

A QUASI-EXPERIMENTAL STUDY TO ASSESS THE EFFECTIVENESS OF VIDEO ASSISTED TEACHING MODULE ON KNOWLEDGE REGARDING IDENTIFICATION AND MANAGEMENT OF THE LIFE-THREATENING CARDIAC RISK FACTORS AMONG ADULTS IN SELECTED GYMNASIUMS, AGARTALA, WEST, TRIPURA

Nursing

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ABSTRACT

Background: Cardiovascular diseases are an important public health concern, and awareness of cardiac risk factors is essential for prevention, early recognition and timely management. Adults attending gymnasiums may benefit from structured education regarding life-threatening cardiac risk factors. **Aim:** The aim of the study is to assess the effectiveness of a video-assisted teaching module on knowledge regarding identification and management of life-threatening cardiac risk factors among adults in selected gymnasiums. **Materials and Method:** A quantitative approach with a quasi-experimental, non-randomized control-group design was adopted. A total of 100 adults aged 18–60 years were selected through convenience sampling, with 50 participants each in the experimental and control groups. Data were collected using a demographic proforma and a structured knowledge questionnaire containing 25 items. A video-assisted teaching module was administered to the experimental group, and post-test knowledge was assessed after seven days. Descriptive and inferential statistics were used for analysis. Results: In the experimental group, the mean knowledge score increased from 7.04 ± 2.72 at pre-test to 21.20 ± 1.73 at post-test. The difference was statistically significant ($t=51.54$, $df=49$, $p<0.001$). In the control group, the mean score increased from 8.18 ± 3.62 to 10.36 ± 3.50 , with no statistically significant difference ($t=1.74$, $df=49$, $p=0.20$). The post-test knowledge score was significantly higher in the experimental group than in the control group ($t=19.65$, $df=98$, $p<0.001$). **Conclusion:** The findings indicate that the video-assisted teaching module was effective in improving knowledge regarding identification and management of life-threatening cardiac risk factors among adults in the selected gymnasiums.

KEYWORDS

Cardiac Risk Factors, Cardiovascular Disease, Video-assisted Teaching, Knowledge, Adults, Gymnasium.

INTRODUCTION

Cardiovascular diseases are a major public health concern and are associated with considerable morbidity and mortality. Several factors contribute to cardiovascular risk, including hypertension, diabetes mellitus, abnormal blood lipid levels, unhealthy dietary habits, physical inactivity, obesity, smoking and family history. Recognizing these factors is important for promoting preventive practices and identifying individuals who may require medical assessment.

Regular physical activity contributes to cardiovascular health. However, participation in exercise does not necessarily ensure adequate knowledge regarding cardiac risk factors, warning signs or appropriate management. Adults attending gymnasiums may benefit from health education that explains the identification of risk factors and the importance of timely medical consultation.

Health education is an important component of nursing practice. Video-assisted teaching provides information through visual and auditory communication and may help learners understand health-related concepts. A structured educational intervention in gymnasium settings may therefore improve awareness of cardiovascular risks.

The present study was undertaken to assess the effectiveness of a video-assisted teaching module on knowledge regarding identification and management of life-threatening cardiac risk factors among adults attending selected gymnasiums in Agartala, West Tripura.

AIM OF THE STUDY

The aim of the study is to assess the effectiveness of video assisted teaching module on knowledge regarding identification and management of the life-threatening cardiac risk factors among adults in selected Gymnasiums.

OBJECTIVES OF THE STUDY

1. To assess the pre-test knowledge regarding identification and management of life-threatening cardiac risk factors among adults in both experimental and control group.
2. To assess the post-test knowledge regarding identification and management of life-threatening cardiac risk factors among adults in both experimental and control group.
3. To find out the effectiveness of video assisted teaching module on knowledge regarding identification and management of life-threatening cardiac risk factors among adults in experimental group.

4. To find out the association between pre-test knowledge regarding identification and management of the life-threatening cardiac risk factors among adults with their selected socio-demographic variables in both experimental & control group.

HYPOTHESES

- H_1 – There is significant difference between the mean pre-test and post-test level of knowledge score regarding identification and management of the life-threatening cardiac risk factors among adults in experimental group.
- H_2 – There is significant difference between the knowledge score regarding identification and management of the life-threatening cardiac risk factors among adults in both experimental and control groups.
- H_3 – There is significant association between the mean pre-test level of knowledge score regarding identification and management of the life-threatening cardiac risk factors among adults in experimental group with their selected demographic variables.
- H_4 – There is significant association between the mean pre-test level of knowledge score regarding identification and management of the life-threatening cardiac risk factors among adults in control group with their selected demographic variables.

RESEARCH METHODOLOGY:

Research Approach

A quantitative research approach was adopted for this study.

Research Design

A quasi-experimental, non-randomized control-group pre-test and post-test design was used to evaluate the effectiveness of the intervention.

