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## RESEARCH ARTICLE

# ASSESSMENT OF LEVEL OF KNOWLEDGE ON DIET AMONG PATIENTS WITH CORONARY ARTERY DISEASE ATTENDING CARDIOLOGY OPD, AT TERTIARY CARE HOSPITAL, TIRUPATI

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### ABSTRACT

**Background:** Coronary artery disease is the most prevalent type of cardiovascular disease. The most common heart disease both in India and in the united states is atherosclerosis, which is an abnormal accumulation of lipids or fatty substances and fibrous tissue in the vessel wall. These substances create blockages or narrow the vessel in a way that reduces blood flow to myocardium. The present study was conducted to assess the level of knowledge on diet among patients with CAD. **Objective:** To assess the level of knowledge on diet among patients with CAD at tertiary care hospital. **Materials and Methods:** Descriptive cross sectional design and convenient sampling technique was followed which included 200 samples were used. Data was collected using structured questionnaire, a point Likert scale & check list items. Data analysis was done with SPSS. **Results:** Out of 200 samples, 62.5% were had inadequate knowledge. The mean age of the subjects were for knowledge statements mean knowledge score was 58.87 and the standard deviation was 12.68 and for check list items mean knowledge score was 11.49 and the standard deviation was 38.5 ± 18.2, majority were males (61%) and illiterates (40%). Common reasons for inadequate knowledge were lack of awareness on various aspects of CAD diet, cost and ignorance. **Conclusions:** The nurse plays multi-tasks in providing care for the patients. So, the nurses need to identify the level of knowledge and need to educate them on various aspects of diet for CAD clients, to prevent the complications of coronary heart disease.

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## INTRODUCTION

Cardiovascular diseases are leading cause of mortality and morbidity in industrial countries. Coronary artery disease comprises a variety of clinical problems resulting from an inadequate oxygen to myocardium for heart to function properly<sup>1</sup>. The major disorders resulting from an insufficient blood supply to myocardium are atherosclerosis, angina, coronary insufficiency, myocardial infarction.

Coronary heart disease also known as “coronary artery disease” or “atherosclerotic heart disease” or “ischemic heart disease” is the most common type of heart diseases and cause of heart attacks<sup>2</sup>.

Coronary artery disease is the most prevalent type of cardiovascular disease. The most common heart disease in the united states is atherosclerosis, which is an abnormal accumulation of lipids or fatty substances and fibrous tissue in the vessel wall. These substances create blockages or narrow the vessel in a way that reduces blood flow to myocardium<sup>3</sup>.

The coronary artery disease leads to problems of angina and myocardial infarction which needs to be treated by different interventions like angioplasties, in which percutaneous coronary interventions are done and cardiac revascularizations or coronary artery bypass graft which is the major treatment for the population<sup>4</sup>.

Today more and more stress is laid on the preventive aspects of the coronary artery diseases and its complications since there is a high prevalence of coronary artery disease and other cardiac disorders among the population<sup>5</sup>.

Coronary heart disease starts when certain factors damage the inner layers of the coronary arteries. These factors include smoking, high levels of certain fats and cholesterol in the blood, high blood pressure, high levels of sugar in the blood due to insulin resistance or diabetes and blood vessel inflammation. Plaque might begin to build up where the arteries are damaged. Over time plaque can harden or rupture, leads to formation of blood clots further narrows the coronary arteries and worsen “angina”. If a clot becomes large enough, it

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can mostly or completely block a coronary artery and cause a heart attack<sup>6</sup>.

The reduction in coronary atherosclerosis is achieved by dietary changes including low sodium diet, low saturated fatty diet, increase in omega -3 fatty acid diet, high fibre diet and high protein diet. The Adult Treatment Panel III of the National Heart, Lung and Blood Institute has recommended therapeutic life style changes for all the people to reduce the risk of coronary artery disease by lowering low density lipoprotein cholesterol<sup>7</sup>.

**Table 1** Therapeutic life style changes diet<sup>7</sup>

Nutrient	Recommended intake as percentage of total daily calories
Total fat	25% - 35%
Saturated fat	< 7%
Polyunsaturated fat	Upto 10%
Monounsaturated fat	Upto 20%
Carbohydrate	50% - 60%
Protein	Approximately 15%
Cholesterol	<200 mg
Sodium	<2400 mg
Dietary fibre	20 - 30 g

The investigator observed that patients with coronary artery disease having inadequate knowledge on disease condition and diet what to be followed. The investigator found the necessity to create awareness among patients with coronary artery disease regarding various aspects on diet. The purpose of the present study was to assess the level of knowledge on diet among patients with coronary artery disease, so that it would be helpful to educate them about the various aspects of diet like low sodium, low fatty diet, high fibre and high protein diet inorder to improve their quality of life. Thus it was expected that the study would help to prevent the complications of coronary artery disease like arrhythmias and heart failure.

