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## Original Research Article

## Effect of educational intervention on awareness regarding health hazards of junk food consumption among engineering students

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## ABSTRACT

**Introduction:** Junk food are very popular in modern society and their harmful effects cannot be neglected. The present study was conducted with an objective to assess the Effect of Educational Intervention on Awareness regarding Health Hazards of Junk food consumption among Engineering Students.

**Materials and Methods:** Pre-experimental one group pretest and post-test research design was adopted to accomplish the objectives. Purposive sampling technique was used to select samples involving forty (40) B. Tech Mechanical engineering 1<sup>st</sup> year students. The pre-test and post-test assessment of awareness regarding health hazards of junk food consumption was carried out using the structured awareness questionnaire. The obtained data was analysed and interpreted using descriptive and inferential statistics.

**Results:** The present study findings showed that mean ( $\pm$ SD) pre-test and post-test knowledge score was 21.4 ( $\pm$  3.44) and 24.0 ( $\pm$ 2.42) respectively. The calculated 't' value was 5.06 which is highly significant at 0.05 level and revealed the effectiveness of educational intervention in improving the awareness regarding health hazards of Junk Food consumption. Also, There was significant association between the pre-test knowledge score with Family's monthly Income and Monthly Pocket money of participants at 0.05 level of significance.

**Conclusion:** The study concluded that educational intervention has positive impact on improving the awareness regarding Health Hazards of Junk Food consumption.

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## 1. Introduction

Food is one of the basic necessities of all living beings, and stands first among all basic needs. Food is taken by every individual to sustain growth, for development and to lead an active and healthy life. It consists of essential substances i.e carbohydrate, protein, fat, and other nutrients.

Junk food is the term given to food that is high in calories but low in nutritional content. These foods are getting very popular among people due to time factor, taste factor, its attractiveness and appealing advertisements.<sup>1</sup>

Psychological development of adolescents such as independence and acceptance by peers may affect

adolescent's food choices and nutrient intake, which places them to adopt unhealthy eating behaviors" like addiction to junk foods.<sup>2</sup>

These types of foods show negative health effects on children. Evidence shows obesity, metabolic disorder, and high cholesterol level are the result of consuming junk foods.<sup>3-5</sup>

In recent years, high attention has been focused on primordial and primary prevention of various health problems related to junk food consumption. Therefore, it is important to prevent the health hazards of junk food to safeguard the future of the students and for good health. Hence, the present study was conducted to assess the Effect of Educational Intervention on awareness regarding health

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hazards of junk food consumption among engineering students.

## 2. Materials and Methods

The present quantitative study adopted pre-experimental one group pre-test post-test research design and was conducted from 6<sup>th</sup> March 2017 to 14<sup>th</sup> March 2017 at JSS Academy of Technical Education, Noida, Uttar Pradesh. The setting was chosen because of easy availability of samples, geographical proximity, expected cooperation with the participants and administrative approval.

### 2.1. Sample size & Sampling criteria

Non-probability purposive sampling technique was used to select study participants. Forty (40) B. Tech Mechanical engineering 1<sup>st</sup> year students who were available during the time of data collection and willing to participate in study was included in the study. Students who did not give consent and had already attended formal teaching program on health hazards regarding Junk food consumption were excluded from the study.

The sample size was calculated through Raosoft (2004), with a 5% margin of error and 95% confidence level from a population size of 50. The calculated sample size was 47. However, data was collected from 40 subjects as they met inclusion and exclusion criteria.

### 2.2. Ethical consideration

Prior ethical approval was obtained from Institutional Ethical Committee (IEC). Details about study objectives and outcomes were explained to study participants to ensure anonymity and confidentiality of the information. A written informed voluntary participation consent was also taken from each study participants.

### 2.3. Instruments

Data was collected from participants under three sections. Section I: Socio-demographic characteristics including Age, Gender, Mother's education, Father's education, Mother's occupation, Father's occupation, Monthly family income, Monthly pocket money, Dietary pattern, Exposure to formal teaching Programme on health hazards regarding Junk food consumption. Section II: Structured knowledge Questionnaire on Awareness regarding health hazards of Junk food Consumption. It consist of thirty (30) multiple choice questions to assess Awareness regarding Health Hazards of Junk Food consumption. Each Correct response scored one and Incorrect response zero. Maximum Score was Thirty and Minimum score was zero. Hence, the awareness score was arbitrarily classified as Good (21-30), Average (11-20) and Poor (1-10).

