A STUDY TO ASSESS THE KNOWLEDGE ABOUT RISK FACTORS AND WARNING SIGNS OF ACUTE CORONARY SYNDROME AMONG PATIENTS ADMITTED IN CARDIAC MEDICAL UNIT AT SCTIMST, TRIVANDRUM

PROJECT REPORT

Submitted in a partial fulfillment of the requirements for the Diploma in Cardiovascular and Thoracic Nursing

ABHILASH .P
Code No. 6078

SREE CHITRA TIRUNAL INSTITUTE FOR MEDICAL SCIENCES AND TECHNOLOGY
TRIVANDRUM
2010

CERTIFICATE FROM SUPERVISORY GUIDE

This is to certify that Mr. ABHILASH .P has completed the project work on ***'A study to assess the knowledge about risk factors and warning signs of acute coronary syndrome among patients admitted in cardiology medical unit at SCTIMST, Trivandrum*** under my direct supervision for the partial fulfillment for the Diploma in Cardiovascular and Thoracic Nursing in the University of Sree Chitra Tirunal Institute for Medical Sciences and Technology. It is also certified that no part of this report has been included in any other thesis for processing any other degree by the candidate.

Dr. Saramma.P.P, MN, PhD
Senior Lecturer in Nursing SCTIMST

Trivandrum
November 2010

APPROVAL SHEET

This is to certify that Mr. ABHILASH .P has been admitted to the Diploma in Cardiovascular and Thoracic Nursing, in January 2009 and he has undertaken the project entitled, ***"A study to assess the knowledge about risk factors and warning signs of acute coronary syndrome among patients admitted in cardiology medical unit of SCTIMST, Trivandrum",*** which is approved for the Diploma in Cardiovascular and Thoracic Nursing, awarded by the Sree Chitra Tirunal Institute for Medical Sciences and Technology, Trivandrum and it is found satisfactory.

EXAMINERS

(1)..... (2).....

GUIDE

(1)..... (2).....

Trivandrum
November 2010

CERTIFICATE FROM THE CANDIDATE

This is to certify that the project on '***A study to assess the knowledge about risk factors and warning signs of acute coronary syndrome among patients admitted in cardiology medical unit at SCTIMST, Trivandrum'*** is a genuine work done by me, under the guidance of Dr.Saramma.P.P, M.N, PhD, Senior Lecturer in Nursing, SCTIMST, Trivandrum. It is also certified that this work has not been presented previously to any other University for award of degree, diploma or other recognition.

ABHILASH .P

CODE NO. 6078

SCTIMST

Trivandrum

November 2010

Acknowledgement

"Commit your works to the Lord
And your thoughts will be stabilized"

- Proverb 16:3

Investigator owes sincere thanks to God Almighty, who accompanied and directed him to achieve success throughout this study.

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CONTENTS

LIST OF TABLES

ABBREVIATIONS

ACC	-	American College of Cardiology
ACS	-	Acute Coronary Syndrome
AHA	-	American Heart Association
AMI	-	Acute Myocardial Infarction
CAG	-	Coronary Angiogram
CCU	-	Coronary Care Unit
CHD	-	Coronary Heart Disease
CI	-	Confidence Interval
CVD	-	Cardiovascular Disease
ED	-	Emergency Department
HDL	-	High Density Lipoprotein
ICMR	-	Indian Council for Medical Research
LDL	-	Low Density Lipoprotein
MI	-	Myocardial Infarction
NSTEMI	-	Non ST Elevation Myocardial Infarction
PTCA	-	Percutaneous Transluminal Coronary Angioplasty
SCR	-	Standard Cardiac Rehabilitation
SCTIMST	-	Sree Chitra Tirunal Institute for Medical Sciences and Technology
SD	-	Standard Deviation
UA	-	Unstable Angina
WHO	-	World Health organization

ABSTRACT

A study to assess the knowledge about risk factors and warning signs of Acute Coronary Syndrome among patients admitted in cardiac medical unit at SCTIMST, Trivandrum.

Background: Acute Coronary Syndrome (ACS) represents the most common cause of morbidity and mortality worldwide. Several risk factors contribute directly to this disease burden. Recognition of warning signs is logically tied to taking action to receive prompt emergency care. **Objectives:** (i) To assess the knowledge about risk factors and warning signs of ACS among patients admitted in cardiac medical units, (ii) To assess the relationship between Knowledge about risk factors and warning signs of ACS and selected variables. **Method:** A survey was conducted in 50 consecutive samples with a pre-validated questionnaire. **Result:** 88% of the samples answered fatty diet, 92% answered hypertension . 84% of the samples answered smoking and 72%, 80% and 76% answered obesity, diabetes and family history as a risk factor for ACS respectively. About warning signs, 96% and 76% answered chest discomfort and arm discomfort respectively. Only 12% had knowledge of indigestion and vomiting as warning signs of ACS. . Conclusion: The study showed that the patients had average level of knowledge about risk factors and warning signs of ACS.

CHAPTER – I

INTRODUCTION

Coronary Heart disease is the leading cause of mortality and morbidity in many, countries world wide. Cardio vascular death is 50% of the total death and by 2020 it is predicted to go up to 2/3 rd of the total death (Keith, 2006). The world Health organization (WHO) estimated that if no appropriate action is taken, 20 million people would die from cardiovascular disease every year by 2015 (okrainee, 2007).

In 2003, the prevalence of coronary heart disease (CHD) in India was estimated to be 3-4% in rural areas and 8-10% in urban areas with a total of 29.8 million affected according to population based cross-sectional surveys. In India, heart disease is the single largest cause of death in the country with heart attacks being responsible for 1/3 of all deaths caused by heart disease. In 1990, there were an estimated 1.17 million deaths from CHD in India and the number is expected to almost double to 2.03 million by 2010. The huge Burden of CVD in Indian sub continent is the consequence of the large population and high prevalence of CVD risk factors.

Back ground of the study

Coronary artery disease has assumed epidemic proportion in India. Over 80% of deaths and 85% of disability from cardiovascular disease (CVD) occur in low-and middle income countries. In India alone, an estimated 19.3 million people had diabetes in 1995 and this is expected to almost triple to 57.2 million in 2025. The last 30 years has been seen remarkable transition in Kerala. Kerala has the highest life expectancy, lowest infant mortality rate and maternal mortality rate. This social transition also has unfortunately led to the highest prevalence of 7.5 percent and urban prevalence of 12 percent. It is clear that, population of Kerala is at very high risk of death from cardiovascular diseases. One may also conjuncture that 1.5 lakhs people develop heart attacks in Kerala every year. This is not surprising when one understands the preponderance of risk factor of cardiovascular diseases in Kerala. The ICMR / WHO study on non-communicable diseases. Risk factors estimate that there are 8.72 million hypertensives in Kerala. The estimated number of diabetic are 3.48 million, 52.1 percent male and 61.4 percent female populations has a total cholesterol of > 200 mg/dl. One may also conjugate that 1.15 lakhs people develop heart attack can be prevented by appropriate management and prevention strategies (Muray, 19997).

Coronary artery disease

Coronary artery disease refers to disease of the heart that result from a decrease in blood supply to the heart muscle. This reduced blood supply is due to deposition of fatty substances on the vessel wall which could block the coronary arteries and result in decreased myocardial tissue perfusion. A number of risk factors may contribute to the development of CAD such as smoking, high blood pressure, diabetes mellitus, dyslpidemia etc. The onset of acute coronary syndrome is frequently the first presentation of CAD.

Acute coronary syndrome

The term Acute Coronary Syndrome (ACS) is used to refer the spectrum of clinical manifestations of coronary heart disease (CHD), which shares this common underlying pathology.

Myocardial infarction

Rupture of atheromatous plaque may result in complete occlusion of the coronary artery by thrombus or other aggregates . This leads to necrosis of the area of myocardium supplied by the affected artery and is labeled as myocardial infarction. MI is typically associated with ST segment elevation on the electro cardiograph (ECG) and the release of biochemical markers of necrosis (FOX, 2000).