## Objectives Of The Study

- To assess the level of knowledge on diet among patients with coronary artery disease.
- To determine the association between knowledge on diet with demographic variables

## MATERIALS AND METHODS

**Sampling and data collection:** *Descriptive cross sectional design*, used to assess the level of knowledge on diet among patients with coronary artery disease. Non-probability convenient sampling of 200 CAD patients from the cardiology out patient department, SVIMS were selected. CAD patients were between the age group of  $\geq 35$  years to  $\leq 70$  years who were eligible, can understand regional language, who were available during data collection and voluntarily willing to participate in the study. Valvular disorders (eg:stenosis and regurgitations), cardiomyopathy & heart block with pacemakers were excluded. Prior Permission was obtained from ethical clearance committee of SVIMS and from Dept. of Cardiology, SVIMS, Tirupati. Patients were informed about the study verbally; once they agreed to have their participation, then written consent from patients were obtained. Participants

signed an informed consent and were told they could withdraw from the study at any time for any reason.

## Instruments

The study was carried out using structured Questionnaire which is a 5-point Likert scale consists of 24 knowledge statements & by check list on diet consists of 30 items to assess the level of knowledge. The reliability of the tool was tested by Split half method of Karl Pearson correlation coefficient formula with a value of  $r=0.94$ .

**Score Interpretation:** The score was interpreted as follows:

### For positive statements:

Strongly agree	: 5
Agree	: 4
Uncertain	: 3
Disagree	: 2
Strongly disagree	: 1

### For negative statements:

Strongly disagree	: 5
Disagree	: 4
Uncertain	: 3
Agree	: 2
Strongly agree	: 1

### The knowledge level ranges from:

24 – 56	: inadequateknowledge
57 – 88	: moderate knowledge
89 – 120	: adequate knowledge

**Section III :** A two point scale, ranging scores from 1 – 0

Yes	: 1
No	: 0

0 - 10	: inadequate knowledge
11- 20	: moderate knowledge
21 -30	: adequate knowledge

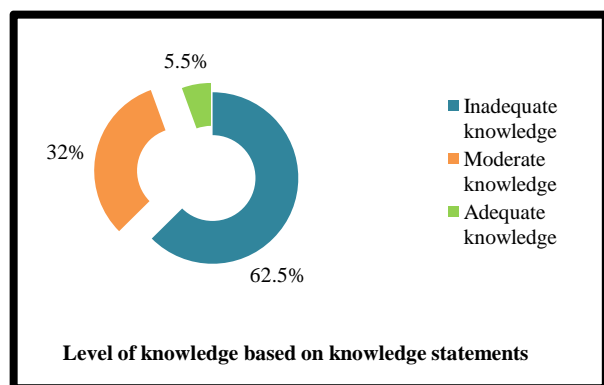
## Data analysis

Data was analysed by using descriptive and inferential statistics. Frequency, percentage, Item analysis, mean, standard deviation, chi-square test and correlation were done.

## RESULTS

The results shows that majority of clients 95 (47.5%) belongs to the age group of 47 - 58 years , 122 (61%) were males, 171 (85.5%) were Hindu's, 188 (94%) were married, 81 (40.5%) were illiterates, 114 (57%) were homemakers, 105 (52.5%) their income was below Rs.5,000, 74.5% were non-vegetarians, 42% were having sedentary work and the data on type of family reveals that majority of them 156 (78%) were from nuclear family. For knowledge statements mean

knowledge score was 58.87 and the standard deviation was 12.68 and for check list items mean knowledge score was 11.49 and the standard deviation was 4.24.



**Frequency and Percentage Distribution Level of Knowledge among coronary artery disease patients based on check list items**

Based on check list items 125 (62.5%) were having inadequate knowledge, 63 (31.5%) were having moderate knowledge and 12 (6%) were having adequate knowledge.

