

Frequency of Protein Food Intake among Young Adults in Tamil Nadu

V. Bhavani¹, Dr N. Prabhavathy Devi²

¹Dietician, ESIC Medical College and Hospital, KK Nagar, Chennai, India

²Assistant Professor, Queen Marys College, Chennai, India

Corresponding Author: V. Bhavani

ABSTRACT

Protein is a macro nutrient which yields 4 kcal/gram. It is also essential for growth and development of an individual. Young adulthood is a transition phase between childhood and adulthood, thus it necessary to evaluate the protein intake of young adults. The study was conducted among 1000 college students (both genders), after obtaining ethical clearance, permission from college authorities and written consent from selected students. Random sampling technique was used in the present study. A standardized, pre-tested Food frequency questionnaire was used to collect the protein intake of the selected subjects. After obtaining the information from the students, the raw data was coded and subjected to statistical analysis using SPSS version 20.0 and the results were interpreted. About 0.2%, 0.7%, 1.2%, 8.6% consumed dhal, egg, curd and milk respectively daily. The overall protein consumption was found to be less among the study group. Since the young adults are the pillars of the nation, it is essential to improve the health and nutritional status of the young adults by providing them with protein and micro nutrient dense foods to prevent deficiencies.

Keywords: Protein, Food frequency, Dietary pattern, fleshy food, High Biological Value, Micronutrient

INTRODUCTION

Early adulthood behaviors including diet and physical activities are often influenced by the environment of an individual growing into adulthood ^[1] (*Uresh Jayantilal Jain, 2016*). The dietary pattern varies widely in different parts of the world. It is generally developed around the kinds of food produced (or imported) depending upon the climatic conditions of the region,

economic capacity, religion, customs, taboos, tastes and habits of the people. ^[2] It has been observed that micronutrient deficiencies are also prevalent among adolescents in developing countries, possibly as a result of poverty or lack of awareness about nutritional foods. ^[3]

The predominant components in the diet of were milk and milk products, roots and tubers, followed by fruits and vegetables. Milk products are a significant source of calcium, Saturated Fatty Acids (SFA), and vitamin B12. Proteins were mainly derived from selected vegetarian sources such as pulses, suggesting a need for improvement in the quality and quantity of intake of protein-rich foods. ^[3] Eshraga in his study highlighted the findings of the food intake pattern which consists of 33% consumed legume, 33% consumed chicken, 84% consumed fish, and 29% consumed milk. ^[4]

It is reported in available literature that young adults do not have the appropriate nutritional education and experience to make healthy food choices, while deficient skills in meal preparation alongside the irregular and demanding class schedule have also a critical effect in reorientation of a eating habits. ^[5]

A good nutrition helps prevent diseases and to develop physical and mental potential. Hence the importance of an adequate diet and nutrition at the stage of university studies since it is a period of life in which people generate greater productivity from the economic and social point of view. ^[4]

MATERIALS AND METHODS

About 1000 college going young adults of both gender were selected using random sampling method. The samples were chosen from three colleges of Chennai, the capital of Tamil Nadu. College students between the age of 19 to 22 years, who were not on any medical intervention were selected for the study. Pregnant, Lactating women, students who were on immune suppressants were excluded from the study.

Ethical clearance was obtained from the Universal ethics committee. Permission from concerned college authorities was obtained. The selected students were explained about purpose of the research. A standardized pre tested Food frequency questionnaire was given to the students and were asked to fill the intake. The obtained raw data were coded and subjected to statistical analysis using SPSS version 20.0. The results were interpreted.

