

# Impact of Nutrition Education Intervention on Food Consumption Pattern and Choices among College Going Girls

SHWETA SAINI\*<sup>1</sup> AND NEETIKA TRIVEDI<sup>2</sup>

<sup>1&2</sup>Assistant Professor

<sup>1</sup>Dayanand Mahila Mahavidyalaya, Kurukshetra (Haryana) India

<sup>2</sup>Hindu Girls College, Jagadhri (Haryana) India

## ABSTRACT

**Purpose:** Adolescence is the period of transition. Girls are obsessive about their appearance at this point of time. At this age many physiological, psychological and emotional changes occur in their body. The nutritional status of these young girls is also a crucial matter to be focused as they are more influenced by peers in this age. Young girls are least bothered about their food choices, consumption pattern and about their nutritional status. That is why the present study aims to assess the impact of nutrition education intervention on food consumption pattern and choices among young girls.

**Method:** Thirty young girls were randomly selected for the study from Dayanand Mahila Mahavidyalaya, Kurukshetra. A self designed well structured questionnaire was administered to the selected girls with the help of google form before and after giving them nutrition education. The questionnaire contained nine questions about the food consumption pattern and choices among young girls. The results were analyzed using arithmetic mean, standard deviation and paired t test.

**Results:** Results of the present study revealed that the young college girls were having bad food consumption pattern and choices. Nutritional education intervention proved to be helpful in changing the food habits and consumption pattern of the young girls up to some extent. As the results analyzed using paired p test showed that the difference between the averages of before and after is not enough to be statistically significant ( $p = 0.05$ ).

**Conclusion:** Overall, changing eating habits requires a combination of education, support and addressing underlying emotional and social factors. Moreover, habitual junk eating is a kind of behaviour which takes time and patience to change. Education is the only mean which bring changes in behaviour of the people. This study strongly recommends that more and more nutrition education based models should be formulated and employed to bring substantial change in eating habits of young college going girls.

**Key Words :** Nutrition Education, Food, Young Girls

## INTRODUCTION

Adolescence is the period of transition. Girls are obsessive about their appearance at this point of time. At this age many physiological, psychological and emotional changes occur in their body. Adolescent girls are over concern about their body weight due to the desire of acceptance among peer and social comparison (Yael *et al.*, 2015).

The nutritional status of these young girls is also a crucial matter to be focused as they are more influenced by peers in this age. Girl's choice of food is dictated more by extrinsic factors like their looks and friends' opinions. Young girls are least bothered about their food choices, consumption pattern and about their nutritional status. The poor eating habits among the girls of this age are the result of peer pressure, parental attitude towards food, dietary habits, media exposure and the increase in fast

**How to cite this Article:** Saini, Shweta and Trivedi, Neetika (2023). Impact of Nutrition Education Intervention on Food Consumption Pattern and Choices among College Going Girls. *Internat. J. Appl. Home Sci.*, **10** (5 & 6) : 143-148.

food centers in urban cities (Akinwusi and Ogundele, 2005). Girls in this age are also not aware or having lack of knowledge about the cumulative effects of their poor eating habits on their nutritional and health status (Anetor *et al.*, 2012).

Usually young girls don't take regular nutritious meals and having lots of junk like burgers, pizzas, noodle, samosa, chocolates, chips, cold drinks etc. with their friends (Haokip and Sharma, 2016). Junk foods are of poor nutritional quality as they do not provide any proteins, vitamins and minerals but only supply empty calories to our body. Thus, the excessive consumption of fast foods can lead to many nutritional deficiency diseases and can also result in obesity (Vaida, 2013 and Srivastava, 2015).

Majority of college girls are found to be eating either too less or sometimes too much. It's rare to find a case that is balanced. Keeping all the above in mind the present study aims to assess the impact of nutrition education intervention on food consumption pattern and choices among young girls. This study probably help to understand likes, dislikes, eating pattern and pitfalls of consumption pattern among young girls so that the better strategies can be formulated to eradicate nutritional imbalances among girls.

## METHODOLOGY

### Subjects:

Thirty young girls were randomly selected for the study from Dayanand Mahila Mahavidyalaya, Kurukshetra. The girls were fully informed of the purpose and procedure of the investigation and provided consent at the outset.

### Questionnaire Development:

Questionnaire was developed to assess the young girls demographic profile, food consumption pattern and choices with the help of google form. The questionnaire included nine questions about food consumption pattern and choices among young girls.

