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Nutritional status of women patients suffering from coronary artery disease in a cardiology institute of Bangalore

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Abstract
The nutritional status of twenty women in patients suffering from coronary artery disease patients in Sri Jayadeva Institute of cardiology, Bangalore was assessed. A pretested interview schedule was used to collect necessary information. Anthropometric measures were assessed by standard procedures (Jelliffe, 1991) and related indices were calculated (W/H ratio, BMI). Hemoglobin and lipid levels were analysed by standard laboratory techniques. The survey revealed that the age ranged from 40-65 years. Most of them were illiterates and from low income group. Having composition of >3 members. Monthly expenditure on fruits, vegetables, milk and pulses was meager (25%) compared to flesh foods. High prevalence of paternal family history for diabetes mellitus (82%) followed by hypertension 9755) was observed. Dietary pattern of 2-3 meals per day was observed comprising mostly of rice/ chapathi/ ragiball with less amount of vegetables adjuncts. Consumption of fruits and vegetables was very less. Mean weight, height and BMI of the subjects were 58 Kgs,151 cms and 25.1 respectively.38% subjects had WHR (Waist to Hip Circumference ratio) of 0.80 to0.85 and 52% had arrange of 0.85 to 0.99. About 5% subjects were severely anemic and 30% were in borderline risk of moderate anemia. The mean food intake was lesser than suggested amount except for roots, tubers and sugar & jaggery. The percent adequacy of fat was 183% where as it was <100% for energy and protein. The mean triglyceride and VLDL values are higher compared to total cholesterol and LDL values. Lower HDL levels were observed which is one of the risk factor for CAD can be attributed to the less intake of fruits and vegetables. The TC: Hdl proportions also higher than 5 which is an indicator of malnutrition negatively affecting the health status of subjects studied. As per angiogram reports 20% patients were reported to have 90-100% blocks and advised bypass surgery.

Keywords: CAD, women, anthropometry, hemoglobin, BMI

Introduction
Nutrition has vital role in promoting health and prevention of diseases. Primary prevention of disease is the most laudable aim of health care. Over a period of time, the human race has been taking a wide range of naturally occurring substances as foods. However, in recent times the changes in dietary patterns have probably been too fast for physiological adaptations. The dynamic relationship between changes in people's diet and health is generally seen in the fast changing patterns of certain diseases. With rapid socio-economic development, decreasing trends in infectious disease due to better health care and consequently longer life expectancy, chronic degenerative diseases are increasing even in countries like India, which are now in various stages of developmental transition [1].

Reports of the World Health Organization (WHO) indicate that cardiovascular diseases claim some 15 million lives ever year and 10 million of them die in developing countries. The prevalence of CHD in India has increased from <2 per cent to 25 per cent of all mortality causing 3 million deaths/year [2]. It is predicted by WHO that death due to circulatory system diseases are projected to double between by 2015. Heart diseases are overtaking Diabetes Mellitus to become number one diseases in 2005-2006.

Malnutrition and Micronutrient Malnutrition is a matter of serious concern in our country as it affects more than a third of India's population. A number of nutritional surveys conducted throughout the country by various institutions namely National Institute of Nutrition, National Nutrition Monitoring Bureau, Food & Nutrition Board, etc., have conclusively proved that there is severe malnutrition prevailing among the low income groups of population comprising of children, adolescent girls, lactating and pregnant women. Women, the main vulnerable section of our society are being affected by both faces of malnutrition i.e. under / over

nutrition. Though women are less prone to heart diseases up to menopause stage, associated factors and nutritional status may contribute to the onset and rapid progression of the coronary artery diseases. Hence the objective of the study was to assess the nutritional status, hemoglobin and lipid profile of the women patients.

Materials and Methods

Twenty women patients admitted for myocardial Infarction problem or Treatment for CAD i.e. invasive techniques in Sri Jayadeva Institute of Cardiology, Bangalore were interviewed. A pre tested schedule was used to collect the information regarding socio-economic profile, occupational status, education level, family history of diseases, Associated disease conditions, dietary pattern, monthly expenditure pattern on food & other things, habits etc.The data collected was compiled and consolidated for further correlation and interpretation.

