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A STUDY ASSESSING JUNK FOOD INTAKE AND ITS EFFECTS ON HEALTH

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Abstract

Junk foods refer to foods that offer little nutritional value and are typically high in fat, sugar, salt, and calories. Consuming large amounts of such food can negatively impact energy levels and mental well-being. As internet usage expanded rapidly in the late 1990s, cyberstalking became a new and complex issue for law enforcement and legal systems. Aim: To study junk food consumption and nutritional status among college students and evaluate its impact on their health. Method: The study used an analytical cross-sectional survey design with a closed-ended questionnaire to collect quantitative data through interviews. Data was gathered from students at LNCT University Bhopal India. Participants were aged between 18 and 20 years. Anthropometric measurements such as height, weight, and body mass index (BMI) were taken using standard equipment, while biochemical parameters were obtained from primary sources. Results: A higher percentage of participants were male, and the fat and obesity rate was 31% among females. A probability of $P<0.05$ The study indicates that the planned instructional module was effective, as evidenced by the significant improvement in the knowledge level of school children regarding the health risks associated with junk foods and their consumption patterns. The research also aimed to understand the frequency of junk food consumption and its impact on health. Conclusion: The study found that excessive junk food consumption leads to various health abnormalities, highlighting the need for nutrition education to improve the overall health status of children. With the increasing use of the internet, qualitative and quantitative data show that addressing this issue is crucial.

Keywords: *Junk foods, abnormalities, anthropometrical, waist.*

Introduction

For a long time, junk food has been spreading around the world quickly because of its bright colors and exciting taste that attracts both young and old people. The way it's made and presented makes it hard to resist. Junk food is made more appealing by using preservatives, which help it taste better, look better, and last longer.

Some people like junk food because it's cheap, tasty, and easy to get [1]. However, young people may not realize the health problems that come from eating too much of it. Eating too much junk food can be addictive and lead to weight gain, long-term health issues, high blood pressure, and problems with mental health.

In today's time, both parents are working, so they don't have much time to spend with their kids. This is the main reason why children develop bad, unhealthy habits. Some parents let their kids eat a lot of junk food just to make them happy. Junk food not only harms the body but can also cause psychological issues like lower intelligence

According to the World Health Organization, the top five health problems in the world are overweight, heart disease, diabetes, cancer, and high blood pressure, and these are mostly caused by bad eating habits and lifestyles that start in childhood. It is predicted that one quarter of 60 million people die every year because of these health threats. The easy availability and advertising of junk food make it easy for people to become addicted. There is very little awareness in society about the dangers of junk food. Junk food and children are connected in a way that they influence each other. So, it's important not to let children get used to eating junk food. Schools and colleges should avoid selling junk food in their canteens. They should also try to reduce the temptation for kids to eat it. It's easier to control the temptation for junk food than it is for alcoholism. Junk food is dangerous to our health and is considered a slow poison for our generation [2].

The very name of junk food shows how harmful it is to our bodies. However, it has been noticed that college students eat junk food but are not fully aware of its impact on their health. This study is meant to highlight the lack of awareness among college students regarding junk food and its dangers. Nutritional problems are one of the major health issues faced by millions of students of all ages. The importance of this study is to take a preventive approach in maintaining good health through specific education, which can be of great benefit to children in preventing both mental and physical problems.

So, this article aims to study the consumption of junk food and the nutritional status of college students, and to evaluate how junk food affects their health [3].

Objectives of the Study
Aim of the Study

To look at how much college students eat junk food and how their nutrition is, and to check how junk food affects their health.

Specific Objectives

To see the difference in the average knowledge level of students before and after going through a planned teaching module. To check how much students know about the health risks of eating junk food.

Materials and Methods

Selection of Subjects

This study was done at LNCT University Bhopal, India. A total of 100 students aged between 18 and 20 years were chosen. These students were in the teenage age group. The students were selected through a raffle method.

Study Design

This is an analytical cross-sectional survey. It was used to get answers to the questions being studied and to deal with some challenges faced during the research. The study was designed to check how effective the planned teaching module was in helping students understand the health dangers of junk food.

Sample Size

The sample included 200 college students who were willing to take part in the research.

Sampling Method

This refers to the process of choosing a part of the population to represent the whole. Probability simple random sampling was used, and the lottery method was applied to select the students.

Tools Used for the Study

An interview was used to collect data in both quantitative and qualitative ways [4].

