A STUDY TO ASSESS THE EFFECTIVENESS OF VIDEO ASSISSTED TEACHING ON HEART HEALTHY DIET AMONG CORONARY ARTERY DISAESE PATIENTS IN CARDIAC OUT PATIENT DEPARTMENT OF SREE MOOKAMBIKA MEDICAL COLLEGE HOSPITAL, KULASEKHARAM AT KANYAKUMARI DISTRICT.

A DISSERTATION SUBMITTED TO THE TAMIL NADUDR.M.G.R.MEDICAL UNIVERSITY, CHENNAI, IN PARTIAL FULFILMENT FOR THE DEGREE OF MASTER OF SCIENCE IN NURSING OCTOBER 2018

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Internal Examiner   **External Examine**

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APPROVED BY THE DISSERTATION COMMITTEE ON   16.08.2018

PRINCIPAL

Prof.Mrs.SanthiLathaM.Sc (N), M.A (SOCIO), Ph.D(N)

Sree Mookambika College Of Nursing

Kulasekharam.   -------------------------

HEAD OF THE DEPARTMENT

Mrs. Ajitha Rethnam Msc[N],MBA,PhD[N]

Sree Mookambika College Of Nursing

Kulasekharam.   -------------------------

RESEARCH GUIDE

Dr. SheebaWiselin, M.Sc.(N), PGDHM, PhD[N].

Sree Mookambika College Of Nursing   -------------------------

Kulasekharam

MEDICAL EXPERT

Dr.Prasandan,

Asst.Professor, Department of Anaesthesia,

Sree Mookambika Institute of Medical Sciences,

Kulasekharam.   --------------------------

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OCTOBER 2018

BONAFIDE CERTIFICATE

This is to certify that the dissertation entitles **"A study to assess the effectiveness of video assisted teaching on heart healthy diet among coronary artery disease patients in cardiac outpatient department of Sree Mookambika Medical College Hospital, Kulasekharam at Kanyakumari District"** is a bonafide research work done by **RESHMA.R.R**, II year M.Sc. Nursing, SreeMookambika College Of Nursing, Kulasekharam, under the guidance of **Dr. SheebaWiselin, M.Sc.(N), PGDHM, PhD**[N]., Professor of the Department in Medical Surgical Nursing, in partial fulfillment of the requirement for the degree of Master of Science in Nursing under The Tamil Nadu Dr. M.G.R. Medical University, Chennai.

Place: Kulasekharam   **Principal**

Date: 08.08.2018   Sree Mookambika College Of Nursing

BONAFIDE CERTIFICATE

This is to certify that the dissertation entitles "**A study to assess the effectiveness ofvideo assisted teaching related to heart healthy diet among coronary artery disease patients in cardiac outpatient department of SreeMookambika Medical College Hospital, Kulasekharam at Kanyakumari District**" is a bonafide research work done by **Reshma .R.R**, II year M.Sc. Nursing, Sree Mookambika College Of Nursing, Kulasekharam, under the guidance of **Dr. Sheeba Wiselin, M.Sc.(N), PGDHM, PhD[N]**, Professor of the Department in Medical Surgical Nursing in partial fulfillment of the requirement for the degree of Master of Science in Nursing under The Tamil Nadu Dr. M.G.R. Medical University, Chennai.

Place: Kulasekharam   **Head Of The Department**

Date: 08.08.2018   Sree Mookambika College Of Nursing

DECLARATION

I hereby declare that the present dissertation "**A study to assess the effectiveness ofvideo assisted teaching related to heart healthy diet among coronary artery disease patients in cardiac outpatient department of Sree Mookambika Medical College Hospital Kulasekharam at Kanyakumari District"** is the outcome of the original research work undertaken and carried out by me under the guidance of **Dr.SheebaWiselin, M.Sc.(N), PGDHM, PhD [N]** in SreeMookambika College Of Nursing. I also declare that the material of this has not formed in any away the basis for the award of any degree or diploma in this university or any universities.

Place: Kulasekharam   Name: Reshma.R.R

Date: 08.08.2018   II year M.Sc Nursing

ACKNOWLEDGEMENT

"Man's efforts are always crowned by God's grace and blessing"

I thank my **Lord Almighty** for His enriched blessing and abundant grace and mercy, which encircled me throughout this research. His presence has enabled me in my attempt to convert this work into a reality and without His kindness; this attempt would have been a failure.

Motivation and guidance of many people helped me in completing the research project successfully. It is my greatest privilege to acknowledge all those resource persons. I offer my sincere thanks to each and everyone who have contributed to the successful completion of this study.

I submit my sincere thanks and respectful regards to **Dr.VelayudhanNair,MS,** Chairman and **Dr.Rema.V.Nair, MD,DGO**, Director, Sree Mookambika Institute Of Medical Sciences, for providing facilities and encouragement for the study.

I sincerely express my sincere thanks to **Mrs.Santhi Latha M.Sc (N), M.A (SOCIO), Ph.D(N),** Principal, SreeMookambikaCollege of Nursing for her guidance, support, constant encouragement, valuable advice and constructive criticism from the initial to the final level that enabled me to develop an understanding of the subject as well as to carry out the study on time.

I owe my deepest sincere of gratitude to **Dr.Mrs.T.CSuguna, M.Sc (N), MA (sociology),Ph.D,** Sree Mookambika College of Nursing for her consistent help, academic support, direction and guidance to complete this study.

I sincerely express my profound gratitude, respect and warmest thanks to **Mrs. Ajitha RethinamM.Sc[N], PhD[N]** Head of the Department**, Department of Medical Surgical Nursing**, Sree Mookambika College Of

Nursing Kulasekharam for her guidance, support, encouragement and strong motivation for completing my study successfully.

I offer my hearty thanks to **Dr.Sheeba Wiselin, M.Sc.(N), PGDHM, PhD**[N] Professor, Department of Medical Surgical Nursing, for her guidance, support, concern and encouragement for the successful completion of this study.

I express my gratitude to **Mrs.Adlin Sujitha M.sc [N] Professor,** Department of Medical Surgical Nursing**,** for her valuable guidance and support.

I am deeply obligated to**Mrs.SelvaRani**M.sc [N], **Associate Professor, Mrs. Meenu .R.N** M.sc [N], **Associate Professor** , Department of Medical Surgical Nursing, for all the suggestions and guidance rendered by them for the perfection of the study.

I wish to express my grateful thanks to all the faculty of Sree Mookambika College of Nursing for their guidance and continued instructions to bring up this presentation of my dissertation.

"Any research is of no value without meaningful data". I am indeed grateful to **Ms.Jossy**, M.Sc (Biostat),Department of Community Medicine, Sree Mookambika Institute of Medical Sciences for having guided me to bring out my thesis efficiently through proper statistical analysis.

I acknowledge my professional gratitude to **Dr.Prasandan**, Head of the department of Anesthesia Sree Mookambika Institute of Medical Sciences, Kulasekharam for his valuable suggestions and guidance.

I sincerely thank all **the participants** who formed the core and basis of this study and for their whole-hearted co-operation. I proudly and honestly express my deep sincere thanks and gratefulness to Cardiac out patient

<div align="right">**INVESTIGATOR**</div>

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ABBREVATIONS

CAD	-	Coronary artery disease
CHD	-	Coronary heart disease
CVDs	-	Cardio vascular diseases
HR	-	High risk
PAD	-	Peripheral artery disease
OPD	-	Out patient department
PUFAs	-	Poly unsaturated fatty acids
KAP	-	Knowledge attitude practice
VAT	-	Video Assessed Teaching

ABSTRACT

Introduction

Heart health is essential for improving the quality of life. Lifestyle changes and improper dietary habits commonly leads to heart disease. One of the most common heart disease is coronary artery disease. Coronary artery disease otherwise called ischemic heart disease. Awareness regarding heart healthy diet helps to improve the level of knowledge among coronary artery disease patients and prevention of cardiac disease as much as possible. Providing video assisted teaching is the best technique to improve the level of knowledge among patients regarding the diet habits. The level of knowledge regarding diet which contains vegetables and fruits which are good source in vitamins, minerals, low calorie and rich in fibre that may help prevent cardiac diseases, daily allowance of dietary pattern, and unhealthy food of the heart. The video may be used to improve the knowledge on heart healthy diet among coronary artery disease patients, which help patients improve their level of knowledge and prevent cardiac diseases.

Study objective:

➢ To assess the pretest level of knowledge on heart healthy diet among coronary artery disease patients in cardiac outpatient department at Sree Mookambika Medical College Hospital.

➢ To assess the post-test level of knowledge on heart healthy diet among coronary artery disease patients in cardiac outpatient department at Sree Mookambika Medical College Hospital after video assisted teaching.

- To determine the effectiveness of video assisted teaching in coronary artery disease patients at cardiac outpatient department.

- To find out the association between the levels of knowledge among coronary artery disease patients in cardiac outpatient department on heart healthy diet with the selected demographic variables such as age, gender, employment status, previous history of cardiac disease, comorbidity, diet habits, personal habits, history of smoking, history of alcoholism and family history of cardiac disease.

Hypotheses

- ❖ H1: There will be a significant improvement on level of knowledge among coronary artery disease patients in cardiac outpatients department with heart healthy diet.

- ❖ H2: There will be a significant association between the level of knowledge of coronary artery diseasepatients in cardiac outpatient department on heart healthy diet with the selected demographic variables such as age, gender, employment status, previous history of cardiac disease, comorbidity, diet habits, personal habits, history of smoking, history of alcoholism and family history of cardiac disease.

RESEARCH METHODOLOGY

The researcher adopted qualitative research design in one group pretest posttest. The study was conducted in Sree Mookambika Medical College Hospital at Kanyakumari district. Based on the inclusion criteria 30 samples were selected by purposive sampling technique. Pretest was conducted by using knowledge assessment questionnaire, after collecting the questionnaires, Video assisted teaching was given

to them. Post test was conducted on after 07th day of teaching by the same knowledge assessment questionnaire. The collected data were analyzed based on the above mentioned objectives using descriptive and inferential statistics.

Study findings

The study identified that the level of knowledge was improved in the post-test group. It was found that there was a significantly improvement in the level of knowledge among coronary artery disease patients. The 't' value compared for the same also reveal significant difference t value 8.47 [p<0.05].

The study identifies that the level of knowledge on heart healthy diet among CAD patients in cardiac out patient department in the post- test. The mean score was statistically significant with 't' value 8.47 [p< 0.05]

Conclusion

The researcher found that video assisted teaching was very much effective in improving level of knowledge on heart healthy diet among coronary artery disease patients. Patient satisfaction was very much higher in this intervention.

CHAPTER : I

INTRODUCTION

"Minimize red meat to keep a healthy heart beat"

"Healthy eating is vital for a person's mental and physical wellbeing"

- Siegel, 2011

Background of the study:

The health do not mean the absence of physical illness only, according to WHO, health is a state of complete physical, mental and social wellbeing, and not merely the absence of disease and infirmity. The loss of health is loss of all happiness. Mahatma Gandhi says, it is health which is real wealth, and not piece of gold and silver.

Cardio vascular diseases which include diseases of the heart, are the leading cause of death worldwide. The majority of cardiovascular diseases is non communicable and related to life style and other factors, becoming more prevalent with aging. Heart disease is a major cause of death, accounting for an average of 30%of all death in 2008 globally. This rate varies from a lower 28% to a high 40%in high countries. [Sutter, 2014]

Coronary diseases also known as ischemic heart disease is caused by atherosclerosis – a build up of fatty materials along the inner wall of the arteries these deposits are known as atherosclerotic plaques which narrow the coronary arteries, and if severe may reduce blood to the heart. If a narrow is minor then the patient may not

have any symptoms, severe narrowing may cause chest pain or breathlessness during exercise or even at rest. [Ballena,2017]

The heart is an astounding faithful creation of nature. Its gentle thumping accompanies us for the duration of our lives, and it is so central to human existence that for much of recorded history, it has served as a symbol of not only life but also love, emotion intelligence and reason. The heart is the one of body's important organ. The general term used to cover malfunctions of heart is heart diseases. Most common heart diseases are coronary artery diseases.[Edward, 2014]

Coronary artery disease is the most common in heart disease. It was estimated that nearly one half of all middle aged men and one third of middle aged women. Coronary artery disease is the major diseases in India, and in each year. Its account for 15 million death every year in this world. The Coronary artery diseases include angina pectoris, myocardial infarction, atherosclerosis, ischemic Heart disease. Awareness and knowledge of risk factor for cardiac disease has been reduce.[Wilson, 2015]

 Coronary artery disease is the number one killer in the developed world with over 7.4 million death attributed to coronary artery disease in 2012.Coronary artery disease not just an American problem. Throughout the developed world, coronary artery disease cause more deaths and disabilities, and responsible for more economic costs than any other single illness. [WHO,2015]

The medical literature tells us that the most effective ways to reduce the risk of heart disease, cancer, stroke, diabetes; Alzheimer's and many more problems are through healthy diet and exercise. Our bodies have evolved to move, yet the people

not at all understanding and still they are behind of junks foods and fried items. It's just because of inadequate knowledge about heart healthy diet. [Suzukai,2017]

American heart association reported, Coronary heart disease is a common term for build-up of plaque in the heart's arteries that could leads to heart attack. In coronary artery diseases the plaque first grows in the coronary arteries until blood flow of the heart muscle is limited [ischemia]. It may chronic caused by narrowing of the coronary artery and limitation of the blood supply of muscle. Or it can be acute, resulting from sudden rupture of a plague and formation of a thrombus or blood clots. The traditional risk factors for coronary artery disease are high LDL cholesterol, low HDL cholesterol, high blood pressure, family history, diabetes, smoking, post-menopausal for women and being older than 45 for men. Obesity may also risk factors, so weight management can play a big role in avoiding CAD. [Fisher,2011]

According to Piyush, [2011]coronary artery disease (CAD) is the leading cause of morbidity and mortality in both developed and developing countries in the world, people originating from the Indian subcontinent appear to have a particular susceptibility. The terms premature early onset and young CAD were almost exclusively used by authors between 1970 and 1990, to distinguish impact of CAD on Indian subcontinent. Nowadays the age range varies. Age of early onset of CAD in Singapore in men is less than 40 and in Baltimore, US is less than 60 years in women.

According to Christie, [2010] most of the time, changing dietary behaviour is inherently difficult and even cause obesity. Health professionals should motivate the healthy eating pattern that is important individual change. One concept in discussion that the dietary change is not and process, that allowing some change in dietary habits makes a person healthy in life period.

Frank, [2013] says that distinct eating patterns reflect different dietary traditions worldwide, and may relate to rates of coronary heart disease in different countries. Low rates attributed to intake of high vegetables, fruits, whole-grain products, fishes and low intake of red meat, high-fat dairy products. Many foods can help to keep the heart at its best. Some help lower your blood pressure. Other diets keep cholesterol in line. Although diet can increase heart disease risk, it's often tough to change eating habits. The knowledge regarding, which foods to eat more and which foods to limit towards heart healthy diet should improve quality of life.

Need of the study:

The burden of CAD remains high across Europe and rest of the world. CAD accounts for 64% of all cardiovascular deaths. According to the global burden of disease, developing countries contributed 3.5 million of total number of 6.2 million death in CAD in 1990. Today CAD is the major killer of both American men and women. Approximately 37% of people who have coronary events in a given year will die of it. Predictions up to 2030, suggest that even with an annual decline in mortality rates about 1%, the absolute number of death will increase. It has been estimated that 30-43% of patients were asymptomatic after myocardial infarction. Analysis in937 outpatients with stable CAD, 14% have angina, about 69% die in the community, 29% die in hospital and 2%die within 30 days of discharge. The prognosis of patient with chronic CAD is not uniform. The economic costs of CAD include health care expenditure and non-health service cost. The major component of health care expenditure was inpatient care accounted for 62% of costs, pharmaceutical represented 23% of total health care cost.CAD is estimated to have cost European union 45 billion Euros in 2003.

Hussein et al,[2015]stated that, cardiovascular diseases are the number one cause of death globally. More people die annually from CVDs than from any other cause. An estimated 17.5 million people died from CVD in 2012, representing 31% of all global death , estimated 7.4 million were coronary artery diseases. The prevalence of coronary heart disease is promoted in turn by a high prevalence of cardiovascular risk factor cardiovascular disease death in Yemen reached 21% of total deaths according to the latest WHO data published in 2014coronary artery disease or coronary heart disease is the most common type of heart disease and cause about two –third of all deaths resulting from cardio vascular disease.

Abed [2015] identify risk factors for coronary artery disease among women with chest pain, underwent coronary angiography during years (2010-2013) in cardiology centre of Palestine. It is an observational study, conducted among 688 women-aged 32 - 96 years; the mean age of our study population is 61 years. Risk factors are abstracted from patients' files. Women with documented coronary disease tend to be older, have higher, systolic blood pressure, serum level of triglyceride, and impaired clearance creatinine. The higher prevalence of hypertension, 58.6% and diabetes 63.6% are mostly seen in menopause women almost 59.4%. Significant positive association is found in women with myocardial infarction, unstable angina, stable angina and presence of obstructive coronary artery disease respectively (89.6%, 82.3%, 59.1%) in opposite women presented with atypical chest pain have high prevalence of normal coronaries (95.7%). About 57.6% have more than three risk factors, and 55.3% are obese or overweight. In addition, 42.1% of them have impaired systolic function. The researcher concluded that cardiovascular risk factors are highly prevalent among Palestinian women in Gaza and the combination of risk factors is common.

Oommen[2012]conducted a cross-sectional study in 2010-2012, assessed the prevalence and risk factors for CHD in urban and rural Vellore, Tamil Nadu and compared the current prevalence with the prevalence of CHD in the same areas in 1991-1994. The study used in addition to the Rose angina questionnaire and resting electrocardiography was conducted in nine clusters of a rural block in Vellore district and 48 wards of Vellore town. The results were compared with a similar study in the same area in 1991-1994. The prevalence of CHD was 3.4% (95% CI: 1.6-5.2%) among rural men, 7.4% (95% CI: 4.7-10.1%) among rural women, 7.3% (95% CI: 5.7-8.9%) among urban men, and 13.4% (95% CI: 11.2-15.6%) among urban women in 2010-2012. The age-adjusted prevalence in rural women tripled and in urban women doubled, with only a slight increase among males, between 1991-1994 and 2010-2012. The large increase in prevalence of CHD, among both pre- and post-menopausal females, suggests the need for further confirmatory studies and interventions for prevention in both rural and urban areas.

Zafari[2014] conducted a study related to the effect of heart healthy diet and a healthy lifestyle on coronary heart disease could be tested in nurse's health study in which 84129 women aged 30-55 years. Healthy diet was defined as 40% of cereal fibre, marine poly unsaturated fatty acids, folate. In the first generation of primary and secondary prevention trials, serum cholesterol was lowered by replacing saturated fat with linoleic acid, average reduction of serum cholesterol 10% obtained. Non significant reductions in major coronary events and all cause mortality of 13% and 6% respectively. The 5 primary and secondary prevention trials with largest reduction in serum cholesterol [13% on average] showed a significant reduction in major coronary events and 11% reduce mortality.

Sreehari et .al [2016] conducted an epidemiological study related to change in trends in the prevalence of coronary artery disease. The prevalence rates in these studies varied between 0.49% and 0.63% and the rates were 6.5 times higher in males compared to females. They reported 2.71% CHD prevalence rate in Chennai. The rural areas in Chennai had a lower prevalence of CHD (5.6% and 6.4%). Studies conducted by Gupta et al. in Jaipur in 1992–95 and 2001 revealed CHD prevalence rates of (5.96% and 6.18%) and (10.5% and 10.1%) among men and women. Ramachandran reported 4% CHD prevalence rate in Chennai during 1994 while Mohan et al. reported higher prevalence rate (11%) during 1996–97. The authors also noticed a rising trend in coronary risk factors with a shift in the age of onset of CHD towards younger age groups. The significant observation in this study was CHD prevalence rates are more in men over the past 20 years in spite of rising trends in risk factors where as there is a sharp rise in the prevalence among women in both urban and rural communities indicating a reversal of trend in the incidence of CHD with respect to gender. Even though sedentary life styles, rising obesity rates and increasing smoking rates in women contribute to this phenomenon. In this study more number of subjects was labelled as CHD based on symptoms alone and majority of those subjects who had ECG changes were asymptomatic. The authors should be lauded for conducting the resurvey in the same region as few such resurveys are available in Indian literature which monitored the CHD prevalence trends over a period of two decades. Risk factors in the local populations are the first step for a successful prevention strategy. Effective control of CHD at the population level involves educating the population on the necessary dietary and behavioural changes for good cardiac health, changing the public policy to create heart healthy environments, encouraging heart healthy partner ships between governments and civil

societies and persuading industries to reduce the sale of tobacco products and unhealthy foods. As accumulation of cardiovascular risk begins early in life, a life course approach is needed to promote cardiovascular health. The health professionals should not get biased towards a technological solution to this problem as opposed to prevention as social determinants play as much role as biological and genetic factors in the causation of CHD.

The heart muscle, like every other part of the body, needs its own oxygen-rich blood supply. Arteries branch off the aorta and spread over the outside surface of the heart. The Right Coronary Artery supplies the bottom part of the heart. The short Left Main artery branches into the Left Anterior Descending artery that supplies the front of the heart and the Circumflex artery that supplies the back of the heart. Heart disease, also known as cardiovascular disease, is a general term for a variety of conditions that affect the heart and blood vessels. It is a chronic disease that can lead to serious events including heart attack and death. Heart disease is one of the leading causes of death in Canada and worldwide. The most common form of heart disease is coronary artery disease caused by atherosclerosis.