### Statistical Analysis:

The results were analyzed using arithmetic mean, standard deviation and paired t test.

### Procedure:

Questionnaire was shared with the selected participants to know their demographic profile, food consumption pattern and choices on an assigned day in a

room. They were also informed of the purpose and procedure of the investigation. After submission of the questionnaire their nutritional knowledge was assessed by calculating the scores and nutrition education intervention was imparted same day. Duration of one month is allotted to the girls in order to use the suggested dietary changes as well as the cons and pros of their current dietary patterns were also explained to them. After one month the same questionnaire was administered to the subjects to assess any change in food consumption pattern and food choices among them.

## RESULTS AND DISCUSSION

### Demographic profile:

All the subjects were studying in undergraduate courses in Dayanand Mahila Mahavidyalaya, Kurukshetra. The results (Table 1) showed that the mean height of the subjects was  $1.54 \pm 0.01$ m and weight was  $55.5 \pm 3.92$ kg. According to the present height and weight of the studied subjects their calculated mean BMI was  $23.23 \pm 1.59$ kg/m<sup>2</sup>.

**Table 1: Anthropometric Dimensions of the Subjects**

Parameters	Subject (n=30) Mean $\pm$ S.D.
Age(years)	19 $\pm$ 0.74
Weight(kg)	55.5 $\pm$ 3.92
Height (m)	1.54 $\pm$ 0.01
BMI(kg/m <sup>2</sup> )	23.23 $\pm$ 1.59

Table 2 revealed the fried food consumption pattern and choices among the girls. The girls who consumed fried food daily were 23.3 per cent which gradually declined to 3.3 per cent after the nutrition intervention session. After the session the girls responded that they are still trying to change their habits after knowing the bad impact of these stuff on their health. Madan *et al.* (2021) in their study on junk food consumption pattern on undergraduate students of Dayalbagh Educational Institute, Agra found that fifty one per cent students regularly consume high fat/fried food in form of chole bhature, samosa, kachori, poori, pizza, pasta, noodles, chowmine and golgappe etc. while forty eight per cent students occasionally consume high fat food.

Table 3 showed that the most (43.30 %) of the girls responded that they were consuming salty snacks such as namkeen, bhujia, chips etc. at least once daily in pre test session which was changed to 1-2 times (36.6 %)

**Table 2 : Comparison of Pre and Post Nutrition Education Intervention on Fried Food Consumption Pattern and Choices among College Going Girls**

Parameter	Responses	Subjects (n=30)		Percentage (%)		Mean± S.D.		P* Value
		Pre Test	Post Test	Pre Test	Post Test	Pre Test	Post Test	
How often you eat or drink								
Fried foods such as Samosas,	At least once daily	07	01	23.3	3.3	6±2.5	6±6	0.9987
Bread pakora, Parathas, Puri,	3 to 6 times a week	04	02	13.3	6.6			
Kachori, Tikki, Bhatore etc.?	1 to 2 times a week	04	07	13.3	23.3			
	2 to 3 times a month	10	16	33.3	53.3			
	Once a month or less	5	04	16.6	13.3			

\*Significant level 0.05

**Table 3 : Comparison of Pre and Post Nutrition Education Intervention on High Salt Snacks Consumption Pattern and Choice among College Going Girls**

Parameter	Responses	Subjects (n=30)		Percentage (%)		Mean± S.D.		P* Value
		Pre Test	Post Test	Pre Test	Post Test	Pre Test	Post Test	
How often you eat or drink								
High salt snacks such as Chips,	At least once daily	13	08	43.3	26.6	6±6	6±4.2	0.4105
Namkeen, Bhujia, Pickles,	3 to 6 times a week	03	06	10	20			
Chutney,Papad etc.?	1 to 2 times a week	09	11	30	36.6			
	2 to 3 times a month	04	04	13.3	13.3			
	Once a month or less	01	01	3.3	3.3			

\*Significant level 0.05

after nutrition intervention session. After post test girls revealed that nutrition education session enabled them to understand that salty snacks can lead to weight gain and increased risk of obesity but it was hard for them to leave these snacks because of easy availability of such item in the college canteen and they have lack of time in between classes for proper lunch.