Inclusion Criteria

College students, both boys and girls, aged between 18 and 20 years who were willing to take part in the study.

Exclusion Criteria

Students who had received similar teaching before were excluded. Students under 18 or over 20 years were not included. Students who were not available during data collection were also excluded [5].

Data Collection

Anthropometric Calculations

A calibrated weighing scale and a stadiometer are used to measure height and weight. BMI, or body mass index: The usual formula BMI = Weight (kg) / (Height (m))^2 used the calculation. A non-stretchable measuring tape is used to measure the waist-hip ratio at the level of the hips' widest part and the iliac crest, or waist.

Parameters of Biochemistry

Blood samples: Taken from participants in a sterile environment. Iron, hemoglobin, vitamin C, and other parameters are examined in a lab setting using common biochemical tests like spectrophotometry, colorimetry, or enzymatic techniques [6].

Dietary Evaluation

The 24-Hour Dietary Recall Method requested participants to list every meal and drink they had eaten and drunk during the preceding 24 hours. Cross-checking habitual consumption is done with the Food Frequency Questionnaire (FFQ). Indian Food Composition Tables (IFCT) were used to compute nutrient consumption, which was then compared to the Recommended Dietary Allowance (RDA, ICMR 2020).

Junk Food Consumption Frequency (Bakery & Soft Drinks)

The frequency (daily, 2-3 times per week, once per week, rarely/never) was recorded using a standardized questionnaire. Frequency and percentage were used to summarize the data [7].

Evaluation of Knowledge (Prior to and Following Intervention)

Evaluation of Knowledge (Prior to and Following Intervention) A standardized knowledge questionnaire about junk food's negative health effects was created and approved. Both a pre-test and a post-test were administered prior to and following the PIM intervention. To ascertain the efficacy of the intervention, scores were statistically examined using the paired t-test.

Analyzing of data using statistical method

The purpose of data analysis is to transform data into a comprehensible and interpretable form, enabling the study and testing of its relationship with various problems.

With the rapid increase in internet usage during the late 1990s, new and complex challenges emerged for law enforcement and legal systems, necessitating the use of statistical methods to determine percentages, means, standard deviations, and conduct t-tests [8].

Results

The table lists the anthropometric measurements of a group of people along with descriptive statistics about them. For the four variations—height, weight, body mass index (BMI), and waist-hip ratio—the data contains the frequency, percentage, and mean ± standard deviation.

• **Height:** 162.4±6.5162.4 cm is the average height. The largest group, which makes up 35% of the sample, is composed of people who are 150-160 cm tall.

• **Weight:** 57.6±8.457.6 kg is the average weight. 40% of people fall into the most frequent weight range, which is 50–60 kg.

• **Body Mass Index (BMI):** 22.4±3.122.4 is the mean BMI. 57.5 percent of the group is classified as having a "Normal" BMI (18.5±24.9).The average waist-to-hip ratio is 0.84+0.06. The majority of people (65%) have a "Normal" waist-to-hip ratio (Table.1).

Table 2 shows a set of people's nutritional and biochemical parameters are summarized in the table. The table displays the frequency and proportion of people who fall into various clinical categories in relation to hemoglobin, fasting blood glucose, serum cholesterol, and triglycerides (e.g., normal, anemic, diabetic, high). The frequency and proportion of people who consume less, more, or the recommended dietary allowance (RDA) for protein and dietary energy intake are displayed (Table.2). The mean and standard deviation for each parameter for the full group are also shown in the table.

Table 3 Shows a nutritional analysis is presented in the table, which contrasts the average daily intake of different nutrients with their Recommended Dietary Allowance (RDA) values.

Table-1: Anthropometric measures of particular pupils

Variation	Category	Frequency (n)	Percentage (%)	Mean ± SD
Height (cm)	<150	30	15.0	162.4 ± 6.5
	150-160	70	35.0	
	161-170	65	32.5	
	>170	35	17.5	
Weight (kg)	<50	45	22.5	57.6 ± 8.4
	50-60	80	40.0	
	61-70	55	27.5	
	>70	20	10.0	
Body Mass Index (BMI)	Underweight (<1805)	25	12.5	22.4 ± 3.1
	Normal (18.5-24.9)	115	57.5	
	Overweight (25-29.9)	40	20.0	
	Obese (≥ 30)	20	10.0	
Waist-Hip Ratio	Normal (<0.85 Female / <0.90 Male)	130	65.0	0.84 ± 0.06
	At Risk (≥ 0.85 / ≥ 0.90)	70	35.0	