Unstable angina

Where less obstructive thrombi exist or where spontaneous dissolution of the thrombus occurs and flow within the artery is restored within 20 minutes, persistent changes on the ECG or release of biochemical markers do not usually occur. Clinically, this is described as unstable angina.

No-ST elevation mi

Episodes of occlusion may occur where release of biochemical markers of necrosis occurs but where ST elevation is not evident on the ECG. This is termed as Non-ST elevation MI. (Fox, 2000).

Mortality risks vary between the syndromes and the treatment indicated for each is different. In particular emergency reperfusion treatment is indicated for acute MI but not for the remainder of the syndrome.

Symptoms associated with ACS:

Chest pain is the classic symptom associated with ACS. The particular type of pain associated with ACS is known as Angina pectoris. Stable angina is usually of brief duration lasting less than few minutes and predictability associated with exertion. However, the symptoms of angina tend to be of longer duration (> 10 minutes). Pain is prolonged (>30 minutes) and associated with other symptoms such as sweating or nausea

and vomiting is commonly associated with MI. The pain of myocardial infarction may last for several hours. Onset of discomfort whilst resting is also suggestive of ACS.

Identifying symptoms of ACS

The symptom of ACS share many common features and are therefore very difficult to distinguish from each other. The features of ACS could be considered typical. However, there is evidence to suggest that a substantial proportion of patients with ACS experience atypical chest pain (Bertrand et al, 2002) or indeed other atypical symptoms such as dyspnea, nausea and vomiting or palpitations. (Canto, et al, 2000; Gupta, et al 2002). Furthermore there is evidence that in patients with objective pathological evidence of MI, a proportion are unable to recall any symptom episode they could associate with MI. Particular groups appear to be most likely to present with atypical symptoms or silent ischaemia. These include women, the elderly and people with diabetes (Gupta, et al 2002; Bertrand, et al 2002).

According to the American Heart association the most common and recognized risk factors and the warning signs of ACS are as follows:

Risk factors

Modifiable risk factors	Non modifiable risk factors
Diabetes mellitus	Age
High blood cholesterol	In men after the age of 45
High blood pressure	In women after menopause, usually after the age of 50.
Cigarette smoking	A previous history of heart attack or procedure to open up the coronary arteries.
Over weight	Family history of early heart disease
Physical inactivity	Father or brother diagnosed before the age of 55.
	Mother or sister diagnosed before the age of 65

Heart attack warning signs

- Chest discomfort.
- Most heart attacks involve discomfort in the center of the chest that lasts for more than few minutes or that goes away and comes back. The discomfort can feel like uncomfortable pressure, squeezing or fullness.
- Discomfort in other areas of upper body:
- Symptoms can include discomfort in one or both arms or in the back, neck, jaw or stomach.
- Shortness of breath
- This symptom often accompanies chest discomfort. However, it can also occur before chest discomfort.
- Other signs :

- These include breaking out in cold sweat, nausea or light headedness. Some patients report a sense of impending doom (Ornato, 2009)

Need and significance of the study

Studies have shown that knowledge has an impact on prevention of heart disease. Significant correlations between patient's specific knowledge about risk factors of coronary heart disease and self reported life style changes and adherence to prescribed drugs, was noted by Roijer (2006). Individual perception of health risk is an accepted key issue, when goals of primary and secondary prevention are identified. Common theories on health behavior, such as the health model or the protection motivation theory support the importance of risk perception, also called perceived susceptibility for health education and preventive medicine. For cardiovascular diseases, primary prevention has large potential benefits, adequate risk perception is an important step for the change of risk related life styles.

Definite treatment for MI is early reperfusion. It may be either with angioplasty or thrombolytic therapy, but the benefit is strictly time dependent. Recognition of heart attack symptoms is logically tied to action to receive prompt emergency care. Inadequate knowledge of heart attack symptoms may prolong delay (Zhang, 2007).

Sree Chitra Tirunal Institute for Medical Sciences and Technology (SCTIMST) is an institute of National Importance by the act of the Indian Parliament. It is an autonomus institute under the administrative control of the department of science and technology, Government of India, and is situated at Trivandrum, the capital city of Kerala. It has a 239-beded tertiary referral hospital with major specialities like cardiology, cardiac surgery, neurology and neuro surgery. About 12,000 patients get registered per month. An average of 30 to 40 patients attends cardiac new OPD every day. An average of 15 – 20 patients with CHD gets admitted electively every day. A total of 553 PTCAs and 1,100 CAGs have been performed from January to October 2010. Knowledge about risk factors of coronary heart disease and warning signs of ACS is important for patients to prevent recurrence. It was felt that there is a need to assess the knowledge level and their relationship with variables in the patients admitted in cardiology medical unit. Hence this study was undertaken with the objectives to assess the knowledge of Acute coronary syndrome (ACS) and to assess the relationship between their knowledge and selected variables. (Age, Sex, educational status, socio economic status as per hospital records).

Statement of the problem

A study to assess the knowledge about risk factors and warning signs of acute coronary syndrome among patients admitted in cardiac medical unit at SCTIMST Trivandrum.

Objectives

- To assess the knowledge of patient about risk factors of acute coronary syndrome (ACS)
- TO assess the knowledge of patients about warning signs of Acute Coronary syndrome (ACS)

Operational Definitions

Knowledge : A state of awareness or understanding with conscious mind. In this study knowledge refers to awareness or understanding about risk factors and warning signs of Acute Coronary Syndrome, measured with the help of a self reported questionnaire on knowledge about risk factors and warning signs of ACS.

RISK FACTORS

A factor that causes a person / group of people to be particularly vulnerable to as wanted unpleasant or unhealthful event. In this study the risk factors taken are smoking, obesity, family history, diabetes mellitus, high blood cholesterol, high blood pressure, stress and fatty diet.

Warning Signs: A warning sign is something that makes one understand that there is a possible changes or problem especially one in the future. In this study warning signs are chest discomfort, Arm discomfort, vomiting, upper back pain, gastric pain and sudden dizziness.

Acute coronary syndrome (ACS)

An umbrella term used to cover any group of clinical symptoms compatible with acute myocardial ischaemia. Acute myocardial ischaemia is considered to produce chest pain due to insufficient blood supply to the heart muscle that results from coronary artery disease. ACS encompasses the spectrum of clinical conditions which may range from unstable engine to non-Q wave myocardial infarction (MI) and Qwave myocardial infarction is also recognized as unstable angina or chest pain, and heart attack. In this study ACS refers to the diagnosis of patients who are admitted in coronary care unit with any of the above mentioned clinical conditions.

Cardiac medical unit

In this study, cardiac medical unit refers to the coronary care unit. The coronary care unit occur is a facility dedicated to acute care services for patients with cardiac disease. This critical environment provides special facilities and utilizes expertise of medical, nursing and other staff trained and experienced in management of patients with acute cardiac problems such as myocardial infarction and unstable angina and who may have undergone interventional procedures from which recovery is possible.

1.7. Limitations

- The study is limited only to Malayalam speaking patients.
- The study area is only in coronary care unit.
- The data collection period is limited to one month.

1.8. Summary

This chapter included the introduction, background of the study, need and significance of the study, statement of the problem, objectives, operational definitions and limitations of the study.

CHAPTER - II

REVIEW OF LITERATURE

Introduction

Review of literature is the key step in research process, which helps to lay a foundation for the study. The literature review provides a background for understanding current knowledge on a topic and illuminates the significance of the study. Also literature review is important to gain better understanding and insight necessary to build upon existing knowledge.

The literature review relevant to this study is presented in the following sections

- studies on risk factors warning signs and symptoms of acute coronary syndrome
- studies on knowledge about risk factors and warning signs of Acute Coronary Syndrome.

