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A SURVEY OF NUTRITIONAL DAILY INTAKE OF FOOD IN ADULTS

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ABSTRACT

Nutritional survey of daily intake of food was carried out at the department of biochemistry, University of Karachi, during 2000-2001. Nutrient intake for adult person was recorded 95 % confident limits of mean standard percentage of total energy intake for main macronutrient's calories and proteins / kg body weight. The result shows that an average diet intake consist of higher value of energy i.e. 80.77 kcal / kg as compared to RDA (1989) findings which are up to 50 Kcal/kg. Considering overall food intake during one day, it is observed that the whole day energy is fairly higher than the normal. In Pakistan a large population is provided by more or less similar pattern of nutrient intake including cereals, meat, egg, milk, vegetable, fruit, oil and butter. The values of nutrient intake are fairly reliable with the exception of carbohydrates, niacin, vitamin A, B6, B12 and D which should be improved in general diet..

Key-words: Food, survey, adults, diet intake, nutrition.

INTRODUCTION

Nutrients are the constituents of food necessary to sustain the normal functions of the body. These compounds provide both energy and essential molecules that either can not be synthesized by the tissues or can be synthesized at a rate sufficient to meet the needs for growth and maintenance. Enough food must be eaten to provide the minimum quantity of every nutrients needed by an individual. The nutrient required are influenced by a variety of genetic and environmental factors unique to each individual.

Recommended Dietary Allowances (RDA, 1989) has recommended that total amount of each nutrient generally increases from infancy to adulthood e.g. adults require about 0.8g of protein per Kg of body weight. Nutrition plays a very important role in the field of prevention and curative medicine for children and adults (Ali, 1993). As Pakistan is an underdeveloped country, information about trend of nutrition are needed adequately. There are established ways in which different categories of people are expected to have social contacts with each other. Food is distributed according to the status of the person enjoyed by him rather than the nutritional mode. A nutritive survey of two hundred students was carried out for one day diet, including breakfast, lunch, supper and dinner. In order to assess the eating habits of a sample of the age group 18 - 23 years adults with the aim of gaining some new knowledge of food intake and needs in this age group. The present study is an attempt to show food distribution patterns among certain family members as the basis of age to meet the problem of malnutrition, food availability, both in terms of dietary energy (or calories) and nutrient intake, proportion or number of undernourished people and health statistic are some of the common indicator of health and nutrition situation in a community/country.

MATERIALS AND METHODS

A small group of 200 students, between the age group of 18 - 23 was selected to study their dietary likeness and dislikeness in the daily food intake. Survey was conducted during 2000-2001 and data was taken randomly regarding their breakfast, lunch, supper and dinner and collected without any sex difference. In this connection interviews were also arranged with different students. Data were analyzed statistically.

RESULTS AND DISCUSSION

Nutrient intake for male and female are setup as mean standard and 95% confident limits of the mean of the absolute nutrient values which are also given in a percentage of total energy intake for the main macro-nutrient calories and proteins are also expressed per kg body weight. Studies of different parameters show (Table 2) that an average diet intake consist of higher values of energy i.e. 80.77 kcal/ kg as compared to RDA (1989) findings which is up to 50 kcal/kg. Equally noteworthy are the protein and fat intake figures. In present survey protein intake was 1.50 g/kg, whereas the RDA value is 0.9 g/kg. The RDA (1989) propose a ceiling for protein intake not exceeding double the recommended level. Presently, this ceiling was a little higher. However, FAO Nutritional studies (1977) shows that excessive protein intake may in the long run have negative repercussions in the body. The value of Fats was 44.18% kcal, which is normal and somewhat similar with RDA i.e. 42 % kcal. The vitamin C intake was

recorded 65.8 mg which is also higher than the RDA recommended values such as 42 mg values of thiamin and riboflavin seem to be normal i.e. 1 .6 mg and 1 .9 mg respectively, whereas, RDA's values are 1.5mg and 1.8mg for thiamin and riboflavin respectively. The Niacin value was recorded as 17.7mg, being lower than the recommended values such as 20mg. Vitamin B6 intake was 1.7mg which is also lower than the established values of RDA given as 2.0mg. Vitamin B12 intake is very poor in the every meal as it shows 1.8µg. According to the recommended values it must be present in our diet up to 3.0µg. Present findings are also in agreement with those of Bellu et al. (1991).