Table-2: Biochemical parameter analysis and nutritional evaluation

Parameter	Category / Range	Frequency (n)	Percentage (%)	Mean ± Sd
Hemoglobin (g/d)	< 12 (Anemia)	55	27.5	12.8 ± 1.5
	< 12 (Normal)	145	72.5	
Fasting Blood Glucose (mg/dl)	< 100 (Normal)	150	75.0	96. ± 12.3
	100-125 (Prediabetes)	35	17.5	
	≥ 126 (Diabetes)	15	7.5	
Serum Cholesterol (mg/dl)	< 200 (Desirable)	120	60.0	188.6 ± 32.4
	200-239 (Borderline High)	55	27.5	
	≥ 240 (High)	25	12.5	
Triglycerides (mg/dl)	< 150 (Normal)	140	70.0	142.5 ± 28.7
	≥ 150 (High)	60	30.0	
Dietary Energy Intake (kcal)	Below RDA (< 2000 kcal)	80	40.0	198.5 ± 31.0
	Meets RDA (2000-2500 kcal)	90	45.0	
	Above RDA (> 2500 kcal)	30	15.0	
Protein Intake (g/day)	Below RDA (<50g)	65	32.5	52.3 ± 9.8
	Meets RDA (50-60g)	100	50.0	
	Above RDA (> 60g)	35	17.5	

Table-3: The chosen student's dietary intake

Frequency of Consumption	Number of Students (n)	Percentage (%)
Daily	45	22.5
2-3 times Per Week	80	40.0
Once a week	50	25.0
Rarely/Never	25	12.5
Total	200	100.0

Table-4: How frequently people use junk food and baked goods

Nutrient	Mean Intake (Per Day)	RDA Value	% of RDA Met	Status
Energy (kcal)	1985 ± 310	2200	90.2%	Slightly below RDA
Protein (g)	52.3 ± 9.8	60	87.2%	Below RDA
Fat (g)	68.5 ± 12.4	60	114.2%	Above RDA
Carbohydrates (g)	290.6 ± 45.2	330	88.1%	Below RDA
Calcium (mg)	780 ± 210	1000	78.0%	Below RDA
Iron (mg)	14.2 ± 3.5	17	83.5%	Below RDA
Vitamin C (mg)	65.7 ± 18.2	80	82.1%	Below RDA
Folate (µg)	240 ±65	300	80.0%	Below RDA
Dietary Fiber	21.5 ± 6.2	25	86.0%	Below RDA

According to the data, the majority of nutrients are not being consumed at the recommended levels. The consumption of energy, protein, carbs, calcium, iron, vitamin C, folate, and dietary fiber is specifically below the recommended daily allowance. At 114.2% of the RDA, fat is the only nutrient that is ingested in excess of the recommended amount. These data are summarized in the status column, which shows that calorie intake is "Slightly below RDA," fat intake is "Above RDA," and all other mentioned nutrients are "Below RDA" (Table.3).

Table 4 Shows that the frequency of consumption for 200 students is shown in the table. Two to three times a week, 80 percent of kids, or 40.0%, eat the item. With 50 pupils, or 25.0%, consuming it once a week, this group is the next largest. With 45 pupils, daily consumers account for 22.5% of the total. The smallest group consists of 25 students, or 12.5% of the total, who drink it little or never (Table.4).

Table 5 Shows that a group of 200 students' frequency of intake of an unidentified item or activity is shown in the table. The majority of the sample, which consists of 70 students (35%), eats the item two to three times a week. With 60 pupils (30%) consuming it once a week, they make up the next largest group. Thirty students (15%) report consuming it daily, while the other forty students (20%) report consuming it infrequently or never (Table.5).

