



# Effectiveness of health education regarding cardiac rehabilitation on knowledge and attitude of patients with cardiac diseases

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## Abstract

The study was conducted to assess the effectiveness of health education regarding cardiac rehabilitation on knowledge and attitude of patients with cardiac diseases in selected hospitals, Perinthalmanna. Objectives of the study were assessing the knowledge and attitude of patients with cardiac diseases on cardiac rehabilitation, assessing the effectiveness of health education and associating the knowledge and attitude with selected demographic variables of patients with cardiac diseases. The investigator adopted the quantitative approach and study design was quasi experimental pre test post test control group design. Investigator had chosen the sample size of 60 out of which 30 was in Experimental and 30 in Control group. The pretest knowledge score indicates that there is no difference in the knowledge and attitude between Experimental group and Control group with the significance level of 0.281 and 0.668. The post test knowledge score indicates that there is significant difference in the knowledge and attitude between Experimental group and Control group with the significance level of <math><0.001</math> and 0.085. The Experimental group which had received health education shows improved knowledge and attitude when comparing to the Control group. There is a significant difference in the knowledge and attitude level of Experimental group comparing to the Control group. The study concluded that the health education program was effective in increasing the knowledge and creating positive attitude.

Key words: Knowledge; Attitude; health education; cardiac rehabilitation; patients with cardiac diseases.

## Background of the problem

Rehabilitation can be defined as the process of helping the patient adjust to a disability by teaching integration of all resources and concentrating more on existing abilities than on permanent disabilities. Cardiac rehabilitation is the restoration of a person to an optimal state of function in six areas: physiologic, psychological, mental, spiritual, economic, and vocational. Cardiac rehabilitation is helpful for the patients with the history of coronary artery disease, heart failure, angina, cardiomyopathy, and certain congenital heart disease. The main components of comprehensive cardiac rehabilitation program are empowering patients to make lifelong changes through exercise programs, nutritional management, weight management, smoking cessation, pharmacotherapy, and ongoing personal follow-up. Cardiac rehabilitation has been proven to be safe and effective in improving cardiovascular patients' quality of life and reducing morbidity and mortality<sup>1</sup>.

## Need and significance of the study

The global burden of disease study estimate of age-standardized cardiovascular death rate of 272 per 1,00,000 population in India is higher than that of the global average of 235 per 1,00,000 population. Despite wide heterogeneity in the occurrence of cardiovascular risk factors across different regions, cardiovascular disease has emerged as the leading cause of death in all parts of India, including poorer states and rural areas<sup>2</sup>.

A descriptive study in order to observe, document, and describe the existing knowledge and attitude towards cardiac rehabilitation in coronary artery disease patients have conducted and according to the research finding; out of 60 respondents half of them have average and 46.67% have inadequately poor knowledge. Only 03.33% (n=2) possess adequate or good knowledge regarding cardiac rehabilitation. The study recommended that the need of the patients for want of knowledge<sup>7</sup>.

As per the statistics the investigator collected from a single hospital (MES medical college hospital, perinthalmanna) an average of monthly admission due to CAD is of 65 patients for the last 1 year period. The investigator cited her own life experience of her family in which most of the family members are having CAD and have undergone coronary interventions.

As the evidences of higher incidence rate of cardiovascular diseases exist, it is needed to make them aware about the cardiac rehabilitation and assure the participation in the rehabilitation program by developing a positive attitude among the cardiac patients. Despite the evidence of benefits of the program, cardiac rehabilitation remains under used<sup>8</sup>. So a study proposes and which intends to evaluate the effectiveness of the health education program on cardiac rehabilitation in improving the knowledge and changing the attitude of patients who have the cardiac disease.

## Statement of the problem

A study to assess the effectiveness of health education regarding cardiac rehabilitation on knowledge and attitude of patients with cardiac diseases in selected hospitals, Perinthalmanna.

## Aim:-

Aim of the study is to assess the effectiveness of health education regarding cardiac rehabilitation on knowledge and attitude of patients with cardiac diseases in selected hospitals, Perinthalmanna.

## Objectives:-

- a) Assess the knowledge and attitude of patients with cardiac diseases on cardiac rehabilitation in experimental and control group
- b) Assess the effectiveness of health education regarding cardiac rehabilitation on knowledge and attitude of patients with cardiac diseases.
- c) Associate the knowledge and attitude with selected demographic variables of patients with cardiac diseases.

## Materials and methods:-

Research approach: quantitative approach

Research design: quasi experimental pre test post test control group design

Symbolic representation of the respected design is

E O1 X O2

C O1 O2

Where, E- Experimental group

C- Control group

O1-Pretest

O2-post test

X- Health education regarding cardiac rehabilitation

Variables:

**Dependent variables:** In this study, knowledge and attitude of patients with cardiac diseases about cardiac rehabilitation are the dependent variables.