Research Setting

The study was conducted in selected gymnasiums in Agartala, West Tripura.

Sample and Sampling Technique

The sample consisted of 100 adults aged between 18–60 years, including 50 participants in the experimental group and 50 participants in the control group. A non-probability convenience sampling technique was used to select the participants.

Sample Selection Criteria

The sample was selected from adults attending the selected

gymnasiums who met the predetermined inclusion and exclusion criteria.

Inclusion Criteria

- Adults present during the period of data collection.
- Both male and female adult aged above 18 -60 years.
- Both male and female who are attending the selected gymnasiums.

Exclusion Criteria

- Adults who were not willing to participate in the study.

Selection and Development of Tools

The research tool consisted of two sections: Part I, a demographic proforma containing 11 items and Part II, a structured knowledge questionnaire containing 25 items to assess knowledge regarding identification and management of the life-threatening cardiac risk factors among adults.

Development and description of the video-assisted teaching module

Based on an extensive review of research and non-research literature, the researcher designed and developed an instructional video on the identification and management of life-threatening cardiac risk factors. The systematic development protocol comprised four sequential phases: preparation of the initial draft and storyboard, establishment of content validity through expert evaluation, formulation of the final draft incorporating recommended modifications, and documentation of a comprehensive description outlining the educational framework and technical specifications of the finalized video.

Validity of Tool

The developed tool was refined and validated through consultation with the research guide and subject experts to ensure its relevance and appropriateness for assessing knowledge regarding cardiac risk factors.

Reliability of Tool

The research tool was subjected to reliability assessment as part of the tool-development process. structure knowledge questionnaire was 0.97

The reliability coefficient of the structured knowledge questionnaire was **0.97**, indicating excellent reliability of the tool.

Data Collection Method

Formal permission was obtained from the concerned authorities of the selected gymnasiums. The investigator explained the purpose of the study and obtained informed consent from the participants. A pre-test was conducted in both groups using the structured knowledge questionnaire. The Intervention (video-assisted teaching module) was administered to the experimental group, and a post-test was conducted after seven days. The educational intervention was subsequently provided to the control group. Confidentiality of the collected information was maintained.

Ethical Consideration

Ethical approval and necessary institutional permissions were obtained as described in the dissertation. Written informed consent was obtained from the participants. Participation was voluntary, confidentiality was maintained, and participants' rights were respected throughout the study.

Plan of Data Analysis

The collected data were analysed using descriptive and inferential statistics.

RESULTS:

Table 1: Frequency and percentage distribution of demographic variables in experimental & control group groups.

Variable	Category	Exp. Group f (%)	Control Group f (%)
Age	18 years 1 day–28	21 (42%)	30 (60%)
	28 years 1 day–39	24 (48%)	15 (30%)
	39 years 1 day–50	2 (4%)	4 (8%)
	50 years 1 day–60	3 (6%)	1 (2%)
Gender	Male	37 (74%)	39 (78%)
	Female	13 (26%)	11 (22%)

Education	No formal education	0 (0%)	0 (0%)
	Primary education	6 (12%)	2 (4%)
	Matriculation	9 (18%)	8 (16%)
	Higher secondary	21 (42%)	18 (36%)
	Graduate and above	14 (28%)	22 (44%)
Occupation	Students	9 (18%)	15 (30%)
	B.Ed.	2 (4%)	10 (20%)
	B.Sc.	2 (4%)	1 (2%)
	Law	2 (4%)	2 (4%)
	B.A.	2 (4%)	1 (2%)
	MBA	1 (2%)	1 (2%)
	Others	41 (82)	35 (70)
	Unemployed	5 (10%)	15 (30%)
	Business	13 (26%)	2 (4%)
	Government job	5 (10%)	8 (16%)
Monthly family income	Housewife	5 (10%)	2 (4%)
	Private job	13 (26%)	8 (16%)
	≤ 15,000	8 (16%)	4 (8%)
	15,001–30,000	37 (74%)	34 (68%)
Gym attendance	30,001–45,000	5 (10%)	8 (16%)
	45,001–60,000	0 (0%)	4 (8%)
	Less than 4 days/week	17 (34%)	15 (30%)
Daily exercise duration	4–5 days/week	22 (44%)	18 (36%)
	>5 days/week	11 (22%)	17 (34%)
	One hour	41 (82%)	33 (66%)
Supplement use	More than one hour	9 (18%)	17 (34%)
	Yes	25 (50%)	20 (40%)
History of any disease like HTN, CAD and DM	No	25 (50%)	30 (60%)
	Yes	0 (0%)	0 (0%)
Medication use for HTN, CAD & DM	No	50 (100%)	50 (100%)
	Yes	0 (0%)	0 (0%)
Family history of Disease like HTN, CAD & DM	No	50 (100%)	50 (100%)
	Yes	16 (32%)	15 (30%)
	Father	5 (10)	7 (14)
	Mother	4 (8)	3 (6)
	Father in aw	2 (4)	2 (4)
	Mother in law	2 (4)	1 (2)
	No	34 (68%)	35 (70%)