Studies on risk factors warning signs and symptoms of ACS

Lovelin et al (2009) conducted a cross – sectional study at the Norwegian University in Norway. The objective of the study was to assess early warning signs of AMI with comparison made by gender. Another aim was to determine whether these early warning sign had any influence on the patients acute symptoms of AMI. Typical symptoms were "identified as chest pain, radiating pain or numbness in the arms, dyspnoea and fatigue. The study sample included 149 women and 384 men who were < 75 yrs of age or older reported to the hospital with symptoms suggesting ACS. The results demonstrated that 28% of women and 36% of men were diagnosed with ACS. Researcheres revealed that the only statistical relevant data found in multi variate analysis was prodromal arm pain (OR=3.11; 95% CI, 1.90 -5.07). in women and a chest pain or discomfort in men (OR = 2.80, 95% CI, 1.17 – 6.70. The study revealed that almost half of the study patients (45%) experienced prodromal chest pain and symptoms the year before the first AMI. These prodromal symptoms predicted the symptoms that occurred during the acute stage of AMI, with some differences between sexes.

Saleheen et al (2004) assessed the relative importance of risk factors for ischaemic heart disease among South Asians migrants in Pakistan. A prospective hospital based case control study was conducted in 90 patients

with a first acute MI between January 2000 – December 2002 were divided into two groups < 45 yrs and > 45 yrs old. They recorded the following risk factors for ischaemic heart disease: Diet, smoking, alcohol use, blood glucose, and lipid profile. The investigators interpreted that smoking cessation, treatment of hypertension and reduction in blood glucose and obesity were important in preventing ischaemic heart disease in South Asians.

Miller et al (2003) conducted a study in the University of Wisconsin, USA to describe prodromal and early warning symptoms of acute myocardial infarction in women. The most frequent prodromal symptom experienced by women are fatigue, shortness of birth, back pain, edema, and transient non-specific chest discomfort. The investigator concluded that cardiac screening of women who present with cardiac risk factors and careful attention to less anticipated symptoms are critical factors that can improve the rapid identification of coronary artery disease in women. The unique physiological and sociological differences between women and men make further study of women's symptom experiences and perceptions, important for health care providers . Further study of gender and ethnic differences in symptom patterns and recognition will help to improve screening and earlier identification of cardiac problems in women patients especially those without chest pain as a prodromal symptom.

Chiou et al (2009), conducted a cross sectional study among patients with CAD in Northern Taiwan. 156 patients diagnosed with CAD were interviewed and asked to complete a structural questionnaire in cardiovascular clinics at three medical centers in Northern Taiwan . The result of the study was 38% of variance of modifying behaviours was explained by self-efficacy, actual risk factors, work status and health beliefs. Age and type "A" personality were the two leading cardio vascular risk factors for the participants. The investigators interpreted that most participants could modify behaviors such as feeling mediators, eating an appropriate diet and following specific life style recommendations. The authors concluded that nurses should assess patient cardiovascular risk factors, health belief and self efficacy and then instruction to each based on his or her specific risk factors.

Wild et al (1995) assessed the importance of risk factors for coronary artery disease among womens in Oklahoma. A number of cardio vascular disease risk factors including central obesity, insulin resistance, dyslipidemia and diabetes mellitus tend to cluster in these women. Another common ovarian morphology in women with hyper androgenism is polycystic ovaries which cluster with hirsutism, anovulation and hyper adrogenism. Studies, indicate that androgen excess may be a signal of increased risk for coronary artery disease even in younger women. If androgenicity and insulin resistance are early warning signs of increasing risk of morbidity and mortality, these patients are prime candidates for

preventive medicine. The investigators concluded that the primary care providers begin to recognize these androgen disorders as a clue to the existence of a complex, life long pattern potentially placing women at risk for premature mortality and morbidity and initial preventive treatment before increasable thresholds are crossed.

Sinan et al (2010) conducted a study to determine the relationship between Serum uric acid level and a the severity of coronary artery disease in Turkish population. A total of 1012 patients who underwent coronary angiography were included in this study. Serum Uric acid and creatinine level as well as fasting lipid profile and fasting blood glucose were measured in all patients before the procedure. Of 1012 patients (mean age 59.4+/-10.24 years), 680 were men and 332 were women . Of the study patients 69% were hypertensive, 28.9% were diabetic, 30% had a smoking history, 30% had low high density lipoprotein cholesterol levels and 34% had hyperglycemia. Based on logistic regression analysis the increased Uric acid level was found to be associated with the presence of CAD in both men and women ($p<0.001$). The increased serum Uric acid level was also found to be associated with the severity of CAD in both men and women based on multi variate linear regression analysis. The investigator concluded that serum Uric acid was found to be associated with the presence and severity of CAD.

2.3. Studies on knowledge about risk factors and warning signs of ACS

Susan et al (2005) conducted a survey on knowledge about blood pressure levels and targets in patients with coronary artery disease in USA. Of 738 patients hospitalized with coronary artery disease to assess their knowledge of systolic and diastolic blood pressure levels as well as corresponding national targets. A bivariate and multivariate analyses are used to determine if any patient demographic or clinical characteristics were associated with blood pressure knowledge. only 66.1% of patients could recall their own systolic and diastolic blood pressure levels. Only 48.9% of all patients could correctly name targets for these values. Knowledge of target blood pressure level was particularly poor among patients who were female (OR) 0.69; 95% confidence interval (CI) 0.49-0.98), age 60 years (OR 0.70, CI 0.51-0.97). without any college education (OR 0.48; CI 0.35-0.65), without a documented history of hypertension (OR 0.57, CI 0.39-0.84), and with known diabetes (OR 0.46, CI 0.33-0.66). The investigator concluded that a significant proportion of patients hospitalized with coronary artery disease did not know their own blood pressure levels or targets.

Aysha et al (2005), conducted a study in the university of East Karachi. The study aimed to calculate the mean knowledge score about CAD risk factors among them. A cross sectional study was conducted in

universities and colleges of Karachi East from April to September 2005. Questionnaires were distributed to 200 adult students of different non-medical universities and colleges. The questionnaire contained assessment of knowledge of risk factors on CAD and awareness about coronary angiography. Knowledge was assessed as a continuous variable. Risk factors of CAD were taken as categorical variables. The mean score of knowledge about risk factors of CAD was 11.47 $\pm$ 2.37. 60% students thought that heart diseases are the number one cause of death in population. Twenty five percent students agreed to quit smoking for CAD prevention. Forty eight percent students correctly defined coronary angiography. The authors concluded that students graded smoking as the top most risk factor for CAD and cost as the major hindrance in getting timely treatment for heart disease. The mean knowledge score among them was above the median score but not up to the mark.

Lichtman et al (2008) conducted a survey about knowledge of cholesterol levels and targets in patients with coronary artery disease in USA. Of 738 patients hospitalized with coronary artery disease to assess their knowledge of their low density lipoprotein, High – density lipoprotein and total cholesterol levels as well as corresponding national targets. Only 8% and 43% of patients could recall their low – density lipoprotein. High density lipoprotein and total cholesterol values. Knowledge of cholesterol level was particularly poor among women, non whites and patients without any college education. Patients with multiple cardiac risk factors and

patients with a previous history of cardiovascular disease were no more knowledgeable about their cholesterol targets than those without these conditions. The investigator concluded that the current cholesterol education efforts appear inadequate particularly for women, non whites and patients without any college education.

Zhang et al (2007) documented the knowledge about heart attack symptoms among Beijing residents and to identify the characteristics associated with increased knowledge of heart attack. A structured survey was conducted in 18 communities in Beijing from March 1 through June 10 in 2006. A total of 4627 respondent completed the questionnaires correctly and 50.29% of them were female. Of the respondents reported chest pain or discomfort as symptoms of heart attack. 75.38% reported at least one of the following eight symptom of heart attack; Back pain, shortness of breath, arm pain or numbness, nausea or vomiting, neck, jaw or shoulder pain, epigastric pain, sweating, weakness (less common symptoms); 20.36% correctly reported one or more heart attack symptoms, only 7.4% knew all the heart attack symptoms and 28.94% knew about reperfusion therapy for heart attack. The investigators concluded that the public knowledge of heart attack symptoms was deficient in Beijing residents.

Partha et al (2007) conducted a study to determine the knowledge about heart attack and hypertension among individuals in pokhana city.

