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Research Article

ASSESSMENT OF DIETARY HABITS AMONG DIFFERENT INCOME GROUPS

***Priya. P and Rari John. K**
Department of Home Science, College of Agriculture, Vellayani, Thiruvanthapuram, 695001
**Author for Correspondence*

ABSTRACT
Total ninety respondents both male and female were selected for the study. Thirty respondents each from high income group (HIG), middle income group (MIG) and low income group (LIG) belonging to the age group of 30 to 45 years from College of Agriculture, Vellayani, Thiruvanathapuram were selected for the study. A specially designed pre-tested questionnaire was used to collect information from the respondents regarding the food habits, frequency of purchase meal timings, meal pattern, knowledge on food habits, frequency use of various foods and actual food intake (24 hour recall method). On evaluating the food habits of the respondents it was found that majority of the respondents in all the three groups were non vegetarian. Habit of meal skipping and outside dinning was also noticed. On considering the meal patterns majority of the respondents had cereal, pulse and vegetable combination for their breakfast, lunch and dinner with the inclusion of non vegetarian foods like egg and fish. The food consumption pattern indicates that consumption of fast food was very low. The nutrient intake revealed that among the three groups, energy, protein and calcium intake was below RDA.

Keywords: *Food Habits, Food Intake, Frequency Use of Foods, RDA*

INTRODUCTION
Rapid changes in diets and lifestyles of the population arising due to industrialization, urbanization, economic development and market globalization have a significant impact on the health and nutritional status of the population (WHO Technical Report Series, 2002). Robertson (2000) had opined that dietary habit on an individual in general influences his or her nutritional status. Diet has undergone a transition from simple homemade food to easy available processed food and modern lifestyle. There have also been significant negative consequences in terms of inappropriate dietary patterns, decreased physical activities and increased tobacco use and a corresponding increase in diet-related chronic diseases especially among poor people (Prasanna, 2008). A sedentary lifestyle, lack of exercise, excess carbohydrate and protein rich diet and improper eating habits have resulted in a wide range of problems such as diabetes and hypertension (Bihsnoi, 1999). Siddiqui and Anusha (2011) reported that eating frequent fast food meals cause an individual to gain more weight and face an increased risk of developing disorders like obesity, type 2 diabetes, non alcoholic fatty liver, diseases related to heart and cancer. Hence, the present study was attempted to study the dietary habits of the three income group respondents.

MATERIALS AND METHODS
Ninety respondents both males and females who are working in the College of Agriculture, Vellayani were selected randomly for the study. Care was taken to select the respondents between the age group of 30 to 45 years and from different income groups like high income, middle income and low income. Comprising 30 respondents from each group.

Conduct of Diet Survey
A diet survey was conducted to evaluate the food habits, meal pattern, actual food intake, frequency of use of various foods and knowledge of the respondents about food habits. A specially designed questionnaire was used to collect information from the respondents on account of their dietary pattern and food habits. The questionnaire consisted of questions regarding the food habits, frequency of purchase meal timings, meal pattern, knowledge on food habits, frequency use of various foods and actual food intake.

Frequency Use of Various Foods

The frequency of use of foods from various food groups were measured using a seven point scale. The percentage of food score for each food used by respondents as well as the food items were calculated separately using a formula suggested by Reburn *et al.*, (1979).

Actual Food Intake (24 Hour Recall Method)

In the dietary recall method the respondents were asked to recall the actual food consumed by them in the previous day. In this recall method pre tested structured questionnaire was used for quantifying this survey. A set of cups and spoons were standardized by the investigator and followed the procedure given by Thimmayyama and Rao (2003).

Statistical Analysis

In order to obtain suitable interpretation, the generated data was subjected to statistical analysis such as mean and percentage.

RESULTS AND DISCUSSION

Dietary Profile of the Respondents

The diet survey is one of the important tool to assess the dietary profile of the respondents. The food habits have become the subject of research over the past decade because of the realization that dietary habits of an individual in their different life stages are an important factor for preventing the degenerative diseases. The food habits of a person is an act which is repeated by the individual under the impetus of the need to provide himself with nourishment and also to meet the emotional as well as social needs (Ghassemi, 2003). The distribution of respondents based on dietary habits is presented in the Table 1.