The risk factors are smoking, excess body weight, especially around your waist, high blood pressure, abnormal blood cholesterol levels, lack of regular exercise, diabetes, excessive stress levels, depression.Leer [2017]

The arterialplaque builds up on the inside wall of arteries. Plaque is made of several substances including cholesterol. This build up is called atherosclerosis or hardening of the arteries. It can start at an early age and is caused by a combination of genetic and lifestyle factors that are called risk factors. Atherosclerosis can cause a narrowing in the arteries to various parts of the body such that blood flow is slowed or

blocked. Poor blood flow to the brain can cause a stroke. Poor blood flow to the arms or legs is called peripheral artery disease (PAD). Poor blood flow to the heart is called coronary artery disease (CAD) and can cause angina or a heart attack. [Nicholas,2014]

Boudi[2016] states that healthy eating is consuming the right quantities of foods from all food groups in order to ensure an individual's body is appropriately nourished and capable of functioning properly, dependent on lifestyle and activity levels a poor diet and physical inactivity are risk factors for many of the major conditions in the UK, including coronary heart disease and diabetes. They are almost a risk for heart disease as high blood pressure, or a high cholesterol level.Barriers of healthy eating include lack of knowledge or education surrounding healthy eating lack of knowledge or education around food preparation poor accessibility toaffordable food inconsistent or unclear food labelling and the marketing of high fat, high sugar foods to children.

Ritchie[2016]Dietary patterns are likely to vary by sex, socioeconomic status, ethnic group and culture. Because of changes in the food preference and food availability, themeaning of dietary pattern could change over time. The 2 major diet patterns delivered from <20% of total variants. The western and prudent diet patterns explained19% of variance in men and15% of variance in women. The percentage of variance explained by the factors should be interrupted with caution because it depends heavily on the total number of variables used in factor analysis.

It emphasizes that CAD is a commonly prevalent phenomena among men and women. Based on the literature review, statistics, incidence of CAD among men and women and the researcher's experience in the hospital, it is felt that video assisted

teaching may be beneficial for the patient and help them to improve their level of knowledge and the level of well being. Thus the researcher showed interest to conduct a study to know theeffectiveness of video assisted teaching upon CAD that may lead to less difficulty and higher success rate. Agostoni,[2017]

Problem statement:

"A study to assess the effectiveness of video assisted teaching on heart healthy diet among coronary artery disease patients in cardiac out- patient department of Sree Mookambika Medical College Hospital Kulasekharam at Kanyakumari District".

Objectives:

- ❖ To assess the pre test level of knowledge on heart healthy diet among coronary artery disease patients in cardiac outpatient department at Sree Mookambika Medical College Hospital.

- ❖ To assess the posttest level of knowledge on heart healthy diet among coronary artery disease patients in cardiac outpatient department at Sree Mookambika Medical College Hospital after video assisted teaching.

- ❖ To determine the effectiveness of video assisted teaching incoronary artery disease patients at cardiac outpatient department.

- ❖ To find out the association between thelevels of knowledge among coronary artery disease patients in cardiac outpatient department on heart healthy diet with the selected demographic variables such as age, gender, employment status, previous history of cardiac disease, co-morbidity, diet habits, personal

habits, history of smoking, history of alcoholism and family history of cardiac disease.

Hypothesis:

- ❖ H1: There will be a significant improvement in level of knowledge on heart healthy diet among coronary artery disease patients in cardiac outpatient department after receiving the video assisted teaching.

- ❖ H2: There will be a significant association between the level of knowledge among coronary artery disease patients in cardiac outpatient department on heart healthy diet with the selected demographic variables such as age, gender, employment status, previous history of cardiac disease, co-morbidity, diet habits, and personal habits, history of smoking, history of alcoholism and family history of cardiac disease.

Operational definitions.

Effectiveness:

In this study effectiveness refers to the improvement in the level of knowledge on heart healthy diet among coronary artery disease patients in cardiac outpatient department after video assisted teaching as measured by structured knowledge assessment questionnaire.

Video assisted teaching:

In this study video assisted teaching refers to education about heart healthy diet for 30 minutes with the help of video to the CAD patients in the demonstration room attached to cardiac OPD of Sree Mookambika Medical college hospital, Kulasekharam at Kanyakumari District.

Heart healthy diet:

In this study heart healthy diet refers to, structured video teaching prepared by the researcher on heart healthy diet for 30 minutes which include definition, vitamins and minerals needed for good heart, health benefits of heart healthy diet, daily food intake, foods to be included and foods to be avoided for healthy heart, diet with recommended calorie and menu which was administered to the coronary artery disease patients.

Cardiac out-patients.

In this study cardiac out patients refers to the diagnosed case of cardiac disease of with age above 25 years attending cardiac outpatient department at Sree Mookambika Medical College Hospital.

Assumptions

➤ Heart healthy diet have the major role to reduce CAD

➤ Level of knowledge on heart healthy diet influence to reduce CAD.

Delimitations

- The study was limited to CAD patients in SreeMookambika Medical College Hospital Kulasekharam only.

- The study was conducted only with 30 CAD patients.

- The study was conducted for a period of 4weeks only.

- The patients who understand Tamil can only be able to participate in the study.

Ethical considerations.

The research proposal was approved by the college dissertation committee. The permission to conduct study was obtained from the Director of Sree Mookambika Medical College Hospital. Oral consent was obtained from each individual before data collection.

Plan for data analysis

The collected data is planned to be analyzed using descriptive and inferential statistics, such as percentage mean, t-test and chi-square test.

Sl.	Data analysis	Method	Remarks
01	Descriptive statistics	• Mean • Standard Deviation	Describe demographic variable. To find out positive square root of mean of standard deviation.
02	Inferential statistics	• t – test • Chi square test	To find the significant difference between pre test and post test. To find out the association between demographic variables and knowledge.

Conceptual frame work

The conceptual frame work helps to make the research finding meaningful and generalisation. It allows the researcher to knit together the observation and facts in orderly scheme.

The study was based on the J. W. Kenny's "Open System Model". All living systems are open system in which there is a continual exchange of matter, energy and information. Open system have varying degree of interaction with the environment

from which the system receives input and gives back output in the form of matter, energy and information for survival. All system must receive varying types and amount of matter, energy and information. The main concept of the system is input. The system transforms the input in the process is known as through put. The energy of information is given off in to the environment as output. When output is reformed in to the system as input, the process is known as feedback. An open system depends on the quality and quantity of the input, through put, output and feedback.

Input:

Input consists of information, material or energy that enters the system.

In this study, input is video assisted teaching programme among coronary artery disease patients in cardiac OPD.

Throughput:

The process after the input absorbed by the system in a way useful to the system. This transformation is called throughput. Throughput was the transformation process which is obtained by delivery of video assisted teaching program.

In this study throughput refers is assess the level of knowledge after VAT programme on heart healthy diet through the post-test score.

Output:

Output refers to the energy, matter or information given out by the system as a result of its processes.

In this study output refers to the change in the level of knowledge regarding heart healthy diet among CAD patients.

Feedback:

The mechanism by which some of the output of a system is returned to the system as input.

1. Negative feedback inhibits change.

2. Positive feedback stimulates change.

In this study feedback refers to evaluates the effectiveness of video assisted teaching programme on improving the level of knowledge and attitude regarding heart healthy diet among CAD patients.

INPUT			THROUGH PUT		OUT PUT
Demographic variables such as age, Gender employment grates previous history of cardiac disease co-morbidity Diet habits personal habits History of alcoholism Family history of cardiac disease	Pre test assessed the Level of knowledge regarding heart healthy diet among coronary artery disease patients	Administering video assisted Teaching programme on Heart health diet	Process of transformation of knowledge on heart healthy diet	Post test Reassessed the level of knowledge regarding heart healthy diet	• Increase in knowledge regarding heart healthy diet

FEED BACK

Successful video assisted teaching programme

Figure 1 : Conceptual Frame Work Based on modified J.W. Kenny's Open System Model

CHAPTER : II

REVIEW OF LITERATURE

Review of literature is a key step in research process. A researcher analysis the existing knowledge before dealing in to a new area of study while conducting a study. When Interpreting the result of the study and making judgment about applications of new knowledge and practice. Research literature were reviewed and organized under the following headings.

❖ Studies related to incidence and prevalence of CAD.

❖ Studies related to Heart Healthy Diet

❖ Studies related to Un Healthy Diet for Heart.

❖ Studies related to knowledge of CAD patients.

❖ Studies related to video assisted teaching on heart healthy diet in CAD patients.

1. Studies related to incidence and prevalence of CAD

Ali [2015] conducted a qualitative study related to prevalence of coronary artery disease in systemic sclerosis, Thirteen studies (Newcastle-Ottawa score 5–8) were selected. Of eight studies with controls, seven reported increased CAD prevalence (10–56%) or incidence (2.3%) compared to controls (prevalence 2–44%; incidence 1.5%). Of five studies without controls, CAD prevalence was 8–32%. Five of six studies reported that traditional cardiovascular risk factors were similar/reduced insystemicsclerosiscompared to controls. Systemic sclerosis was an independent risk factor for CAD, in addition to age (n = 2), hypercholesterolaemia (n = 3), male gender (n = 1), hypertension and diabetes (n = 1). Disease duration, renal involvement and

pulmonary arterial hypertension were associated with CAD. Systemic sclerosis is associated with an increased prevalence/incidence of CAD. Systemic sclerosis is an independent risk factor for CAD. The association of CAD with Systemic sclerosis-related factors requires further research. Meanwhile, patients with Systemic sclerosis should be screened and treated for identified traditional cardiovascular risk factors.

Mohan [2001] conducted an epidemiological study related to prevalence of coronary artery disease and its relationship to lipids in a selected population in South India, It involves two residential areas in Chennai in South India. Of the total of 1,399 eligible subjects (age ≥ 20 years), 1,262 (90.2%) participated in the study. All the study subjects underwent a glucose tolerance test and were categorized as having normal glucose tolerance (NGT), impaired glucose tolerance (IGT) or diabetes. Twelve-lead electrocardiogram (ECG) was performed in 1,175 individuals (84%). Coronary artery disease was diagnosed based on previous medical history or Minnesota coding of ECGs. The overall prevalence rate of CAD is 11.0% (age standardized, 9.0%). The prevalence rates of CAD were 9.1%, 14.9% and 21.4% in those with NGT, IGT and diabetes, respectively. Prevalence of CAD increased with an increase in total cholesterol (trend chi-square: 26.2, $p < 0.001$), low-density lipoprotein (LDL) cholesterol (trend chi-square: 24.5, $p < 0.001$), triglycerides (trend chi-square: 9.96, $p = 0.002$) and total cholesterol/high-density lipoprotein ratio (trend chi-square: 6.14, $p = 0.0132$). Multiple logistic regression analysis identified age (odds ratio [OR]: 1.05, $p < 0.001$) and LDL cholesterol (OR: 1.009, $p = 0.051$) as the risk factors for CAD. The prevalence of CAD is rising rapidly in urban India. Lifestyle changes and aggressive control of risk factors are urgently needed to reverse this trend.

Tardif [2010] conducted an observational study on Coronary artery disease in 2010. The burden of coronary artery disease remains high across Europe and rest of the world. CAD continues to be main cause of death and a major cause of morbidity, mortality and loss of quality of life. CAD is a leading public health problem accounting for a significant proportion of total societal costs and representing 27% of total cardio vascular disease. In cerebrovascular disease CAD accounts for 64% of all cardiovascular deaths. The prospective analysis of data from the placebo arm of beautiful demonstrated that elevated resting HR ≥70 is a strong independent predictor of clinical outcomes. Consistent with these data, ivabradine significantly improved coronary outcomes in these patients with an HR ≥70. Compared with placebo, there was a 36% reduction in relative risk of hospitalization for fatal and non-fatal MI in these patients with HR ≥ 70. Treated with ivabradine (P = 0.001) and a 30% relative risk reduction in coronary revascularization (P = 0.016). Treatment with ivabradine was also associated with a 22% reduction in the relative risk of the composite endpoint of hospitalization for fatal and non-fatal MI and unstable angina pectoris (P = 0.023) as compared with placebo. The study concluded cardio vascular disease and CAD remain the leading cause of mortality in the world. In addition of life style and pharmacological approach that are available to prevent and treat CAD. Results of these trials will be complemented by clarify, a large –scale international registry of outpatients with stable CAD that assess base line characteristics management and practice. Ongoing randomized trials are assessing the role of selective HR reduction in improving outcomes in patients with CVDs. Results from these trials will be complemented by clarify, a large-scale international registry of outpatients with stable CAD that will assess baseline characteristics, management practices, and all potential outcome determinants including HR.

Manisha [2011]conducted a descriptive study related to assessments of riskfactors of CAD in employees. The study was conducted in five selected educational institution of Pune city. Almost 60 teachers of primary and secondary schools were selected. Descriptive and inferential statistics had been used to analyze the data obtained through interviews .The study showed that teachers, based on their prevalence of CAD riskfactors, are at increasing risk of CAD. Maximum numbers of teachers were in a mild risk [62%], many of them in moderate risk [28%], and none of them were in a severe risk of getting coronary artery disease. Average number of sample 43.33% was having abnormal BMI. Male teachers were having abnormal waist hip ratio 23.33%, wereas only 10% are having normal ratio.There was significant correlation found between the years of experience and educational status with risk factors of coronary artery disease.

Krishnan [2016] conducted across sectional study related to prevalence of coronary artery disease and its risk factors in Kerala. They selected 5167 adults (mean age 51 years) using a multistage cluster sampling method. Information on socio-demographics, smoking, alcohol use, physical activity, dietary habits and personal history of hypertension, diabetes, and CAD was collected using a structured interview schedule. Anthropometry, blood pressure, electrocardiogram, and biochemical investigations were done using standard protocols. CAD and its risk factors were defined using standard criteria. Comparisons of age adjusted prevalence were done using two tailed proportion tests. The overall age-adjusted prevalence of definite CAD was 3.5 %: men 4.8 %, women 2.6 % ($p < 0.001$). Prevalence of any CAD was 12.5 %: men 9.8 %, women 14.3 % ($p < 0.001$). There was no difference in definite CAD between urban and rural population. Physical inactivity was reported by 17.5 and 18 % reported family history of CAD. Other CAD risk factors detected in the study were,

overweight or obese 59 %, abdominal obesity 57 %, hypertension 28 %, diabetes 15%, high total cholesterol 52 % and low level of high density lipoprotein cholesterol 39 %. Current smoking was reported only men (28 %). The prevalence of definite CAD in Kerala increased nearly three times since 1993 without any difference in urban and rural areas. Most risk factors of CAD were highly prevalent in the state. Both population and individual level approaches are warranted to address the high level of CAD risk factors to reduce the increasing prevalence of CAD in this population.

Priyanka [2017] conducted a descriptive research study related to knowledge of CAD patients in outpatient department to develop life style modifications coronary artery disease is the single largest killer of both men and women worldwide . Impairment of heart function due to inadequate blood flow to the heart. The risk factors precipitate coronary artery disease can presented in to two categories that is modifiable and non-modifiable factors. Results depicted that mean knowledge score of patients attending medical OPD was 15.9 and mean percentage was 54.82%. It was interfered that 44% were patients having average level of knowledge, 34% patients were having good level of knowledge and 22% patients were having below average level of knowledge regarding CAD among patients attending medical OPD. The study can be done on large sample in different research settings. A pre experimental study can be conducted to assess effectiveness of structured teaching program on knowledge regarding coronary artery disease among students of B.sc Nursing.

Sekhri [2014] conducted a comparative study on prevalence of risk factors for coronary artery disease in the Indian urban population. There is an immediate need to initiate measure to raise awareness of these risk factors so that individuals at high risk

for future coronary artery disease can be managed. The study population consisted of government employees in different parts of India (n=10 642 men and n=1966 women; age 20–60 years) and comprised various ethnic groups living in different environmental conditions. Recruitment was carried out in 20 cities across 14 states, and in one union territory. All selected individuals were subjected to a detailed questionnaire, medical examinations and anthropometric measurements. Blood samples were collected for blood glucose and serum lipid profile estimation, and resting ECG was recorded. Results were analyzed using appropriate statistical tools. The study revealed that 4.6% of the study population had a family history of premature CAD. The overall prevalence of diabetes was 16% (5.6% diagnosed during the study and the remaining 10.4% already on medication). Hypertension was present in 21% of subjects. The prevalence of dyslipidemia was significantly high, with 45.6% of study subjects having a high total cholesterol/high density lipoprotein ratio. Overall, 78.6% subjects had two or more risk factors for CAD. The present study demonstrates a high prevalence of CAD risk factors in the Indian urban population. Therefore, there is an immediate need to initiate measures to raise awareness of these risk factors so that individuals at high risk for future CAD can be managed.

2. Studies related to heart healthy diet

Tarino et al [2015] conducted a study to determine saturated fat's role in heart disease risk, researchers from California reviewed the existing literature about saturated fats, polyunsaturated fats, carbohydrates, and heart disease. The scientists found that when saturated fat is replaced with polyunsaturated fat, heart disease risk decreases. However, when saturated fat is replaced with surgery refined carbohydrates, heart disease risk remains the same, if not worsens. The researchers

concluded that overall dietary patterns emphasizing vegetables, fish, nuts, and whole versus processed grains form the basis of heart-healthy eating, and should supersede a focus on macronutrient composition.

A experimental study was conducted by Violi [2015] to assess the effectiveness of olive oil Mediterranean Meals with Olive Oil Can Improve Blood Sugar Control, Cholesterol. Researchers assigned 25 healthy adults to a Mediterranean meal (pasta, chicken breast, salad, bread, and an apple) prepared either with or without olive oil, then measured their cholesterol and blood sugar. After 30 days, the participants switched groups and ate the other meal, serving as their own control. The scientists found that 2 hours after eating, the meal without olive oil was associated with higher glucose and insulin levels, as well as higher bad cholesterol. In the second part of the experiment, the participants were assigned to a Mediterranean meal prepared with either olive oil or corn oil, switching groups after a 30 day washout period. Their blood sugar and cholesterol was tested after the meals as well. Two hours after eating, the meals with olive oil were associated with a lower increase in blood sugar and improved markers of blood sugar control as well as a smaller increase in bad cholesterol. These experiments indicate that meals with olive oil can help regulate blood sugar, and may help improve cholesterol.

Avocados are the perfect example that help to lowering cholesterol. Researchers assigned 45 overweight and obese adults to one of three cholesterol lowering diets: a lower fat diet, a moderate fat diet with one avocado per day, and a moderate fat diet with sunflower and canola oils. Those on the avocado diet lowered their bad cholesterol significantly more than those on the other diets. Additionally, the

avocado group was the only group to significantly decrease the risk of heart disease and improve the ratio of LDL to HDL conducted by Wang [2015]

Li et al [2015] conducted a prospective cohort study related to saturated fats compared with unsaturated fats and sources of carbohydrates in relation to risk of coronary heart disease. They selected 84,628 women and 42,908 men who were free of diabetes, cardiovascular disease, and cancer at baseline. Diet was assessed by a semi quantitative food frequency questionnaire every 4 years. During 24 to 30 years of follow-up, we documented 7,667 incident cases of CAD. Higher intakes of polyunsaturated fatty acids and carbohydrates from whole grains were significantly associated with a lower risk of CAD comparing the highest with lowest quintile for PUFAs (hazard ratio 0.80, 95% confidence interval 0.73 to 0.88; p value is<0.0001) and for carbohydrates from whole grains (HR: 0.90, 95% CI: 0.83 to 0.98; p value is 0.003). In contrast, carbohydrates from refined starches/added sugars were positively associated with a risk of CAD (HR: 1.10, 95% CI: 1.00 to 1.21; p trend = 0.04). Replacing 5% of energy intake from saturated fats with equivalent energy intake from PUFAs, monounsaturated fatty acids, or carbohydrates from whole grains was associated with a 25%, 15%, and 9% lower risk of CAD, respectively Replacing saturated fats with carbohydrates from refined sugars was not significantly associated with CAD risk (p > 0.10). The findings indicate that unsaturated fats, especially PUFAs, and high-quality carbohydrates can be used to replace saturated fats to reduce CAD risk.

Boom [2015] conducted a cross sectional study related to acculturation and dietary pattern of Surinamese. Three dietary patterns were identified noodle/rice dishes and white meat (red meat, snacks and sweets and vegetables, fruit and nuts). In

total, 1370 Dutch-origin and 1727 Surinamese-origin were participated in this study. The participant's characteristics by ethnicity and sex in this study sample. The average age ranged from47 to 49 years between the subgroups and they were substantially more women than men in all ethnic groups .The majority of the men and women of Surinamese origin, 85 % and 86 %, respectively, were first-generation residents. The distribution of the categories of residence duration differed between men and women. For example-44 % of the Surinamese-origin men had residence duration of 38 years or more. 30 % of the Surinamese-origin women. The majority of the men and women of Surinamese origin (51 % and 53 %, respectively) were between 18 and34 years old at the time of migration. With regard to acculturation strategy, 74 % of the Surinamese origin men and 83 % of the women were classified as integrated indicating high orientation to both the Dutch and the Surinamese culture. It consistent association between acculturation and dietary patterns in the present study indicates that dietary patterns are quite robust. Understanding the continued adherence to traditional dietary patterns when developing dietary interventions in ethnic minority groups is warranted.