Lipid profile and hemoglobin levels were analysed by standard laboratory techniques in the hospital lab and the data was utilized. Anthropometric measures are assessed by standard procedures (Jelliffe, 1991) [3] and respective indices were assessed by standard formulae. BMI of the patients were calculated by dividing weight (Kg) by square of height (meter). W/H ratio was computed by division of waist circumference by respective hip circumference of the subjects.

Results

The age of subjects ranged from 40 – 65 years. About 50 – 55% total subjects were illiterates or studied up to primary/middle school level.12% had completed SSLC and 5% were graduates. None were postgraduates. 65% of subjects or their husbands were agricultural laborers or worker's category in private sectors. 20-30% were government servants or their direct dependents. As the survey was done in Government hospital such prevalence could have obtained in the study.

It was also noted that higher percent of subjects i.e.60-65% were specially from lower income group who are residing in sub-urban or urban areas since past 15-30 years for job opportunities. About 20% surveyed were from Muslim community, 5% from Christian and 75% from Hindu community who consume mixed type of diet. 25% were vegetarians. Higher percent of patients had family composition of >3members (65%). It was interesting to note that 60% were from nuclear families, 40% from extended type or joint families.

The total annual income has not exceeded Rs.20,000-30,000/- for 73% subjects whereas for 16% subjects who are family members of mostly businessmen/ officials, the income had a range of Rs.2-3 lakhs. It was observed that for many patients (60-70%) monthly expenditure on sugar & jaggery, non veg items, cereals and snack items (specially fried / baked items) was higher compared to other items. Expenditure on fruits and vegetables, milk and milk products, pulses was meager (<25%) compared to flesh foods. Expenditure was found to be more on rent, water bill, fuel, electricity bill, clothes and maintenance in the decreasing order.

Higher prevalence of family history mainly paternal was observed for type II diabetes mellitus i.e. NIDDM (82%) followed by hypertension (75%), obesity (59%), heart disease (41%) and stroke (6%). The family history was opined to be absent or not known in 15% of subjects. The prevalence of associated diseases among 32% subjects was Type II Diabetes, for 85% was chronic hypertension.10% women were obese.

The dietary pattern was of generally 2-3 meals per day. Breakfast comprised mostly of rice items and chapathi with fair amount of vegetable adjuncts. Consumption of fruits was very less as noted (2-3 no or <200g /week). Ragi balls or chapathies/roties were said to be being consumed for supper with curry items. Frequent consumption of bakery items and chats i.e. weekly twice or thrice was observed more in salaried people /businessmen. It was observed that chewing tobacco was found in 20% women.

In relation to dietary modification 100% of patients restricted oily foods, 72% have restricted flesh foods mainly mutton as advised by doctor and 23-45% have restricted salt and sweets. Only 8-10% of patients have strictly avoided non veg foods & fried items in their diet. None have included any natural food/herbal preparations as remedy for their condition. About 42% have started using refined sunflower oil after the onset of disease.

Anthropometric assessments revealed that the mean weight and height values were 58 kgs and 151 cms respectively and the mean BMI was 25.1 (Table 1). It was noted in the study that 38% of subjects had WHR of 0.8 to 0.85 and 52% had a range of 0.85 – 0.99. How ever 10% women were having WHR >1.0.

Table 1: Mean values of Anthropometric measures.

Measures	Mean +SD
Height(cm)	151+ 4.63
Weight(Kg)	58 + 10.1
BMI	25.1 + 4.12
Waist Circumference(cm)	88.8+ 7.83
Hip Circumference(cm)	98.7 + 9.1
Waist/Hip Ratio	0.91 + 0.0 7

Anemia status

It was observed that the 5 per cent subjects were severely anemic as per WHO classification and about 30 per cent were in borderline risk of moderate anemia (Table 2). 15 per cent were having 9 to 10 g/dl of hemoglobin and 50 per cent were reported to have >10g/dl. The results indicated that less intake of micronutrient rich foods like fruits and vegetables, low income and illiteracy might be the reason for prevailing anemic status in the subjects.