Table 4 depicted that about fifty per cent of the subjects were having sweets like chocolate, kulfi, ice cream, puddings daily before the session while after the session they had reduced the consumption 1-2 times a week (40 %). Some of the girls in the present study revealed that they feel good after having sugar snacks even in stressed time so it is hard to break the habit of eating sugary food. In a similar study researcher found

that sixty per cent of the students occasionally consume high sugar-based food like cold-drinks, pastry, donut etc. whereas thirty one students consume these foods regularly. These foods are readily available in college canteen and fast-food outlets (Madan *et al.*, 2021).

Table 5 revealed that approximately half (46.6 per cent) of the respondent were consuming sugar in tea, coffee, curd, lassi etc. daily but the change in pre and post session was that they were now shifted to dessi khand and shaker as an option to replace white sugar.

Table 6 showed that before and after the session same number (46.6) of the girls had fruits and salad in their daily diet. The percentage of girls consumed fruits and salad 3-6 times a week was improved from 20 per cent to 40 per cent. Girls told that there is limited access

**Table 4 : Comparison of Pre and Post Nutrition Education Intervention on Sweet Snacks Consumption Pattern and Choices among College Going Girls**

Parameter	Responses	Subjects (n=30)		Percentage (%)		Mean± S.D.		P* Value
		Pre Test	Post Test	Pre Test	Post Test	Pre Test	Post Test	
How often you eat or drink								
Sweets such as	At least once daily	15	06	50	20	6±6	6±4.2	0.1024
Chocolate,Kulfi, Ice cream,	3 to 6 times a week	04	06	13.3	20			
Laddu, Barfi, Jalebi, Halwa,	1 to 2 times a week	09	12	30	40			
Rice pudding, etc.?	2 to 3 times a month	02	06	6.6	20			
	Once a month or less	00	00	00	00			

\*Significant level 0.05

**Table 5 : Comparison of Pre and Post Nutrition Education Intervention on Consumption of Sugar in Drinks and Choices among College Going Girls**

Parameter	Responses	Subjects (n=30)		Percentage (%)		Mean± S.D.		P* Value
		Pre Test	Post Test	Pre Test	Post Test	Pre Test	Post Test	
Consume sugar and honey in tea, coffee, curd, lassi, etc?.	At least once daily	14	14	46.6	46.6	6±6.5	6±5.8	0.6454
	3 to 6 times a week	12	06	40	20			
	1 to 2 times a week	02	09	6.6	30			
	2 to 3 times a month	02	01	6.6	3.3			
	Once a month or less	00	00	00	00			

\*Significant level 0.05

**Table 6 : Comparison of Pre and Post Nutrition Education Intervention on Fruits and Salad Consumption Pattern and Choices among College Going Girls**

Parameter	Responses	Subjects (n=30)		Percentage (%)		Mean± S.D.		P* Value
		Pre Test	Post Test	Pre Test	Post Test	Pre Test	Post Test	
Fruit and salad?	At least once daily	14	14	46.6	46.6	6±4.7	6±6.6	0.5676
	3 to 6 times a week	06	12	20	40			
	1 to 2 times a week	04	04	13.3	13.3			
	2 to 3 times a month	04	00	13.3	00			
	Once a month or less	02	00	6.6	00			

\*Significant level 0.05

of fruits and salad in the college canteen and it was difficult for them to carry it from home. Moreover, when girls reached canteen they are so hungry and require some solid food instantly.

Table 7 depicted the comparison of pre and post nutrition education intervention on sprouted pulses and green vegetables consumption pattern and choices among college going girls. According to the present study sprouts, pulses and green vegetables were usually consumed 2-3 times a month by fifty per cent of the girls whereas this was improved to be 1-2 times a week (33.3 %) followed by 3-6 times a week (23.3 %) by the girls after the nutrition intervention session.

Table 8 revealed that the data regarding consumption of refined food items like burger, pizza etc. was showing

no clear cut results after the session but the difference was observed in consumption frequency. This investigation definitely depicts the liking of refined food items like burger, pizza etc. among the girls. The refined food like burger, pizza, pasta, maggi etc. were easily available in the college canteen and satisfy the taste buds and hunger of college going girls.

Table 9 showed that about 43.3 per cent of the subjects were having fats like ghee, butter, cream etc in their daily diet before the session while the consumption pattern reduced slightly after the session.