Experts from the field of medical-surgical nursing (5), dietician (02) were involved in content validity of Educational Intervention and Data collection Tool. There was 100% agreement noted for all the items. Reliability of Structured Questionnaire on Awareness regarding health hazards of Junk food Consumption was calculated with Spearman- Brown formula ( $r = 0.85$ ).

Awareness regarding health hazards of Junk food Consumption among engineering students was assessed using structured knowledge questionnaire on Day-1 and on the same day, a 30 minutes Educational Intervention was given regarding health hazards of Junk food Consumption using PowerPoint presentation. The topics covered were: Healthy diet, nutrition, balanced diet, varieties of junk food, harmful effect of junk food and its control and prevention. The method of teaching was Lecture cum discussion. Post-test was conducted on Day-8 by administering same set of structured knowledge questionnaire.

The obtained data was analysed using SPSS version 20. Mean and paired sample 't' test was calculated at 0.05 level of significance. The calculated 't' value more than the table value at 0.05 level was considered statistically significant. Chi square test was used to find the association between pre-test knowledge score on awareness regarding health hazards of Junk food consumption with selected demographic variable at 0.05 level of significance. A P value less than 0.05 was considered statistically significant.

## 3. Results

Table 1 depicts that Majority (97.5%) of respondents were between 18-20 years of age, Predominantly Males (90%). Regarding the Educational status of parents', the data shows that Majority of parents were Graduate i.e Mother (30%) and Father (47.5%). However, the Occupational Status of Parents showed that Majority (82.5%) of Mothers was Home Maker and Father was in Government Job (32.5%). Maximum (62.5%) participants had a monthly family Income of >30000 INR and Nearly two-third gets a monthly pocket money of >200 INR. The dietary pattern shows that Majority (45%) belongs to Vegetarian and Mixed group. However, Maximum (67.5%) reported that they had not been exposed to any formal teaching Programme on health hazards regarding Junk food consumption.

Table 2 Shows that the Majority (67.5%) of participants scored between 21-30 (Good) in Pre-test and the scores has increased (85%) subsequently in post-test. Thereby, indicating an improvement in knowledge score after implementation of Educational Intervention on awareness regarding health hazards of junk food consumption. Data also depicts that mean ( $\pm$ SD) pre-test and post-test knowledge score was 21.4 ( $\pm$ 3.44) and 24.0 ( $\pm$ 2.42) respectively. The calculated 't' value was 5.06 that indicates a significant difference between mean pre and post-test knowledge scores.

**Table 1:** Socio- Demographic Characteristics n=40

<b>Demographic Data</b>	<b>f (%)</b>
<b>Age (In years)</b>	
18-20	39 (97.5)
Above 20	01 (2.50)
<b>Gender</b>	
Male	36 (90%)
Female	04 (10%)
<b>Mother's education</b>	
Primary	04 (10.0)
High school	07 (17.5)
Higher secondary	10 (25.0)
Graduation	12 (30.0)
Post-graduation	07 (17.5)
<b>Father's education</b>	
Primary	01(2.50)
High school	03(7.50)
Higher secondary	06 (15.0)
Graduation	17 (42.5)
Post-graduation	13 (32.5)
<b>Mother's Occupation</b>	
Government job	04 (10.0)
Private job	02 (5.00)
Home maker	33 (82.5)
Business	00 (00.0)
Others	01 (2.50)
<b>Father's Occupation</b>	
Government job	13 (32.5)
Private job	09 (22.5)
Home Maker	00 (00.0)
Business	11 (27.5)
Others	07(17.5)
<b>Family's monthly income (INR)</b>	
<10000	04 (10.0)
10001-20000	06 (15.0)
20001-30000	05 (12.5)
>30000	25 (62.5)
<b>Monthly pocket money (INR)</b>	
< 100	09 (22.5)
100-200	03 (7.50)
>200	28 (70.0)
<b>Dietary pattern</b>	
Vegetarian	18 (45.0)
Mixed	18 (45.0)
Eggetarian	04 (10.0)
<b>Exposed to formal teaching Programme on health hazards of Junk food?</b>	
Yes	13 (32.5)
No	27 (67.5)

**Table 2:** Frequency, percentage distribution, mean, standard deviation and 't' Value of pre-test and post-test scores of students regarding health hazards of junk food consumption. n=40

Assessment Score	Grading	Pre-test		Post-test		't' Value
		f (%)	Mean ± SD	f (%)	Mean ± SD	
0-10	Poor	01 (2.50)		00 (00.0)		
11-20	Average	12 (30.0)	21.4 ± 3.44	06 (15.0)	24.0±2.42	5.06
21-30	Good	27 (67.5)		34 (85.0)		