3. Studies related to heart unhealthy diet

Whatnal(2016)conducted a cross-sectional studies among Unhealthy life style behaviours are known modifiable risk factors for cardiovascular disease (CVD). This cross-sectional analysis aimed to describe lifestyle behaviours and CVD risk markers in young overweight and obese Australian women and explore associations between individual and combined lifestyle behaviours with CVD riskmarkers. Lifestyle behaviours assessed were diet quality, alcohol intake, physical activity, sitting time and smoking status, and were combined to generate a Healthy Lifestyle Score (HLS)

(0–5). Objectively measured CVD risk markers were body mass index, body fat, waist circumference, blood pressure, and plasma cholesterol and triglycerides. Analysis included 49 women aged 18–35 years, with BMI 25.0 to 34.9 kg/m2. The mean ± SD Australian Recommended Food Score was 33.5±9.3 points, alcohol 3.3±2.4 standard drinks/day, physical activity 207 ± 225 min/week and sitting time 578 ± 213 min/day. All participants were non-smokers. The proportion of participants outside normal reference ranges was 83.7% for waist circumference (n = 41), blood pressure 0% (n = 0), total cholesterol 26.2% (n = 11), HDL cholesterol 38.6% (n = 17), LDL cholesterol 22.7% (n = 10), and triglycerides 4.2% (n = 2). Physical activity was inversely associated with body fat (β =−0.011%, p = 0.005), diastolic blood pressure (β =−0.010 mmHg, p = 0.031) and waist circumference (β =−0.013 cm, p = 0.029). Most participants (59.2%, n = 29) had a HLS≤2. No significant associations were found between HLS and CVD risk markers. Insufficient physical activity was the primary lifestyle factor associated with increased CVD risk markers, which suggests interventions targeting physical activity in young women may potentially improve cardiovascular health.

The current study reinforces that unhealthy life style behaviours and cardio vascular disease (CVD) risk markers are prevalent in young overweight and obese women. The major finding is that physical activity levels are directly associated with increased CVD risk markers. The young women are consuming high amounts of alcohol. This suggests that lifestyle interventions, especially those including diet habits, targeting young overweight and obese women are warranted and have the potential to improve cardiovascular risk factors and heart health across the adult life.

Islam [2013]epidemiological study in Bangladesh Lifestyle related factors, including poor dietary habits, excess saturated and Tran's fat, high salt intake, and low-level physical activity may be important as well. Some novel risk factors, including hypovitaminosis D, arsenic contamination in water and food-stuff, particulate matter air pollution may play unique role. At the advent of the new millennium, we know little about our real situation. Large-scale epidemiological, genetic and clinical researches are needed to explore the different aspects of CAD in Bangladesh. The prevalence of CAD varies considerably by populations, may be up to 10 folds. South Asians are unduly prone to develop CAD. Most notable features of CAD in this population are the extreme prematurity and severity; 2–4-fold higher prevalence, incidence, hospitalization and mortality; 5–10 years earlier onset of first myocardial infarction (MI) and 5–10-fold higher rates of MI and death before the age of 40 years.4 The exact prevalence of CAD in Bangladesh is not known. Only a limited number of small-scale epidemiological studies are available. Probably the prevalence of IHD was first reported in 1976, which was 0.33%. More recent data indicates CAD prevalence between 1.85%6 and 3.4%7 in rural and 19.6% in an urban sample of working professionals. Despite marked disparity in values, there seems to be a rising prevalence of CAD in Bangladesh. A recent study from rural Bangladesh demonstrated a dramatic increase in CVD from 1986 to 2006. The age-standardized CVD mortality rates increased by 30-fold (from 16 deaths per 100,000 to 483 deaths per 100,000) among males and 47-fold (from 7 deaths per 100,000 to 330 deaths per 100,000) in females. A nation-wide survey is needed to find out the current epidemiological aspects of CAD in the country. Healthy life styles including consumption of heart-healthy diets, avoidance to smoking and smokeless tobacco, moderation of salt intake and increased physical activity, should be promoted.

Limitations can be placed on the concentrations of salt, sugar, trans-fats and saturated fats in manufactured food products. Food labelling should also be introduced to facilitate informed choice by consumers. Food adulteration should be dealt with rigorously. Provision of safe, arsenic-free water and food should be ensured. Special attention should be given to stop malnutrition and under-nutrition in fetal and neonatal life through nutrition programs. Public awareness should be created to avoid childhood obesity. If indicated by further research, vitamin D deficiency should be avoided by fortification of food.

4. Studiesrelated to knowledge of CAD patients

Philip [2015] suggests that lifestyle management that includes a diet of mostly plants may help prevent and reverse CAD. It is a conscious and mindful decision to maximize the health benefits per calorie while minimizing potential harmful exposures. The Lifestyle Heart Trial found that 82% of patients diagnosed with heart disease who followed this plant-based diet program had some level of regression of atherosclerosis and 91% had a reduction in the frequency of angina episodes, whereas 53% of the control group, fed the American Heart Association diet, had progression of atherosclerosis. In addition, the study showed a reduction in low-density lipoprotein (37.2%) that is similar to results achieved with lipid-lowering medications. The plant-based diet group had a 73% decrease in coronary events and a 70% decrease in all-cause mortality. In 1998, a collaborative analysis using original data from 5 prospective studies was reviewed and showed that, compared with non-vegetarians, vegetarians had helps 24% reduction in ischemic heart disease death rates. Atherothrombotic CAD is a largely preventable condition that is characterized by the formation of atherosclerotic plaques.

George [2014] conducted a cross sectional studies related to the knowledge of cardiovascular risk factors among Indian school children. Aim of the study was to assess the prevalence of cardiovascular risk factors and its knowledge among school children of Delhi. A survey among 485 school children studying in classes 6, 7 and 8 in two government and one private school in New Delhi using convenience sampling. Cardiovascular risk factors (physical activity, diet and smoking), knowledge about risk factors and family profile were assessed using a structured self-report questionnaire. Weight, height and blood pressure measurements were taken. The mean age of the studied school children was 12.8 ± 1.6 years. The prevalence of overweight and obesity was 9.5% and 11.5% respectively. The prevalence of prehypertension, stage 1 hypertension and stage 2 hypertension was 12.4%, 6.8% and 1.4% respectively. Of the total, 43.8% were physically active for at least 1 hour per day on all 7 days of the previous week. Daily consumption of fruits and vegetables was reported by 42% and 76% of the school children respectively. Nearly 5% of the school children reported to have used any form of tobacco. One fifth of the school children had a family history of cardiovascular disease. Of the total, 25.4% had adequate knowledge regarding cardiovascular risk factors. Cardiovascular risk factors are highly prevalent among school children. Importantly, school children lack adequate knowledge regarding cardiovascular risk factors. School based interventions are required for cardiovascular risk reduction in childhood.

Chathurvedhi [2013] changes in knowledge, attitudes and practices among coronary artery disease patients. The purpose of this paper is to analyze changes in knowledge, attitudes and practices (KAP) regarding diet and life style related risk factors among male and female coronary artery disease (CAD) patients (30-60 yrs.), in Jaipur city. All willing patients under medical supervision for CAD were included.

A detailed pre-tested and standardized interview schedule was used to elicit required information. In total, 100 subjects were assessed for KAP. Retrospective data were recorded for the information on KAP prior to the incidence of the disease.The major findings revealed that there was a significant change in knowledge, attitudes and practices before and after the incidence of CAD. Knowledge and attitudes were found to have a strong association. Close association was statistically established between knowledge and smoking practice for male subjects and between attitudes and weight loss for female patients. No association could be established for other attributes.The study explores the effect of CAD on the knowledge, attitude and practices of the patients regarding diet and life style related risk factors. It also observes and compares the data prior to the frank expression of the disease and after the disease.

Mirzha [2013] conducted a cross sectional study in Bangladesh. The Bangladesh ranks highest among other Southeast Asian countries regarding risk factors for the number one cause of death worldwide heart disease. Low income citizens tend to have less awareness and understanding about coronary artery disease (CAD) due to a number of socioeconomic barriers. There is a need to assess knowledge and perception about CAD in order to develop baseline data for preventive programs. This survey assessed knowledge, attitudes, and health-seeking practices toward CAD among 222 Bangladeshi patients. The 40-point KAP surveys were completed based on systematic random sampling from a government cardiovascular hospital representing a lower income population in Dhaka, Bangladesh. The mean KAP score was 21.45 ± 5.83 with a total possible score being 40. Only 5.86% of the sample was able to demonstrate a high level of proficiency. Men had more knowledge ($t\ (1.962) = 1.334$, $P = 0.051$), but women demonstrated more health-seeking behaviours with stronger statistical significance ($t\ (-2.135) = -0.407$, $P = 0.034$).

Several significant chi-square relationships were found between socioeconomic status (SES) and KAP scores. This study demonstrated selective lapses in CAD knowledge, attitude, and practice among Bangladeshi patients with low SES. Future preventative educational interventions would benefit by targeting the deficiencies in KAP in this study.

Khadka [2013]conducted a descriptive study related to knowledge regarding modifiable risk factors of coronary artery disease patient. Progressive urbanization and adoption of the western lifestyle contributes to the rising burden of cardiovascular disease in the developing world Coronary Atherosclerotic Heart Disease is no longer confined by geographical area or socioeconomic boundary. The prevalence of Coronary Atherosclerotic Heart Disease is increasing in Nepal. Knowledge is an important pre-requisite for implementing both primary and secondary preventive strategies for cardiovascular diseases. This investigation attempts to quantify knowledge of modifiable risk factors of Coronary Atherosclerotic Heart Disease among sample population in Kathmandu metropolitan city. Community based cross-sectional descriptive study design using quantitative method of study was conducted in ward no 5 of Kathmandu out of 35 wards. Selection was done by simple random technique (lottery method). Total house hold serial number of selected ward was identified from election commission record section and data was collected using systemic random sampling. The household head aged 18 years and above was taken as representative sample (n= 196). Standard questionnaire was used to interview participants. The risk factors specifically included smoking, hypertension, elevated cholesterol levels, diabetes mellitus and obesity. The mean age (SD) of the 196 participants was 51.26 (13.56) years. Of the participants only 22% had good level of knowledge regarding modifiable risk factors of Coronary Atherosclerotic Heart

Disease. This study showed that majority of the respondent lack predefined good level of knowledge regarding modifiable risk factors of Coronary Atherosclerotic Heart Disease. Mostly 85.2%, 61.73%, 40.31%, 28.6%, 17.86% are correctly identified hypertension, obesity, cholesterol, smoking and diabetes mellitus respectively as modifiable risk factor of Coronary Atherosclerotic Heart Disease. Study found association of good level of knowledge in male participants (p=0.006), Brahmin cast (p=0.001), living in nuclear family (p= 0.041), ex-smoker (p=0.06), doing regular exercise (p= 0.006).This study call for efforts such as targeted public health education to increase the level of knowledge about the modifiable risk factors.

Radha [2012] conducted a descriptive study related to knowledge regarding preventive measures of heart disease among the adult population heart disease is the leading cause of death globally. Prevention is the most effective way of combating its epidemic in the resource poor nations. Knowledge on preventive measures of heart diseases has been identified as a prerequisite for change in behaviour. This study was conducted with the purpose of identifying the knowledge on heart disease and its prevention among the adults population. A total of 405 respondents who met the eligible criteria were systematically sampled and interviewed face to face for the study. A pretested semi structured interview schedule was used to collect data from adults. The duration of the study was one month. Among total respondents, 57.8 percent had adequate knowledge on heart disease. Only less than half (46.9%) knew age as non-modifiable risk factor for heart disease followed by heredietary (39.8%) and sex (13.8%). Regarding modifiable risk factors, the most cited response was fatty food consumption (72.6%) followed by smoking (70.4%), stress (63.7%), physical inactivity (61.7%), hypertension (59%), obesity (58.8%), high cholesterol diet (36.5%) and diabetes (30.1%). Most of the respondents (57.8%) knew dyspnea during

exertion as symptom of heart disease followed by chest pain (24%). Majority of respondents (80.7%) cited decreasing fatty diet as preventive measure of heart disease following daily exercise (75.6%), eating vegetables and fruits (71.6%), keeping blood pressure under control (59%) and keeping diabetes under control (33.8%) respectively. Knowledge was significantly associated with age, gender, education level and family history of heart disease. The findings concluded that significant percentage (42.2%) of respondents had inadequate knowledge on heart disease. The findings also highlighted the lack of knowledge on high cholesterol diet and diabetes as modifiable risk factors for heart disease i.e. 36.5% and 30.1% respectively. So it is recommended that awareness raising programs could be beneficial on prevention of heart disease is correcting in the deficient areas of knowledge regarding preventive measures of heart disease

5. Studies related to video assisted teaching on heart healthy diet among CAD patients

Mahalekshmi [2015] conducted a descriptive study to evaluate the effectiveness of video assisted teaching program on knowledge regarding cardiac diet among CAD patients admitted in cardiac inpatient department at selected cardiac hospital Erode. The Implementation of video assisted teaching program of CAD patients, 46(92%) had inadequate knowledge, 4(8%) had moderate knowledge and none of them had adequate knowledge regarding cardiac diet and the pretest mean knowledge score was 8.58. After implementation of video assisted teaching program CAD patients knowledge level, 13(26%) had moderate level of knowledge, 37(74%) had adequate level of knowledge and none of them had inadequate knowledge regarding cardiac diet and posttest mean knowledge score was 26.5. The posttest

mean score percentage (82.81%) of knowledge on cardiac diet were comparatively more than their pretest mean knowledge score (26.81%). It confirms that, there was increase in knowledge after the administration of video assisted teaching program. The paired 't' test was worked out the 't' value was 24.8 and it implies that the difference in the pretest and post test knowledge score found to be statistically significant at 5% level. This result evidently supported the effectiveness of video assisted teaching program promoting the knowledge on cardiac diet .Chi square was used to find out the association between the socio demographic variables with the pretest knowledge score. The present study reveals that, there is an association between pretest knowledge with age, sex, education, dietary pattern, personal habits, and family history of CAD. The mean pre-test knowledge of CAD patients was found in adequate and moderately adequate knowledge level. After implementation of video assisted teaching program on cardiac diet the mean posttest knowledge was found most of the patients having adequate and moderately adequate knowledge level. The finding of this study revealed that video assisted teaching program was found effective among CAD patients.

CHAPTER : III

METHODOLOGY

Introduction:

Methodology is a systemic way of solving the problem. It may be understand in a science of studying how project is doing scientifically.

This chapter includes research approach, research design, setting of the study, variables, population, sample size, sampling technique, sample selection criteria, description of the tool, scoring technique, validity, and procedure for data collection and plan for data analysis.

Research Approach:

To accomplish the objectives of the study, quantitative approach and the study was intended to assess the effectiveness of VAT programme on heart healthy diet among CAD patients was considered as most appropriate.

Research Design:

The research design used in this study was one group pre-test post-test design.

The design can be represented as

[01 X 02]

O1 =   Pre - test to assess the level of knowledge on heart healthy diet among CAD patients.

X   =   Intervention [video assisted teaching programme on heart healthy diet among CAD patients].

O2 =   Post – test to evaluate the effectiveness of VAT programme regarding heart healthy diet among CAD patients.

Variables:

Independent variable – video assisted teaching

Dependent variable   – level of knowledge of CAD patients regarding heart healthy diet

Setting of the study:

The study was conducted in Sree Mookambika Medical College Hospital, Kulasekharam in Kanyakumari district. This is a 750 bedded multi- speciality hospital. In patients of 440 – 470 patients and new cases and 350old cases as out patients per day. The hospital having outpatient department that consists of 60 -100 CAD patients daily.

Population:

Target population:

The target population was the study is coronary artery disease patients, attending cardiac OPD of Sree Mookambika Medical College Hospital Kulasekharam at Kanyakumari district.

Accessible population:

Accessible population for the study is CAD patients who are between 25 years to 65 years of age who fulfil the inclusion criteria

Sample size:

Sample consists of 30 CAD patients in cardiac outpatient department

Sampling techniques:

Purposive sampling technique is adopted for this study and the samples were selected based on inclusion and exclusion criteria.

Criteria for sample selection:

Inclusion criteria:

- Patients who visit cardiac out patients department at SreeMookambika Medical College Hospital.
- Cardiac patients who are on conservative treatment.
- Patients willing to participate in the study.

Exclusion criteria:

- Post CABG patients (those who undergone coronary artery bypass graft surgery)
- Those who are critically ill (hemiplegia severe breathing difficulty)

Description of tool:

The tool consists of two sections

Section : A

It consist of demographic variables such as age in year, gender, employment status, previous history of cardiac disease ,co-morbidity, diet habits , personal habits, habits of smoking, habits of alcohol and family history of cardiac disease.

Section : B

It consists of 25 multiple choice questions to assess the knowledge of CAD patients in cardiac outpatient department.

Scoring interpretation:

The structured questionnaire consists of 25 questions. Each correct response carries '1' mark and wrong response '0' mark.

Score interpretation :

1. Excellent   : 90-100%
2. Good   : 70-89%
3. Average   : 50-69%
4. Poor knowledge   : 30-49%
5. Very poor   : <30%

Testing of tool:

Validity:

Content validity of tool was established on the basis of the opinion of five experts. One HOD of medical surgical department from Sree Mookambika Medical

College Hospital and four medical and surgical Nursing faculties. The necessary suggestion and modifications was in corporate in the and the tool was finalized

Reliability:

Reliability of the tool was identified by test retest method using spearman rank correlation formula. Knowledge Standardise questionnaire r value is 0.6 hence the tool was reliable.

$$\text{Formula r} = \frac{\sum(x-\bar{x})(y-\bar{y})}{\sum(x-\bar{x})^2\ (y-\bar{y})^2}$$

Pilot study:

Pilot study help to find out the feasibility and practicability of the research study. The pilot study was conducted in Sree Mookambika Medical College Hospital at Kanyakumari district. Prior the pilot study written permission obtained from Director for 7 days. Oral consent was obtained from CAD patients in cardiac outpatient department at Sree Mookambika Medical College Hospital. After self introduction, objectives of the study was explained to all the samples, were 3 samples are selected for pilot study between the age group of 25 years to 65 years. First day 3 patients selected and pre-test was done by using structured knowledge assessment questionnaire.Video assisted teaching was given for that 3 CAD patients in cardiac outpatient department. After 7days post test was conducted by using the same structuredknowledge assessment questionnaire.

Ethical consideration:

Before conducting the study a prior written permission was obtained from the Director of Sree Mookambika Medical College Hospital Kulasekharam at

Kanyakumari District. The study was conducted after getting the approval from the research committee of Sree Mookambika College of Nursing Kulasekharam. Oral consent was obtained from CAD patients those willing to participatethe study in cardiac outpatient department at Sree Mookambika Medical College Hospital Kulasekharam at Kanyakumari District.

Data collection procedure:

A prior written permission was obtained from the Director of Sree Mookambika Medical College Hospital Kulasekharam at Kanyakumari District. Oral consent was obtained from CAD patients. Data collection was done during the period of February 1stto March 1st ended. 30 samples were selected based on the inclusion criteria, by purposive sampling technique. by purposive sampling technique. After self-introduction, objectives of the study was explainedfor all selected the CAD patients.Pre-test was conducted by using knowledge assessment questionnaire. Day one 6 patients were educated by video assisted teaching programme. The same schedule were followed. Post test was conducted after 7th day of teaching programme, by the same knowledge assessment questionnaire.

Plan for data analysis

The collected data is planned to be analyzed using descriptive and inferential statistics, such as percentage mean, t-test and chi-square test.

Sl.	Data analysis	Method	Remarks
01	Descriptive statistics	• Mean • Standard Deviation	Describe demographic variable. To find out positive square root of mean of standard deviation.
02	Inferential statistics	• t – test • Chi square test	To find the significant difference between pre test and post test. To find out the association between demographic variables and knowledge.

DESIGN	SETTINGS	POPULATION	SAMPLING TECHNIQUE AND SAMPLE SIZE	TOOL	PRE TEST
Pre experimental design one group pretest post test design	Sree Mookambika Medical College Hospital, Kulasekharam, K.K. Dist.,	CAD patients in cardiac out patient department between the age group of 25 – 65	Purposive sampling technique and sample size 30	Demographic variables - Age - Gender -Previous history of cardiac disease - Co-morbidity -History of smoking - H/o Alcohol - Family history of cardiac diseases	Structural questionnaire regarding heart healthy diet Video assisted teaching program

POST TEST

Finding and Conclusion	←	Data Analysis inferential descriptive	←	Structured questionnaire regarding heart healthy

Figurer 2 : Schematic – Representative of Research design

CHAPTER : IV

ANALYSIS AND INTERPRETATION OF DATA

This chapter represents the analysis and interpretation data collected in accordance with the objectives stated for the study. The collected data were organized, tabulated, summarized and analyzed by using descriptive and inferential statistical method.

Objectives of the study

➢ To assess the level of knowledge on heart healthy diet among coronary artery disease patients in cardiac outpatient department at Sree Mookambika Medical College Hospital before and after video assisted teaching.

➢ To determine the effectiveness of video assisted teaching in coronary artery disease patients at cardiac outpatient department.

➢ To find out the association between the levels of knowledge among coronary artery disease patents in cardiac outpatient department on heart healthy diet and selected demographic variables such as age, gender, employment status, previous history of cardiac disease, co-morbidity, diet habits, personal habits, history of smoking, history of alcoholism and family history of cardiac disease

The data collected was analyzed and presented under the following sections.

Section A: Distribution of samples according to demographic variables.

Section B: Pretest and posttest knowledge regarding heart healthy diet among CAD patients.

Section C: Association between the level of knowledge among CAD patients in cardiac outpatient department on heart healthy diet with the selected demographic variables such as age, gender, employment status, personal habits, co morbidity, previous history of cardiac disease, diet habits, history of smoking, history of alcohol and family history of cardiac disease.

Section : A

Distribution of samples according to demographic variables.

Table 1: Percentage distribution of study subjects according to their demographic variables.