Food Habits of the Respondents

Majority of the respondents in all income groups were non- vegetarians. The study is supported by the findings of Kerala Statistical Institute (2000) and Unnithan (2008). In the case of meal skipping, 57 per cent, 54 per cent and 27 per cent of LIG, MIG and HIG respondents had skipped their meals. Most of the respondents skipped their breakfast and the reason for skipping was lack of time. The findings of the study is in conformity with the observation of Evanson (1990) who had reported as that for one third of the population skipped breakfast due to lack of time. Thirty per cent of the LIG as well as MIG and 16 per cent of the HIG respondents had a habit of dinning outside the items like tea and dinner and the reason was both necessity and convenience. As observed by Divakar (2011) regular meal times is an essential determinant of sound health. Among the three income group respondents similar trend was observed.

Table 1: Distribution of Respondents Based on their Dietary Habits

Characteristics	Category	No of Respondents	Per cent
Regular time for Consumption of meals	LIG	17	57
	MIG	15	50
	HIG	23	77
Skipping of meals	LIG	17	57
	MIG	16	54
	HIG	8	27
Taking of foods outside regularly	LIG	4	13
	MIG	4	13
	HIG	5	16

Daily Meal Pattern of the Subjects

The daily meal pattern of the respondents was assessed and it was noted that 64 per cent of the respondents had early morning tea with bakery items. In the case of breakfast the menu followed for 58 percent of the respondents was cereal, pulse and vegetables combination. Whereas, in the case of lunch, 44 per cent of the respondents had rice, fish and vegetable combination. Tea with bakery items was the

evening tea menu for most of the respondents. in the case of dinner 41 per cent of the respondents followed the menu same as that of lunch. The daily meal pattern of the subjects in a study conducted by Taskar *et al.*, (2007) revealed that the meal pattern followed by the respondents were tea with snacks in early morning as well as in evening and for the breakfast cereal- pulse combination was seen. While in the case of lunch, rice, vegetables along with any of the non vegetarian items was observed and for dinner it was almost similar as that of lunch (Table 2).

Table 2: Distribution of Respondents Based on their Daily Meal Pattern (n = 90)

Sl. No	Type of Foods	Meal Pattern									
		Early Morning		Breakfast		Lunch		Evening		Dinner	
		No	%	No	%	No	%	No	%	No	%
1.	Tea	32	36	4	4	-	-	15	17	-	-
2.	Tea with Bakery items	58	64	-	-	-	-	75	83	-	-
3.	Cereals, Pulse, Vegetables	-	-	52	58	2	2	-	-	-	-
4.	Wheat, Pulse, Vegetables	-	-	14	16	-	-	-	-	17	19
5.	Rice, Fish, Vegetables	-	-	-	-	40	44	-	-	37	41
6.	Rice , Egg, Vegetables	-	-	-	-	35	40	-	-	20	22
7.	Rice and Vegetables	-	-	-	-	4	4	-	-	6	7
8.	Not taking foods	-	-	20	22	9	10	-	-	10	11
	Total	90	100	90	100	90	100	90	100	90	100

Frequency of Use of Various Food Items

Education, food consumption pattern and food frequency pattern are the important items which were identified as the factors which have a positive correlation on nutritional status (Nagi and Mann, 1991). In the case of frequency use of food items, the most frequently used food items by LIG and MIG was cereals, pulses, vegetables, fish and coffee/tea, followed by the food items like fruits, egg, milk and milk products.

The less frequently used foods were meat, juices/soft drinks and homemade snacks. Fast foods were least frequently used.

In the case of HIG it was similar to that of the LIG as well as MIG expect in the case of fish consumption which was least frequently used by the respondents.

The findings of the study conducted by Thara (2002). About the food consumption pattern revealed that most frequently used foods by the respondents were cereals, nuts and oil seeds, fats and edible oils followed by milk and milk products, fruit and sugar and jiggery. The food items like meat and egg were used occasionally while the fish consumption was common.

Monthly Food Expenditure Pattern

Food is a major vehicle for improving the nutrition of people and is markedly influenced by income level (Chandran, 2005). In the present study, it was revealed that most of the money was spent for the purchase of cereals and fish followed by milk and milk products, vegetables, fats and oils, snacks/desert/ beverages and fruits.

A low amount was spent for the purchase of pulses, meat, egg, roots and tubers, sugar/jaggery/ honey and processed food and a very low amount was spent for green leafy vegetables by the three income groups of respondents. Similar result was reported by Gayathri (2002).

Mean Food Intake of the Respondents

The mean food intake of the respondents was assessed and it was noted that, 91 per cent of the RDA was met in the case of cereals and for pulses it was 60 per cent. The intake of vegetables, fruits, milk and milk products was below the RDA level.

The consumption above RDA level was observed for the food items like flesh foods, fats and oils and sugar and jaggery for males.