**Table 2** Association between demographic variable and level of knowledge among CAD patients.

S.no	Demographic variables	Chi-square value	P value
1.	Education	41.633	0.01**
2.	Occupation	16.635	0.034*
3.	Monthly family income	26.881	0.001*
4.	Family history of CAD	7.111	0.029*

**Table3** Distribution of correlation for demographic variables among coronary artery disease patients  
N=200

s.no	Demographic Variable	Karl pearson correlation r value	P value
1	Age(yrs)	0.919	0.01**
2	Sex	-0.111	0.117*
3	Education	0.102	0.151**
4	Occupation	0.105	0.14**
5	Monthly family income (Rs)	0.123	0.082**
6	Family history of CAD	0.101	0.156**
7	Are you a veg or non-veg	0.354	0.354**

**Table 5** Distribution of correlation for Check list items on diet among coronary artery disease patients

Category	check list items	Karl pearson Correlation (r value)	P value
a.low sodium foods	Papaya	-0.92	0.32 **
	Bitter gourd	-0.63	0.75**
	Cucumber	0.107	0.74*
	pork/beef	0.125	0.03 *
b.oils high in cholesterol	Meat	0.150	0.47*
	groundnut oil	0.185	0.88 *
	coconut oil	0.135	0.009 *
	beans/ridge gourd	0.154	0.056 *
c.food stuffs high in fibre	Wheat	-0.699	0.154 **
	oats/corns	-0.488	0.69 **
	Apple	-0.544	0.48 **
	green leafy vegetables	0.152	0.54 **
d.food stuffs high in proteins	egg white	0.117	0.15 *
	Pulses	0.919	0.11 *
	Walnuts	0.014	0.91 **
	Peanuts	0.003	0.178 *

## DISCUSSION

The discussion of the present study was based on the findings obtained from the descriptive and inferential statistical analysis of collected data. It is presented in the view of the objectives of the study. The study findings revealed that 125 (62.5%) of CAD patients were having inadequate knowledge, 64 (32%) were having moderate knowledge and 11 (5.5%) were having adequate knowledge levels among target population.

The results have shown that there was association with education, occupation, monthly income and family history of coronary artery disease which were statistically significant at  $P < 0.05$ . In the correlation of demographic variables with level of knowledge on diet among coronary artery disease patient's, age, education, occupation, income, family history and non-vegetarian were positively correlated at  $P < 0.01$  and sex was negatively correlated at  $P < 0.05$ .

In the correlation with level of knowledge on diet among coronary artery disease patient's, Low sodium diet, intake of fatty food, oats, preparation of food from Olive oil, sweets made of ghee, salmon fish, milk, green leafy vegetables, cup of beans, pulses, chicken, liver were negatively correlated and citrus fruits, egg white, husked wheat, eating garlic were positively correlated at  $P < 0.01$  and pickles, papads and dry fish were positively correlated at  $P < 0.05$ . In the correlation of check list items with level of knowledge on diet among coronary artery disease patient's, bitter gourd, papaya, oats and apple were negatively correlated, green leafy vegetables and walnuts were positively correlated at  $P < 0.01$  and cucumber, meat, pork, groundnut oil, palm oil, beans, egg white, pulses and pea nuts were positively correlated at  $P < 0.05$ .

Namratha R.Kandula, Diane S.Lauderdala, Neeraja R.Khurana *et.al.*, (2009)<sup>12</sup> conducted a cross sectional study on knowledge gaps and misconceptions about coronary heart disease among south Asians in United states. The purpose was to examine south Asians knowledge and beliefs about coronary heart disease.

The sample size were 270 south Asian adults, interviews were conducted using a standardized questionnaire with 4-point Likert scale. Multivariate regression models were used to examine the associations between sociodemographics and coronary heart disease knowledge. Most of the participants (89%) said that they knew little or nothing about coronary heart disease. Stress was the most frequently mentioned risk factor (44%), few mentioned (49%) exercises, (37%) said low fat diet, (11%) controlling blood pressure, (10%) cholesterol levels and (9%) diabetes for prevention. 53% said that heart attacks were not preventable ( $P$  value  $< 0.005$ ). Low education levels and family history of heart disease were being interviewed and low level of acculturation were associated with less knowledge and concluded that majority of south Asians believed that coronary heart disease was not preventable and had low awareness of modifiable risk factors and on diet.

Nurses can aid clients by identifying the level of knowledge on diet and emphasizing the importance of various aspects of diet

to promote well-being as well to prevent the complications of coronary heart disease.

## CONCLUSION

The findings of the study revealed that based on knowledge statements, majority of coronary artery disease patients 125 (62.5%) were having inadequate knowledge and 11 (5.5%) were having adequate knowledge, based on check list items 125 (62.5%) were having inadequate knowledge and 12 (6%) were having adequate knowledge. Some of the demographic variables were statistically significant at  $P < 0.01$  and hence concluded that, coronary artery disease patients should improve their knowledge regarding various aspects of diet on coronary artery disease in order to improve their Quality of life and prevent complications of coronary artery disease.

## Recommendations

- A descriptive study can be conducted to assess the prevalence of coronary artery disease.
- A quasi-experimental study can be conducted on effectiveness of planned teaching programme regarding prevention of coronary artery disease and life style modifications among general population.
- A similar study could be conducted on larger sample.

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