N=30

Sl. No.	Demographic Variables	Frequency	%
1.	Age		
	(a) 25- 35	3	10
	(b) 35-45	1	3.33
	(c) 45-55	10	33.33
	(d) 55-65	16	53.34
2.	Gender		
	(a) Male	21	70
	(b) Female	9	30
3.	Employment Status		
	(a) Employee	18	60
	(b) Unemployed	12	40
4.	Previous history of cardiac disease		
	(a) Yes	9	30
	(b) No	21	70
5.	Co Morbidity		
	(a) Diabetes	14	46.67
	(b) Hypertension	7	23.33
	(c) Both	9	30
6.	Diet habits		
	(a) Vegetarian	5	16.67
	(b) Non Vegetarian	25	83.33

7.	Personal habits		
	(a) Diet control	14	46.67
	(b) Regular exercise	16	53.33
8.	History of smoking		
	(a) Yes	13	43.33
	(b) No	17	56.67
9.	History of Alcoholism		
	(a) Yes	11	36.7
	(b) No	19	63.3
10.	Family history of cardiac Disease		
	(a) Yes	6	20
	(b) No	24	80

The table 1 describes the distribution of frequency and percentage of the study subjects according to their demographic variables. Regarding the age, 10% belongs to 25-35 years and3.33% belongs to 35-45years, 33.33% belongs to 45-55years, and 53.33% belongs to 55-65years.regrding gender 70% male 30%female.In respect of employment status60% employ and40% unemployed. Regarding previous history of cardiac disease is 30% have cardiac disease and 70% no cardiac disease, regarding co-morbidity 46.67% diabetes 23.33% hypertension 30% both diabetes and hypertension. Regarding diet habits 16% vegetarian and 83.33% non-vegetarian .regarding personal habits 46.67%diet control and 53.33% regular exercise regarding history of smoking is 43% smoker and 56.67% non-smokers. Regarding alcoholism 36.67% were alcoholic and 63.33% non-alcoholic. Regarding family history of cardiac disease is 20% have 80% not have.
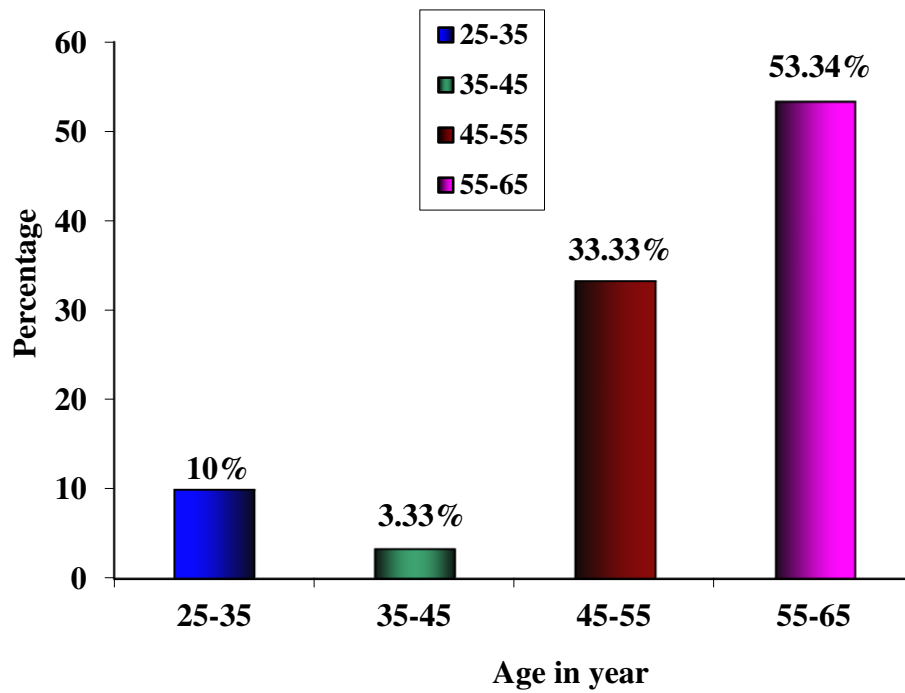
Figure 1 : Frequency and percentage distribution of demographic variable according to age
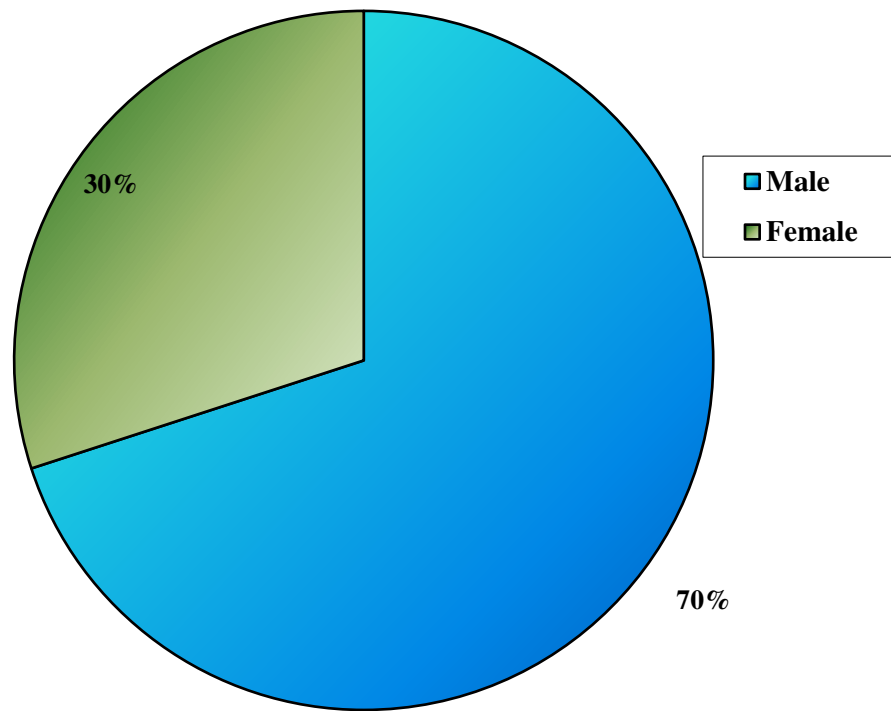
Figure 2 : Frequency distribution of demographic variable according gender.
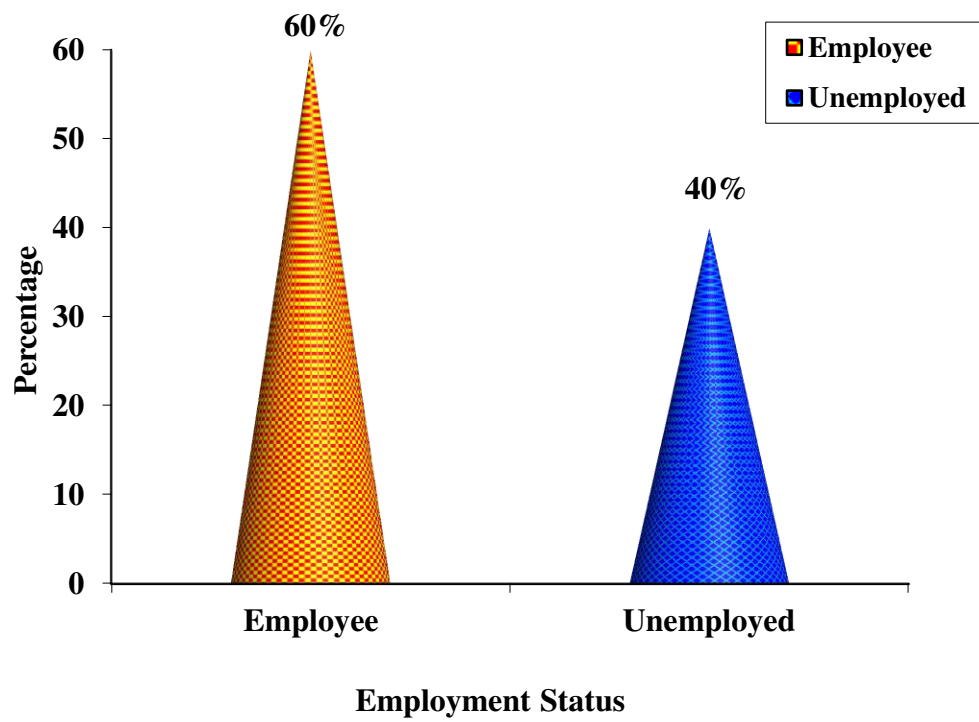
Figure 3: Percentage distribution of samples according to employment status

Previous history of cardiac disease
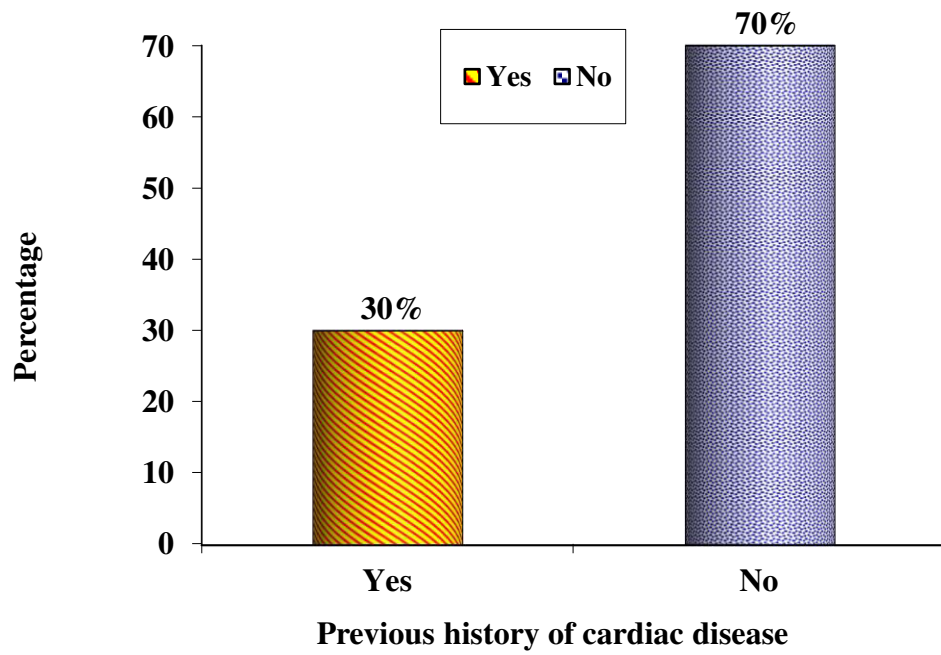
Figure 4 : Frequency and percentage distribution of demographic variable according previous history of cardiac disease.
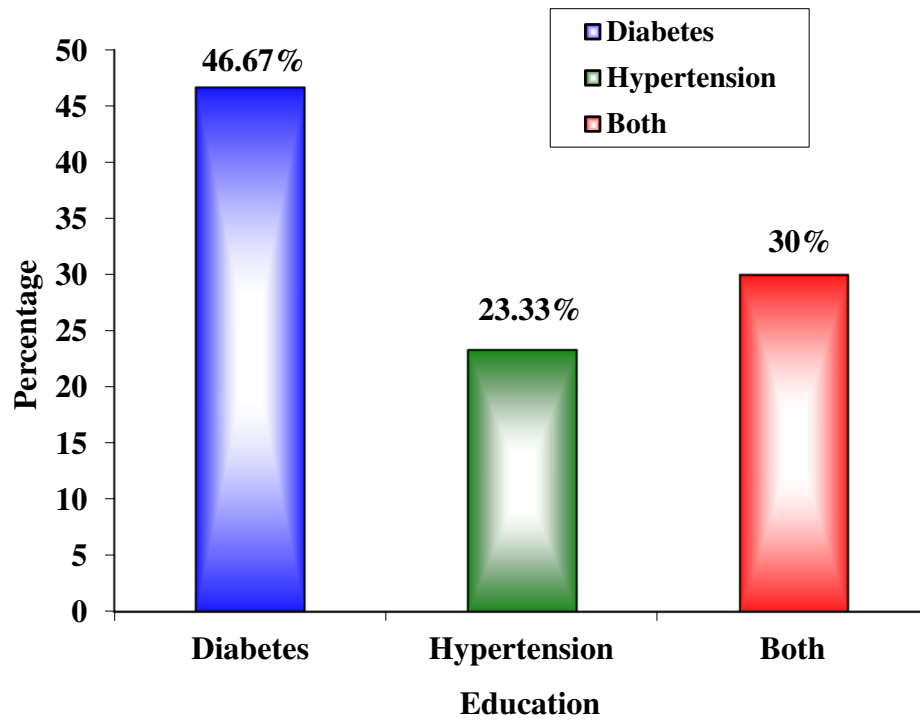
Figure 5 : Frequency and percentage distribution of demographic variable

according to co-morbidity
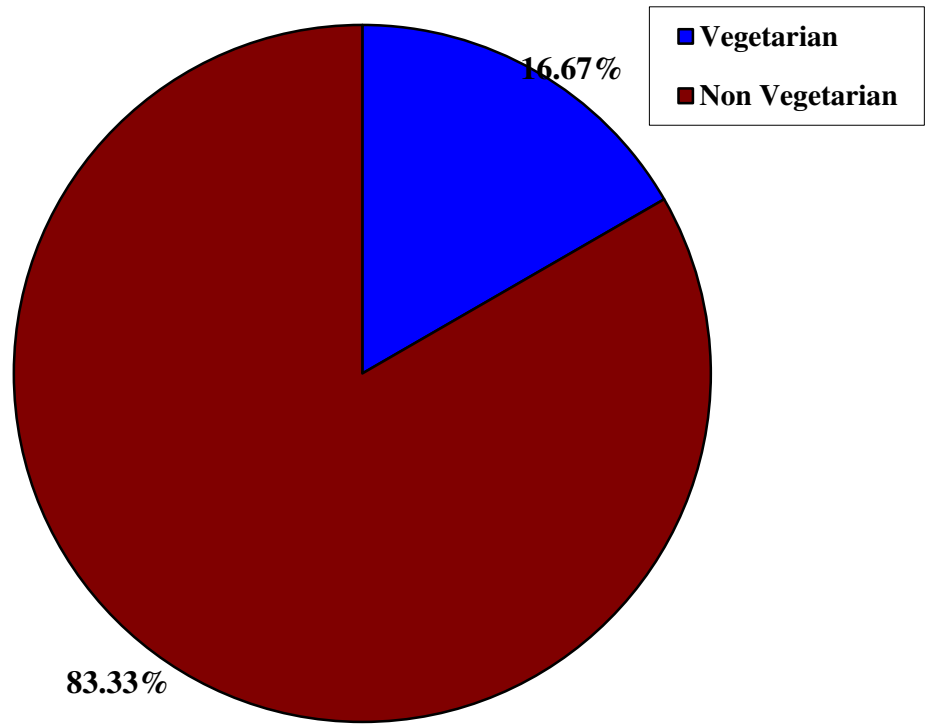
Figure 6 : Frequency and percentage distribution of demographic variable according to diet habits
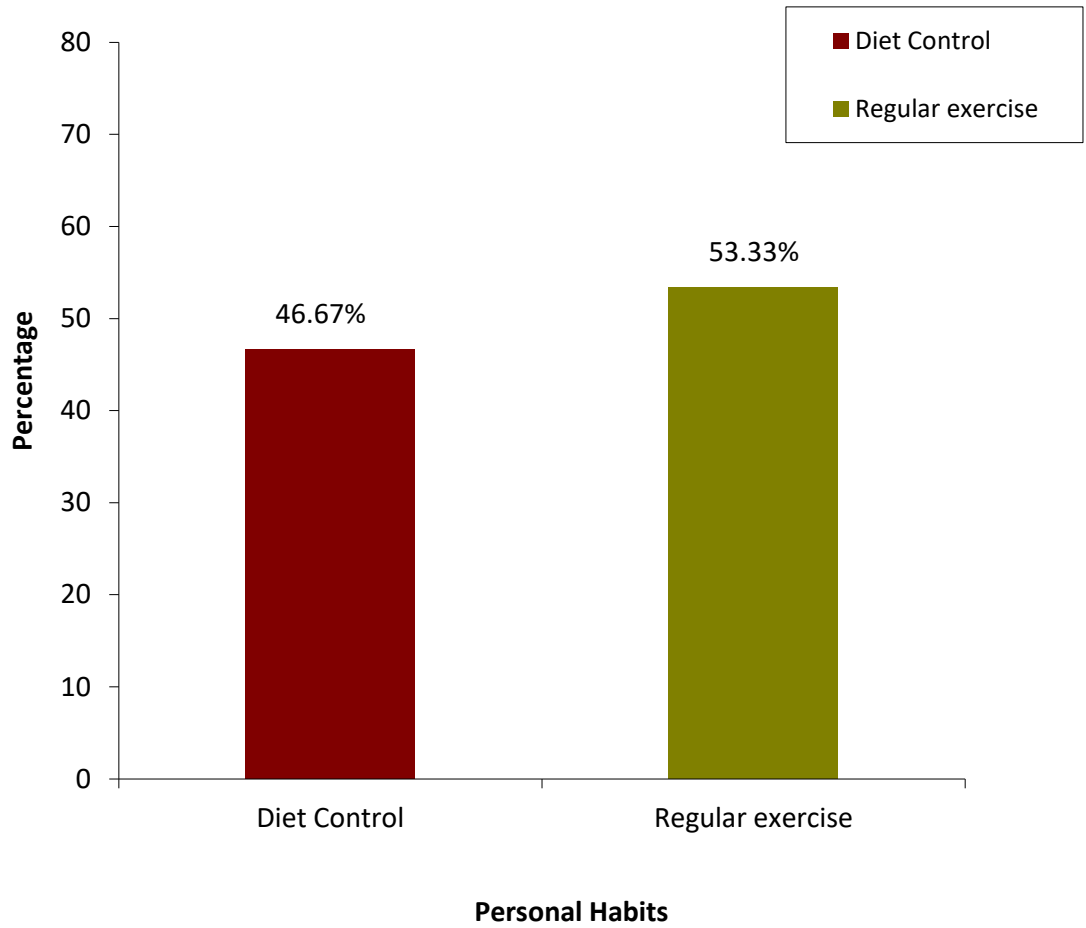
Figure 7 : Frequency and percentage distribution of demographic variable according to personal habits.
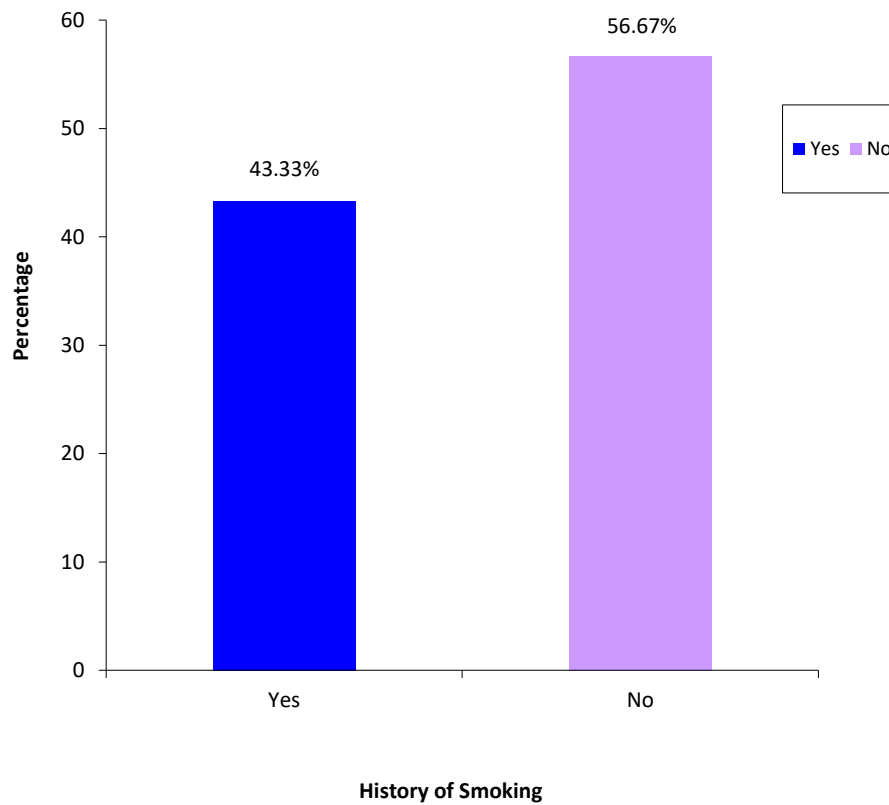
Figure 8 : Frequency and percentage distribution of demographic variable according to history of smoking
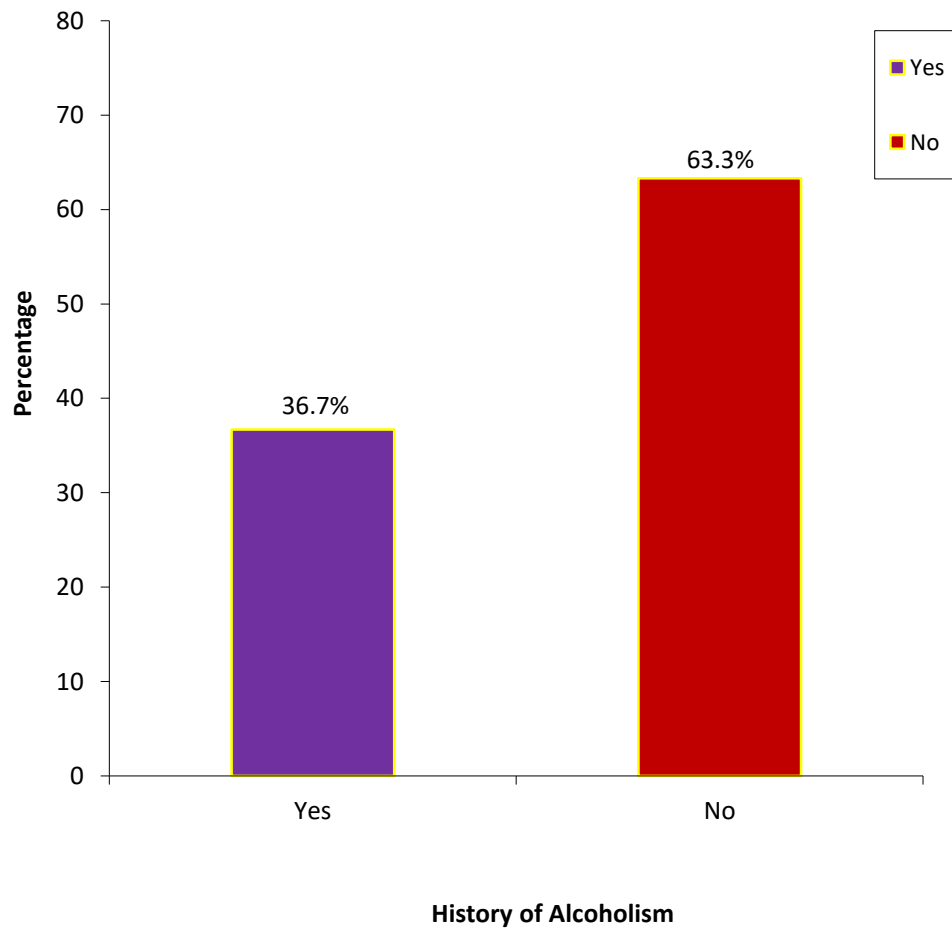
Figure 9 : Frequency and percentage distribution of demographic variable according to history of alcoholism
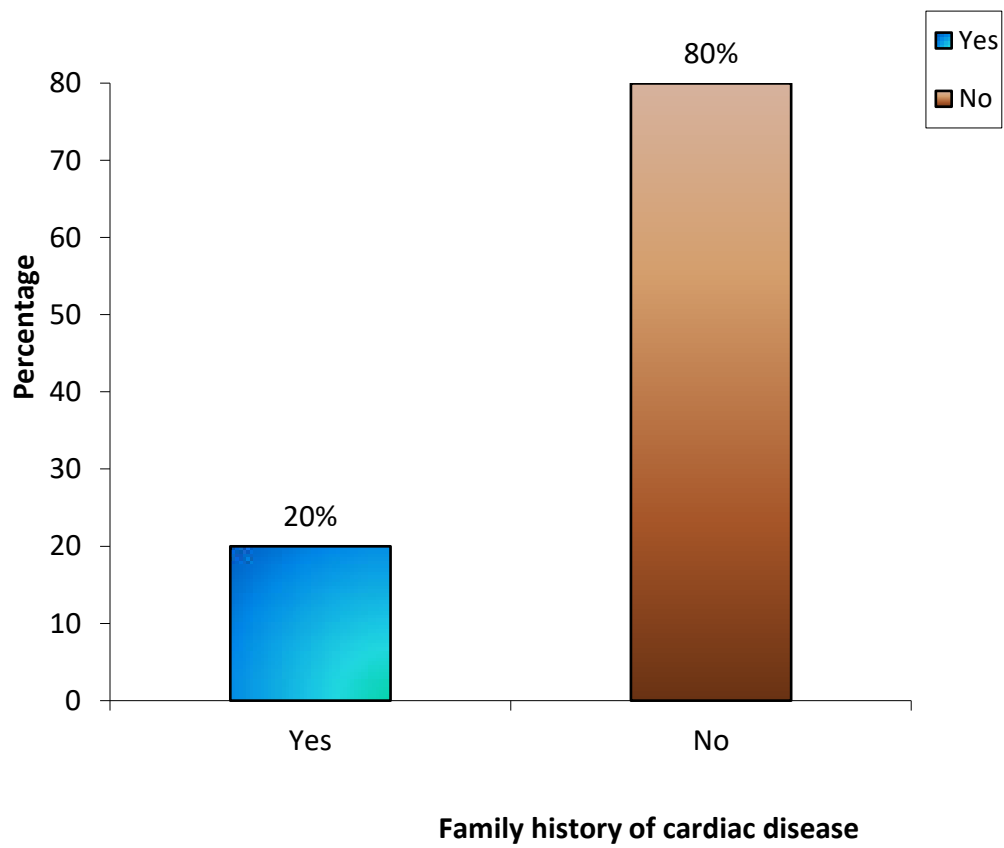
Figure 10 : Frequency and percentage distribution of demographic variable according to family history of cardiac disease.

