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## A study to assess the effectiveness of structured teaching programme on knowledge regarding risk status of coronary artery disease among diabetic patients at E.S. Hospital, Villupuram, Tamil Nadu

**Karth R, Kumudhavalli D, Malarvizhi, Suryakanth H and Inigo Sherlin Joy G**

### Abstract

**Background:** Diabetes mellitus is predicted to become to leading cause of morbidity and death in the coming decade. India has a high prevalence of Diabetes mellitus & the numbers are increasing at alarming rate. Coronary artery disease (CAD) is the most common type of cardiovascular disease and accounts for the majority of these deaths. Atherosclerosis is the major cause of CAD. The incidence of CAD is 2-4 times greater among persons who have diabetes, even those with well controlled blood glucose levels, than the general population.

**Objectives:** 1. To assess the knowledge regarding risk status of CAD among diabetic patients before and after structured teaching programme. 2. To evaluate the effectiveness of STP on knowledge regarding risk status of CAD among diabetic patients. 3. To associate post test knowledge on risk status of CAD among diabetic patients with their selected demographic variables.

**Method:** A pre-experimental design one group pre-test post test research design was adopted. 30 diabetic patients were selected by using purposive sampling technique.

**Result:** The study concluded that there is increased level of knowledge diabetic patients after administering structured teaching programme.

**Keywords:** structured teaching programme, knowledge, risk status, coronary artery disease

### Introduction

Happiness is nothing more than good health.

Diabetes Mellitus is a chronic medical condition which means it can last a lifetime. According to the WHO India had 32 million diabetic subjects in the year 2000 and this number would increase to 80 million by the year 2030 <sup>[1]</sup>. The international diabetic federation also reported that the total number of diabetic subjects in India was 41 million in 2006 and that this would risk to 70 million by the year 2025. Diabetes mellitus is predicted to become to leading cause of morbidity and death in the coming decade. India has a high prevalence of Diabetes mellitus & the numbers are increasing at alarming rate <sup>[2]</sup>. Health care workers have more responsibility to create awareness regarding DM & control its prevalence. Diabetes mellitus is a chronic multisystem disease related to abnormal insulin production, impaired insulin utilization, or both. The longterm complications of diabetes are what make it such a devastating disease. Diabetes is the leading cause of adult blindness end- stage renal disease (ESRD) and non traumatic lower limb amputations. It is also major contributing factor for heart disease and stroke. Adults with diabetes have heart disease death rates 2 to 4 times higher than adults without diabetes <sup>[3]</sup>.

Cardiovascular disease is the major cause of death in the world. Coronary artery disease (CAD) is the most common type of cardiovascular disease and accounts for the majority of these deaths. Patients with CAD can be asymptomatic or develop chronic stable angina. Atherosclerosis is the major cause of CAD. Inflammation and endothelial injury plan a central male in the development of atherosclerosis. Endothelial lining can be injured as a result of tobacco use, hyperlipidemia, hypertension and diabetes <sup>[4]</sup>.

### Need for the study

Diabetes is reaching epidemic proportions in both the western and developing worlds. Currently it affects nearly 5% and the adult population in the U.K. Due to the increasing prevalence of obesity the incidence and vascular complications of diabetes will continue to

rise (the foresight report estimates that by 2015, 64% of adults aged 21 to 60 in the UK will be obese and by 2025 this will rise to 83%) Nearly 80% of patients with diabetes suffer from cardiovascular illness with CAD representing the major component of this disease [5]. Approximately 10-15% of patients admitted to hospital suffering from a heart attack (MI) and 20% of patients dying from CAD have diabetes as a contributing factor. Therefore diabetes is placing a large burden on our health care system, both directly and indirectly [6].

The incidence of CAD is 2-4 times greater among persons who have diabetes, even those with well controlled blood glucose levels, than the general population. The patient with diabetes manifests CAD not only more frequently but also at an earlier age. There is no age difference between male or female patients with diabetes in the onset of manifestations of CAD. Diabetes virtually eliminates the lower incidence of CAD in premenopausal women. Diabetic women have 5-7 times higher risk for CAD than non diabetic women. Undiagnosed diabetes is frequently discovered at the time of MI. Because the person with diabetes has an increased tendency towards connective tissue regeneration and endothelial dysfunction [7].

A study was conducted in Himachal Pradesh, India to assess the prevalence of CHD in rural population. Eight hundred twelve patients were examine mean age was 47.44+/-12.2 year 399 were males and 413 were females. Thirty three patients were found to have coronary heart disease, giving the prevalence of 4.06%. 26 of 399 males had CHD (6.9%) and 26 of 413 females had CHD. Seventeen of these CHD patients were Hypertensive, two were diabetic and 10 patients had family history of CHD. The study concluded that the prevalence of CHD was low in rural population of Himachal Pradesh, being around 4%, more in males than in females [8].