ICMR (1994) observed that in Thiruvanathapuram district, the mean intake of cereal met about 74 to 95 per cent of its RDA. Earlier studies of Nirmala (2002) and Shanmukhapriya (2005) reported that the intake of fish was above the RDA.

In the case of females, it was noted that positive deviation from RDA was seen among the food items like cereals, vegetables, fat and oils and sugar and jaggery. The consumption of foods like pulses, fruits, milk and milk products and flesh foods were below the RDA level.

The result was supported with the result of Karuna (1993) who had reported that the intake of fruits and green leafy vegetables were below the RDA level for the adult women engaged in fish vending in Thiruvanathapuram district and the findings of Rauma (2001).

Mean Nutrient Intake of the Respondents

Nutrient adequacy in the diet is of paramount importance to physical and mental health (Divakar, 2011). The result of the present study revealed that, in the case of LIG, the intake of energy fat and iron was above the RDA for females and males and the intake of protein and calcium was below the RDA. With regards to MIG, the energy and fat consumption was above the RDA and other nutrients were below the RDA level.

The study was supported by the findings of NNMB (2002). In HIG, intake of calcium, iron was above the RDA for both male and female. Energy consumption was above the RDA for females and the nutrients like protein and calcium was below the RDA. Similar results were observed by Sujatha (1990) (Table 3, 4 and 5).

Table 3: Distribution of Respondents Based on their Mean Nutrient Intake (LIG)

Activity	Nutrients	Male			Female		
		Mean Intake	RDA	% of RDA	Mean Intake	RDA	% of RDA
Sedentary		-	2320	-	2849	1900	150
Moderate	Energy (Kcal)	3126	2730	115	2750	2230	123
Heavy		2602	3490	75	3056	2850	107
Sedentary		-		-	44		88
Moderate	Protein (g)	36.6	60	61	51	55	93
Heavy		60		100	39		71
Sedentary		-	25	-	57	20	285
Moderate	Fat (g)	58.2	30	194	60	25	240
Heavy		69	40	173	50	30	167
Sedentary		-		-	326		54
Moderate	Calcium (mg)	384.7	600	64	350	600	58
Heavy		306		51	305		51
Sedentary		-		-	24		114
Moderate	Iron (g)	27.8	17	164	24	21	114
Heavy		28		165	25		119

Table 4: Distribution of Respondents Based on their Mean Nutrient Intake (MIG)

Activity	Nutrients	Male			Female		
		Mean Intake	RDA	% of RDA	Mean Intake	RDA	% of RDA
Sedentary		2396	2320	103	2222	1900	117
Moderate	Energy (Kcal)	1821	2730	67	2634	2230	118
Heavy		1889	3490	54	2160	2850	76
Sedentary		56		93	53		96
Moderate	Protein (g)	45	60	75	50	55	91
Heavy		58		97	36		65
Sedentary		57	25	228	57	20	285
Moderate	Fat (g)	49	30	163	66	25	264
Heavy		62	40	155	57	30	190
Sedentary		221		37	287		48
Moderate	Calcium (mg)	254	600	42	327	600	55
Heavy		350		58	256		43
Sedentary		27		159	17		81
Moderate	Iron (g)	18	17	105	21	21	100
Heavy		19		111	20		95

Table 5: Distribution of Respondents Based on their Mean Nutrient Intake (HIG)

Activity	Nutrients	Male			Female		
		Mean Intake	RDA	%of RDA	Mean Intake	RDA	% of RDA
Sedentary		1743	2320	75	2303	1900	121
Moderate	Energy (Kcal)	2018	2730	74	2764	2230	124
Heavy		1887	3490	54	-	2850	-
Sedentary		61.8		103	48		87
Moderate	Protein (g)	66	60	110	49	55	89
Heavy		97.9		163	-		-
Sedentary		61.8	25	247	61	20	305
Moderate	Fat (g)	65	30	217	45	25	180
Heavy		97.9	40	245	-	30	-
Sedentary		373		62	300		50
Moderate	Calcium (mg)	346	600	58	296	600	49
Heavy		693.6		116	-		-
Sedentary		41.7		245	27		129
Moderate	Iron (g)	33	17	194	32	21	152
Heavy		48.2		284	-		-

It could be concluded that in the present study, when the food habits of the respondents were assessed and it was found that, majority of the respondents in all income groups had a good food habit. It is a positive sign that the consumption of cereals, pulses, vegetables and flesh foods were seen among the respondents and the consumption of fast foods were comparatively low.

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