The study was carried out to note the respondent's knowledge regarding myocardial infarction and Hypertension and to note the associates , if any, of the knowledge with demographic and personal characteristics. The structured survey was conducted during September 2002 were interviewed by briefed seventh semester students using a structured questionnaire. Basic demographic information and knowledge about MI&HTN was collected. The median score was calculated. Difference in scores among different subgroups of respondents were noted using appropriate statistical tests ($p<0.05$). Sixty –six respondents were interviewed; 44 were male. The knowledge score of heart attack and HTN were 6 (maximum score 8) and 11 (maximum score 14) respectively. The score were significantly respondents and family members suffering from cardiovascular diseases. The investigator concluded that the respondents were aware of the basic facts regarding MI and HTM. However, lacunae in knowledge were noted. Further studies are required.

Omar et al (2009) conducted study to determine the knowledge of modifiable risk factors of coronary atherosclerotic heart disease (CASHD) among a sample in India. A hospital based, cross sectional study was conducted at all India institute of medical sciences (AIIMS), New Delhi, India. Participants (n= 217) recruited from a patient waiting area new in the emergency room were provided with standardized questionnaires to assess their knowledge of modifiable risk factors of CASHD. The risk factors specifically included smoking , hypertension, elevated cholesterol

levels. Whereas identifying 4 or more risk factors was regarded as a good knowledge level. A multiple logistic regression model was used to isolate independent demographic markers predictive of a participants level of knowledge. 41% of the sample had a good knowledge level. 68%, 72%, 73% and 57%of the population identified smoking, obesity, hypertension and high cholesterol correctly , respectively. 30% identified diabetes mellitus as a modifiable risk factor of CASHD. The investigators concluded that an Indian population in a hospital setting showed a lack of knowledge pertaining to modifiable risk factors of CASHD. By isolating demographic predictors of poor knowledge such as current smokers and persons who do not exercise regularly, educational interventions can be effectively targeted and implemented as primary and secondary prevention

Summary

Keywords used for search

CHAPTER - III

METHODOLOGY

3.1. Introduction

Research methodology is the systematic way to solve problem. It includes the steps that the researcher adopts to study his problem with logic behind. (Kothari, 1990). It indicates the general pattern of organizing the procedure of gathering valid and reliable data for an investigation.

This chapter provides a brief description of the method adopted by the investigator to conduct this study. This chapter includes the research approach, research design, setting of the study, sample and sampling technique. It further deals with the development of the tool, procedure for data collection and plan for data analysis.

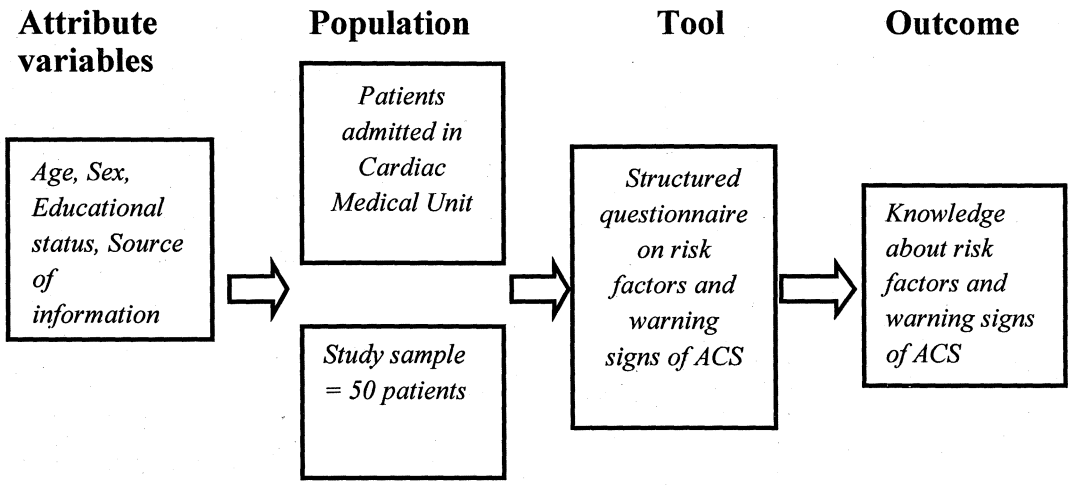
3.1 Research approach

Survey approach was selected for this study. Survey approach is more suitable for educational fact finding in a relatively small sample.

Research design

Research design is concerned with the overall framework for conducting the study. The design used for fulfilling the objectives of the study is as a descriptive survey . design. The framework for the study is as follows.

Framework for the study



3.4 Setting of the study

This study was conducted in the Coronary care unit (Cardiac medical unit) of Sree Chitra Tirunal Institute for Medical Sciences and Technology, Trivandrum. The rationale for selecting this institute was that the investigator was more familiar with the institution. SCTIMST is an institute of national importance, where there is a separate department for Cardiology, which includes Cardiology medical ward and Comprehensive Acute Coronary Care Unit.

3.5 Study population

The target population of the study was both male and female patients admitted in Cardiology medical unit.

3.6. Sample

The sample consisted of 50 patients. 10 samples were selected for pilot study.

3.7. Criteria for sample selection

Inclusion criteria:

- Patients who can understand and read Malayalam/ or English.
- Patients who are willing to participate.

Exclusion criteria:

Patients on ventilator and who cannot respond are excluded from the study.

3.8. Sampling technique

Patients who are admitted in the Cardiology Medical Unit during the data collection period and who fulfilled the inclusion criteria were consecutively selected as samples by purposive sampling technique.

3.9. Data collection tool

Data collection tool refers to the instrument, which was used by the investigator to obtain relevant data. The investigator prepared a structured questionnaire after an extensive review of literature. The questionnaire was then examined and content validated by experts in SCTIMST. The research tool was finalized according to experts' opinion.

3.10 Description of the tool

The structured questionnaire consists of two sections.

Section I:

General information or Demographic data.

It includes, name, age, sex, marital status, educational status, and financial category (according to hospital records). Educational status is placed under four sub headings. Uneducated (no basic education), primary (up to 5lh Std), secondary (6th to 12lh std), and above 12Ih std. Occupational status and the source of information is also included.

Section II:

It consists of a total of 24 questions regarding risk factors and warning signs of ACS. These questions were placed under two divisions. First division consists of 13 questions about risk factors of ACS, which includes 8 known risk factors, and 5 wrong risk factors. The second division consists of 11 questions about warning signs of ACS, including 8 correct and 3 incorrect warning signs. The questions were of Yes or No type. Separate columns were provided for answering Yes, NO and Don't know. Each correct answer is given '1' mark. Don't know answer is calculated as wrong answer and each wrong answer in given '0' mark. Total knowledge about risk factors and warning signs is calculated with percentage of marks scored by the samples. **A** pilot study was conducted from October 1st to 5th. The aim of the pilot study was to find out the practicability and feasibility of the tool. The pilot study was conducted among 10 samples. The sampling technique used was purposive sampling. Informed consent was taken from the samples. Then the finalized tool was used to assess the knowledge of the samples regarding risk factors and warning signs of ACS. The pilot study findings revealed that the study was feasible and practicable.

3.12. Data collection procedure

Since there was no problem faced during pilot study, the same method of data collection was used for the final study. The final study was done during the month of October for a period of 30 days. The sample collection was done on the 2nd or 3rd day of admission in CCU. The researcher first introduced himself to the subjects and then explained the need and purpose for the study. Informed consent was taken from the patients. The research tool was given to the patients and then 15 minutes was given to answer the questions. The entire time taken was a maximum of 30 minutes per sample. The samples were very cooperative and no problems occurred during data collection.

3.13. Plan for analysis

After data collection, datas were organized, tabulated, summarized and analyzed. Descriptive statistics like frequency mean and inferential statistics chi-square was used.

3.14. Protection of human subjects

The proposed study was conducted after the approval of the guide. Permission was obtained from the Head of the Cardiology Medical Department, and the Sister- in- Charge. Informed consent was taken from each subject before the data collection. Assurance was given to the study participants regarding the confidentiality of data collected.