\*df (39) = 1.023 at 0.05 level of significance

**Table 3:** Association between post-test knowledge scores and selected demographic variables. n=40

Demographic Data	Knowledge Score		df	$\chi^2$ Value	p Value
	Below median	Above median			
<b>Age (in years)</b>					
18-20	17	22	1	5.71	5.991
Above 20	01	00			
<b>Gender</b>					
Male	13	23	1	0.19	3.841
Female	01	03			
<b>Mother's education</b>					
Primary	03	01			
High school	03	04			
Higher secondary	03	07	4	3.72	9.488
Graduation	03	09			
Post-graduation	02	05			
<b>Father's education</b>					
Primary	01	00			
High school	02	01			
Higher secondary	02	05	4	5.34	9.488
Graduation	07	10			
Post-graduation	02	10			
<b>Mother's Occupation</b>					
Government job	01	03			
Private job	01	01	3	2.22	9.488
House maker	11	22			
Business	00	00			
Others	01	00			
<b>Father's Occupation</b>					
Government job	05	08			
Private job	04	05	3	0.80	7.815
Business	03	08			
Others	02	05			
<b>Family's monthly income (INR)</b>					
<10000	00	04			
10001-20000	05	01	3	8.86 **	7.815
20001-30000	02	03			
>30000	07	18			
<b>Monthly pocket money (INR)</b>					
< 100	03	06			
100-200	03	00	2	6.06**	5.991
>200	08	20			
<b>Dietary pattern</b>					
Vegetarian	05	13			
Mixed	06	12	2	3.21	5.991
Eggetarian	03	01			
<b>Attended formal teaching Programme on health hazards of Junk food?</b>					
Yes	03	10	1	1.19	3.841
No	11	16			

Significance at 0.05 level. \*\* - Significant

Table 3 depicts that there was a significant association between the pre-test knowledge score with Family's monthly Income and Monthly Pocket money of participants at 0.05 level of significance.

#### 4. Discussion

Junk food is energy dense food with high amount of refined sugar, trans-fat, polyunsaturated fat, salt, numerous additives and low nutrient value in terms of protein, fibre, vitamin and mineral content.<sup>6</sup> The present study was conducted to assess the Effect of Educational Intervention on awareness regarding health hazards of junk food consumption among engineering students, Noida, Uttar Pradesh.

The present study findings revealed that Majority (67.5%) of participants scored between 21-30 (Good) in Pre-test and the scores has subsequently increased (85%) to 21-30 (Good) in post-test. Thereby, indicating an improvement in knowledge score after implementation of Educational Intervention on awareness regarding health hazards of junk food consumption. Similar findings were reported by studies conducted by Ramachandra *et al* and Yadav *et al* that showed improvement in knowledge score after educational intervention.<sup>7,8</sup>

The recent study data also depicts that mean ( $\pm$ SD) pre-test and post-test knowledge score was 21.4 ( $\pm$  3.44) and 24.0 ( $\pm$ 2.42) respectively. The calculated 't' value was 5.06 that indicates a significant difference between mean pre and post-test knowledge scores. Thereby showing effectiveness of educational intervention. Similar Findings was reported by Yadav B *et al* Amoldeep *et al* and Mishra R *et al*. Thus, findings suggests that interventions are needed to help students to transform their knowledge into healthy eating behaviour and thereby maintaining the healthy lifestyle.<sup>8-10</sup>

Chi-square was calculated to assess the association of pre-test knowledge score with selected demographic variables. It was found that there was a significant association between the post-test knowledge score with Family's monthly Income and Monthly Pocket money of participants at 0.05 level of significance. Similar findings were reported by Dowarah *et al* that proved that one who has more pocket money is likely to consume more fast food.<sup>11</sup> Contradictory to the present study findings, the study conducted by Amoldeep *et al* reported that there was a significant association between age and educational status with pre-test knowledge scores and Yadav B *et al* reported that there is no significant association between knowledge score and selected demographic variables.<sup>8,9</sup>

#### 5. Limitations

The study was limited to a single set-up, without a control group and small sample size that limits the generalization of present study findings

#### 6. Conclusion

According to the present study findings it was concluded that educational intervention has positive impact on improving the awareness regarding Health Hazards of Junk Food Consumptions.

#### 7. Conflict of Interest

The authors declare that there are no conflicts of interest in this paper.

#### 8. Source of Funding

None.

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