**Independent variables:** In this study the health education regarding cardiac rehabilitation is the independent variable.

**Setting of the study:** The study was conducted at cardiology wards of selected hospitals in Perinthalmanna. The investigator had chosen two hospitals in Perinthalmanna in which one was for Control group and other for Experimental group. The Control group was taken from Moulana hospital and the Experimental group was taken from MES Medical college hospital, perinthalmanna. population in this study was patients with cardiac diseases admitted to the selected hospitals.

**Population:** population in this study was patients with cardiac diseases admitted to the selected hospitals

**Sample and sampling technique:**

Sample size was estimated based on a similar study and power analysis. Using the power level of 0.80, an alpha level of 0.05, and an effect size of 0.30 for paired t test, the estimated sample size was 2. Based on an estimated statistics of average number of admissions, the sample size was calculated as 60. In this study investigator had chosen the sample size of 60 patients with cardiac diseases who fulfill the inclusion criteria. Among 60 participants, 30 were in Experimental group and 30 in Control group. Sampling technique adopted for selecting the sample was Non-probability purposive sampling.

**Tools and techniques:**

**Tool 1:** Self administered structured knowledge questionnaire.

**Tool 2:** Attitude scale; Likert scale with five point measurements.

The reliability correlation coefficient of knowledge questionnaire was found to be 0.96 and that of Likert scale was 0.98 which indicates that the tool was highly reliable for the study.

**Findings of the study were presented in four sections**

**Section I:** Assessment of knowledge of patients with cardiac diseases on cardiac rehabilitation.

**Section II:** Assessment of attitude of patients with cardiac diseases on cardiac rehabilitation.

**Section III:** Analysis of effectiveness of health education regarding cardiac rehabilitation on knowledge and attitude of patients with cardiac diseases.

**Section IV:** Evaluation of the Association of knowledge and attitude with selected demographic variables of patients with cardiac diseases.

**Section I:** Assessment of knowledge of patients with cardiac diseases on cardiac rehabilitation.

**Table 1: Baseline knowledge of participants in experimental and control group**

N=60

Group	Baseline knowledge			Total
	Inadequate	Moderate	Adequate	
<b>Experimental group</b>	22	8	0	30
<b>Control group</b>	24	6	0	30
<b>Total</b>	46	14	0	60

Table 1 depicts that the baseline knowledge of the participants were low as 46 participants (22 in Experimental group and 24 in Control group) were having inadequate knowledge and only 14 participants (8 in Experimental group and 6 in Control group) were having only moderate knowledge. There were no participants with adequate knowledge and so health education to improve the level of knowledge is necessary.

**Section II:** Assessment of attitude of patients with cardiac diseases on cardiac rehabilitation.

**Table 2: Baseline attitude of participants in experimental and control group**

N=60

Group	Baseline attitude			Total
	Negative	Neutral	Positive	
<b>Experimental group</b>	3	1	26	30
<b>Control group</b>	5	3	22	30
<b>Total</b>	8	4	48	60

Table 2 shows that 48 participants (26 participants in Experimental group and 22 in Control group) were having positive attitude, 4 participants (1 sample in Experimental group and 3 in Control group) were having neutral attitude and 8 participants (3 participants in Experimental group and 5 in Control group) were having negative attitude towards cardiac rehabilitation.

**Section III:** Analysis of effectiveness of health education regarding cardiac rehabilitation on knowledge and attitude of patients with cardiac diseases.

**Table 3: Difference in the knowledge between experimental and control group during pretest**  
N=60

group	N	Mean	Std. Deviation	Std. Error Mean	t value	p value
Experimental group	30	12.3	3.984	0.727	1.088	0.281
Control group	30	11.07	4.763	0.87		

Table 3 shows the pretest knowledge score which indicates that there is no difference in the knowledge between experimental group and Control group with the significance level of 0.281.

**Table 4: Difference in the attitude between experimental and control group during pretest**  
N=60

group	N	Mean	Std. Deviation	Std. Error Mean	t value	p value
Experimental group	30	44.47	6.689	1.221	0.431	0.668
Control group	30	43.7	7.072	1.291		

Table 4 shows the pretest attitude score; indicates that there is no difference in the attitude between experimental group and Control group with the significance level of 0.668.

**Table 5: Difference in the knowledge between experimental and control group during posttest**  
N=60

Group	N	Mean	Std. Deviation	Std. Error Mean	t value	p value
Experimental group	30	21.9	4.172	0.762	10.804	<0.001
Control group	30	9.67	4.589	0.838		

The post test knowledge score indicates that there is significant difference in the knowledge between Experimental group and Control group with the significance level of <0.001. The Experimental group which had received health education shows improved knowledge level comparing to the Control group.

