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RESEARCH ARTICLE

DEMOGRAPHIC PROFILE AND DIETARY HABITS OF MALE HYPERLIPIDEMICS IN HYDERABAD CITY

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ABSTRACT

Hyperlipidemia is a powerful and extremely common risk factor of cardiovascular disease and mainly affecting the younger population. The present study was conducted in a private hospital at Hyderabad city. Two hundred and fifity male hyperlipidemic subjects were selected and data was collected on socio-economic status like age, education, occupation, activity pattern, income level and type of family. Dietary habits like type of diet, meal pattern and types of fats and oils used for cooking by the male hyperlipidemics through questionnaire. The findings revealed that they are in the age group of 40-60 years and had a high educational qualification, holding higher positions, some agriculturists and others retired personnel. They were involved in sedentary activity and are in nuclear families of high income group. They were mostly non vegetarians and the consumed different foods. The dietary habits and consumption of fats and oils used for cooking were changed after the onset of the disease. Modification in the dietary pattern will alter the dietary intake. Thus there is burning need to emphasize on the modification in the dietary intake to improve the health status.

INTRODUCTION

Hyperlipidemia is a powerful and extremely common risk factor for the development of coronary heart disease and thus leading to cardiovascular disease. A number of factors like age, sex and genetics are also contributing to the risk of developing cardiovascualr disease. In addition, dyslipidemia must be considered with other risk factors in order to reduce the burden of cardiovascular disease. In the modern times, cardiac disease has emerged as the leading cause of death worldwide, particularly in developed countries. The World Health Organization [2008] reported that 16.7 million deaths in 2003 (29.2 per cent of total global deaths) were caused by some form of cardiovascular diseases. Cardiovascular diseases, also on the rise, comprise a major portion of non-communicable diseases. In 2010, of all projected worldwide deaths, 23 million are expected to be because of cardiovascular diseases. In fact, cardiovascular diseases would be the single largest cause of death in the world accounting for more than a third of all deaths [WHO, 2008]. These are major contributors to the global burden of chronic diseases and in the present scenario and as per the epidemiologists in India and International agencies such as the WHO have been sounding an alarm on the rapidly rising burden of cardiovascular disease for the past 15 years [Reddy, 2007]. As part of globalization and higher income levels, India also faced rapid urbanization and 31.8 per cent of them are living in urban areas which induced a nutritional shift resulting in the rise of unhealthy food and decreased intake of fruits and vegetables and also led to a number of issues like reduced physical activity, unhygienic and overcrowded living conditions, growing levels of stress, and higher exposure to pollution [Gupta *et al.*, 2011] thus leading to the increase in cardiovascular disease risk factors. Dietary modification is effective in achieving and maintaining improved serum lipid levels.

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Regular physical activity, when combined with a sensible eating plan and weight loss, can help to lower cholesterol and triglyceride levels i.e., hyperlipidemia. Exercise also has a positive effect on many of the other risk factors for heart disease, including high blood pressure, diabetes and obesity. Many epidemiological studies indicated that a diet rich in fruits and vegetables had a protective role against the development and progression of cardiovascular disease which is one of the leading causes of morbidity and mortality worldwide [Louis *et al.*, 2007]. The other reasons are physical inactivity and unhealthy eating conditions. The study was taken up with the following objectives.

- Elicit information on demographic profile and dietary habits of the hyperlipidemics.
- Finding out the dietary habits before and after the onset of the disorder.

MATERIAL AND METHODS

The main aim of the present study was to assess the socio economic status and dietary habits of the subjects. For the study 250 subjectes were selected from one of the corporate hospital located in the heart of the city in Hyderabad. The male hyperlipidemic subjects selected were in the age group of 40-60 years and were included based on their willingness to participate in the study. The socio-economic profile such as age, education, occupation, activity pattern, type of family and income level of the family and dietary habits on type of diet, meal patter, types of oils used for cooking by the hyperlipidemic subjects were collected using the questionnaire. The results of the study are tabulated and discussed below.

RESULTS AND DISCUSSION

Socio-economic status

Among the risk factors socio-economic status is said to be associated with the hyperlipdemia which in turn causes cardiovascular diseases.