Table 2: Anemia status of subjects

Range of Hb values(g/dl)	%
7-8	5
8-9	30
9-10	15
>10	50
Mean+Sd	10.1+1.57

Food and nutrient intake

The mean food intake was lesser than suggested intake for cereals, pulses, green leafy vegetables and fruits. The mean intake of roots & tubers and sugar & jaggery was more compared to suggested intake (Table 3). As opined by 42% of subjects the mean intake of flesh foods was more than half a kilogram twice or thrice a week prior to onset of disease. But now the intake has been reduced to 200- 300g by them twice or once a month at present.

The mean nutrient intake was more for fat (55 g) than RDA

(20g) where as lesser for energy and protein. This has reflected in higher percent adequacy of fat (183%) as depicted in Table 4.

Table 3: Mean Food intake of subjects

Food Group	Food intake (gm)	Suggested Intake (gm)
Cereals	287.0+46.3	350-400
Pulses	27.8+9.85	30-40
Green leafy Vegetables	26.2+19.5	50-100
Fruits	35.2+25.2	50-100
Roots & Tubers	121.0+35.1	70-100
Sugar& Jaggery	48.2+9.6	20-30
Meat & poultry	66.5+24.5	100-200

Table 4: Mean Nutrient Intake of subjects

Nutrient	Women	
	Mean+SD	%Adequacy
Energy(K.cal)	2200+281	(90.7%)
Protein(gm)	42.0+12.6	(70%)
Fat(gm)	55.3+12.4	(183%)

Lipid profile

The lipid profile values revealed that mean triglyceride and VLDL values are higher compared to total cholesterol and LDL values (Table 5). Lower HDL levels were observed which is one of the risk factor for CAD can be attributed to the less intake of fruits and vegetables. The TC:HDL proportions also higher than 5 which is an indicator of malnutrition negatively affecting the health status subjects studied.

About 40 to 60% of female subjects surveyed were having 60 - 90% block in 1 or 2 of the coronary arteries. As per angiogram reports 20% patients were reported to have 90-100% blocks and advised bypass surgery.

Table 5: Lipid profile of subjects (Mean+SD)

Parameter(mg/dl)	Women(n=20)	Desired values
Total Cholesterol	185.4+10.8	<200
LDL Cholesterol	106.1+41.8	<130
VLDL Cholesterol	36.4+11.6	<30
Triglycerides	241+ 82.9	<150
HDL Cholesterol	34.2+5.39	>40
TC: HDL Proportion	5.41+0.84	5:1
LDL Chol:HDL Chol	3.0+0.89	3.5:1

Conclusion

By the survey conducted it is evident that the prevalence of CAD is becoming higher in females due to the prevailing associated risk factors. It is alarming to note that the incidence is increasing in the age group of 40-65 years of women due to changed life style, reduced physical activity, dietary and occupational pattern, increased stress in the recent past. The food and nutrient intake is lower than RDA for protein, energy but more for fat. The severe and moderate anemia is observed in the subjects which can be attributed to the reduced intake of micronutrient rich foods like fruits and vegetables. There is a need for adequate awareness and counseling through nutrition education among the people specially women CAD patients and their family members for proper dietary and disease management.

Reference

1. Gopalan C. Rising incidence of chronic degenerative diseases – A health hazard of developmental transition. NFI bulletin 2005;26(3):1-4.
2. Tanuja R, Shrinath Reddy K, Mario vaz, Donna Spiegel man, Prabhakaran D, Willett WC *et al*. Diet and risk of ischemic heart diseases in India, Am J Clin Nutr 2004;79:582-592.
3. Jelliffe DB, Jellifee DEF. Community nutrition assessment with special reference, Oxford Medical Publication, 1991, 13-93.
4. World Health Organisation, Obesity, Preventing and managing the global epidemic, Geneva, WHO, 1998.
5. Janelle KC, Barr SJ. Nutrient intakes and eating behaviour scores of vegetarian non-veg women J. Am. Diet. Assoc. 1999;95:180-189.
6. Rebecca Kurian, Parvathi Eshwaran P, Anura Kurpad V. Basal metabolic rate in Indian male and female subjects of different Body Mass Index. The Ind. J Nutr. Dietet, 2005;42:392.