ORIGINAL RESEARCH PAPER
Volume - 14 | Issue - 07 | July - 2025 | PRINT ISSN No. 2277 - 8179 | DOI : 10.36106/ijsr
INTERNATIONAL JOURNAL OF SCIENTIFIC RESEARCH

"PREVALENCE OF PACKAGED SNACKS, BEVERAGES, AND JUNK FOOD CONSUMPTION AMONG SCHOOL-GOING CHILDREN AND PARENTAL PERCEPTIONS: A CROSS-SECTIONAL STUDY"

Paediatrics

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ABSTRACT

Introduction: The present study aimed to explore the prevalence and frequency of consumption of packaged food, drinks, and junk food among school-going children, as well as parental perceptions regarding their consumption frequencies and associated gut ailments. The findings shed light on several important aspects of children's dietary habits and their potential health implications. **Methods:** A cross-sectional, questionnaire-based study was conducted involving 9557 participants recruited from 32 schools in an urban area. Parents completed structured questionnaires assessing the frequency of consumption of packaged snacks, drinks, and junk food, sources of these items, parental awareness of recommended consumption frequencies, and the presence of gut ailments in their children. Data were analyzed using chi-square test to explore associations between dietary habits and health outcomes. **Results:** The study revealed high prevalence rates of daily consumption: 30.8% for packaged snacks, 17.3% for packaged juices, 15.1% for carbonated drinks, and 13.5% for junk food. A significant portion of parents (16.7%) deemed daily consumption acceptable, highlighting a gap in awareness. The analysis indicated a strong association between frequent consumption of these items and health issues such as constipation, eating disorders, and obesity. Constipation was notably higher among children consuming these foods daily and those whose parents stored them at home. **Conclusion:** The findings underscore the detrimental impact of frequent consumption of packaged snacks, beverages, and junk food on children's health, particularly gastrointestinal issues and obesity. There is a critical need for interventions targeting parental awareness and home food environments to promote healthier dietary habits and mitigate the associated health risks.This study, with its large sample size, provides comprehensive insights into the dietary patterns of children and the urgent need for educational initiatives to address the identified health concerns.

KEYWORDS

Junk Food, School Children, Parents Perceptions, Child Health

INTRODUCTION:

Packaged snacks and beverages refer to commercially processed food items that are pre-packaged and ready for consumption. These can include items like chips, cookies, candies, packaged fruit juices, soft drinks, energy drinks, and flavored milk, among others.

The term "junk food" was coined by Michael Jacobson in 1972, encompassing a range of snacks high in salt and sugar, fried fast food items, and sweet carbonated beverages. Additionally, burgers, pizzas, and sandwiches can fall under this classification depending on their ingredients and cooking techniques (1,2). Excessive consumption of these products, particularly those high in sugar, salt, unhealthy fats, and artificial additives, can have several negative health implications for children like non-communicable diseases such as obesity, diabetes, cardiovascular issues, and hypertension (2-4).

As societal and economic dynamics shift, including longer working hours, greater female participation in the workforce, a rise in single-parent households, aggressive marketing, easy accessibility and affordability of ready-to-eat foods and fast food etc. have altered family eating habits. Amidst the expanding list of daily tasks and seemingly diminishing productive hours, coupled with the challenges of household chores, finding the time to prepare nutritious and traditional family meals becomes increasingly difficult. Consequently, individuals often turn to convenient alternatives such as packaged food and junk food.

Parents play a crucial role in establishing and modelling healthy eating habits for their children, and their perceptions of what constitutes acceptable dietary practices significantly influence children's food choices.

With a large sample size of 9557 participants, our study offers comprehensive insights into children's dietary habits, factors contributing and their potential health implications.

METHODS:

Study Design: This research employed a cross-sectional questionnaire-based study to investigate the prevalence, frequency, and patterns of consumption of packaged food, drinks, and junk food among school-going children. Additionally, the study aimed to assess parental awareness regarding recommended consumption frequencies and examine the association between dietary habits and gut ailments.

Participant Recruitment:

Parents of school-going children were recruited as participants for the study. A convenience sampling method was utilized to select participants from various schools within the target area.