Table 10 revealed that thirty per cent of the girls were having sweetened beverages like soft drinks, juices etc. at least once daily before the session while after the session this was changed to 1-2 times a week (26.6) and

**Table 7 : Comparison of Pre and Post Nutrition Education Intervention on Sprouted pulses and green vegetables Consumption Pattern and Choices among College Going Girls**

Parameter	Responses	Subjects (n=30)		Percentage (%)		Mean± S.D.		P* Value
		Pre Test	Post Test	Pre Test	Post Test	Pre Test	Post Test	
Sprouted pulses and green vegetables?	At least once daily	05	05	16.6	16.6	6±5.5	6±2.6	0.9969
	3 to 6 times a week	05	07	16.6	23.3			
	1 to 2 times a week	00	10	00	33.3			
	2 to 3 times a month	15	05	50	16.6			
	Once a month or less	05	03	16.6	10			

\*Significant level 0.05

**Table 8 : Comparison of Pre and Post Nutrition Education Intervention on Refined foods Consumption Pattern and Choices among College Going Girls**

Parameter	Responses	Subjects (n=30)		Percentage(%)		Mean± S.D.		P* Value
		Pre Test	Post Test	Pre Test	Post Test	Pre Test	Post Test	
Refined food items like burgers, pizza, etc.?	At least once daily	07	00	23.3	00	6±2.3	6±3.7	0.6451
	3 to 6 times a week	07	07	23.3	23.3			
	1 to 2 times a week	08	10	26.6	33.3			
	2 to 3 times a month	06	06	20	20			
	Once a month or less	02	07	6.6	23.3			

\*Significant level 0.05

**Table 9 : Comparison of Pre and Post Nutrition Education Intervention on Fats Consumption Pattern and Choices among College Going Girls**

Parameter	Responses	Subjects (n=30)		Percentage (%)		Mean± S.D.		P* Value
		Pre Test	Post Test	Pre Test	Post Test	Pre Test	Post Test	
Ghee, butter, cream, mayonnaise, etc.?	At least once daily	13	07	43.3	23.3	6±4.1	6±1	0.5676
	3 to 6 times a week	03	05	10	16.6			
	1 to 2 times a week	06	06	20	20			
	2 to 3 times a month	05	05	16.6	16.6			
	Once a month or less	03	07	10	23.3			

\*Significant level 0.05

**Table 10 : Comparison of Pre and Post Nutrition Education Intervention on Sweetened beverages Consumption Pattern and Choices among College Going Girls**

Parameter	Responses	Subjects (n=30)		Percentage (%)		Mean± S.D.		P* Value
		Pre Test	Post Test	Pre Test	Post Test	Pre Test	Post Test	
Sweetened beverages like soft drinks, juices, etc.?	At least once daily	09	05	30	16.6	6±1.9	6±2.1	0.9999
	3 to 6 times a week	05	03	16.6	10			
	1 to 2 times a week	06	08	20	26.6			
	2 to 3 times a month	04	08	13.3	26.6			
	Once a month or less	06	06	20	20			

\*Significant level 0.05

2-3 times a month (26.6 %). The results analyzed using paired t test showed that the difference between the averages of before and after is not enough to be statistically significant (p=0.05).

Students consume mostly with their peers during the college hours or in the get together parties. They revealed that fast food is easily available everywhere like canteen etc. Thus it frees them to carry food from home whereas some students responded that to relieve stress they indulge in eating fast food (Madan *et al.*, 2021).

Shami and Fatima (2017) in their study on ‘know the trends of fast-food consumption by college going girls’ found that fast food junctions mostly target the young generation and environment of college, influence the

behavior of students to make social interaction with peers and to satisfy taste buds and hunger.

**Conclusion:**

Young girls are influenced by social norms regarding body image and food. Peer pressure and company also play a significant role in shaping young girls’ eating habits. With the peer group girls like to eat sugary, fatty, salty snacks and drinks not fruits, vegetables and healthy food. Lack of knowledge about nutrition is also one of the major factors in poor eating habits of girls. Emotional factors such as stress, boredom, happiness and togetherness motivate the girls to choose food randomly.

Overall, changing eating habits requires a combination of education, support and addressing

underlying emotional and social factors. Moreover, habitual junk eating is a kind of behaviour which takes time and patience to change. Education is the only mean which bring changes in behaviour of the people. This study strongly recommends that more and more nutrition education based models should be formulated and employed to bring substantial change in eating habits of young college going girls.

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