`   The section deals with pre test and post test knowledge regarding heart healthy diet among CAD patients in cardiac outpatient department.

Table 2: Pre test knowledge of CAD patients regarding heart healthy diet.

[N=30]

Categories	Knowledge of CAD patients	
	f	%
Excellent	0	0
Good	3	10
Average	16	53.4
Poor Knowledge	7	23.3
Very poor	4	13.3

The above table shows the level of knowledge of CAD patients before video assisted teaching. There is no excellent knowledge 10%good, 53%average, 23.3%poor knowledge, and 13.3%very poor knowledge.
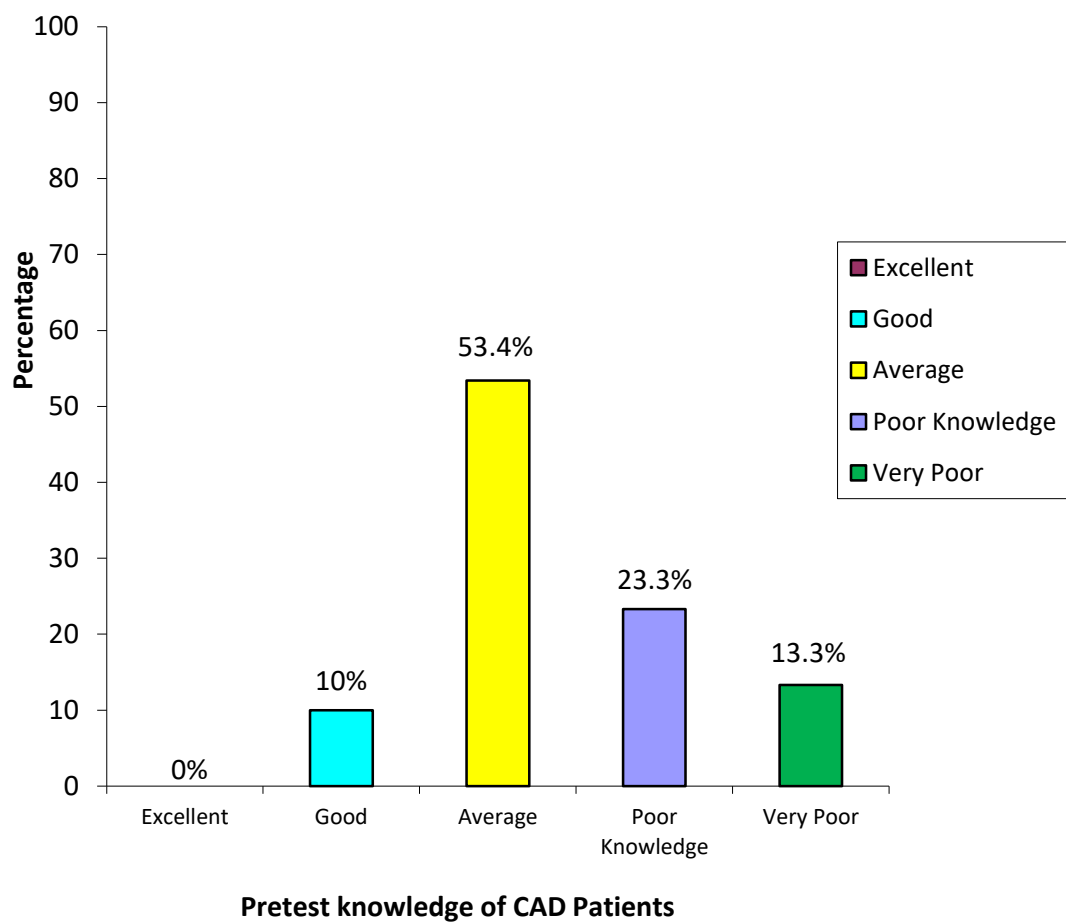
Figure 11 : Pre test knowledge of CAD patients regarding heart healthy diet.

Table 3 : Post test knowledge of CAD patients regarding heart healthy diet.

[N=30]

Categories of scoring	Knowledge of CAD patients	
	f	%
Excellent	0	0
Good	20	66.7
Average	9	30
Poor knowledge	1	3.3
Very poor	0	0

The above table shows the level of knowledge of CAD patients after video assisted teaching program. 66.7% good knowledge, 30% average knowledge and 3.3% only poor knowledge.
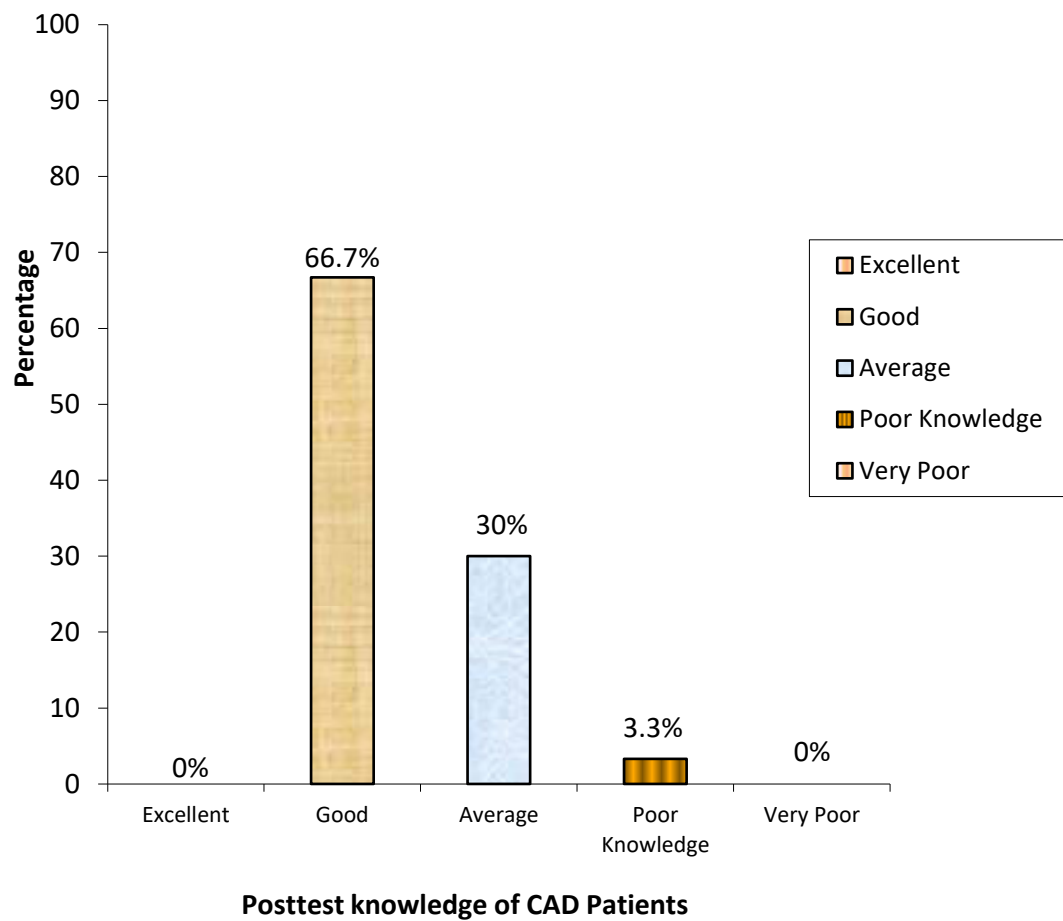
Figure 12 : Post test knowledge of CAD patients regarding heart healthy diet.

Section : C

Table 4 : The effectiveness of video assisted teaching program me on heart healthy diet by comparing pretest and posttest scoring knowledge regarding heart healthy diet.

N=30]

	Mean	**MD**	**SD**	**t test**	**T value**
Pretest	12.03	3.93	3.35	8.47* (S)	2.31
Posttest	15.96		2.37		

Significance at P<0.05

    The above table shows assess the effectiveness of video assisted teaching program is improving the knowledge regarding heart healthy diet, which is statistically significant with the value of ' t' 8.47* with P value< 0.05.

<div align="center">

Section : D

</div>

The section deals with the association between knowledge of CAD patients regarding heat healthy diet with selected demographic variables.

Table 5 : Association between level of knowledge of CAD patients regarding heart healthy diet and selected demographic variables.

[N=30]

Sl No	Demographic Variables	f	good		Average		Poor Knowledge		Very poor		df	Chi square value	P Value
			f	%	f	%	f	%	f	%			
1.	Age (a) 25- 35 (b) 35-45 (c) 45-55 (d) 55-65	3 1 10 16	0 0 13 26	0 0 33 67	3 1 3 9	10 3.33 10 30	0 0 3 4	0 0 10 13.33	0 0 4 0	0 0 13.33 0	9	11.74 (NS)	16.9
2.	Gender (a) Male (b) Female (c) Transgender	21 9 0	26 13 0	67 33 0	12 5 0	40 16.67 0	3 3 0	10 10 0	4 0 0	13.33 0 0	3	2.87 (NS)	7.8
3.	Employment Status (a) Employee (b) Unemployed	18 12	13 26	33 67	11 6	36.67 20	2 4	6.67 13.33	4 0	13.33 0	3	5.49 (NS)	7.8
4.	Previous history of cardiac disease (a) Yes (b) No	9 2	13 26	33 67	6 11	20 36.67	1 5	3.33 16.67	1 3	3.33 10	3	0.79 (S)	7.8
5.	Co Morbidity (a) Diabetes (b) Hypertension (c) Both	14 7 9	1 1 1	3.3 3.3 3.3	7 4 6	23.3 13.3 20	3 1 2	10 3.3 6.7	2 1 1	6.67 3.33 3.33	6	0.54 (ns)	12.6

Table Five continued ....

S.No	Variable									df	χ²	Table value
6.	Diet habits											
	(a) Vegetarian	5	0	0	3	10	1	3.3	1	3.3	3	8.39* (S)	7.8
	(b) Non Vegetarian	25	3	10	14	46.6	5	16.7	3	10			
7.	Personal habits											
	(a) Diet control	14	3	10	7	23.3	3	10	1	3.3	3	4.45 (NS)	7.8
	(b) Regular exercise	16	0	0	10	33.3	3	10	3	10			
8.	History of smoking											
	(a) Yes	13	2	6.7	6	20	1	3.3	4	13.3	3	8.09* (S)	7.8
	(b) No	17	1	3.3	11	36.7	5	16.7	0	0			
9.	History of Alcoholism											
	(a) Yes	11	2	6.7	5	16.7	2	6.7	2	6.7	3	1.88 (NS)	7.8
	(b) No	19	1	3.3	12	40	4	13.3	2	6.7			
10.	Family history of cardiac Disease											
	(a) Yes	6	0	0	3	10	1	3.3	2	6.7	3	3.1 (NS)	7.8
	(b) No	24	3	10	14	46.6	5	16.7	2	6.7			

Significance at $P<0.05$

The above table shows that there is a significant association between the level of knowledge and demographic variables such as diet habits and history of smoking. There is no significant association between the knowledge and demographic variables such as age, gender, employment status, previous history of cardiac disease, co-morbidity, personal habits, history of alcoholism and family history of cardiac disease.

CHAPTER : V

RESULTS AND DISCUSSION

The present study was conducted to determine the effectiveness of video assisted teaching on heart healthy diet among coronary artery disease patients in cardiac out- patient department at Sree Mookambika Medical College Hospital Kulasekham. The quantitative approach pre experimental design with one group pre test post test was adopted in this study the knowledge of patients regarding heart healthy diet was assessed by structured questionnaire. The analysis was done by descriptive and inferential statistics at 5% level of significance (P =0 .05). The result was discussed based on the objective set for the study.

Objectives:

➢ To assess the pretest level of knowledge on heart healthy diet among coronary artery disease patients in cardiac outpatient department at Sree Mookambika Medical College Hospital before video assisted teaching.

➢ To assess the level of knowledge on heart healthy diet among coronary artery disease patients in cardiac outpatient department at Sree Mookambika Medical College Hospital after video assisted teaching.

➢ To determine the effectiveness of video assisted teaching in coronary artery disease patients at cardiac outpatient department.

➢ To find out the association between the level of knowledge among coronary artery disease patients in cardiac outpatient department with the selected demographic variables such as, age, gender, employment status, previous

history of cardiac disease, co-morbidity, diet habits, personal habits, history of smoking, history of alcoholism and family history of cardiac disease.

Distribution of the study samples based on demographic variables

The samples were selected on the inclusion criteria. The characteristics of samples are discussed below.

Table 1 show the distribution of subjects according to the demographic variables.

The first objective of the study was to assess the pretest, level of knowledge on heart healthy diet among CAD patients in cardiac outpatient department at Sree Mookambika Medical College Hospital before video assisted teaching.

In my study among the 10% good 53.3%average 23.33%poor knowledge and 13.33%   very poor knowledge in pretest.

Chathurvedhi (2013) conducted a study related to changes in knowledge, attitudes and practices among coronary artery disease patients. The purpose of this paper is to analyze changes in knowledge, attitudes and practices (KAP) regarding diet and life style related risk factors among male and female coronary artery disease (CAD) patients (30-60 yrs), in Jaipur city. All willing patients under medical supervision for CAD were included. A detailed pre-tested and standardized interview schedule was used to elicit required information. In total, 100 subjects were assessed for KAP. Retrospective data were recorded for the information on KAP prior to the incidence of the disease. The major findings revealed that there was a significant change in knowledge, attitudes and practices before and after the incidence of CAD.

Knowledge and attitudes were found to have a strong association. Close association was statistically established between knowledge and smoking practice for male subjects and between attitudes and weight loss for female patients. No association could be established for other attributes. The study explores the effect of CAD on the knowledge, attitude and practices of the patients regarding diet and life style related risk factors. It also observes and compares the data for prior to the frank expression of the disease and after the disease. Li et al (2015) conducted a prospective cohort study related to Saturated Fats Compared with Unsaturated Fats and Sources of Carbohydrates in Relation to Risk of Coronary Heart Disease. They selected 84,628 women and 42,908 men who were free of diabetes, cardiovascular disease, and cancer at baseline. Diet was assessed by a semi quantitative food frequency questionnaire every 4 years. During 24 to 30 years of follow-up, we documented 7,667 incident cases of CAD. Higher intakes of polyunsaturated fatty acids and carbohydrates from whole grains were significantly associated with a lower risk of CAD comparing the highest with lowest quintile for PUFAs (hazard ratio 0.80, 95% confidence interval 0.73 to 0.88; p value is<0.0001) and for carbohydrates from whole grains (HR: 0.90, 95% CI: 0.83 to 0.98; p value is 0.003). In contrast, carbohydrates from refined starches/added sugars were positively associated with a risk of CAD (HR: 1.10, 95% CI: 1.00 to 1.21; p trend = 0.04). Replacing 5% of energy intake from saturated fats with equivalent energy intake from PUFAs, monounsaturated fatty acids, or carbohydrates from whole grains was associated with a 25%, 15%, and 9% lower risk of CAD, respectively Replacing saturated fats with carbohydrates from refined starches, sugars was not significantly associated with CAD risk (p > 0.10). The findings indicate that unsaturated fats, especially PUFAs or high-quality carbohydrates can be used to replace saturated fats to reduce CAD risk.

The second objective of the study was to assess the level of knowledge on heart healthy diet among CAD patients in cardiac outpatient department at Sree Mookambika Medical College Hospital after video assisted teaching.

In my study among 66.67%of good knowledge in posttest comparing to pretest none of the patients have very poor knowledge. This findings shows there need of video assisted teaching regarding heart healthy diet.

Khadka (2013)conducted a descriptive study related to knowledge regarding modifiable risk factors of coronary artery disease patient. Progressive urbanization and adoption of the western lifestyle contributes to the rising burden of cardiovascular disease in the developing world Coronary Atherosclerotic Heart Disease is no longer confined by geographical area or socioeconomic boundary. The prevalence of Coronary Atherosclerotic Heart Disease is increasing in Nepal. Knowledge is an important pre-requisite for implementing both primary and secondary preventive strategies for cardiovascular diseases. This investigation attempts to quantify knowledge of modifiable risk factors of Coronary Atherosclerotic Heart Disease among sample population in Kathmandu metropolitan city. Community based cross-sectional descriptive study design using quantitative method of study was conducted in ward no 5 of Kathmandu out of 35 wards. Selection was done by simple random technique (lottery method). Total house hold serial number of selected ward was identified from election commission record section and data was collected using systemic random sampling. The household head aged 18 years and above was taken as representative sample (n= 196).Standard questionnaire was used to interview participants. The risk factors specifically included smoking, hypertension, elevated cholesterol levels, diabetes mellitus and obesity. The mean age (SD) of the 196 participants was 51.26 (13.56) years. Of the participants only 22% had good level of

knowledge regarding modifiable risk factors of Coronary Atherosclerotic Heart Disease. This study showed that majority of the respondent lack predefined good level of knowledge regarding modifiable risk factors of Coronary Atherosclerotic Heart Disease.85.2%, 61.73%, 40.31%, 28.6%, 17.86% correctly identified hypertension, obesity, cholesterol, smoking and diabetes mellitus respectively as modifiable risk factor of Coronary Atherosclerotic Heart Disease. Stud y found association of good level of knowledge in male participants (p=0.006), Brahmin cast (p=0.001), living in nuclear family (p= 0.041), ex-smoker (p=0.06), doing regular exercise (p= 0.006).This study call for efforts such as targeted public health education to increase the level of knowledge about the modifiable risk factors.