The socio-economic factors like age, education and occupation of the selected 250 male hyperlipidemics is given in the Table I. From Table I, it is seen that among the selected 250 male hyperlipidemics, maximum per cent of 29.2 were in the age group of 51-55 years, 28 per cent were in the age group of 56-60 years, 22 per cent were in the age group of 46-50 years and 20.8 per cent were in the age group of 40-45 years. The education level of the male hyperlipidemics were in the ascending order starting from the primary level to professional degree. Majority(46 per cent) of them are holding professional degree such as engineers, doctors and other professional courses. Very few only one per cent had education upto primary level. As most the male hyperlipidemics were having higher degree, the occupation of the subjects were also high (35.6 per cent). Thirty per cent of the subjects were doing business, five per cent were agriculturist and around five per cent were doing Government jobs. Twenty four of the male hyperlipidemics were retired.

Table1. Socio-economic status of male hyperlipidemics

Socio-economic details	Number	Per cent
Age (Years)		
40-45	52	20.8
46-50	55	22.0
51-55	73	29.2
56-60	70	28.0
Total	250	100.0
Education		
Primary School	3	1.2
Higher Secondary	53	21.2
Graduate	79	31.6
Professional Degree	115	46.0
Total	250	100.0
Occupation		
Professionals	89	35.6
Business	75	30.0
Agriculture	13	5.2
Government/Private Job	12	4.8
Retired	61	24.4
Total	250	100.0

Activity pattern

Activity pattern of the male hyperlipidemics were shown in Table II. From the Table II, it was evident that male hyperlipidemic subjects were categorized as per their different levels of activity. These levels of activities are divided into sedentary, moderate and heavy (Dietary Guidelines, ICMR, 2010). Sedentary activity includes household works, light gardening and no physical activity. Around 66.8 per cent of the selected hyperlipidemics were retired personnel and others include business and few professional personnel. Moderate activity includes brisk walking, meditation, yoga, bicycling, palying with children and weight training. About 29 per cent of the selected hyperlipidemics constitute the moderate activity which includes majority of professionals, ten per cent were business people and very few (five percent) were retired personnel as they are health conscious and were diagnosed with the disorder. Heavy activity includes industrial workers and agriculturists. Only 4.4 per cent of the hyperlipidemic subjects were uner this category.

Table 2. Activity pattern of the selected subjects

Type of activity*	Number	Per cent
Sedentary	167	66.8
Moderate	72	28.8
Heavy	11	4.4
Total	250	100.0

**Dietary Guidelines, ICMR, 2010*

Type of the family

Table III predicts the type of the family of the selected male hyperlipidemics. Among the 250 male hyperlipidemics selected, 74.4 per cent belongs to the nuclear family where as 25.6 per cent of them belongs to the joint family system.

Table 3.Type of family

Type of family	Number	Per cent
Joint	64	25.6
Nuclear	186	74.4
Total	250	100.0

Income status of the selected hyperlipidemics

Income level of the family is clearly presented in the Table IV.

The income level of the individual were classified into low income (Rs. 3301-7300), middle income (Rs.7301-14500) and high income (Rs. 14501 & above) as per the classification given by Technical Report of 11th Five Year Plan (2007-2012). Among the 250 male hyperlipidemics, 61.6 per cent of the subjects belong to the high income group, 30.8 per cent belong to the middle income group and only a few (7) per cent of male hyperlipidemics belong to the low income group. According to University of Rochester Medical Center [Science Daily, 2009], Ignoring the risk of lower income and education when making treatment decisions may exacerbate existing health care disparities, which have been increasing over time. Doctors who ignore the socioeconomic status of patients when evaluating their risk for heart disease are missing a crucial element that might result in inadequate treatment. Social status has been related with the prevalence and incidence of cardiovascular disease [Demosthenes *et al.,* 2005]. Socioeconomic status indicators including education, income, and occupation are associated with coronary heart disease risk factors, morbidity, and mortality. In most industrialized nations, individuals with less education, lower income, and blue collar occupations have the highest coronary heart disease rates. Low socio-economic status predicts coronary heart disease independent of traditional risk factors included in the Framingham risk score [Loucks *et al.,* 2009 and Fiscella *et al.,* 2009], particularly in high income countries [Rosengren *et al.,* 2009 and Goyal *et al.,* 2010].

