

## IMPACT OF NUTRITION COURSES ON DIETARY HABITS AND LIFESTYLE OF COLLEGE STUDENTS

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### ABSTRACT

Good nutrition is critical during the teenage years to ensure healthy growth and development. A healthy diet must meet the changing nutritional needs of a growing teenager. The diet of adolescents particularly college going students is typically high in calories, fat, sugar, sodium and often fails to meet the daily recommended amounts of fruits, vegetables, and calcium-rich foods. The frequent consumption of unhealthy diets in combination with the lack of physical activity leads to poor nutritional status. The present study was conducted on university students to study the behavioral changes in dietary habits and lifestyle using experimental intervention design. Significant and beneficial changes in dietary habits have been found in university students with nutrition specialization.

Study revealed that mean scores for nutrition knowledge in pre-test was significantly different. After the intervention of nutrition course ninety percent of nutrition students in the intervention group appeared to have formed positive behavior towards adoption of healthy eating habits. The intervention group became conscious in selection of food specially meal timings having breakfast without fail. Nutrition specialization students included fruits, milk, low salt & sugar, germinated legumes and showed control behavior in consumption of fast foods, while controlled group shown status quo. Hence nutrition education could be incorporated at degree level as curriculum irrespective of their specialization to help students make decisions about their dietary intake.

**KEYWORDS:** Behavioral changes, Diet, Impact, Lifestyle, Nutrition course

### INTRODUCTION

College students between the ages of 18 and 24 years gain new experiences and personal freedom as well as develop a sense of identity as they ascend from adolescence to adulthood [1]. Unfortunately, during this phase, the tendency to engage in unhealthy dieting, meal skipping, and fast food consumption is rather common. Minimal physical activity is also one of the common lifestyle patterns of adolescence period [1]. Poor eating habits and limited physical activity can likely increase the risk for osteoporosis, obesity, hyperlipidaemia, diabetes, and cancer later in life[1]. Such an unhealthy lifestyle is further linked to health-related quality of life (HRQoL), which is highly related to an individual's nutritional status [2]. Good eating habits should be established at an early age [3].

Adolescence is characterized by rapid growth with profound, complex and interrelated changes. In girls these changes play a crucial role in the successful outcome of pregnancy and lactation at a later stage. Micronutrients like iron, vitamin A and zinc, required in micro quantities, are essential for growth, development, utilization of nutrients, immunity and many other physiological and metabolic functions. Any deficiency of these essential nutrients adversely affects growth

and amplifies the risks to the individual's health. In the case of females, this increases the likelihood of damage to future generations through fetal growth retardation and limited ability to cope up with stress.

Micronutrient deficiency is at epidemic proportions in many countries including India, in spite of decades of nutrition programmes. The problem of getting sufficient nutrients occurs when a girl child enters adolescence, a time when growth and requirements accelerate. Deficiencies arise from inadequate intakes, impaired absorption or utilization, excessive losses or a combination of these factors. Adolescence is the best period to correct nutritional deficiencies.

Nutrition education is widely used as a medium to deliver healthy diet and nutrition information; however, this type of intervention is still rarely implemented for college students. Hence this study was conducted to assess the impact of Nutritional education on lifestyle, consumption pattern and dietary habits of college students

## **MATERIALS AND METHODS**

The research design included a control group (T1) from College of agriculture without nutrition course and an experimental group (T2) from College of Home science with nutrition specialization. From each group thirty adolescent girls between 18 and 20 years of age were selected randomly from the list of students enrolled at the time of admission. Information pertaining to their dietary pattern and lifestyle was collected immediately after admission and at the end of the semester.

Standard questionnaire on nutrition knowledge, attitude, and practice was developed for measuring subject's nutritional awareness. The Questionnaire consisted five parts. The first part consisted of personal information about the students and their body measurements. The second part consisted of some questions which measured the amount of the student's knowledge about food groups and food sources. The third posed some questions about the frequency of consumption from each food group. The fourth part posed some questions about choosing foods the last part contained diet survey.

The questionnaire was distributed to a total 60 students of control and experimental groups. Diet survey was carried out in the homes of each student by weighing method. Data was collected on the number of working hours; time spent on exercise, consumption pattern of food and frequency of outside food. Mean Percentages and Frequency were taken to analyze and interpret results.

## **RESULTS AND DISCUSSIONS**

### **Food Consumption Pattern**

These results in Table 2 revealed that students with nutrition course are highly motivated and are more cautious in selection of food, daily exercise and in cultivating good food habits continuously modifying their previous life pattern. They also showed keen interest in their health, body weight, and body image. Ninety percent of the students with nutrition specialization had regular exercise and breakfast without fail. A great majority (93%) of the students of experimental group consumed milk with corn flakes/rice flakes/oats after breakfast. More than half (62%) of them stopped taking soft drinks. Previous literature has demonstrated that there have been several studies using college nutrition courses to motivate overall dietary changes [4, 5].