Priyanka (2017) conducted a descriptive research study related to assess knowledge of CAD patients in outpatient department to develop life style modifications coronary artery disease is the single largest killer of both men and women worldwide. Impairment of heart functions due to inadequate blood flow to the heart. The risk factors precipitate coronary artery disease can present in to two categories that is modifiable and non-modifiable factors. A result depicted that mean knowledge score of patients attending medical OPD was 15.9 and mean percentage was 54.82%. It was interfered that 44% were patients having average level of knowledge, 34% patients were having good level of knowledge and 22% patients were having below average level of knowledge regarding CAD among patients attending medical OPD. The study can be done on large sample in different research settings. A pre experimental study can be conducted to assess Effectiveness of structured teaching program on knowledge regarding coronary artery disease among students of B.sc Nursing.

Boom (2015) conducted a cross sectional study related to acculturation and dietary pattern of Surinamese, Three dietary patterns were identified noodle/rice dishes and white meat (red meat, snacks and sweets and vegetables, fruit and nuts). In total, 1370 Dutch-origin and 1727 Surinamese-origin were participated in this study. The participant's characteristics by ethnicity and sex. In this study sample, the average age ranged from47 to 49 years between the subgroups and there were substantially more women than men in all ethnic groups .The majority of the men and women of Surinamese origin, 85 % and 86 %, respectively, were first-generation residents. The distribution of the categories of residence duration differed between men and women. For example-44 % of the Surinamese-origin men had residence duration of 38 years or more. 30 % of the Surinamese-origin women. The majority of the men and women of Surinamese origin (51 % and 53 %, respectively) were between 18 and34 years old at the time of migration. With regard to acculturation strategy, 74 % of the Surinamese origin men and 83 % of the women were classified as integrated indicating high orientation to both the Dutch and the Surinamese culture. It consistent association between acculturation and dietary patterns in the present study indicates that dietary patterns are quite robust. Understanding the continued adherence to traditional dietary patterns when developing dietary interventions in ethnic minority groups is warranted.

Third objective of the study was to determine the effectiveness of video assisted teaching in CAD patients at cardiac outpatient department.

In my study during the pretest patient scored, 10% good, 53.3% adequate, 23.33%little knowledge, 13.33% inadequate. During the posttest66.67% good, 30% adequate, 3.33%little knowledge. By comparing the pretest and posttest only 3.33%

little knowledge and no one have inadequate knowledge. This shows improvement in the level of knowledge regarding heart healthy diet.

Mahalekshmi (2015) conducted a descriptive study to evaluate the effectiveness of video assisted teaching program on knowledge regarding cardiac diet among CAD patients admitted in cardiac inpatient department at selected cardiac hospital Erode. The Implementation of video assisted teaching program of CAD patients, 46(92%) had inadequate knowledge, 4(8%) had moderate knowledge and none of them had adequate knowledge regarding cardiac diet and the pretest mean knowledge score was 8.58. After implementation of video assisted teaching program CAD patients knowledge level, 13(26%) had moderate level of knowledge, 37(74%) had adequate level of knowledge and none of them had inadequate knowledge regarding cardiac diet and posttest mean knowledge score was 26.5. The posttest mean score percentage (82.81%) of knowledge on cardiac diet were comparatively more than their pretest mean knowledge score (26.81%). It confirms that, there was increase in knowledge after the administration of video assisted teaching program. The paired 't' test was worked out the 't' value was 24.8 and it implies that the difference in the pretest and posttest knowledge score found to be statistically significant at 5% level. This result evidently supported the effectiveness of video assisted teaching program promoting the knowledge on cardiac diet .Chi square was used to find out the association between the socio demographic variables with the pretest knowledge score. The present study reveals that, there is an association between pretest knowledge with age, sex, education, dietary pattern, personal habits, and family history of CAD. The mean pre-test knowledge of CAD patients was found inadequate and moderately adequate knowledge level. After implementation of video assisted teaching program on cardiac diet the mean

posttest knowledge was found most of the patients having adequate and moderately adequate knowledge level. The finding of this study revealed that video assisted teaching program was found effective among CAD patients.

Fourth objective of the study was to determine the association between cardiac disease and selected demographic variables such as age, gender, occupation, previous history of heart disease, co-morbidity, personal habits, history of smoking and alcoholism, diet habits. There was significant association between the diet habits and history of smoking.

Radha(2012)conducted a descriptive study related to Knowledge regarding preventive measures of heart disease among the adult population Heart disease is the leading cause of death globally. Prevention is the most effective way of combating its epidemic in the resource poor nations. Knowledge on preventive measures of heart diseases has been identified as a prerequisite for change in behaviour. This study was conducted with the purpose of identifying the knowledge on heart disease and its prevention among the adults population. A total of 405 respondents who met the eligible criteria were systematically sampled and interviewed face to face for the study. A pretested semi structured interview schedule was used to collect data from adults. The duration of the study was one month. Among total respondents, 57.8 percent had adequate knowledge on heart disease. Only less than half (46.9%) knew age as non-modifiable risk factor for heart disease followed by hereditary (39.8%) and sex (13.8%). Regarding modifiable risk factors, the most cited response was fatty food consumption (72.6%) followed by smoking (70.4%), stress (63.7%), physical inactivity (61.7%), hypertension (59%), obesity (58.8%), high cholesterol diet (36.5%) and diabetes (30.1%). Most of the respondents (57.8%) knew dyspnoea during exertion as symptom of heart disease followed by chest pain (24%). Majority

of respondents (80.7%) cited decreasing fatty diet as preventive measure of heart disease following daily exercise (75.6%), eating vegetables and fruits (71.6%), keeping blood pressure under control (59%) and keeping diabetes under control (33.8%) respectively. The findings concluded that significant percentage (42.2%) of respondents had inadequate knowledge on heart disease. The findings also highlighted the lack of knowledge on high cholesterol diet and diabetes as modifiable risk factors for heart disease i.e. 36.5% and 30.1% respectively. The awareness raising programs improve the level of knowledge and beneficial on prevention of heart disease is correcting in the deficient areas of knowledge regarding preventive measures of heart disease. Knowledge was significantly associated with age, gender, education level and family history of heart disease.

Video assisted teaching program helps the patients to improve their knowledge regarding heart healthy diet and empower the CAD patient to lead healthy life in this complex society.

CHAPTER : VI

SUMMARY, CONCLUSION, NURSING IMPLICATION, LIMITATION AND RECOMMENTATION

The chapter deals with the summary to the study and conclusion drawn from the study. It also explains limitation of the study, implication of the study on different areas like nursing education, nursing administration, nursing practice and research.

Summary

The study was undertaken to assess the effectiveness of video assisted teaching on heart healthy diet among coronary artery disease patients in cardiac out-patient department at Sree Mookambika Medical College Hospital Kulasekharam".

Objectives of the study:

❖ To assess the pretest level of knowledge on heart healthy diet among coronary artery disease patients in cardiac outpatient department at Sree Mookambika Medical College Hospital.

❖ To assess the posttest level of knowledge on heart healthy diet among coronary artery disease patients in cardiac outpatient department at Sree Mookambika Medical College Hospital after video assisted teaching.

❖ To determine the effectiveness of video assisted teaching in coronary artery disease patients at cardiac outpatient department.

❖ To find out the association between the levels of knowledge among coronary artery disease patients in cardiac outpatient department on heart healthy diet

with the selected demographic variables such as age, gender, employment status, previous history of cardiac disease, co-morbidity, diet habits, personal habits, history of smoking, history of alcoholism and family history of cardiac disease.

Hypothesis:

❖ There will be a significant improvement in level of knowledge on heart healthy diet among coronary artery disease patients after receiving video assisted teaching.

❖ There will be a significant association between the level of knowledge of cardiac op patients on heart healthy diet and selected demographic variable such as age, gender, employment status, previous history of cardiac disease, co-morbidity, diet habits, and personal habits, history of smoking, history of alcoholism and family history of cardiac diseases.

The present study was based on the concept of J.W. Kenny's open system model the review related to the study has been done to identify, select, critically analyze and report on existing information of the problem selected for the study. This helps the Investigator to prepare the tool for the study. 30 samples were selected by purposive sampling technique. A pretest was conducted by administering structured questionnaire. Investigator given video assisted teaching program about heart healthy diet. After 7 days of teaching session a post test was conducted by the same structured questionnaire.

The data were collected, arranged tabulated and analyzed using appropriate statistical methods and result were charted in the analysis. During pretest10%good, 53%average, 23.3% poor knowledge, and 13.3% very poor knowledge. During

posttest 66.7% good knowledge, 30% average knowledge and 3.3% only poor knowledge. By comparing the pretest and posttest we can find out that in pretest 13.3% poor knowledge but posttest there is no very poor knowledge and only 3.3% poor knowledge. This shows improvement in the level of knowledge regarding heart healthy diet.

Findings of the study:

The findings revealed that there was significant improvement in the mean of knowledge.

The above mentioned mean difference was statistically proved by t test, for knowledge was statistically high significant at the level of $P < 0.05$ and the H1 was accepted. The table 5 shows that there was an association between the demographic variables such as diet habits and history of smoking. There is no significant association between knowledge and demographic variables such as age, gender, employment status, and previous history of cardiac disease, co morbidity, personal habits, history of alcoholism, and family history of cardiac disease.

Conclusion:

This study reveals that the video assisted teaching program is improving the level of knowledge of coronary disease patients regarding heart healthy diet. There by it helps in regarding heart healthy diet in daily life and preventing the hazarders like CAD in future life.

Nursing implications:

The finding of the study revealed the effect of video assisted teaching program is improving the level of knowledge regarding heart healthy diet among CAD patients and it can be implied in nursing research and nursing administration.

Nursing practice:

1. The finding of the present study helps the nurses to identify the importance of heart healthy diet.
2. Nurses can provide the awareness regarding heart healthy diet in CAD patients while conducting camp.
3. Nurses can prepare the CAD patients to follow-up the heart healthy diet.

Nursing education:

- In-service education can be given to the nursing personal in various method of teaching while providing health education to CAD patients regarding heart healthy diet.
- The nursing students must be prepared to provide health teaching by using various teaching methods.

Nursing research:

➢ The present study can be used as a source of review of literature for others, who intending to conduct study on effectiveness of video assisted teaching program on knowledge of heart healthy diet among CAD patients.

➢ The study can be done in various setting and for different age groups to improve level of knowledge.

Nursing Administration:

The study emphasized the need for health education program about video assisted teaching program on heart healthy diet among CAD patients which helps to improve the knowledge of CAD patient's regarding hear healthy diet.

Limitation:

❖ The study was conducted with 30 samples only. Hence the generalization is not possible.

❖ Present study limited to small number of subjects and related to only CAD patients.

❖ The tool used for the data collection was not standardized. It was designed by investigator herself for the purpose of the present study based on the objectives of the study.

Recommendation:

1. A similar study can be done for a large and wider sample for more generalizability.

2. The study can be done for a long term basis to produce more outcomes.

3. Encourage beginning receivers to conduct longitudinal study regarding heart healthy diet.

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APPENDIX : A

SREE MOOKAMBIKA COLLEGE OF NURSING
(Approved by the Goverment of Tamil Nadu & Recognised by Indian Nursing Council,
New Delhi, Tamil Nadu state Nurses & Midwives Council, Chennai.)
Affiliated to The Tamil Nadu Dr. M.G.R. Medical University, Chennai.
PADANILAM WELFARE TRUST, V.P.M.HOSPITAL COMPLEX, PADANILAM,
KULASEKHARAM, K.K.DIST., TAMIL NADU, PIN : 629 161
Phone : 04651 - 280743, 280866, 280742, 280745

ETHICAL COMMITTEE CLEARANCE

Date :.............................
Lr. No.   16-08-2017

To

Ms. Reshma.R.R.

I YR .M.Sc (N),

Sree Mookambika College of Nursing,

Kulasekharam.

Ref: Research Topic: "A Study to assess the effectiveness of Video assisted teaching on heart healthy diet among coronary artery disease patients in cardiac outpatient department in Sree Mookambika Medical college hospital Kulasekharam at Kanyakumari District".

Sub: Approval of the above reference study.

Dear Reshma.R.R

Ethics committee of Sree Mookambika College of Nursing, Kulasekharam reviewed and discussed the study proposal documents submitted by you related to the conduct of the above referenced study in the meeting held on 16-08-2017.

The following ethical committees Members were present at the meeting held on 16-08-2017.

NAME	PROFESSION	POSITION IN THE COMMITTEE
Prof. Mrs. Santhi Letha	Nursing	Chair Person
Dr. Kani Raj Peter	Medical	Basic Medical Scientist
Dr. T.C. Suguna	Nursing	Clinician
Adv. Mohanan	Legal	Legal Expert
Prof. Mrs.Ajitha Retnam	Nursing	Member secretary
Dr.P. Selva Raj	Management	Philosopher
Mr. Natarajan	Social	Medical Social Worker
Mrs. Latha	Lay Person	Community Person

After due ethical and scientific consideration, the ethics committee has approved the above presentation submitted by you.

Regards,

Mrs. Santhi Letha PhD (N)

Ethics Committee Chairperson,   Date   : 16-08-2017

Sree Mookambika College of Nursing,   Place :Kulasekharam

V.P.M. Complex, Padanilam, Kulasekharam.

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APPENDIX : B

SREE MOOKAMBIKA COLLEGE OF NURSING

(Approved by the Goverment of Tamil Nadu & Recognised by Indian Nursing Council,
New Delhi, Tamil Nadu state Nurses & Midwives Council, Chennai.)
Affiliated to The Tamil Nadu Dr. M.G.R. Medical University, Chennai.

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Phone : 04651 - 280743, 280866, 280742, 280745

LETTER SEEKING EXPERT OPINION FOR TOOL VALIDITY.......................................

Lr. No.

To

Madam/Sir

Sub : M.Sc Nursing Programme dissertation – Validation of study tool request – reg:

Ms/Mrs. **Reshma.R.R** a bonafide if II Year M.Sc Nursing student of
Sree Mookambika College of Nursing is approaching you to obtain validation of study tool
pertaining to her dissertation in practical fulfillment of the requirement for the degree of
Master of Science in Nursing. The selected topics "**A Study to assess the effectiveness of
video assisted teaching on Heart healthy diet in Cardiac OP Patients at Sree
Mookambika Medical College Hospital, Kulasekharam, Kanya Kumari District**". In this
regard I request you to kindly extent possible technical guidance and support for successful
completion of dissertation.

I enclosed here with a check list for your evaluation.

Thanking You

Yours Sincerely

PRINCIPAL
Sree Mookambika College of Nursing
Kulasekharam-629 161

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APPENDIX : D

From

    Reshma .R.R,

    II Year M.Sc Nursing (Medical Surgical Nursing)

    Sree Mookambika College of Nursing,

    Kulasekharam,

To

    The Director,

    Sree Mookambika College of Nursing,

    Kulasekharam.

    Sub   : Permission to conduct data Collection in Sree Mookambika Institute of

                    Medical Sciences

Respected Madam,
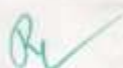
          Myself Reshma .R.R. M.Sc (N) II year student am writing this letter to inform you that I am planning to do my data collection for research in Sree Mookambika Medical College Hospital and my topic is **"A Study to assess the effectiveness of Video assisted teaching on Heart healthy diet Cardiac out patients at Sree Mookambika Medical College Hospital, Kulasekharam, Kanyakumari District"** . So I Kindly request you to grant me permission to do the study and do the needful.

                        Thanking You,

                                      Yours Sincerely

Place :   Kulasekharam   Reshma .R.R

Date :   06-02-2018   II Year M.Sc (N)

APPENDIX : E

LIST OF EXPERTS FOR TOOL AND CONTENT VALIDATION

1. **Dr. Mrs. Susan Jose M.Sc [N], Ph.D**
   Principal,
   KIMS College of Nursing,
   Chempakamangalam,
   Thiruvananthapuram.

2. **Mrs. Rajam M.Sc [N]**
   Associate professor,
   C.S.I College of Nursing,
   Karakonam.

3. **Mrs. Mary Russelin Prabha M.Sc[N]**
   Associate professor,
   NIMS College of Nursing,
   Neyyatinkara.

4. **Dr. Mrs. Sharmila Jansi Rani MSc [N], PhD**
   Vice Principal,
   Christian college of Nursing, Neyyoor.

5. **Dr. Mrs. Susan jose M.Sc [N], Ph.D**
   Principal,
   KIMS College of Nursing,
   Chempakamangalam, Thiruvananthapuram.

6. **Mrs. Rajam M.Sc [N]**
   Associate professor,
   C.S.I College of Nursing, Karakonam.

7. **Mrs. Mary Russelin Prabha M.Sc[N]**
   Associate professor,
   NIMS College of Nursing, Neyyatinkara.

8. **Dr. Mrs. Sharmila Jansi Rani MSc [N], PhD**
   Vice Principal,
   Christian college of Nursing,
   Neyyoor.

Name of the expert   :

Designation   :

College   :

Respected Madam / sir,

Kindly go through the content and place the right (✓) marks against the check list in the Following   columns ranking from relevant to non- relevant. Where ever there is a need for Modification, kindly give your opinion in the remarks column.

SECTION : A

DEMOGRAPHIC VARIABLES

Item no.	Relevant	Need modification	Not relevant	Remarks

SECTION : B

CHECK LIST

Item no.	Relevant	Need modification	Not relevant	Remarks

APPENDIX : G

DATA COLLECTION TOOL

SECTION : A

DEMOGRAPHIC VARIABLES

Sample No : _____

1.Age in year?

    a. 25-35

    b. 35-45

    c. 45-55

    d. 55-65

2.Gender

    a. Male

    b. Female

    c. Transgender

3.Employment status

    a. Employed

    b. Unemployed

4.Previous history of cardiac diseases

    a. Yes

    b. No

5. Co-morbidity

    a. Diabetic mellitus

    b. Hypertension

    c. Both diabetic and hypertension

6.Diet habits

    a. Vegetarian

    b. Non vegetarian

7.Personal habits

    a. Diet control

    b. Exercise

8. Habits of smoking

    a. Yes

    b. No

9. Habits of alcoholism

    a. Yes

    b. No

10. Family history of cardiac disease

    a.Yes

    b. No

எண்ணிக்கை : _____

1. வயது

   (a) *25-35*

   (b) *35-45*

   (c) *45-55*

   (d) *55-65*

2. பா- னம்

   (a) *ஆண்*

   (b) *பெண்*

   (c) *வேறு*

3. தொழில்

   (a) *உண்டு*

   (b) *இல்லை*

4, இதற்கு முன் இருதய நோயால் பாதிக்கப்பட்டவரா?

   (a) *ஆம்*

   (b) *இல்லை*

5. இணை நோய்கள்

   (a) *சர்க்கரை நோய்*

   (b) *இரத்த அழுத்தம்*

   (c) *இவை இரண்டும்*

6. உணவு பழக்கம்

   (a) சைவம்

   (b) அசைவம்

7. பழக்க வழக்கம்

   (a) உணவு கட்டுப்பாடு

   (b) உடற்பயிற்சி

8. புகை பிடிக்கும் பழக்கம்

   (a) உண்டு

   (b) இல்லை

9. மது அருந்தும் பழக்கம்

   (a) உண்டு

   (b) இல்லை

10. குடும்பத்தில் யாருக்காவது இருதய நோய் உள்ளதா?

   (a) ஆம்

   (b) இல்லை

KNOWLEDGE QUESTIONNAIRE TO ASSESS THE LEVEL OF

KNOWLEDGE ON HEART HEALTHY DIET

Sample No : _____

➢ Among the following questions choose the correct answer and put

➢ Each right answers carries 1 mark

➢ Each wrong answer carries 0 mark

➢ Total 25 mark

1. What is the main function of heart?

    a. Transport of nutrients and oxygenation

    b. Help to balance the body

    c. Stabilize hormone level

    d. Improve impulse transmission.