RESULTS AND DISCUSSION

Table-1: Pulses and Dhal intake of the Participants

Pulses	Daily	Alternate days	Thrice a day	Twice a day	Once a day	Rarely	Never	Total
Dhal	2 (0.2)	16 (1.6)	61 (6.1)	307 (30.7)	474 (47.4)	137 (13.7)	3 (0.3)	1000 (100)
Whole grams	0 (0)	0 (0)	1 (0.1)	48 (4.8)	123 (12.3)	491 (49.1)	337 (33.7)	1000 (100)
Roasted Bengal gram	8 (0.8)	15 (1.5)	18 (1.8)	52 (5.2)	139 (13.9)	499 (49.9)	269 (26.9)	1000 (100)

Values within () denote row percentage

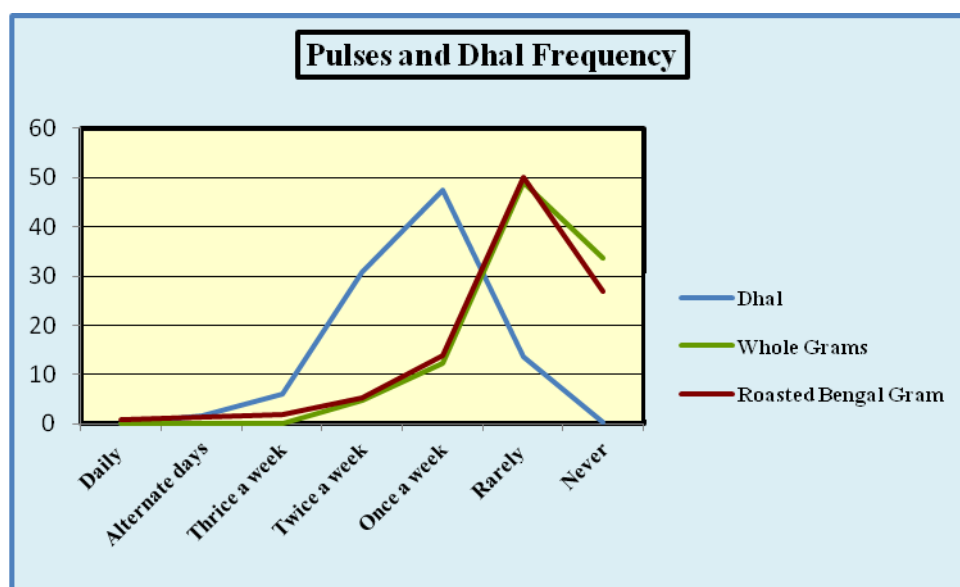


Figure-1

Dhal, whole grams, and roasted Bengal gram are rich source of proteins and B complex vitamins, fiber. Dhal is used in the meal as major side dish/accompaniments as sambar, kottu, dhal sabji. But it is surprising to note that only 0.2% and 1.6% consumed dhal daily and on alternate days. About 6.1% and 30.7% consumed thrice a week and twice a week, respectively, and about 47.4% consumed it once a week and 13.7% consumed rarely and 0.3% never consumed dhal.

Whole grams are cherished as evening snack in Tamilnadu. It is very

pathetic to note that none of the participants consumed wholegrams daily and on alternate days and only 0.1% consumed thrice a week, 4.8% and 12.3 % consumed twice a week, and once a week respectively. About 49.1% consumed it rarely, and 33.7% never consumed whole grams. Roasted Bengal gram is consumed in the form of chutney or sweet balls. Only 0.8% consumed it daily followed by 1.5%, 1.8%, 5.2%, and 13.9% consumed it on alternate days, thrice a week, twice a week, once a week, respectively. About 49.9% consumed

it rarely, and 26.9% never consumed roasted Bengal gram.

Table-2: Nuts intake of the Participants

Nuts	Daily	Alternate days	Thrice a day	Twice a day	Once a day	Rarely	Never	Total
Almond	5 (0.5)	0 (0)	0 (0)	1 (0.1)	36 (3.6)	238 (23.8)	720 (72.0)	1000 (100)
Coconut	67 (6.7)	66 (6.6)	108 (10.8)	288 (28.8)	312 (31.2)	149 (14.9)	10 (1.0)	1000 (100)
Groundnut	3 (0.3)	18 (1.8)	53 (5.3)	45 (4.5)	131 (13.1)	475 (47.5)	275 (27.5)	1000 (100)