CHAPTER - IV

ANALYSIS AND INTERPRETATION OF DATA

4.1 INTRODUCTION

Analysis is categorizing, ordering, manipulating and summarizing the data to an intelligible and interpretable form, so that research problem can be studied and tested including relationship between variable.

Interpretation is the process of making a sense of the result and examining the implication of finding with in broader context.

The data in this study was arranged and analysed under the following sections:

(1) Distribution of sample according to demographic variables

(2) Distribution of sample according to the knowledge about risk factors of ACS

(3) Distribution of sample according to the knowledge about warning signs of ACS

(4) Distribution of sample according to total knowledge score

Relationship between patient's knowledge about risk factors and warning signs and selected variables.

Table 1 : Distribution of samples according to demographic variables.

N = 50

Demographic	Frequency	Percentage
Age :		
<40 years	6	12
41 to 50 years	15	30
51 to 60 years	18	36
> 60 years	11	22
Sex :		
Male	28	56
Female	22	44
Education:		
Primary (Up to 5^{th} std)	8	16
Secondary (6^{th} – 12^{th} std)	24	48
Graduate (> 12^{th} std)	18	36
Occupation:		
Employed	28	56
Unemployed	22	44
Source of information:		
Mass media	32	64
Health workers	12	24
Others	6	12

Table 1 shows the demographic distribution of the samples according to variables. 36% of the samples were in between the age group of 51 - 60 years, and 12 % of the samples were less than 40 years. 22% of the samples were greater than 60 years (Fig 2).

56% of the samples were males and the rest 44% were females (Fig 3).

48% of the samples had secondary education (5th - 12th), 36 %-of the samples had higher education (> 12th std) and 16% of the samples had primary education (up to 5th std). (Fig.4).

56% of the samples were employed and 44% were unemployed. (Fig 5). Mass media was the source of information for a maximum of 64% of the samples. Health workers were the source for 24 % of the samples. (Fig 6).

Fig. 2 : Distribution of samples according to age

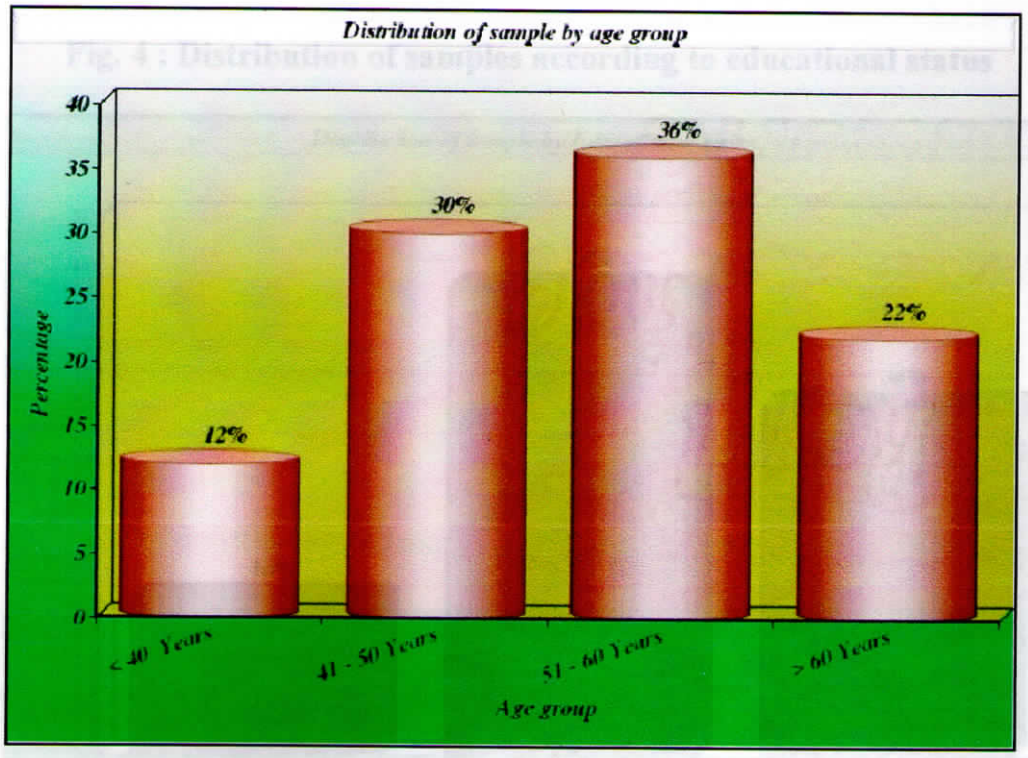


Fig.3 : Distribution of samples according to sex

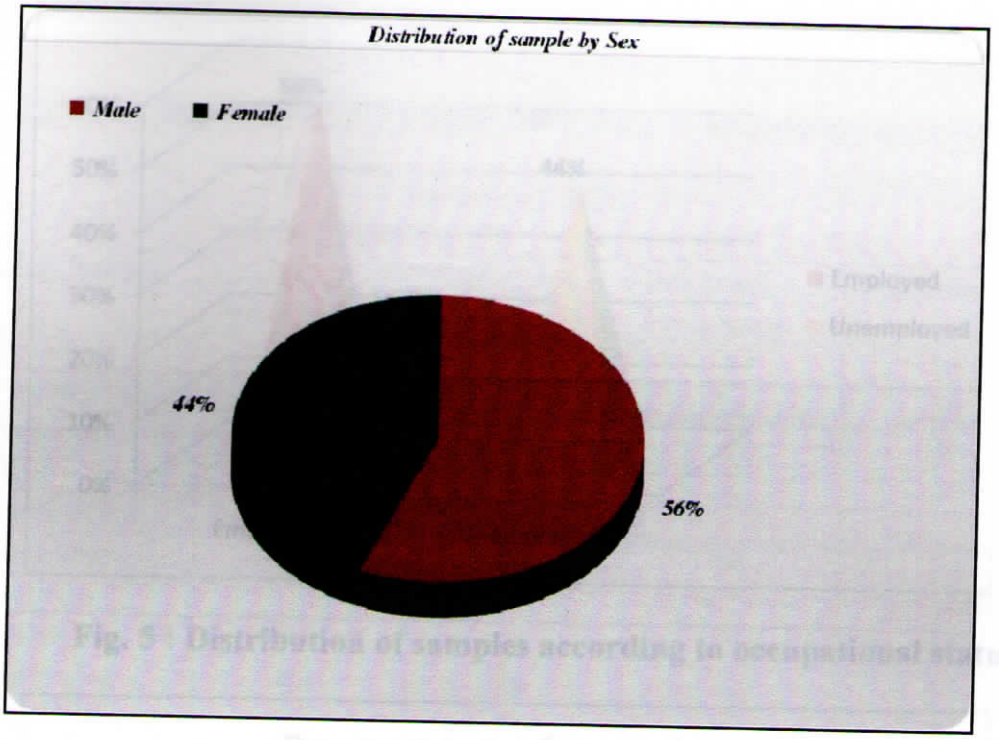
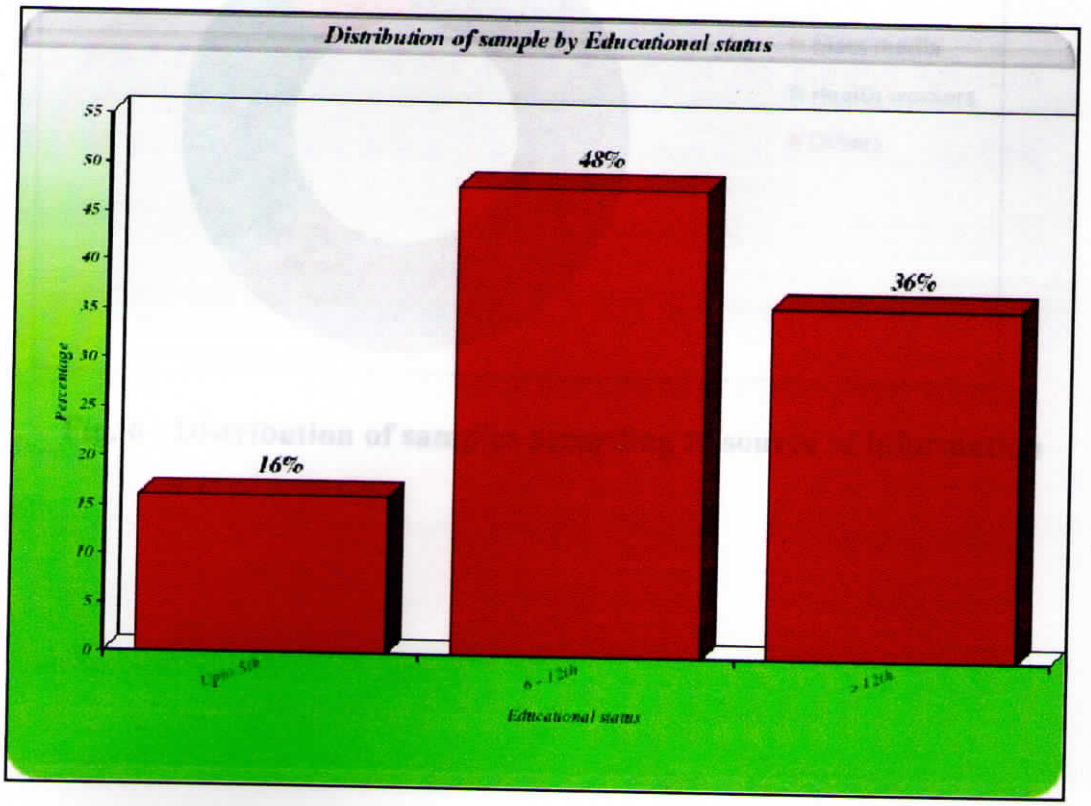