2. Normal daily intake of fat is?

    a.   15-25%

    b.   25- 35%

    c.   35-45%

    d. 45-55%

3. Normal level of HDL or good cholesterol?

    a.   100gm

    b.   200gm

    c.   300gm

    d. 400gm

4. Daily intake of carbohydrate for healthy heart?

    a. 20-35g

    b. 25-38gm

    c. 35-42gm

    d. 40-50gm

5. How much amount of salt is to be taken daily for maintaining healthy heart?

    a. 5grams

    b. 8grams

    c. 10gram

    d. 15 grams

6. Normal daily intake of calorie?

    a. 10%

    b. 20%

    c. 30%

    d. 40%

7. Daily allowance of recommended protein?

    a. 10-15%

    b. 12-20%

    c. 20-25%

    d. 17-30%

8. How much servings of fruits are to be taken daily for maintaining healthy heart?

    a. 1-2 servings

    b. 2-3 servings

    c. 3-4 servings

    d. 4-5 servings

9. What kind of milk is good for healthy heart?

    a. Whole milk

    b. Powder milk

    c. Skimmed milk

    d. Thick milk

10. Which food is not ideal for a healthy heart?

    a. Beer

    b. Red vine

    c. Fruits and vegetables

    d. Fried foods

11. How does heart healthy diet prevents cardiac disease?

    a. Avoiding fat deposition

    b. Increasing cholesterol level

    c. Increasing body weight

    d. Increasing blood pressure

12. Which fatty acid is most essential for healthy heart?

    a. Omega 3 fatty acids

    b. Gingili oil

    c. Coconut oil

    d. Palm oil

13. Common theme of heart healthy eating pattern is?

    a. Intake of oily foods

    b. Vegetable intake only

    c. Intake of adequate amount of all nutrients

    d. Intake more junk foods

14. Which vitamins has the role of prevent blood clotting?

    a. Vitamin A and B

    b. Vitamin B and C

    c. Vitamin C and E

    d. Vitamin A and E

15. Goal of heart healthy diet?

    a. To improve circulation

    b. Increase blood pressure

    c. Reduce oxygenation

    d. Growth and development

16. Which vitamin regulate blood pressure?

    a. Vitamin A

    b. Vitamin B

    c. Vitamin C

    d. Vitamin D

17. Which of the cholesterol present in fishes that essential for healthy heart?

    a. Omega 3 fatty acid

    b. Carbohydrate

    c. Iron

    d. HDL

18. Among the following types fish, select the one which is good for healthy heart?

    a. Prawn

    b. Salmon

    c. Anchovy

    d. Cat fish

19. What is the effect of cardiac disease?

    a. Reduction of growth and development

    b. Deformity in the heart and blood vessels

    c. Proper functioning of heart

    d. Headache

20. The occurrence of heart disease can be prevented by?

    a. Intake of healthy diet

    b. Less intake of vitamins and minerals

    c. Lack of exercise

    d. Intake of junk foods

21. What is the main complication of atherosclerosis?

    a. Increase body weight

    b. Poor concentration

    c. Myocardial infarction

    d. Giddiness

22. How much amount of curd to be taken by cardiac patients?

    a. 7 spoon

    b. 8 spoon

    c. 10 spoon

    d. 12 spoon

23. Among which foods which one is increased blood circulation and prevent stroke?

    a. Garlic

    b. Ginger

    c. Tomato

    d. Cucumber

24. Which food item helps to reduce LDL?

    a. Almonds

    b. Casunuts

    c. Pistha

    d. Ground nuts

25. Among the drinks which one is high rich in potassium?

    a. Barley water

    b. Rice water

    c. Tender coconut water

    d. Lemon juice

கீழ் காண்பவற்றில் சரியான விடையை தேர்ந்தெடுத்து (✓) செய்யவும்,

ஒவ்வொரு சரியான விடைக்கும் 1 மதிப்பெண். தவறான பதிலுக்கு 0 மொத்தம்

25

எண்ணிக்கை : _____

1. *இதயத்தின் மிக முக்கியமான செயல்பாடு என்ன?*

   (a) *ஊட்டப்பொருள் மற்றும் ஆக்ஸிஜனை உடலுக்கு எடுத்து செல்வது*

   (b) *உடல் ஆரோக்கியத்தை சமநிலைப்படுத்துவது*

   (c) *உட- ல் ஹார்மோன் அளவை நிலைநிறுத்த உதவுகிறது*

   (d) *உணர்ச்சி வேகத்தை அதிகரிப்பது*

2. *நாம் தினமும் உட்கொள்ளும் கொழுப்பின் அளவு என்ன?*

   (a) *15% - 25%*

   (b) *25% - 35%*

   (c) *35% - 45%*

   (d) *45% - 55%*

3. *நல்ல கொழுப்பின் சரியான அளவு என்ன?*

   (a) 100 mg

   (b) 200 mg

   (c)› 300 mg

   (d) 400 mg

4. *நல்ல ஆரோக்கியமான இதயத்திற்கு தினசரி தேவைப்படும் மாவு சத்தின்*
   (கார்போஹைட்ரேட்) அளவு என்ன?

   (a) 20 – 35 g

   (b) 25 – 38 g

   (c) 35 – 42 g

   (d) 40 – 50 g

5. நல்ல ஆரோக்கியமான இதயத்திற்கு தினசரி எடுத்துக் கொள்ள வேண்டிய உப்பின் அளவு?

    (a) *5* grams

    (b) *8* grams

    (c) *10* grams

    (d) *15* grams

6. தினசரி நம் உடலுக்கு தேவைப்படும் கலோரியின் அளவு என்ன?

    (a) *10%*

    (b) *20%*

    (c) *30%*

    (d) *40%*

7. தினசரி நம் உடலுக்கு தேவைப்படும் புரதத்தின் அளவு என்ன?

    (a) *10-15%*

    (b) *12-20%*

    (c) *20-25%*

    (d) *17-30%*

8. ஆரோக்கியமான இதயத்திற்கு நாள் ஒன்றுக்கு எத்தனை முறை பழங்கள் சேர்த்து கொள்வது அவசியம்?

    (a) *1-2 முறை*

    (b) *2-3 முறை*

    (c) *3-4 முறை*

    (d) *4-5 முறை*

9. ஆரோக்கியமான இதயத்திற்கு எந்த வகை பால் நல்லது?

    (a) *முழுமையான பால்*

    (b) *தூள் பால்*

    (c) *ஆடை நீக்கிய பால்*

    (d) *தடித்த (கட்டியான) பால்*

10. கீழ்கண்டவற்றில் எந்த உணவு ஆரோக்கியமான இதயத்திற்கு ஏற்றது அல்ல?

(a) பீர்

(b) சிவப்பு பீர்

(c) பழங்கள் மற்றும் காய்கறிகள்

(d) வறுத்த உணவுகள்

11. எப்படி இதய ஆரோக்கிய உணவு வகைகள் இதய நோய் வராமல் பாதுகாக்கிறது?

(a) கொழுப்பு அதிகரிக்காமல் பாதுகாக்கிறது

(b) கொழுப்பு அதிகரிக்கும்

(c) உடல் எடையை அதிகரிக்கும்

(d) இரத்த அழுத்தத்தை அதிகரிக்கும்

12. இதில் எந்த கொழுப்பு அமிலம் ஆரோக்கியமான இதயத்திற்கு தேவை?

(a) ஒமேகா 3'ப்டி ஆசிட்

(b) நல்லெண்ணெய்

(c) தேங்காய் எண்ணெய்

(d) பாமாயில்

13. ஆரோக்கிய இதயத்திற்கான பொதுவான வழிமுறைகள் ஆவது

(a) எண்ணெய் உணவு வகைகள் உட்கொள்ளுதல்

(b) காய்கறிகள் மட்டும் உட்கொள்ளுதல்

(c) தேவையான அளவு ஊட்டச்சத்து பொருட்கள் உட்கொள்ளுதல்

(d) அதிகமான சிற்றுண்டு பழக்கம் மேற்கொள்ளுதல்

14. எந்த வைட்டமின் இரத்தம் உறைதலை தடுக்கிறது?

(a) வைட்டமின் ஏ மற்றும் பி

(b) வைட்டமின் பி மற்றும் சி

(c) வைட்டமின் சி மற்றும் இ

(d) வைட்டமின் ஏ மற்றும் இ

15. இதய ஆரோக்கிய உணவு முறையின் இலக்கு எண்

   (a) இரத்த ஊட்டத்தை அதிகப்படுத்த

   (b) இரத்த அழுத்தத்தை அதிகப்படுத்த

   (c) ஆக்ஸிஜன் அற்ற தன்மையை குறைக்க

   (d) வளர்ச்சி மற்றும் முன்னேற்றத்திற்காக

16. எந்த வைட்டமின் இரத்த கொதிப்பை கட்டுக்குள் வைக்கிறது?

   (a) வைட்டமின் ஏ

   (b) வைட்டமின் பி

   (c) வைட்டமின் சி

   (d) வைட்டமின் டி

17. கொழுப்பு நிறைந்த மீன் வகைகளில் இதய ஆரோக்கியத்திற்கு பயனுள்ள கொழுப்பு எது?

   (a) ஒமேக 3'பார்ட்டி ஆசிட்

   (b) கார்போஹைட்ரேட்

   (c) இரும்புச் சத்து

   (d) உயர் கொழுப்பு அமிலம்

18. கீழ்கண்ட மீன் வகைகளில் எந்த வகை மீன் ஆரோக்கியமான இதயத்திற்கு நல்லது?

   (a) இறால்

   (b) மத்தி சாள மீன்

   (c) நெத்தி- மீன்

   (d) கெளுத்தி

19. இதய நோயின் விளைவுகள் என்ன?

   (a) பரிணாம வளர்ச்சி தடைப்படுகிறது

   (b) இதயம் மற்றும் இரத்தக்குழாய்களில் குறைப்பாடு ஏற்படுகிறது

   (c) சரியான இதய செயல்பாடு

   (d) உட- ல் ஒரு மாற்றமும் நிகழாமல் இருப்பது

20. இதய நோய் ஏற்படுவதை எவ்வாறு தடுக்கலாம்?

   (a) இதய ஆரோக்கிய உணவு முறையை கடைபிடிப்பது

   (b) ஊட்டச்சத்து மற்றும் தாது உணவுகளை உட்கொள்ளாமல்இருப்பது

   (c) உடற்பயிற்சி செய்யாமல் இருப்பது

   (d) கொழுப்பு நிறைந்த உணவுகளை உட்கொள்ளுவது

21. இரத்த குழாய்களில் அடைப்பினால் ஏற்படும் ஆபத்து என்ன?

   (a) உடல் எடை அதிகரிக்கும்

   (b) கவனம் செலுத்துவதில் குறைபாடு

   (c) மாரடைப்பு

   (d) மயக்கம்

22. இதய நோய் உள்ளவர்கள் ஒரு நாளைக்கு எத்தனை சதவீதம் தயிர் எடுத்து கொள்ளலாம்?

   (a) 7 ஸ்பூன்

   (b) 8 ஸ்பூன்

   (c) 10 ஸ்பூன்

   (d) 12 ஸ்பூன்

23. எந்த உணவு இரத்த ஒட்டத்தை அதிகரிக்க செய்து பக்க வாதம் வராமல் தடுப்பதில் முக்கிய பங்கு வகிக்கிறது?

   (a) வெள்ளை பூண்டு

   (b) இஞ்சி

   (c) தக்காளி

   (d) வெள்ளரிக்காய்

24. மனித உடம்பில் கெட்ட கொழுப்பின் அளவை குறைக்கின்ற உணவு எது?

   (a) பாதாம் பருப்பு

   (b) முந்திரி பருப்பு

   (c) பிஸ்தா பருப்பு

   (d) வேர் கடலை

25. பொட்டாசியம் சத்து அதிகம் அடங்கியுள்ள நீர்வகை எது?

   (a) பார்- தண்ணீர்

   (b) கஞ்சி தண்ணீர்

   (c) இளநீர்

   (d) எலுமிச்சை சாறு

ANSWER KEY :

1. a	13. c
2. b	14. c
3. b	15. a
4. b	16. b
5. a	17. a
6. b	18. b
7. d	19. b
8. b	20. a
9. c	21. c
10. c	22. a
11. a	23. a
12.a	24. a
	25. c

SCORING INTERPRITATION

Excellent   : 90-100%

Good   :70 -89%

Average   : 50 – 69%

Poor knowledge   : 30 – 49%

Very poor   : < 30%

TEACHING MODULE

Topic   : Heart healthy diet

Group   : Cardiac OP patients

Time   : 30 minutes

Teaching method   : Lecture cum discussion

AV aids   : Electronic CD

Instructor   : Investigator

GENERAL OBJECTIVES

At the end of the class ,the patients will able to gain adequate knowledge regarding heart healthy diet and get positive attitudes towards heart healthy diet and apply the knowledge received in practising, in order to provide a healthy heart.

SPECIFIC OBJECTIVES

The patients are able to,

- ➢ define heart healthy diet

- ➢ enlist the main functions of the heart healthy diet

- ➢ explain the heart healthy diet help for healthy heart functioning

- ➢ enumerate the vitamins and minerals that need for the good heart

- ➢ list down the health benefits of heart healthy diet

- ➢ describe vitamins and minerals rich food

- ➢ enlist the daily foods including in the heart healthy diet

➢ list down the foods to be avoided for healthy heart

➢ list down the food which are healthy for cardiac patients.

➢ explain the dietary therapy regarding healthy heart

➢ explain the diet for cardio vascular disease patients

INTRODUCTION:

Cardiac disease are the major cause of mortality globally , as well as India .They are caused by disorders of the heart and blood vessels . Common modifiable risk factors are including un healthy diet lack of exercise etc. Controlling the common modifiable risk factors help to prevent cardiac problems.

The global burden of 80% of mortality due to cardiac diseases estimate of age –standardized cardiac death rate is 272 per100000 population in India higher than global average of 235 per 100000 population.

The specific food that eat extremely important in regards to the heart health . Heart healthy diet will reduce the risk of cardiac disease . In order the diet to be healthy must have key points such as low fat , cholesterol ,high in fruits vegetables . These help to reduce body weight, blood pressure, and cholesterol level . The heart healthy diet contain much more vitamins and minerals such as omega 3 fatty acid ,vitamin C, D,E and fiber these having anti clotting effect ,lower risk of stoke etc and helps to heart healthy .

DEFINITION:

The heart healthy diet is defined as ,a diet that reduce the risk of developing heart disease ,and can promote healthy cholesterol level, a healthy blood pressure and help to keep that waistline in shape.

Balancing the food intake is a vital key to healthy heart.

FUNCTIONS OF HEART:

The cardio vascular system consist of the heart ,blood vessels and blood .This system has main three functions ,they are as to follows ;

- ✓ Transport of nutrients , oxygen and hormones to cell throughout the body
- ✓ Removal of metabolic wastes[carbon dioxide, nitrogenous waste]

HOW DIET HELP HEART TO BE HEALTHY ?

- ➢ Reduce the risk of heart disease.
- ➢ Help to reduce cholesterol level and reduce the risk of accumulation of fat in arteries.

➢ Help to maintain normal blood pressure, It reduce the risk of stroke.

➢ Help to maintain the normal rhythm of heart that reduce the risk of arrhythmia.

➢ The diet having much more vitamins and minerals that maintaining good oxygenation and nutrients supplements to the cells.
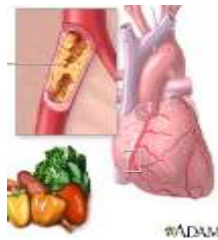
HOW A DIET MAKE HEART STRONGER?

1. Strengthen the heart and cardio vascular system
2. Improved circulation/ oxygenos .
3. Increased energy level.
4. Increased endurance.
5. Lower blood pressure .
6. Reduced stress.
7. Improved muscle tone and strength.
8. Improved balance and joint flexibility.
9. Keep the skin healthy.
10. Reduce the risk of heart failure.
11. Maintain the blood sugar and improve insulin metabolism.
12. Stronger bones.
13. Healthy body weight.
14. Improved sleep.
15. Increased self esteem.

HEALTH BENEFITS

- ❖ Eating a diet rich in vegetable and fruits are reduce the risk for heart disease.

- ❖ It protect certain types of cancer.

- ❖ Fiber rich diet reduce risk of obesity ,heart disease ,and type 2 diabetes. Potassium rich diet reduce blood pressure , kidney stones, and help to decrease bone loss.

- ❖ Vegetables having low calories diet , and that useful in helping to lower calorie intake.

VITAMINS AND MINERALS FOR GOOD HEART.

Vitamin D3`

It is the absorbed form of vitamin d in the body . It goes on to become further activated in liver 1,25 dihydroxycholecalciferol. It regulate healthy blood pressure level maintaining a healthy heart and blood vessels.

Vitamin B12

It is an essential vitamin for normal production of **RBC'S** in body along with assisting in giving the body natural protection against heart disease.

Niacin [B vitamin]

Helps increase HDL or good cholesterol levels .

Vitamin E

Reduction of stroke and heart attack and heart disease . It's a anti-oxidant vitamin.

Vitamin C

Protect arteries against damage. Vitamin C can impede the progression of atherosclerosis .

Co Q10

It is an essential co-enzyme or co- factor required for synthesis of ATP molecule that is biochemical energy reduction of bad cholesterol level.

Omega -3 fatty acid:

Helps to support healthy function of heart. It is having anti- clotting effects ,so keep blood flowing . It's also helps to lower triglyceride.

Folic acid :

Vitamin B is important for heart health . The amount of homocysteine in the blood .a Bio-marker for the heart disease is regulated by folic acid .High level of

homocystine can lead to heart disease . It damage blood vessel wall and promote blood clot.

Calcium:

Helps to weight management. It's regulate blood pressure along with magnesium and potassium.

Magnesium

Magnesium supplements and a diseased risk of death from heart disease. It's the body's natural calcium channel blocker .It balances out the excess calcium that associated with heart going into muscle spasm ,which equals a heart attack .

Potassium:

Potassium helps regulate blood pressure levels ,and high blood pressure or hypertension is major risk factor for heart disease.

Vitamin rich foods

Vitamin D3:

- ❖ Cod liver oil
- ❖ Fish [Tuna]
- ❖ Raw milk

Vitamin B 12:

- ❖ Eggs
- ❖ Milk
- ❖ Fish
- ❖ Dairy products

Magnesium:

- ❖ Dark green leafy vegetables.
- ❖ Whole grains.
- ❖ Nuts.

Folic acid:

- ❖ Beans
- ❖ Green leafy vegetables
- ❖ Citrus fruits
- ❖ Raisins

Niacin:

- ❖ Diary products
- ❖ Fish poultry
- ❖ Lean meats
- ❖ Nuts
- ❖ Eggs

Potassium:

- ❖ Dairy banana

- ❖ Potatoes

- ❖ Peaches

- ❖ Apricots

- ❖ Tender coconut water

Calcium

- ❖ Milk

- ❖ Broncolli

Vitamin E

- ❖ Nuts

- ❖ Seeds

- ❖ Cooking oils

Vitamin C

- ❖ Cauliflower
- ❖ Orange
- ❖ Strawberries
- ❖ Watermelon
- ❖ Broccoli
- ❖ Tomatoes
- ❖ Cabbage

Omega -3 fatty acid

- ❖ Oatmeal
- ❖ Black beans
- ❖ Fish[salmon,tuna,mackerel]

Protein

- ❖ Soy products

[soy beans, soy yogurt, soy protein powder]

- ❖ Non fat dairy products

- ❖ Egg white

Better foods

- Nuts and seeds

- Olives

- Avocados

- Low fat dairy products

- White bread

- White rice, pasta

- Fruit juice

- Grilled fish

- White chicken

- White sugar

- Syrup candles

- Brown sugar

Bad foods

- Red meat

- Fried food

- Butter

- Margarine

- All oils

- Tropical oils

- Hydrogenated oils and fish

- Alcoholic beverage

LIST OF FOODS FOR HEALTHY HEART

The American heart association recommended to eat healthy diet consist of a daily intake of food more than:

- ❖ 1500milli grams of sodium

- ❖ Fewer than 200milli grams of cholesterol

- ❖ Less than 70% calories from saturated fat

- ❖ Less than 1% calories from trans fat.

DIET THERAPY

Diet therapy is concerned with the use of food as an agent in effecting recovery from illness .Diet therapy means the use of diet not only in the care of sick but also in prevention of disease and maintenance of health.

General objectives

- To maintain good nutritional status of the patients .

- To correct the nutrient deficiencies which may have occurred due to disease.

- To afford rest to whole body.

- To adjust to food intake to the body's ability to metabolize the nutrients during the disease.

- To bring about changes in body weight whenever necessary.
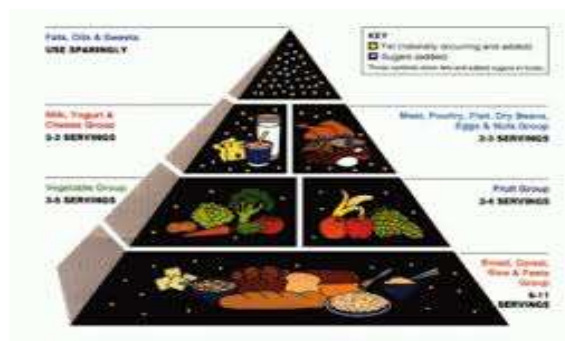
HEALTHY FOOD HABITS

Start eating heat healthy diet is vague; instead, give specific yet simple ,dietary changes as following

- ❖ Eat foods low in saturated fats.

General eat a variety of foods everyday choose foods from different groups.

Meats

Substitute dried beans or legumes as a main dish to reduce fat ,calories ,cholesterol. trim fat from meat before grilling or boiling. remove the skin from poultry before cooking. use tomato, lemon, garlic .

Milk

Drink 2% milk for a few weeks then 1% and finally skim milk .each step will decreased saturated fat.

Cheese

Choose low fat cheese that have 2-6 grams of fat per ounce. choose low fat cottage cheese ,farmer cheese made with skim milk or pot cheese.

Egg

Limit yolks to three per week. two egg whites can be Substituted for one whole egg in recipes.

Fat and oils

Substitute soft or liquid margarine or liquid oils in recipes.1 or ¾ tablespoon oil will substituted 1 tablespoon of butter.

Fruits and vegetables

Eat plenty of fresh or frozen fruits and vegetables.

Bread cereals and pastas

Pasta rice and dried peas and beans as main dishes , soups.

NUTRITION FOR CARDIOVASCULAR DISEASE.

Cardio vascular disease include hypertension, angina pectoris ,ischemic heart disease and myocardial infarction.

OBJECTIVES:

i.   To relieve strain to the heart.

ii.   To prevent further damage to the heart.

iii. To restore the damaged heart.

FOOD RECOMMENDED

Foods low in cholesterol and saturated fat.

- Skim, paneer from skim milk.

- Cereals and pulses.

- Whole grains.

- All vegetables and fruits.

- High fiber and soluble fibre such as oat meal, gums ,millets, pectin.

- Lean meat ,egg white ,and fish

- Vegetable oils and sugar

Food to be avoided

- Cholesterol rich food

- Whole milk, butter ,cream, cheese.