Graph-1: Shows the level of knowledge in experimental and control group

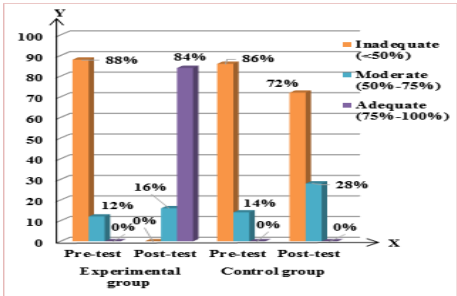


Table 2: Comparison of Pre-test and Post-test Knowledge Scores within the Experimental and Control Groups. n=100

Pre-test/P ost-test	Experimental Group (n=50)		Control Group (n=50)		Unpaired t-test			
	Mean	Standard deviation (±SD)	Mean	Standard deviation (±SD)	Calculated value	Tabulated value	df	p-value
Pre-test	7.04	2.72	8.18	3.62	1.91	1.98	98	0.06 (NS)
Post-test	21.2	1.73	10.36	3.50	19.65	1.98	98	0.00 (S)

Paired t-test	df	p-value	Paired t-test	df	p-value			
Calculated value	Tabulated value		Calculated value	Tabulated value				
51.54	2.01	49	0.00 (S)	1.74	2.01	49		

Table 2 depicts that in the experimental group, the pre-test mean knowledge score was 7.04 ± 2.72 and the post-test mean score was 21.20 ± 1.73 . The computed paired 't'-test value was 51.54 at $df=49$ ($p<0.001$), indicating a statistically highly significant improvement. Consequently, based on this **paired 't'-test** result, the research hypothesis (H_1) was accepted and the null hypothesis (H_{01}) was rejected.

In the control group, the pre-test mean knowledge score was 8.18 ± 3.62 and the post-test mean score was 10.36 ± 3.50 . The computed paired 't'-test value was 1.74 at $df=49$ ($p=0.20$), which was statistically not significant.

Therefore, based on the non-significant **paired 't'-test** outcome, the null hypothesis (H_{02}) was accepted and the research hypothesis (H_2) was rejected.

Comparing baseline pre-test scores between the experimental (6.68 ± 2.01) and control groups (8.18 ± 3.62), the unpaired 't'-test yielded a value of 2.56 at $df=98$ ($p=0.01$), which was statistically significant. For the post-test comparison between the experimental (21.20 ± 1.73) and control groups (10.36 ± 3.50), the unpaired 't'-test yielded a value of 19.65 at $df=98$ ($p<0.001$), demonstrating a statistically highly significant difference.

Thus, the findings from both the paired 't'-test and unpaired 't'-test analyses confirm that the video-assisted teaching module was significantly effective in enhancing knowledge regarding the life-threatening cardiac risk factors among adults in selected gymnasiums.

Regarding Association there was no statistically significant association between pre-test knowledge level and selected demographic variables in the experimental group. All reported p-values were greater than .05, including age, gender, education, occupation, family income, gym attendance, exercise duration, supplement consumption, and family history of hypertension, coronary artery disease, and diabetes mellitus. Therefore, the association between pre-test knowledge and the selected demographic variables was not statistically significant.

There was no statistically significant association between post-test knowledge level and selected demographic variables in the control group. The reported p-values for age, gender, education, occupation, family income, gym attendance, exercise duration, supplement consumption, and family history of hypertension, coronary artery disease and diabetes mellitus were all greater than .05. Therefore, no significant association was identified between post-test knowledge and the selected demographic variables.

DISCUSSION

The study assessed the effectiveness of the video-assisted teaching on knowledge regarding the life-threatening cardiac risk factors among adults attending selected gymnasiums. The experimental group's mean knowledge score significantly increased from 7.04 ± 2.72 to 21.20 ± 1.73 ($p<0.001$), whereas the control group showed no significant improvement. The post-test difference between groups was statistically significant ($t=19.65$, $p<0.001$), demonstrating the effectiveness of the intervention. No significant association was found between pre-test knowledge and selected demographic variables. These findings support video-assisted teaching as a useful health education strategy in gymnasium settings.

CONCLUSION:

The study concluded that the video-assisted teaching module was effective in improving knowledge regarding the identification and management of the life-threatening cardiac risk factors among adults attending selected gymnasiums in Agartala, West Tripura. The experimental group demonstrated a statistically significant improvement in post-test knowledge compared with the control group.

Video-assisted teaching may therefore be considered a useful component of health education in gymnasium settings.

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