Table 4. Income status

Income level (`/Month)*	Number	Per cent
3301-7300	19	7.6
7301-14500	77	30.8
14501 & above	154	61.6
Total	250	100.0

** Technical Report of 11th Five Year Plan (2007-2012)*

Dietary habits of the selected male hyperlipidemics

Type of diet and meal pattern of the male hyperlipidemics was dipicted in the Table V. Table V showed that most (58.8 per cent) of male hyperlipidemics were having non-vegetarian diet, 31.2 per cent were having vegetarian food and ten per cent were ova-vegetarians. Details on the meal pattern clearly concluded that fifty per cent of the male subjects were having three meals per day and 29.6 per cent were having three meals with healthy snacks.

Table 5. Dietary habits of the male hyperlipidemics

Dietary habits	Number	Per cent
Type of diet		
Non Vegetarian	147	58.8
Vegetarian	78	31.2
Ova Vegetarian	25	10.0
Total	250	100.0
Meal Pattern		
3 meals with healthy snacks	74	29.6
3 meals	125	50.0
< 3 meals	15	6.0
Irregular eating pattern	36	14.4
Total	250	100.0

Only six per cent were having less than three meals whereas fourteen per cent were having irregular eating pattern. This is due to their work load and stress. The dietary habits of the male hyperlipidemics almost fifty per cent of them has changed their diet and meal pattern after the onset of the disease. The dietary habits before and after the onset of the disease is shown in the Figure 1.

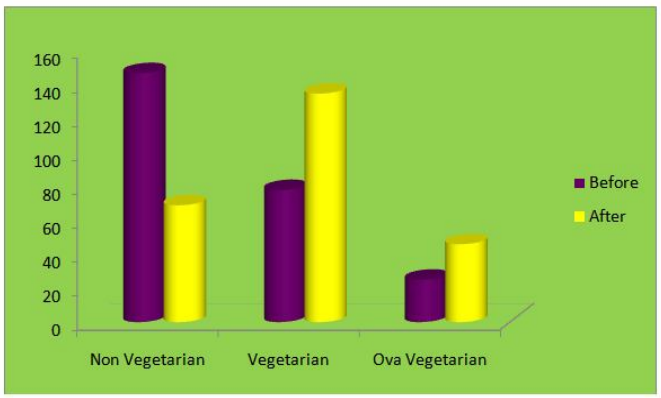

Figure 1: Dietary Habits Before and After the Onset of the Disease

Types and quantity of fats and oils used for cooking

The types of fats and oils used for cooking by the selected male hyperlipidemics is presented in Table VI.

Table 6: Types and quantity of fats and oils used for cooking

Types of fats and oils	<25ml		25ml	
	Number	Per cent	Number	Per cent
Sunflower oil	145	58.0	77	30.8
Groundnut oil	66	26.4	25	10.0
Olive oil	54	21.6	11	4.4
Rice bran oil	46	18.4	117	46.8

**Multiple response*

There is a multiple response from the subjects about the usage of the types of fats and oils in their daily cooking. Majority of the subjects are using sunflower oil and keep changing the oils every month. Most of the subjects are using 500 ml of oil per person per month, whereas some are using one to one and half litre of oil per person per month. The other oils used by the subjects in the order of preference are groundnut oil, olive oil and rice bran oil. The hyperlipidemic male individuals who use 25 ml of oil in daily cooking were majority of 46.8 per cent were found to use rice bran oil, 30.8 per cent were found to use sunflower oil, ten per cent were found to use groundnut oil and a minimum per cent of four per cent were found to use olive oil. There are also subjects who are using less than 25 ml of oil in their daily cooking. Most (58 per cent) of the subjects were using sunflower oil,26.4 per cent were using groundnut oil, 21.6 per cent were using olive oil and 18.4 per cent were using rice bran oil in their daily cooking.

Summary and conclusion

Hyperlipidemia is a disorder and not a disease. As the age advances, the chances of hyperlipidemia advances. This was most commonly affecting the people at an younger age which are the most productive years of their life, mainly due to the work load and stress by the individual thus lacking the physical activity in their day-to-day activities. The dietary pattern of the individual plays a major role in most of the degenarative disorders. The effectiveness of dietary changes and activity pattern reduces the levels of hyperlipidemia. It is concluded that there were considerable factors of the socio-economic status and dietary habits in the prevalence of the risk factors of the hyperlipidemia and thus associated with cardiovascular disease. The change in the diet was strongly associated with the incident of the hyperlipidemia. These results indicate an oppurtunity to reduce dietary habits and show a need for further investigation on the determinants of the chronic diseases.

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