.

1. To determine the effectiveness of the structured teaching plan by comparing pre-test and post-test knowledge and perception scores.
2. To find the correlation between knowledge and perception regarding CAD risk factors.
3. To examine the association between knowledge/perception and selected demographic variables.

MATERIALS & METHODS

Study component	Description
Approach	Evaluative research approach
Design	Pre-experimental pre-test–post-test design as described in the study
Setting	Selected nursing institution in Jaipur, Rajasthan
Sample	40 B.Sc. Nursing first-year students
Sampling	Purposive sampling
Independent variable	Structured teaching programme/plan on CAD risk factors
Dependent variable	Knowledge and perception regarding CAD risk factors
Knowledge tool	20-item structured questionnaire
Perception tool	10-item, 3-point Likert scale
Teaching duration	Approximately 30–40 minutes
Analysis stated in source	Descriptive statistics; z-test planned for effectiveness; chi-square for association

RESULTS

The study included 40 students. The source reports that most participants were 17–18 years old (20; 50.0%), followed by 18–19 years (17; 42.5%) and 19–20 years (3; 7.5%). Twenty-nine participants (72.5%) were male and 11 (27.5%) were female. Thirty-five (87.5%) were Hindu, while 1 (2.5%) was Christian, 1 (2.5%) Muslim and 3 (7.5%) belonged to other religions. All 40 participants were unmarried. Twenty-eight (70.0%) lived in rural areas and 12 (30.0%) in urban areas.

Table 1. Distribution of students by knowledge level

Knowledge level	Pre -test n (%)	Post -test n (%)
Poor (0–5)	17 (42.5%)	0 (0.0%)
Good (6–10)	18 (45.0%)	5 (12.5%)
Average (11–15)	5 (12.5%)	20 (50.0%)
Excellent (16–20)	0 (0.0%)	15 (37.5%)
Total	40 (100%)	40 (100%)

Table 2. Summary of pre-test and post-test knowledge scores

Measure	Pre -test	Post -test	Change
Mean	6.8	13.7	+6.9
Median	7	14	+7
Standard deviation	2.15835	2.081395	—

The mean knowledge score increased by 6.9 points, from 6.8 before the intervention to 13.7 after the intervention. This represents an approximate 101.5% increase relative to the pre-test mean. The proportion of students with poor knowledge decreased from 42.5% to 0%, while the proportion with excellent knowledge increased from 0% to 37.5%.

Statistical reporting note: The thesis states that a z-test was to be used to evaluate effectiveness, but the displayed effectiveness table leaves the z-value blank and does not provide a p-value. Therefore, this article reports the observed descriptive improvement without assigning a statistical-significance value that is not present in the source.

DISCUSSION

The results show a clear shift in the distribution of knowledge scores after the structured teaching programme. Before the intervention, nearly half of the students were classified as having good knowledge and 42.5% had poor knowledge. After the intervention, none were classified as having poor knowledge, while 50.0% were classified as having average knowledge and 37.5% as having excellent knowledge. The increase in mean and median scores is consistent with the study objective of assessing the effect of structured education.

The findings are also directionally consistent with several studies summarized in the source thesis. For example, the reviewed literature describes improvements in CAD-related knowledge after structured or planned teaching interventions among different populations. Because these studies used different samples, settings and instruments, their numerical results should not be treated as directly equivalent to the present study.

CONCLUSION

Among the 40 B.Sc. Nursing first-year students included in this study, knowledge regarding coronary artery disease risk factors improved after the structured teaching programme. The mean score increased from 6.8 to 13.7, and the post-test distribution showed no students in the poor-knowledge category and 15 students (37.5%) in the excellent-knowledge category. These findings support the practical value of structured CAD education within the study sample. The absence of a reported z statistic or p-value in the source means that the magnitude of statistical significance cannot be stated from the available results.

NURSING IMPLICATIONS

- Nursing education: Structured teaching can be incorporated into cardiovascular health education for nursing students.
- Nursing practice: Nurses can use health education to reinforce awareness of modifiable CAD risk factors and preventive lifestyle practices.
- Nursing administration: Educational and screening programmes may be organized to strengthen cardiovascular-risk awareness.
- Nursing research: The study can provide a baseline for larger studies using stronger designs, larger samples and complete inferential reporting.

LIMITATIONS

- The study included only 40 participants.
- Purposive sampling limits generalizability to other populations.
- The study was conducted in a selected nursing college/institution in Jaipur.
- The source reports an effectiveness test but does not provide the final z statistic or p-value in the displayed results table.

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CONFLICTS OF INTERESTS: There is no conflict of interest

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