Values within () denote row percentage

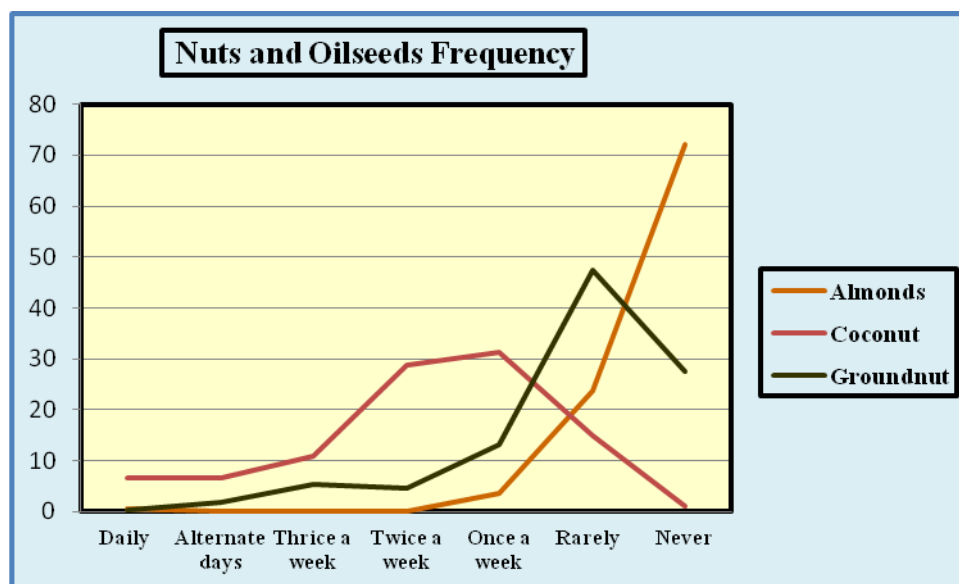


Figure-2

Almonds are loaded with calories and vitamin E. Only about 0.5% consumed daily, 0.1% cherished it twice a week and 3.6% consumed once a week. About 23.8% consumed it rarely and about 72% never consumed almonds. Expensiveness of almonds might be the reason for less consumption of almonds.

Coconut is a common and most usable nut in Tamilnadu. It is loaded with calories and proteins. The tasty nature of coconut is preferred in South Indian cookery. About 6.7% and 6.6% consumed it daily and on alternate days. About 10.8% and 28.8% consumed it thrice a week and

twice a week, respectively. About 31.2% and 14.5% cherish it once a week and on alternate days and only 1% never consumed coconut.

Groundnuts or peanuts are inexpensive nuts which are readily available. It is also rich in calories, fat, fiber, protein. About 0.3% and 1.5% consumed daily and on alternate days respectively. About 5.3% and 4.5% consumed it thrice a week and twice a week, respectively. About 13.1% and 47.5% consumed once a week and on alternate days, respectively. About 27.5% never consumed groundnuts.

Table-3: Egg, Meat, Fish intake of the Participants

Egg, fleshy and sea foods	Daily	Alternate days	Thrice a day	Twice a day	Once a day	Rarely	Never	Total
Egg	7 (0.7)	22 (2.2)	68 (6.8)	229 (22.9)	351 (35.1)	160 (16)	163 (16.3)	1000 (100)
Chicken	0 (0)	0 (0)	2 (0.2)	26 (2.6)	488 (48.8)	242 (24.2)	242 (24.2)	1000 (100)
Mutton	0 (0)	2 (0.2)	4 (0.4)	24 (2.4)	193 (19.3)	488 (48.8)	289 (28.9)	1000 (100)
Dry fish	37 (3.7)	39 (3.9)	92 (9.2)	204 (20.4)	202 (20.2)	205 (20.5)	221 (22.1)	1000 (100)
Fish	0 (0)	0 (0)	0 (0)	105 (10.5)	487 (48.7)	331 (33.1)	77 (7.7)	1000 (100)