Fig. 4 : Distribution of samples according to educational status



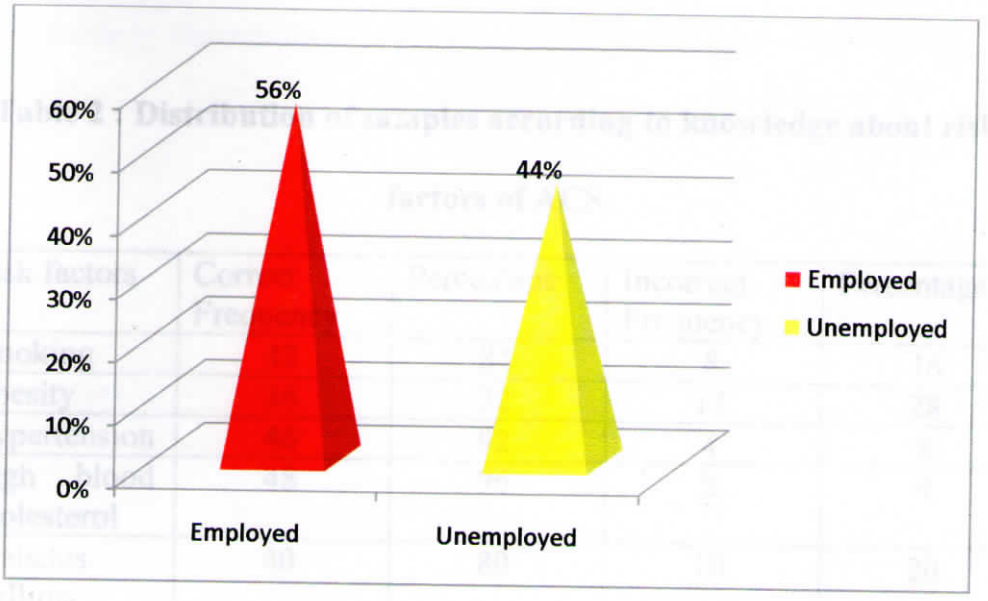


Fig. 5 : Distribution of samples according to occupational status

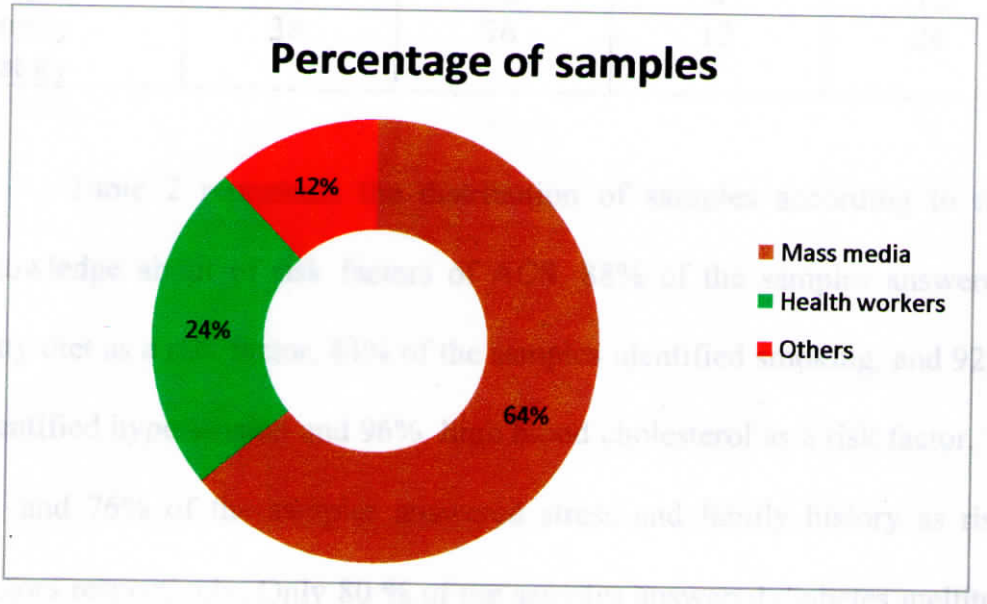


Fig. 6 : Distribution of samples according to source of information

Table 2 : Distribution of samples according to knowledge about risk factors of ACS

Risk factors	Correct Frequency	Percentage	Incorrect Frequency	Percentage
Smoking	42	84	8	16
Obesity	36	72	14	28
Hypertension	46	92	4	8
High blood cholesterol	48	96	2	4
Diabetes mellitus	40	80	10	20
Stress	36	72	14	28
Fatty diet	44	88	6	12
Family history	38	76	12	24

Table 2 represents the distribution of samples according to the knowledge about of risk factors of ACS. 88% of the samples answered fatty diet as a risk factor, 84% of the samples identified smoking, and 92% identified hypertension and 96% high blood cholesterol as a risk factor. 72 % and 76% of the samples answered stress and family history as risk factors respectively. Only 80 % of the samples answered diabetes mellitus as a risk factor. (Fig.7).

Table 3: Distribution of samples according to knowledge about warning signs of ACS

Warning signs	Correct Frequency	Percentage	Incorrect Frequency	Percentage
Chest discomfort	48	96	2	4
Vomiting	26	52	24	48
Arm discomfort	38	76	12	24
Upper back pain	24	48	26	52
Shortness of breath	38	76	12	24
Neck/jaw pain	24	48	26	52
Sudden dizziness	28	56	12	24
Indigestion/ Gastric discomfort	6	12	44	84

Table 3 represents the distribution of samples according to the knowledge about warning signs of ACS. 96% of the samples answered chest discomfort to be the main warning sign of ACS 76% of the samples identified arm discomfort. **76%, 48% and *56%*** of the samples answered for shortness of breath, neck/ jaw pain and sudden dizziness respectively. 48% answered upper back pain and only 12% and 52 % of the samples answered for indigestion/ gastric discomfort and vomiting respectively. (Fig 8)