While, milk was consumed (83%) even by control group but in the form of tea, coffee, or curd. Daily intake of

milk as well as green leafy vegetables and yellow-orange vegetables intake was completely negligible in case of control. It was observed that the experimental group was consuming leafy vegetables and fruits (90%) daily. This shows that nutrition education when incorporated in their routine learning environment will certainly have impact on behavioral, eating habits [6,7]

Eighty five percent of consumed pulses daily and a few (10%) consumed pulses 2-3 times weekly. Half (50%) consumed egg daily and another (50%) 2-3 times a week. Apart from this they also cultivated a habit of taking germinated legumes and coconut water in their daily diet. Similar findings [6, 7] have been previously discovered, such that females reported more positive attitudes towards healthy eating and greater health-consciousness than males did.

On other hand in control group the sedentary lifestyle is marked by prolonged periods of sitting and being glued to a computer screen or television. The sedentary lifestyle carries health risks which may be contributed by lack of exercise. Huge majority (97%) of students from control group had no exercise and only three percent had a habit of exercise. One-third (36%) skipped breakfast the findings were similar to previous reports [8]

The table 1 also showed that One-fifth (22%) of control group students skipped meals and majority (83%) consumed tea or coffee more than 2 times a day. One-third of them were vegetarians. More than half (72%) of them eat fast-foods. It was observed that all of them were consuming cereals two times a day throughout the week. Majority (94%) of them consumed pulses 2-3 times a week and a few (6%) consumed pulses daily. Majority (90%) consumed vegetables daily and the remaining (10%) consumed 2-3 times a week.

**Table1: Distribution of Students Based on their Food Consumption Pattern (%)**

Food Groups	Daily		Weekly 2-3 times		Weekly once		Monthly	
	*T1	*T2	T1	T2	T1	T2	T1	T2
Cereals	100	100	—	-	—		—	
Pulses	6	85	94	10	—		—	
Milk and milk products	83	93	20	5				
Leafy Vegetables	—	90	40	10	60		—	
Other Vegetables	90	92	10	8	—		—	
Fruits	23	90	74	10	—		3	
Fats & Oils	100	80	—	20	—		—	
Egg	—	50	50	50	17		—	
Chicken / Mutton	—	-	67	-	—		—	50
Fast foods/junk foods	72	30	25	10				
Soft drinks	70	-	20	10	10	13	-	5
Germinated seeds	50	80	20	80				
Coconut water	30	50	10					

\*Control group (T1)

Experimental group (T2)

More than half (60%) consumed leafy vegetables once a week, but 40% consumed 2-3 times a week. A quarter of them (23%) consumed fruits daily, three fourth (74%) consumed 2-3 times a week and 3% consumed once a month. Half (50%) consumed egg 2-3 times a week, nearly one-fifth (17%) consumed once a week. Less than half (33%) did not consume egg. More than half (67%) consumed chicken or mutton at least twice a week.

### Mean Nutrient Intake of University Students

Table 2 evidence that, the consumption of nutrients is adequate in cases of experimental group where as in control group, the consumption of calories and protein is high. The consumption of fat is more than twice the recommended values. Calcium, Vitamin A and C consumption is a little less than the RDA and Iron consumption is less than half of the recommended value.

**Table 2: Comparison of Mean Nutrient Intake of University Students with RDA\***

Nutrients	Actual Consumption		*RDA
	T1	T2	
Calories (Kcal/d)	2642	1950	1900
Protien (g/d)	68	53	55
Fat (g/d)	42	21	20
Calcium (mg/d)	302	650	600
Iron (mg/d)	11	20	21
Vitamin A (ug/d)	350	620	600
Vitmamin C (mg/d)	36	80	40
Folic acid (µg/d)	0.2	1.2	1.0

\*Control group (T1), Experimental group (T2),

\*RDA – Recommended Dietary Allowance

**Source:** Nutritive Value of Indian Foods, ICMR

### CONCLUSIONS

The results for dietary habits also showed that nutrition education was significantly beneficial in improving dietary habits, daily nutrient intake, and quality of life. Because dietary habits could worsen during university years, any undesirable dietary norm should be addressed at earlier ages and preferably through individuals' routine learning environments. Hence, nutrition education is a well-suited technique to improve both students' dietary habits and their awareness of overall health.

In this context, research should focus on the development of nutrition education tools, which are not only effective but also interesting and practical for the current generation of students. Social media can help to large extent in transforming and affecting the dietary habits educated youth. For example, the effectiveness of the short messaging system has been demonstrated in smokers, diabetics, and bulimia nervosa patients. Another recommendation is to target nutrition education for first-year university students, who may still be adjusting to the collegiate environment and experiencing independence in life for the first time. It can be concluded that the use of educational interventions are best methods for enhancing students eating habits, promoting healthier diets and lifestyles and for a positive impact in the life.

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