Note: Values within () denote row percentage

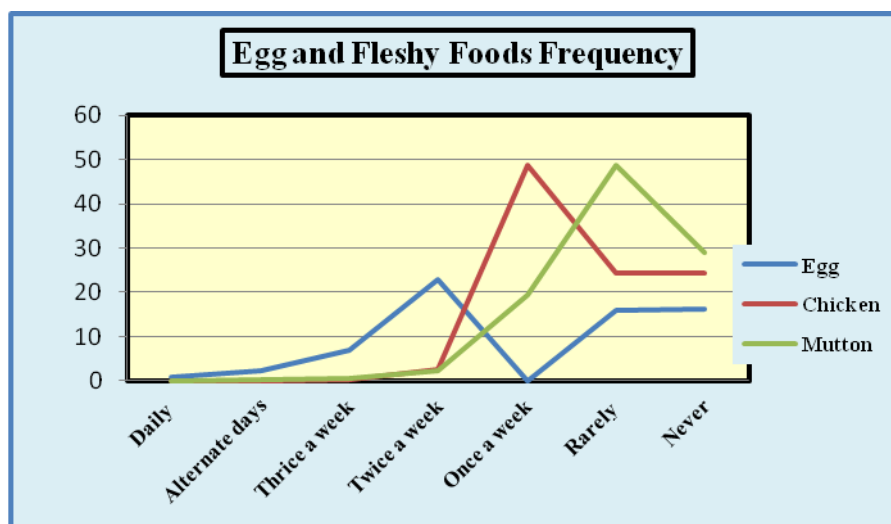


Figure-3

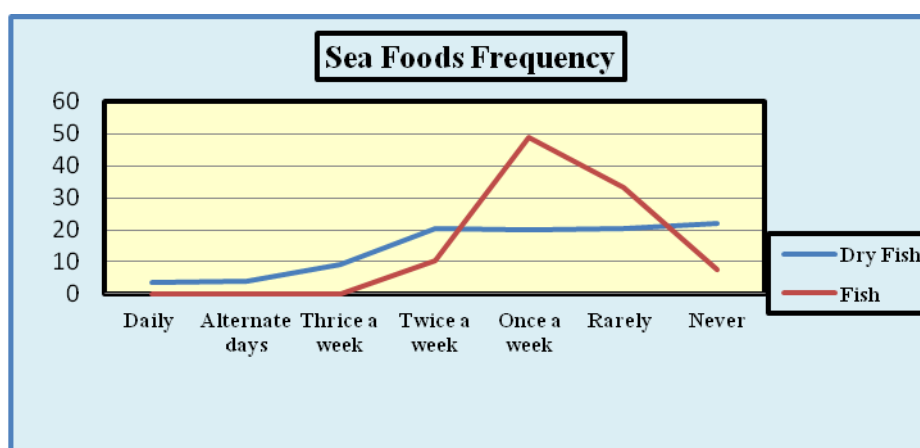


Figure-4

Egg, fleshy foods, and fish are excellent source of good quality protein. Protein present in egg white is considered as a reference protein and has High Biological Value (HBV) of 93. They are also rich in calcium, magnesium.

Egg is consumed by 0.7% and 2.2% daily and on alternate days, respectively, followed by 6.8% and 22.9% thrice a week and twice a week, respectively. About 35.1% and 16% consumed once a week and rarely, respectively. About 16.3% never consumed eggs. Chicken is consumed by 0.2% and 2.6% thrice a week and twice a week, respectively. About 48.8% and 24.2% consumed once a week and rarely, respectively and 24.2% never consumed chicken.

Mutton is never consumed by 28.9% of the subjects. It was consumed by 48.8% and 19.3% rarely and once a week, respectively. About 2.4% and 0.4% cherished it twice a week and thrice a week, respectively. About 0.2% consumed it on alternate days. Fish is consumed by 10.5% twice a week and 48.7% once a week. About 33.1% consumed it rarely and only 7.7% never consumed fish.

It is evident from our study that being close to the sea coast, easy availability and less cost, made North Chennaites to prefer consuming dry fish. About 3.7% and 3.9% consumed dry fish daily and on alternate days. About 9.2% and 20.4% cherished it thrice a week, and twice a week respectively. About 20.2% and 20.5% consumed it once a week and rarely,

respectively. Only about 22.1% never consumed dry fish.