Table 1. Anthropometric characteristics of sample.

Parameters	Mean	S.D.	S.E.±
Age	21.8	1.02	0.23
Weight	59.9	4.7	1.05

Table 2. Daily intake of nutrients related to RDA.

Nutrients	Units	Mean	S.E. ±	RDA
Energy	Kcal/kg	80.77	3.10	50
Proteins	g/kg	1.50	.006	0.9
Fat	%kcal	44.18	3.14	42
Vit. C	µg	65.8	4.1	45
Thiamin	µg	1.6	0.09	1.5
Riboflavin	µg	1.9	0.07	1.8
Niacin	µg	17.7	1.3	20
Vit. B6	µg	1.7	0.03	2.0
Vit B12	µg	1.8	0.06	3.0
Folic acid	µg	564.4	43.9	400
Ca	µg	1899.7	129.4	800
Phosphorus	µg	1579.5	61.5	800
Magnesium	µg	530.3	24.6	300
Iodine	µg	145.4	16.2	100
Zinc	µg	24	0.78	15
Iron	µg	30.4	1.5	18
Vit. A	IU	4637	922.2	5000
Vit. D	IU	324	12.5	400

Table 3. Intake of nutrients as a percentage of total daily calories intake in adults.

Nutrients	Mean	S.D.	S.E. ±
Protein	7.49	1.06	0.33
Carbohydrates	26.93	4.02	0.98
Fats	44.18	13.60	3.06

S.D. Standard Deviation, S.E. ± Standard Error.

The quantity of folic acid intake was 564.4µg which is higher than RDA value i.e. up to 400µg. The presence of calcium in the normal Pakistani diet was recorded 1899 mg, which is fairly higher than the RDA value (800 mg). The amount of phosphorus was found 1579mg which seems to be exceedingly higher than the RDA values must be 800mg but similar to those of Champe and Harvey (1987). Values of magnesium were 1500 mg whereas, in RDA data the magnesium intake is 300 mg it shows that our values were such more higher. Intake of Iodine was recorded

145.4 mg, which seems at the higher limits of recommended levels i.e. 100 mg. Iron was recorded 30.4 mg. which is also higher than RDA level i.e. up to 18 mg. The amount of zinc intake in the diet was recorded up to 24 mg, seems higher than the recommended value which is up to the level of 15 mg similar to those of (Ali, 1966). The intake value of vitamin A during the survey was recorded 4637IU which seems very discouraging, being very low as compared to the *RDA* value which is 5000 IU. The energy provided by carbohydrates was 26 % Kcal in present survey which is also very little as compared to the RDA's established values, should be up to 58% Kcal. Vitamin D intake was recorded 324 IU which is more or less similar to those of the findings of Carlson et al. (1964) and Vieth et al. (2002).but still in low limits than the recommended values of RDA i.e 400 IU. Overall one day food intake shows that the whole day energy intake is fairly higher than the normal. In Pakistan a large population is provided by more or less similar pattern of nutrient intake including rice, wheat, cereals, pulses, meat, eggs, milk, vegetables, fruits, oil and butter etc. The data shows that the intake of protein, vitamin C, folic acid, calcium, phosphorus, magnesium, iodine, iron and zinc are definitely higher than RDA level. On the other hand some macro as well as micronutrients are found in less or very less quantity as compared to RDA in our everyday diet intake e.g. amount of niacin, vitamin B6, B12, A, D, and carbohydrates. However, the intake values of riboflavin and thiamin seem to be normal according to the RDA's recommended values and USAID values (1972).

The present studies (Table 1-3) indicate that nutrients are fairly reliable with the exception of carbohydrates, niacin, vitamin A, B6, B12, and D, these should be improved in general diet. In this regard to keep our diet balance a layman must be informed through T.V. and Radio media according to global nutritional status.

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