- Bakery products

- Organ meats [liver]

- Egg yolk ,fish

- Nuts, oilseeds ,picks

- Margarine, vanaspati

- Fried food

- Alcohol

REGULAR LOW CHOLESTROL AND LOW FAT HIGH FIBRE DIET

Energy   : 1600 kcal

Fat   : 40 g

Protein   : 65g

SAMPLE MENU

MEAL	FOOD STUFF	QUANTITES
Early morning		
Breakfast	Lemon water	1 glass
	Milk	1cup
	Sugar	1tsp
	Stuffed rotti	1
	Curd	1/2 koter,100g
	Boiled egg white and bread	1-2
		1-2 slice
Lunch	Fresh fruits	1
	Salad	150g
	Chapathi	2-3
	Rice	60g
	Vegetable	250g
	Curd	200g
Evening	Tea	1cup
	Sugar	1tsp
	Black channa	30g
	Biscuits	3-4
	Vegetable soup	1cup
Dinner	Chapathi	2
	Vegetable	250g
	Chicken or fish	100g
	Cooking oil	20g

இதய ஆரோக்கிய உணர்வு முறை

முன்னுரை :

உலக அளவில் இதய நோயால் மரணம் அடைபவர்கள் எண்ணிக்கையில் இந்தியா முத- ல் உள்ளது, இதய நோய் என்பது இருதயம் மற்றும் இரத்தக் குழாய்களில் ஏற்படுகின்ற பாதிப்பு ஆகும், பொதுவாக. வரைமுறையற்ற உணவுப் பழக்கம். உடற்பயிற்சி இல்லாமை ஆகியவை ஆகும், எனவே மேற்கூறிய பழக்கவழக்கங்களை சரிபடுத்துவதின் மூலம் இதய நோயை கட்டுப்பாட்டிற்குள் வைக்கலாம்.

உலகில் 80% மரணத்திற்கான காரணம் இருதய நோய் ஆகும். சராசரியாக உலக அளவில் ஒரு லட்சத்தில் 272 நபர்கள் இருதய நோயால் மரணமடைகிறார்கள். இந்தியாவில் மட்டுமே ஒரு லட்சத்திற்கு 235 நபர்கள் மரணமடைகிறார்கள்.

நல்ல உணவு முறைகள் பெரும்பாண்மையான இதய நோய்களை குறைக்க உதவுகிறது. ஆரோக்கியமான உணவு முறை என்பது பழவகைகள், காய்கறிகள், குறைந்த கொழுப்பு மற்றும் கொலஸ்டிரால்,

வரையறை :

இருதய ஆரோக்கிய உணவு முறை என்பது. ஒரு உணவு முறை இருதய நோயின் வீரியத்தை குறைக்கவும், நல்ல கொழுப்பான அளவை உயர்த்தவும், இரத்த கொதிப்பின் அளவை கட்டுக்குள் வைக்கவும் உதவிய உணவுமுறையை தான் இருதய ஆரோக்கிய உணவு முறை என்கிறோம்.

இதய ஆரோக்கிய உணவு பழக்கம் என்றால் என்ன?

இதய ஆரோக்கிய உணவு பழக்கம் ஆரோக்கியமான வாழ்க்கை முறைக்கு ஊன்று கோல் ஆகும், ஆரோக்கியமான உணவு, உடற்பயிற்சி, கெட்ட பழக்கவழக்கங்கள் இல்லாமை.

➢ இரத்த கொழுப்பை மேம்படுத்தவும்.

➢ ஆரோக்கியமான உடல் எடையுடன் இருக்கவும்.

➢ இதய நோய் மற்றும் பக்கவாதம் ஏற்படாதவாறு இருக்கவும் உதவுகிறது.

ஏற்கனவே இதய நோய் உள்ள ஒரு நபர் அவருடைய உணவு பழக்கத்தில் மாறுதல் ஏற்படுத்துவதன் மூலம் அதிகமான இதய நோய் ஆபத்துகளை தவிர்க்க முடியும், எதற்காக நாம் இரத்த கொழுப்பின் அளவில் அக்கரை கொள்ள வேண்டும்,

கொழுப்பு மற்றும் ட்ரைகிளிசரைட் இரத்தக் கொழுப்பு வகையை சார்ந்தது ஆகும், கெட்ட கொழுப்பு இதய நோய் மற்றும் பக்கவாதத்தின் வீரியத்தை கூட்டுகிறது,

இரத்த கொழுப்பு என்றால் என்ன?

கொலஸ்டிரால் என்பது இரத்தத்தில் உள்ள மெழுகு போன்ற கொழுப்பு பொருள் ஆகும், இது கல்லீர- ல் உற்பத்தி ஆகிறது, கொலஸ்டிரால் பல வகையான உடல் செயல்பாட்டிற்கு உதவுகிறது, இரத்த கொழுப்பின் அளவு அதிகமாகும் போது இரத்த குழாயில் அடைப்பு ஏற்படவும் இதயத்திற்கான இரத்த ஓட்டத்தின் அளவு குறையவும் இதன் மூலம் இதய நோய் ஏற்படவும் வாய்ப்பு உள்ளது,

கொலஸ்டிரால் வகைகள் :

1. உயர் அடர்த்தி கொழுப்பு புரதம் (HDL) (நல்ல கொழுப்பு).
2. குறைந்த அடத்தி கொழுப்பு புரதம் (LDL) (கெட்ட கொழுப்பு).

ட்ரைகிளிரைடு என்றால் என்ன?

இது ஒரு வகை இரத்த கொழுப்பு ஆகும். இதன் அளவு அதிகரிக்கும் போது இதய நோய் பாதிப்புகள் ஏற்படும்.

இதய ஆரோக்கிய உணவு முறையின் கருப்பொருள் :

● தாராளமான காய்கறிகள் மற்றும் பழவகைகள்.
● தானிய வகைகள், ஸ்டார்ச் காய்கறிகள், பருப்பு வகைகள், மீன், கடல் உணவு வகைகள், முட்டை, மெ- ந்த கோழி, இறைச்சி.

* துரித உணவு முறை. டிரான்ஸ் கொழுப்பு, உப்பு மற்றும் சர்க்கரை சேர்த்து கொள்வதை தவிர்த்தல்.

இதய ஆரோக்கிய முறையின் 9 வழிமுறைகள் :

நம் விருப்பம் போல் உணவு உட்கொள்வது என்பது தொன்று தொட்டே இருந்து வரும் ஒரு பழக்கம், அந்த பழக்க வழக்கத்தில் இருந்து ஒரு சில மாற்றங்கள் ஏற்படுத்துவதின் மூலம் ஆரோக்கியமான இதயத்தை நாம் சொந்தமாக்கலாம்,

1, நன்கு பதப்படுத்தப்பட்ட உணவு முறை மேலும் பகிர்ந்து உண்ணுதல்.

2, ஏராளமான காய்கறிகள் மற்றும் பழவகைகள் சேர்த்து கொள்ளுதல்.

3, தானிய வகைகள் சேர்த்து கொள்ளுதல்.

4, பருப்பு வகைகள். முட்டை, மெ- ந்த கோழி, மீன் வகைகள் இவற்றில் ஏதாவது ஒன்று அலலது 2 முறை தினழும் எடுத்துக் கொள்வது.

5, குறைந்த கொழுப்பு பால் பயன்படுத்துவது.

6, ஆரோக்கியமான எண்ணை மற்றும் கொட்டை வகைகளை தேர்ந்தெடுத்தல்.

7, தேவைக்கு ஏற்ப தண்ணீர் அருந்துதல்.

8, உணவு தயாரிக்கும் போது இயற்கையான மசாலா பொருட்களை உபயோகித்தல்.

9, துரித உணவு முறையை முழுவதுமாக தவிர்த்தல்

இந்த 9 வழிமுறைகளையும் தொடர்ந்து செய்வதின் மூலம் நாம் ஆரோக்கியமான இதயத்திற்கு சொந்தக்காரர் ஆகலாம்.

இதயத்தின் செயல்பாடு (வேலை) :

இருதய அமைப்பு என்பது இருதயம். இரத்தக் குழாய்கள் மற்றும் இரத்தம் இவை மூன்றும் சேர்ந்தது ஆகும்.

* உட- ன் அனைத்து பாகங்களுக்கும் சத்துக்கள், ஆக்சிஜன், ஹார்மோன்ஸ் போன்றவற்றை அனுப்ப உதவுகிறது.

- வளர்சிதை கழிவுகளை இரத்தத்தில் இருந்து பிரிக்க உதவுகிறது.

உணவு எவ்வாறு ஆரோக்கியமான இதயத்திற்கு வழிவகை செய்கிறது :

❖ இதய நோயின் அளவை குறைக்கிறது.

❖ கொலஸ்டிரால் அளவை குறைக்கவும், இரத்த குழாயில் கொழுப்பு படிவதையும் தவிர்கிறது.

❖ இரத்த கொதிப்பை கட்டுக்குள் வைத்து பக்கவாதம் ஏற்படுவதையும் தவிர்கிறது.

❖ இதய துடிப்பை சமநிலை படுத்துகிறது.

❖ வைட்டமின்கள் மற்றும் கனிமங்கள் இந்த உணவில் இருப்பதால் ஆக்ஸிஜனேற்றம் மற்றும் சத்துக்களை உட- ல் செலுத்த உதவுகிறது.

இதய ஆரோக்கிய உணவு முறையை எப்படி தொடங்குவது :

1, சிறிய மாற்றங்கள் :

சிறு சிறு மாற்றங்கள் ஏற்படுத்துவதின் மூலம் பெரிய வித்தியாசத்தை உண்ணலாம்.

2, காய்கிறகள் மற்றும் பழவகைகள் சேர்த்தல் :

பல வகை பழங்கள் மற்றும் காய்கறிகளை சேர்த்துக் கொள்ளுதல் குறிப்பாக மஞ்சள் மற்றும் ஆரஞ்சு நிற காய் மற்றும் பழங்கள்.

3, பல வகையான தானியம் சேர்த்துக் கொள்ளுதல் :

முழு தானியம் சேர்த்துக் கொள்ளுதல் அதன் மூலம் நார் சத்தின் அளவு அதிகமாக கிடைக்கும், (ஒட்ஸ். ரொட்டி. பழுப்பு அரிசு) .

4, வாரத்திற்கு இரு முறையேனும் மீன் சேர்த்துக் கொள்ளுதல் :

எண்ணை மீன் வகைகளில் ஒமேகா 3 கொழுப்பு அமிலம் அல்ங்கி உள்ளது. அது இதயத்திற்கு மிகவும் சிறந்தது (சாளை மீன், கானாங்கெளுத்தி ஆற்று மீன், மத்தி மீன்).

5, நிறைவுற்ற கொழுப்பு மற்றும் கொலஸ்டிரால் அளவை குறைத்தல்.

6, டிரான்ஸ் கொழுப்பு அல்ங்கிய உணவுகளை தவிர்த்தல் (தின்பண்டங்கள். பொரித்த சில்லுகள்).

7, சோடியம் அளை குறைத்தல்

சோடியம் இரத்தக் கொதிப்பின் அளவை உயர்த்துகிறது, சிறுநீரக குறைபாடு உள்ளவர்கள் தினசரி 1500mg சோடியமும் மற்றவர்கள் 2300mg சோடியமும் எடுத்துக் கொள்ளலாம்.

8, தேவையான காலோரிகள் வரை மட்டும் உண்ணவும்.

உடல் எடையை கட்டுக்குள் வைத்தல். அளவு சாப்பாடு. சர்க்கரை சேர்த்தல் பானங்களை தவிர்த்தல்.

சத்துக்களின் அடிப்படை :

கொழுப்பு மற்றும் எண்ணை :

சில வகை கொழுப்புகள் பொதுவாக உடல் செயல்பாட்டிற்கு முக்கியமானது, கொழுப்புகளில் நல்ல மற்றும் கெட்ட கொழுப்புகள் உண்டு, இந்த கொழுப்புகளை சரியான விகிதத்தில் பயன்படுத்துவதின் மூலம் நம் இதயத்தின் ஆரோக்கியம் அடங்கியுள்ளது.

- தினமும் 25-35% மட்டும் கொழுப்பு எடுப்பது மிகவும் அவசியமானது.
- மோனோ கொழுப்பு அமிலம் மற்றும் ஒமேகா 3 கொழுப்பு அமிலம் பயன்படுத்துவது காலச்சிறந்தது.
- ஒமேகா 6 கொழுப்பு அமிலம் இரண்டாவது தேர்வாக இருக்கலாம்.
- டிரான் கொழுப்பு 1%-க்கும் குறைக்காக எடுக்கலாம்.

கார்போஹைட்ரேட். நார்சத்து. சர்க்கரை :

- 1gm கார்போணைட்ரேட் 4 கலோரிகள் கொடுக்கும். பொதுவாக இது அதிகமாக காணப்படுவது காய்கறிகள் மற்றும் தானியங்கள்.

- நார்சத்து உணவில் அதிக அளவு கார்போஹைட்ரேட் அல்ங்கி உள்ளது, பெண்கள் தினமும் 25 gm-ம் 38 gm எடுப்பது அவசியம்.

புரதம் :

புரதம் பொதுவாக இறைச்சி வகைகளில் அதிகமாக காணப்படும். தானிய வகைகள். காய்கறிகள். கொட்டை வகைகளிலும் காணப்படும். தினமும் 12-20% உட்கொள்வதின் மூலம் இதயத்தின் ஆரோக்கியம் மேம்பாடும்.

வைட்டமின்கள் :

- ஆக்ஸினேற்ற வைட்டமின்கள் E மற்றும் C இவை இதய நோயை குறைக்கிறது, வைட்டமின் E இரத்த கட்டி உருவாகாமல் தடுக்கிறது.

- வைட்டமின் B இரத்த கொதிப்பை குறைக்கிறது, இதய நோயின் வீரியத்தையும் குறைக்கும்.

- வைட்டமின் D இதய நோய் சம்பந்தமான நோயை குறைக்கும், தினமும் 400 – 800 IU எடுத்துக் கொள்வது அவசியம்.

கனிமங்கள் :

- பொட்டாசிய உணவுகள் இரத்த கொதிப்பை கட்டுக்குள் வைக்கும்.

- மெக்னீசியம் இரத்த கொதிப்பை கட்டுப்படுத்தும் தினமும் 320ம்ஞ் எடுப்பது அவசியம்.

- கால்சியம் இரத்தக் குழாயின் தன்மையை சீர்படுத்தும்.

இதய ஆரோக்கிய உணவு எவ்வாறு இதய நோயை தடுக்கும் :

பல ஆராய்ச்சி முடிவுகள் மேற்கோல் காட்டியிருப்பதாவது ஒரு மனிதன் தன் உணவு முறைகளில் அதிக படியான காய்கறிகள் மற்றும் பழவகைகளை சேர்த்து கொள்வதன் மூலம் தன்னை இதய நோய் மரணத்தி- ருந்து தன்னை பாதுகாத்து கொள்கிறான்.

இதயத்திற்கான வைட்டமின். கனிமங்கள் :

வைட்டமின் D3 :

இதிலுள்ள வைட்டமின் உட-ல் உறிஞ்சப்படுகிறது. கல்லீர-ல் காணப்படுகின்ற 1. 25 ஹைட்றோகிஸி ஹேல்ஸி கால்சி'டிரால் அடங்கியுள்ளது. இரத்த அழுத்தத்தை குறைக்கிறது, இரத்த அணுக்களை சீரமைக்கிறது.

வைட்டமின் B12 : இது இரத்தத்தில் சிவப்பு நிறமாகுதலை அதிகரிக்கிறது.

வைட்டமின் B : இரத்தத்தில் கொழுப்பு அதிகரிக்க பயன்படுகிறது, (ஹைடின்-ட்டி - ப்போபுரோட்டின்).

வைட்டமின் E : இது அண்டிஆக்ஸிடின் வைட்டமின். இது பக்கவாதம். இருதய நோயைகுறைக்கிறது.

வைட்டமின் C : இது இரத்தக் குழாய்கள் அடைப்புகளை குறைக்கிறது.

ஓகோ 3'பேத்தி ஆசிட் : இதில் உறைதலுக்கு காரணியாக உள்ளது, டைரைகிளிசரைட் குறைக்க உதவுகிறது, இவ்வாறு இதயம் ஆரோக்கியமாய் இருக்கிறது.

'போ-க் ஆசிட் : இது வைட்டமின் E இதில் இரத்தத்திலுள்ள ஹோமோசிஸ்ட் குறைக்காது, ஹோமோசிஸ்ட் அதிகரிப்பதின் மூலம் இதய நோய் வருவதால், வைட்டமின் E காரணமாக இது நோய் தடுக்கப்படுகிறது.

வைட்டமின் அதிகம் உள்ள உணவுப் பொருட்கள் :

வைட்டமின் D3 :

- மீன் எண்ணொய்
- சூரைமீன்
- பச்சை பால்

வைட்டமின் B12 :

- முட்டை
- பால்
- மீன்
- பால் பொருட்கள்

மெக்னீஷியம் :

- பச்சை வகை காய்கறிகள்

- முழு தானிய ரொட்டி

- கொட்டைகள்

'போலிக் ஆசிட் :

- பீன்ஸ்

- பச்சை வகை காய்கறிகள்

- சிட்ரஸ் பழங்கள்

- உலர்ந்த திராட்சைகள்

பொட்டாசியம் :

- வாழைப்பழம்

- உருளைக் கிழங்கு

- பீச்

- இளநீர்

- இலந்தை பழம்

கால்சியம் :

- பால்

- பிரான்கோ

வைட்டமின் E :

- எண்ணொய்

- விதைகள்

- கொட்டைகள்

வைட்டமின் இ :

- ஆரஞ்சு
- ஸ்டாபெறி
- தண்ணிமெந்தங்காய்
- கா- 'பிளவர்
- தக்காளி
- முட்டைகோஸ்

ஒமேகா 3 பேற்றி ஆசிட் :

- ஒட்ஸ்
- கருப்பு பீன்ஸ்
- மீன் (சுறா. களை)

புரத வகைகள் :

- சோயா பொருட்கள்
- முட்டையின் வெள்ளைக்கரு
- கொழுப்பு குறைந்த பால் வகைகள்

இருதய நோய்க்கான 14 உணவுபழக்கங்கள் :

1. ஆரஞ்சு :

இரத்த அழுத்தம். கொழுப்பு. இருதய நோய் குறைக்கிறது. ஆரஞ்சு சாரில் உள்ள பெற்றினல் நார்சத்து உள்ளது. அந்த நார்சத்து கொழுப்பை கரைக்கிறது.

2. பரட்ட கீரை :

இது இருதய நோய் அடைப்பை குறைக்கிறது. இதிலுள்ள லூயூடின் என்கிற சத்துக்காரணமாக இருதய நோய் அடைப்பைக் குறைக்கிறது. இதில் ஒகோ 3 'பேத்தி ஆஸிட், நார், பொட்டாசியம், வைட்டமின் E இதில் அடங்கியுள்ளது.

3. பயிறு :

இது காற்ற அழுத்தத்தை குறைக்கிறது, இதில் நார், பொட்டாசியம், மெக்னீசியம், 'போளேட் மூதலனவை இதில் அடங்கியுள்ளது. மெக்னீசியம் இயற்கைக்கா நம் உட-ல் காணப்படுகிற கால்சியம் சேனல் புளோக்கர் இது அதிக இரத்த அழுத்தத்தை குறைக்கிறது.

4. பீர் (சிவப்பு டீர்) :

சிவப்பு டீர் மிக நல்லது, எல்ல பீர் வகைகளும் குறைந்த அளவில் பயன்படுத்துவது இருதய நோய்க்கு நல்லது.

5. நிலக்கடலை : பதாம் இருதய நோய் குறைக்கிறது. இதில் அர்ஜ÷னின் அடங்கியுள்ளது. இது இரத்த குழாய்களில் படிந்துள்ள கொழுப்புகளை குறைக்கிறது. இதில் வைட்டமின் E உள்ளது.

6. சீனி கிழங்கு :

இதில் 12 சதவீதம் பொட்டாசியம் உள்ளது. சிறுநீர் வழியாக சோடியம் வெளியேற்ற பயன்படுகிறதினால், இரத்த அழுத்தத்தை குறைக்கிறது. பொட்டாசியம் சாப்பிடுவதால் பக்கவாதம் குறைக்கிறது.

7. பப்பாளி :

இதில் - க்கோபின் என்றை ஆன்றி - ஆக்ஸைடு இதில் அதிகம் காணப்படுவதால் கொழுப்பு. பக்கவாதம் போன்ற நோய்களைக் தடுக்கிறது.

8. தயிர் :

தினசரி 7 ஸ்பூன் தயிர் சாப்பிடுவதால் அதிக அளவில் இதய நோய்கள் வராமல் தடுக்கப்படுகிறது.

10. பதாம் :

EDL கொலஸ்ட்ரோல் குறைப்பதற்கு உதவுகிறது கொழுப்பு உட்கொள்வதை இது குறைக்கிறது.

11. மத்தி சாளை :

டைரைகிளசரேட் குறைக்கிறது, HDL அதிகரிக்க உதவுகிறது, இதில் ஒமேகா 3 'த்தி ஆசிட் அடங்கியுள்ளது,

12. கடுத்த சாக்ளேட் :

இரத்த அழுத்தம் குறைக்கிறது, இதில் 'ளேவனோல்ட் அடங்கியுள்ளது, இரத்த குழாய்களில் இரத்த ஓட்டத்தை பயன்படுத்துகிறது,

13. பூண்டு :

இரத்த அழுத்த மற்றும் கொழுப்பு கட்டிகளையும் குறைக்கிறது, இது அஇஉ க்னிகியுபெட்டர் இதில் அடங்கியுள்ள ஆன்ஜியேடென்சின் இரத்த குழாய்கள் சுருக்கம் அடைய உதவுகிறது,

APPENDIX : I

DATA COLLECTION PROCEDURE

A prior written permission was obtained from the Director of Sree Mookambika Medical College Hospital Kulasekharam at Kanyakumari District. Oral consent was obtained from CAD patients. Data collection was done during the period of February 1st to march 1st ended. 30 samples were selected based on the inclusion criteria, by purposive sampling technique. After self-introduction, objectives of the study was explained for all selected the CAD patients in cardiac out patient department. Pre-test was conducted by using knowledge assessment questionnaire. Day one, 6 patients were educated by video assisted teaching programme. The same schedule were followed. Post test was conducted after 7th day of teaching programme, by the same knowledge assessment questionnaire.

APPENDIX : J

PHOTOGRAPHS