Table-4: Milk and milk products intake of the participants

Milk and Milk products	Daily	Alternate days	Thrice a day	Twice a day	Once a day	Rarely	Never	Total
Milk	86 (8.6)	58 (5.8)	83 (8.3)	119 (11.9)	200 (20.0)	257 (25.7)	197 (19.7)	1000 (100)
Curd	12 (1.2)	10 (1.0)	11 (1.1)	57 (5.7)	146 (14.6)	380 (38.0)	384 (38.4)	1000 (100)
Cheese	0 (0)	2 (0.2)	8 (0.8)	22 (2.2)	100 (10.0)	261 (26.1)	607 (60.7)	1000 (100)

Values within () denote row percentage

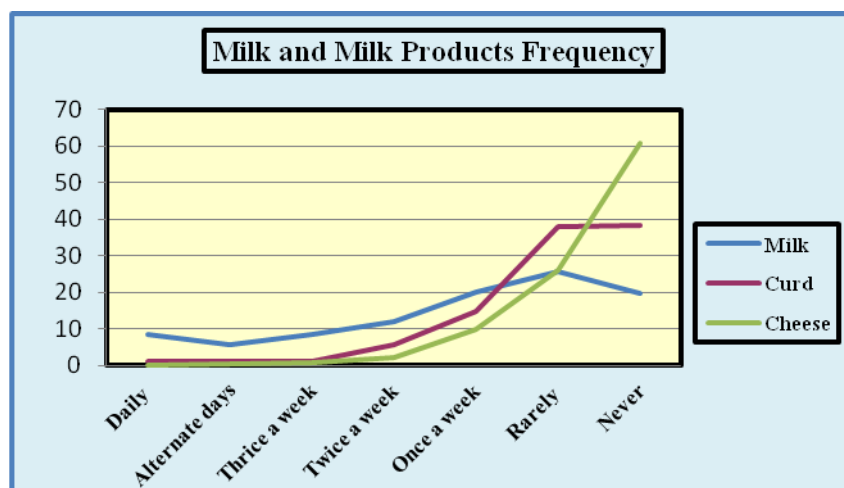


Figure-5

Milk and milk products contain valuable nutrients, and it also offers a range of health benefits. Milk is rich in protein, calcium, B complex vitamins and phosphorous. From the study it is well known that about 8.6% and 5.8% subjects consumed milk daily and on alternate days, respectively. About 8.3% and 11.9% consumed milk thrice a week and twice a week, respectively. About 20% and 25.7% consumed it once a week and rarely and only 19.7% never consumed milk. A similar study conducted by **Meenal Vinay Kulkarni** revealed that about 55% students had no habit of drinking milk. [6] In another study conducted by **Mendhe** showed that the male consumed 135 ml of milk whereas female consumed 200ml of milk. [7]

Curd is a fermented milk product which is commonly consumed in India. About 1.2% and 1.0% consumed curd daily and on alternate days. About 1.1% and 5.7% consumed it thrice a week and twice a week, respectively. Curd was consumed by 14.6% and 38% once a week and rarely, respectively. About 38.4% never consumed curd.

Cheese is a milk product loaded with calcium, protein, and calories but due to its cost it was never consumed by 60.7%. About 26.1% and 10% consumed it rarely and once a week, respectively. About 2.2% and 0.8% cherished it twice a week and thrice a week respectively and only 0.2% consumed it on alternate days.

CONCLUSION

Protein is essential for growth and development of an individual. The common protein rich sources are pulses, legumes, nuts, milk & milk products and non-vegetarian sources such as fish and fleshy foods. Egg is considered as reference protein and contains High Biological Value. It is highly disgusting to note from the present study that protein consumption is less among the study population. Protein rich snacks such as Roasted Bengal gram balls, peanut chikkies must be introduced since childhood to increase the consumption of protein. Intake of milk and curd to be practiced regularly to meet the requirements. Students and parents should be educated about the importance of protein

food in the daily diet. Introducing protein snacks instead of processed food stuffs in college canteen brings enormous changes in the protein intake of the students. Every packed lunch must be filled with protein food like paneer, dhal or egg to meet the requirement. Since the young adults are the pillars of the nation, it is essential to improve the health and nutritional status of the young adults by providing them with protein and micro nutrient dense foods to prevent deficiencies. Another advantage in consuming protein foods are, most of the protein foods are also rich in vitamins and minerals. Thus, it is essential for the young adults to consume protein rich foods and meet the requirements.

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