**Statement of the Problem**

A study to assess the effectiveness of structured teaching programme on knowledge regarding risk status of coronary artery disease among diabetic patients at E.S. Hospital, Villupuram.

**Objectives**

1. To assess the knowledge regarding risk status of CAD among diabetic patients before and after structured teaching programme.
2. To evaluate the effectiveness of STP on knowledge regarding risk status of CAD among diabetic patients.
3. To associate post test knowledge on risk status of CAD among diabetic patients with their selected demographic variables.

**Hypothesis**

**H<sub>1</sub>:** There will be a significant difference between pre test and post test knowledge score among diabetic patients regarding risk status of coronary artery disease after STP.

**H<sub>2</sub>:** There will be a significant association between post test knowledge of diabetic patient regarding risk status with their selected demographic variables.

**Delimitations**

- The study is limited to the diabetic patient in E.S. hospital only.

- The study period of data collection is only one week.
- The sample size is 30 diabetic patients only.

**Materials and Methods**

**Research approach:** Quantitative approach is selected for this study.

**Research design:** pre-experimental design one group pre-test, post-test design.

**Study setting**

The study was conducted at E.S. Hospital, Villupuram.

**Population**

The population of this study was diabetic patients who are admitted in E.S. Hospital, Villupuram.

**Sample**

The sample consisted of 30 diabetic patients admitted in E.S. Hospital.

**Sample technique**

The sampling technique used is purposive sampling, 30 samples are taken as the subjects of the study.

**Description of the tool**

**Section-I:** It deals with diabetic patients such as age, religion, occupation & Income of the family.

**Section-II:** It deals with assessment of knowledge on risk status of CAD among diabetes patients.

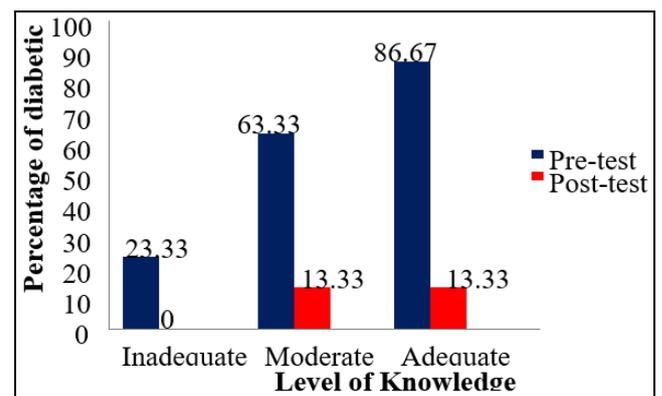
**Table:** Score interpretation

S. No	Level of Knowledge	Score
1.	Inadequate knowledge	1-7
2.	Moderate adequate Knowledge	8-14
3.	Adequate knowledge	15-20

**Results and Discussion**

**Table 1:** Frequency distribution and percentage of level of knowledge regarding risk status of coronary artery disease. (N=30)

S. No	Level of Knowledge	Pre-test		Post-test	
		(F)	(%)	(F)	(%)
1.	Inadequate knowledge	7	23.33%	-	-
2.	Moderate knowledge	19	63.33%	4	13.33%
3.	Adequate knowledge	4	13.33%	26	86.67%



**Fig 1:** Frequency and percentage distribution of level of knowledge among diabetes patients regarding risk status of coronary artery diseases.

**Table 2:** Comparison of pre test and post test level of knowledge regarding risk status of coronary artery disease among diabetes patients. (N=30)

S. No.	Test	Mean	Standard Deviation	DF	“t” Value
1	Pre-test	9.866	2.94	29	10.71
2.	Post-test	16.3	3.94		S*

\* Significant ( $p < 0.05$  level)

**Major Finding of the Study**

- The study reveals that level of knowledge in pre test, 7(23.33%) had inadequate knowledge, 19(63.33%) had moderate knowledge and 4(1.33%) had adequate knowledge and in post-test no one had inadequate knowledge, 4(13.33%) had moderate knowledge and 26(8.67%) had adequate knowledge.
- The mean score of risk status of CAD among diabetic patients in pre-test was 9.866 and standard deviation was 2.94 and the mean score of post-test was 16.3 and standard deviation 3.94 and estimated “t” value was 10.71 which was highly significant at  $P < 0.05$  level. Hence the research hypothesis  $H_1$  Is accepted.

**Conclusion**

The study implies that structured teaching programme on risk status of Coronary Artery Disease among diabetic patients was very effective to gain knowledge about risk of Coronary Artery Disease.

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