**Table 6: Difference in the attitude between experimental and control group during posttest**  
N=60

Group	N	Mean	Std. Deviation	Std. Error Mean	t value	p value
Experimental group	30	47.37	2.141	0.391	1.753	0.085
Control group	30	45.2	6.424	1.173		

The post test attitude score indicates that there is difference in the attitude between Experimental group and Control group with the significance level of 0.085. The Experimental group which had received health education shows more positive attitude than the Control group.

#### **Section IV: Evaluation of the Association of knowledge and attitude with selected demographic variables of patients with cardiac diseases**

- There is no association between the knowledge and attitude with age, gender, religion, occupation of patients, marital status and Previous knowledge about cardiac rehabilitation of patients with cardiac diseases.

- There is significant association between the knowledge and education of patients with cardiac diseases with significance level of 0.004.
- There is significant association between the knowledge and monthly income of patients with cardiac diseases with significance level of 0.003. But there is no association between attitude and monthly income of patients with cardiac diseases.
- There is significant association between the knowledge and family history of cardiac illness of patients with cardiac diseases with significance level of 0.003. But there is no association between attitude and family history of cardiac illness of patients with cardiac diseases.

### **Nursing implications**

The study has implications which are of vital concern to the field of nursing education, nursing service, nursing administration and nursing research.

#### **1. Nursing education**

It is always wise to bring changes in the grass root level. Nursing curriculum is a way to inculcate change in nursing education. The nursing curriculum should be renovated in such a way that it should include detailed need of health education in each disease process and should include more number of health educations as course requirement from first year onwards. The students should be encouraged and taught about different ways of providing health education in both community and hospital set up.

The aspects of cardiac rehabilitation and need of life style modifications should be added in detail to the curriculum as it is necessary to provide health education to all the patients admitted with coronary artery diseases.

#### **2. Nursing service**

Coronary artery disease is the most prevalent type of cardiovascular disease<sup>1</sup>. The coronary artery disease mortality rate per 100,000 is 382 for men and 128 for women in Kerala<sup>5</sup>. Cardiovascular diseases are epidemic in India. The Registrar General of India reported that Coronary heart diseases led to 17% of total deaths and 26% of adult deaths in 2001-2003, which increased to 23% of total and 32% of adult deaths in 2010-2013<sup>4</sup>.

These statistics are emphasizing the need of awareness among the public to prevent the occurrence of coronary artery diseases and to reduce the mortality rates by giving awareness about the cardiac rehabilitation program which facilitates the adherence to good life style among patients with coronary artery diseases. So all the nurses should be trained in such a way that they should have the adequate knowledge to educate the patients who came across with coronary artery disease.

#### **3. Nursing administration**

Nurses as administrators or nursing administrators themselves are in a position to introduce newer methods of nursing care to reduce the mortality and hospital stay of patients who admitted in the hospitals. They should introduce health awareness program to the patients and bystanders in various aspects of diseases. They should be trained for giving adequate education in every disease process. They are also in a position to recommend for cardiac rehabilitation facilities, as coronary artery disease is a prevalent case in most of the hospitals and should be started in coordination with the management.

#### 4. Nursing research

In India nursing research on cardiac rehabilitation and its use is still in its infancy, even though many of them are empirical and easily tested. Health care professionals should recognize the need of cardiac rehabilitation centers or facilities to promote the adherence to life style modifications. To make the nursing care evidence based, nurses should come forward or motivated to conduct more research studies on such topics.

##### Limitations

- The investigator had time limit as it is an educational study. So it could not assess the practice of participants which is actually takes time to adhere.
- Less literature in relation to the effectiveness of health education on knowledge and attitude was available which made detailed discussion difficult.
- Due to lack of time, Sampling technique adopted was non probability purposive sampling, where the findings are influenced by the investigator's personal preferences.
- Generalization is limited as it is of small sample size.
- The place of research influences the association of knowledge and demographic characteristics as more number of participants included is from Islam religion.

##### Recommendations

- A similar study can be replicated on a larger sample for generalization of findings.
- A similar study can be replicated with probability sampling technique which can assure more accurate results.
- A similar study can be replicated with a gap of 1 month between pretest and post test which can assure more accurate results as it shows the adherence to the learned contents.
- A similar study can be conducted to evaluate the effect of health education on knowledge and attitude regarding cardiac rehabilitation in different participants like health professionals such as doctors and nurses.
- A descriptive study can be conducted to assess the knowledge, attitude and practice of life style modifications among people with coronary artery diseases in community settings.
- A similar study can be conducted to evaluate the effect of health education on knowledge, attitude and practice of life style modifications in community settings.