Table-5: Comparison of the mean and standard deviation of knowledge levels prior to and during the intended educational module on the health risks associated with junk food

Frequency of Consumption	Number of Students (n)	Percentage (%)
Daily	30	15.0
2-3 times per week	70	35.0
Once a week	60	30.0
Rarely/Never	40	20.0
Total	200	100.0

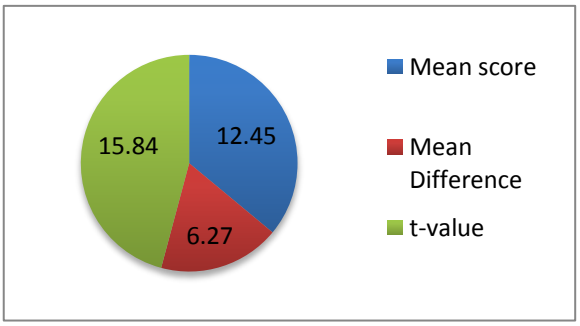
Table-6: Comparison of pre-test and post-test knowledge assessment scores

Knowledge Assessment	Mean score ± SD	Mean Difference	t-value	p-value
Pre-test (Before PIM)	12.45 ± 3.26	6.27	15.84	0.0001
Post-test (After PIM)	18.72 ± 2.95			

The Table 6 displays the findings of a knowledge evaluation that compares pre-test and post-test scores, including those associated with the "PIM" intervention. A mean score of 12.45±3.26 (mean ± standard deviation) was obtained for the pre-test, while 18.72±2.95 was obtained for the post-test.

There was an average difference of 6.27 between the pre-test and post-test scores. A t-value of 15.84 and a p-value of 0.0001 were obtained from the statistical analysis, which was most likely a paired t-test. The observed rise in the mean score following the PIM intervention is statistically significant, according to this extremely low p-value (less than 0.005) (Table.6).

Fig-1: Comparison of the mean and standard deviation of knowledge levels prior



Discussion

The majority of the individuals were within normal growth trends, as seen by their mean height (162.4 ± 6.5 cm) and weight (57.6 ± 8.4 kg). The BMI distribution revealed that 30% were overweight or obese and more than half (57.5%) had a normal BMI, suggesting an increasing risk for diseases linked to a certain lifestyle. 35% of students were found to be "at risk" by the waist-hip ratio, indicating central obesity and a propensity for metabolic diseases [9]. According to hemoglobin analysis, 27.5% of individuals had anemia, which is indicative of dietary inadequacies. Young individuals' metabolic risk is increasing, as seen by the 17.5% pre-diabetic and 7.5% diabetic fasting blood glucose readings. Poor lipid metabolism was indicated by serum cholesterol and triglyceride levels, which showed that 30% had high triglycerides and 27.5% had borderline high cholesterol [10].

The amount of energy consumed (1985 ± 310 kcal) was just 90.2% of the recommended daily allowance. Intakes of dietary fiber, protein, calcium, vitamin C, and folate were all below RDA, indicating deficiencies in micronutrient intake. Intake of fat (114.2% of RDA) was higher than what was advised, which is in line with habits of consuming junk food.

These results point to unbalanced eating habits that include more fat and fewer micronutrients [11]. Approximately 40% of students ate junk food two to three times a week, and 22.5% ate it every day, indicating a frequent reliance on foods high in energy but low in nutrients. Reduced dietary adequacy, aberrant lipid profiles, and elevated BMI are linked to this tendency. Shown a noteworthy improvement after the intervention (mean pre-test: 12.45 ± 3.26 vs. post-test: 18.72 ± 2.95). The high t-value (15.84), p-value (0.0001), and mean difference (6.27) show that the instructional module was very successful in raising awareness of the dangers of junk food [12].

Conclusion

Despite normal anthropometric norms, the study reveals that students have bad dietary habits, consume a lot of junk food, and have nutritional deficits. Early indicators of lifestyle disorders, such as anemia, pre-diabetes, obesity, and dyslipidemia, were present in a significant number of patients. There was an imbalance in the patterns of nutrient intake, with too much fat and insufficient protein, calcium, vitamins, and fiber. The effectiveness of educational interventions (PIM) in increasing knowledge highlighted the significance of awareness campaigns in reducing the dangers associated with nutrition. Improved health outcomes for young adults require long-term measures such dietary education, lifestyle changes, and a decrease in junk food intake.

Recommendations for Future Study

Based on the research findings, the following suggestions were made: A real experiment can be done to check how well people understand the health dangers of junk food. The impact of different teaching methods, such as using videos and audio lessons about the health risks of junk food, can be studied to see how well they help school children learn and form good attitudes.

Limitations

This study has some limits, but it doesn't stop it from achieving its main goal. The study only looked at students in a college, not people of other ages. Also, since this research was done in India, the results might not apply to other parts of the world.

Strengths

This study provides basic information that can help future research. It can also encourage young researchers to do similar studies with bigger groups of people.

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