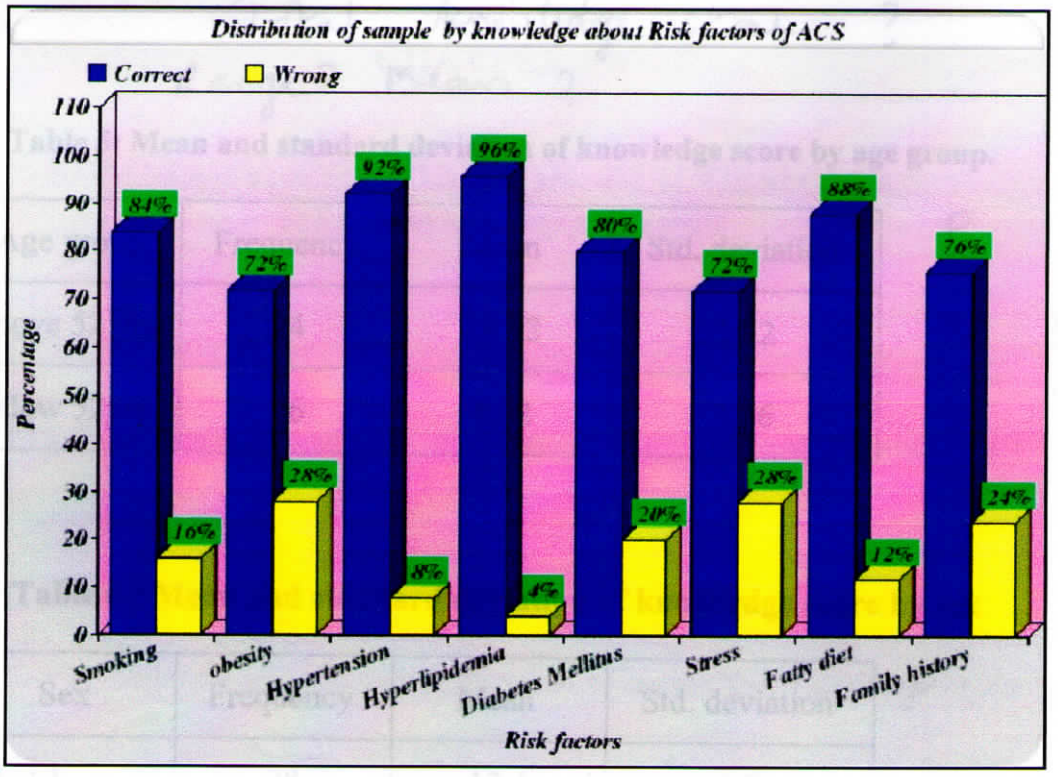


Fig. 7 Sample distribution according to the knowledge about risk factors

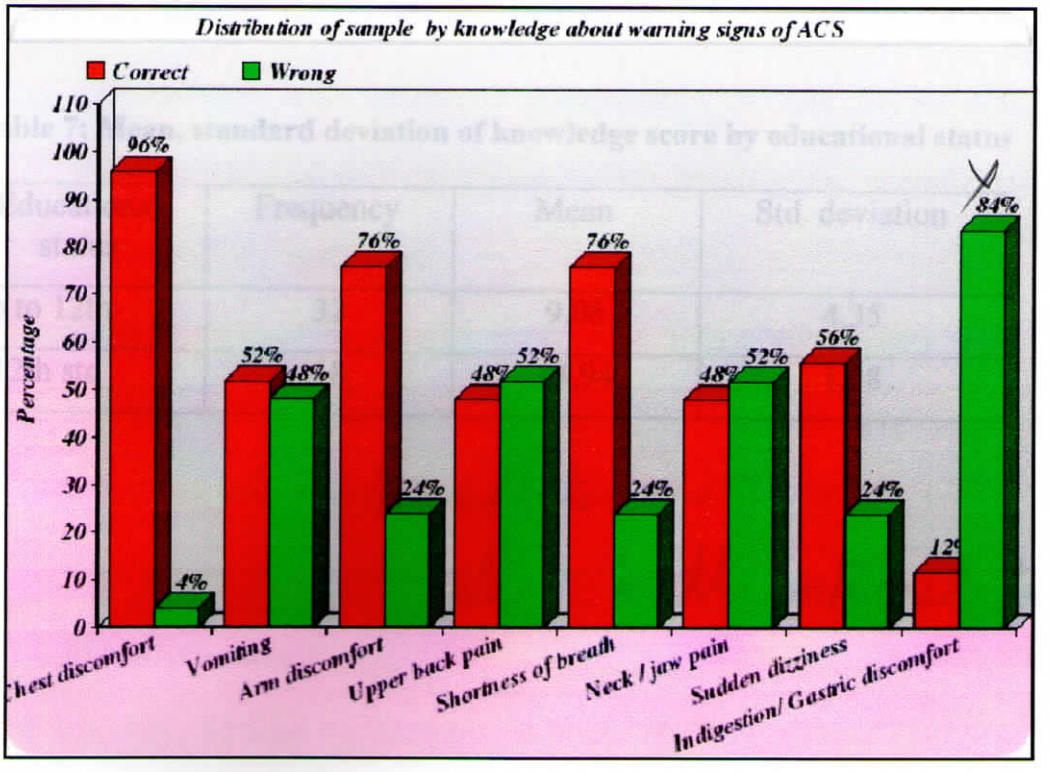


Fig.8 Sample distribution according to the knowledge about warning signs

Total knowledge score ?
Range ? Mean ?

Table 5: Mean and standard deviation of knowledge score by age group.

Age group	Frequency	Mean	Std. deviation
above 52 yrs	24	14.53	1.72
below 52yrs	26	8.02	3.96

P
?

Table 6 : Mean and standard deviation of knowledge score by sex

Sex	Frequency	Mean	Std. deviation
MALE	28	12.4	3.7
FEMALE	22	9.77	4.63

P
?

Table 7: Mean, standard deviation of knowledge score by educational status

Educational status	Frequency	Mean	Std. deviation
up to 12th	32	9.06	4.35
>12th std	18	14.94	1.08

P
?

Incomplete !
What is the interpretation.

CHAPTER – V

SUMMARY, CONCLUSION, DISCUSSION AND RECOMMENDATIONS

This chapter gives a brief account of the present study including the conclusions drawn from the findings of the study, discussions and recommendations.

5.1 Summary

A descriptive study was undertaken to assess the knowledge about warning and risk factors of ACS among patients admitted in cardiac medical unit of SCTIMST, Trivandrum

- fifty samples was selected by purposively sampling. Knowledge was assessed with structured questionnaire on risk factors and warning signs of ACS, prepared by the investigator. Significant findings of the study were,
- Majority, 56% of the samples were males, 36% of the samples were between the age group of 51-60 years. 48% of the samples had secondary education between 6 - 12 standard. 56% of the samples were employed. Source of information was through mass media for 64% of the samples.
- Majority, 88% of the sample had knowledge about **fatty diet** as a risk factor. Hypertension and High blood cholesterol was answered by 92% and 96% of the samples.

- ❖ Majority 96% of the sample had knowledge about chest discomfort as a warning sign of ACS. Only 12% and of the samples had knowledge about indigestion/gastric discomfort and vomiting as warning signs of ACS.

5.2 Conclusion

A descriptive study was undertaken to assess the knowledge of the patients about risk factors and warning signs of ACS. The results conveyed that the patients had lower level of knowledge about risk factors and warning signs of ACS. The study was inducted in a relatively small sample of 50 patients. There was an increase in the mean total knowledge score of patients with higher educational level. This study clearly portrays that majority of the patients had average or above average total knowledge.

5.5 Discussion:

The findings of the study were discussed with reference to the objectives and with the findings from other studies. The objectives of the study were, to assess the knowledge about risk factors and warning signs of ACS and to assess the relationship between knowledge and selected variables. According to Memis et al (2009) 11.8% of the population were unaware of the risk factors. Assiri (2003) found that the level of knowledge about risk factors of ACS were low among the population.

Pais et al (1996) interpreted that smoking cessation, treatment of hypertension and reduction in blood glucose and central obesity is important in preventing ischemic heart disease in Asian Indians. Study

findings revealed that patients had average level of knowledge regarding risk factors and warning signs of ACS. Dracup et al (2005), Ponti et al (2006) also found that there is a lack of good knowledge about ACS symptoms and risk factors among patients. These studies support the findings of the present study.. A study by Khan al (2006) revealed higher educational status as an independent predictor of good knowledge about ACS among patients. This supports the findings of the present study.

5.4 Recommendations

- A similar study can be conducted in a large sample.
- A similar study can be conducted in some selected group of hospitals
- An experimental study can be conducted to assess the effectiveness of health education on ACS in patients admitted in the hospital.

what is your conclusion?

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ANNEXURE - I

REQUEST LETTER

From,

ABHILASH .P
Diploma in CVT Nursing
SCTIMST
Trivandrum.

To

THE SISTER IN-CHARGE
CMICU
SCTIMST
Trivandrum.

Subject:

Requesting permission for conducting a research study in CMICU.

Respected Sister,

As a partial fulfillment of my course, I have to submit research study. I have selected CMICU as my project area. So I request you to permit me to do my project and complete it successfully. My problem statement is as follows....

"A STUDY TO ASSESS THE KNOWLEDGE ABOUT RISK FACTORS AND WARNING SIGNS OF ACUTE CORONARY SYNDROME AMONG PATIENTS ADMITTED IN CARDIAC MEDICAL UNIT AT SCTIMST, TRIVANDRUM".

Thanking you.

Yours sincerely,

Date :
Place : Trivandrum

ABHILASH .P

ANNEXURE - II

QUESTIONAIRE TO ASSESS PATIENTS KNOWLEDGE ABOUT RISK FACTORS AND WARNING SIGNS OF ACUTE CORONARY SYNDROME (HEART ATTACK)

GENERAL INFORMATION

FORM NO:

NAME :

AGE :

SEX :

MARITAL STATUS : MARRIED SINGLE OTHER

EDUCATIONAL STATUS : PRIMARY SECONDARY DEGREE

OCCUPATION :

CATEGORY : A B B1 C D

SOURCE OF INFORMATION :

DATE :

QUESTIONNAIRE

(Please mark (√) in the box, which you think as right answer)

(1) Which of the following increases the risk of having a heart attack?

Sl. No.	Risk factors	Yes	No	Don't know
1	CIGARETTE SMOKING			
2	OBESITY			
3	CHRONIC HEADACHE			
4	HYPERTENSION			
5	SLEEPING TOO MUCH			
6	DRINKING LOT OF COFFEE			
7	HIGH BLOOD CHOLESTEROL			
8	DIABETES MELLITUS			
9	STRESS			
10	FATTY DIET			
11	LIVING WITH HEART PATIENT			
12	ASTHMA			
13	FAMILY HISTORY OF HEART DISEASE			

2) Which of the following are the warning signs of heart attack?

Sl. No.	Warning Signs	Yes	No	Don't know
1	CHEST DISCOMFORT			
2	SEVERE HEADACHE			
3	VOMITING			
4	ARM DISCOMFORT			
5	FEVER			
6	UPPER BACK PAIN			
7	SHORTNESS OF BREATH			
8	NECK / JAW PAIN			
9	SUDDEN DIZZINESS			
10	INDIGESTION / UPPER GASTRIC DISCOMFORT			
11	LOOSE STOOL			

ANNEXURE – III

INFORMED CONSENT

I, ... hereby agree to participate in the research study, to assess patients knowledge about risk factors and warning signs of acute coronary syndrome (Heart attack), conducted by Mr. ABHILASH .P 1st year Diploma in Cardiovascular and Thoracic Nursing, of Sree Chitra Tirunal Institute for Medical Sciences and Technology, Trivandrum. I understand that there will not be any change in the nature of care I receive and the data given by me will be kept confidential, and will be used only for research purpose.

ANNEXURE IV

ഹൃദയസ്തംഭനത്തിന്റെ സാധ്യത വർദ്ധിപ്പിക്കുന്ന ഘടകങ്ങൾ, മുന്നറിയിപ്പ് നൽകുന്ന ലക്ഷണങ്ങൾ എന്നിവയെ സംബന്ധിച്ച് രോഗികൾക്കുള്ള അറിവ് എന്ന വിഷയത്തെക്കുറിച്ച് പഠിക്കുന്നതിന് തിരുവനന്തപുരം എസ്.സി.ടി ഹോസ്പിറ്റലിലെ സി.വി.ടി.എസ് നഴ്സിംഗ് വിദ്യാർത്ഥി ആയ അഭിലാഷ്.പി നടത്തുന്ന പഠനത്തിൽ സഹകരിക്കാൻ ഞാൻ സമ്മതിക്കുന്നു. എപ്പോൾ വേണമെങ്കിലും എനിക്ക് പിന്തിരിയാമെന്നും എന്റെ സഹകരണമോ നിസ്സഹകരണമോ എനിക്ക് ലഭിക്കുന്ന ശുശ്രൂഷയെ ബാധിക്കുകയില്ലെന്ന് ഞാൻ മനസ്സിലാക്കുന്നു. എല്ലാ വിവരങ്ങളും തികച്ചും രഹസ്യമായി സൂക്ഷിക്കുമെന്നും അവ പഠനത്തിനുമാത്രമേ ഉപയോഗിക്കൂ എന്ന് ഞാൻ മനസ്സിലാക്കുന്നു. ആയതിനാൽ സ്വമനസ്സാലെ ഞാൻ ഈ പഠനത്തിന്റെ ഭാഗമാകാമെന്ന് സമ്മതിക്കുന്നു.

വിവരം നൽകുന്ന വ്യക്തിയുടെ ഒപ്പ്

സ്ഥലം:

തീയതി:

ANNEXURE - V

ചോദ്യാവലി

ശരിയായ ഉത്തരത്തിനുനേരെ (√) അടയാളം രേഖപ്പെടുത്തുക

I. താഴെപ്പറയുന്നവയിൽ ഹൃദയസ്തംഭന സാധ്യത വർദ്ധിപ്പിക്കുന്ന ഘടകങ്ങൾ ഏവ?

ക്രമ നം.	ഘടകങ്ങൾ	ശരി	തെറ്റ്	അറിയില്ല
1	പുകവലി	☐	☐	☐
2.	അമിത വണ്ണം	☐	☐	☐
3.	സ്ഥിരമായ തലവേദന	☐	☐	☐
4.	ഉയർന്ന രക്ത സമ്മർദ്ദം	☐	☐	☐
5.	അമിതമായ ഉറക്കം	☐	☐	☐
6.	ധാരാളം കോഫി കുടിക്കുന്നത്	☐	☐	☐
7.	രക്തത്തിൽ അമിതമായി കൊഴുപ്പ് അടിഞ്ഞുകൂടുന്നത്	☐	☐	☐
8.	പ്രമേഹം	☐	☐	☐
9.	മാനസിക പിരിമുറുക്കം	☐	☐	☐
10.	കൊഴുപ്പടങ്ങിയ ഭക്ഷണം	☐	☐	☐
11.	ഹൃദയസ്തംഭന സാധ്യത ഉള്ളവരുടെകൂടെ ജീവിക്കുന്നത്	☐	☐	☐
12.	ആസ്ത്മ	☐	☐	☐
13.	പാരമ്പര്യം	☐	☐	☐

II. താഴെപ്പറയുന്നവയിൽ ഹൃദയസ്തംഭനത്തിന്റെ മുന്നറിയിപ്പ് നൽകുന്ന ലക്ഷണങ്ങൾ ഏവ?

ക്രമ നം.	ഘടകങ്ങൾ	ശരി	തെറ്റ്	അറിയില്ല
1	നെഞ്ചിന് അസ്വസ്ഥത	☐	☐	☐
2.	കഠിനമായ തലവേദന	☐	☐	☐
3.	ഛർദ്ദി	☐	☐	☐
4.	കൈവേദന	☐	☐	☐
5.	പനി	☐	☐	☐
6.	പുറംവേദന	☐	☐	☐
7.	ശ്വാസ തടസ്സം	☐	☐	☐
8.	കഴുത്ത് / താടി വേദന	☐	☐	☐
9.	പെട്ടെന്നുള്ള തലകറക്കം	☐	☐	☐
10.	ദഹനക്കുറവ് / ഉദരാസ്വാസ്ഥ്യം	☐	☐	☐
11.	വയറിളക്കം	☐	☐	☐