Questionnaire Development: A structured questionnaire was designed to collect data on-

- demographic information,
- frequency of consumption of packaged food, drinks, and junk food,
- sources of acquisition for these foods and drinks and whether these are stored at home,
- parental awareness about recommended consumption frequencies and whether they think they are healthy or not,
- presence of gut ailments and any association with frequency of consumption

Data Collection:

The questionnaire was distributed to parents either in physical form or electronically. Informed consent was obtained from all participants. They were provided with instructions on how to complete the questionnaire accurately and were assured of the confidentiality of their responses.

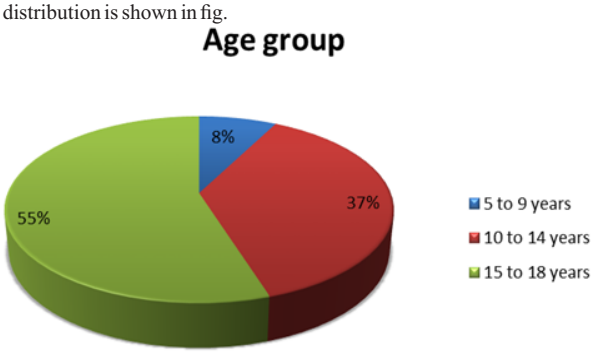
Data Analysis:

Quantitative data collected from the questionnaire were analyzed using appropriate statistical methods. Descriptive statistics, including frequencies and percentages, were calculated to summarize the prevalence and frequency of consumption of packaged food, drinks, and junk food among school-going children. Chi-square tests were employed to assess the association between dietary habits and gut ailments, as well as to explore factors influencing consumption frequencies.

RESULTS:

In this study, participants were queried about their consumption of

junk food, and their responses were gathered. The data was collected from 32 schools located in urban area. Out of 9210 participants 4240 (44.4%) were males and 5317 (55.6%) were females. The age range of them was between 5 to 18 years (14.23 ± 2.52). The respondents' age distribution is shown in fig.

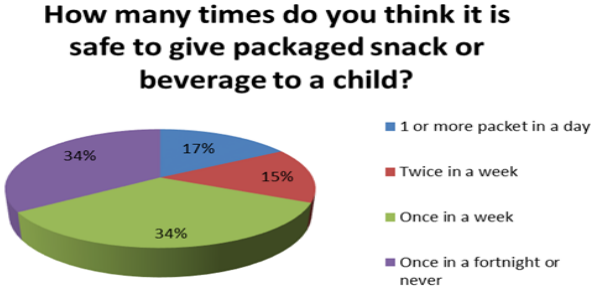


Graph 1: Age Distribution Of Children

Out of 9210 participants surveyed on how frequently their children consume packaged snacks, the findings revealed that 30.8% reported one or more packets per day, 19.5% reported twice a week, 34.1% reported once a week, and 15.6% reported once every two weeks. Similarly, for packaged juices, the responses were as follows: 17.3% reported daily consumption, 15.2% reported twice a week, 32.8% reported once a week, and 34.8% reported once every two weeks. Regarding carbonated drinks, the distribution was: 15.1% daily, 14.7% twice a week, 30.3% once a week, and 39.9% once every two weeks. For junk food consumption, the breakdown was: 13.5% daily, 15.5% twice a week, 35.3% once a week, and 35.7% once every two weeks.

Table1: Prevalence Of Consumption Of Junk Food Among Study Population

Question		1 or more packet in a day	Twice in a week	Once in a week	Once a fortnight or never	Total
How many times does your child eat packaged snacks?	N	2836	1792	3144	1438	9210
	%	30.8	19.5	34.1	15.6	100
How frequently does your child drink packaged juices?	N	1584	1390	3004	3191	9169
	%	17.3	15.2	32.8	34.8	100
How many times does your child drink carbonated drinks and store bought sweetened beverages?	N	1371	1339	2753	3625	9088
	%	15.1	14.7	30.3	39.9	100
How frequently does your child eat junk food like noodles/pasta/pizza etc.?	N	1230	1412	3219	3254	9115
	%	13.5	15.5	35.3	35.7	100
How many times do you think it is safe to give packaged snack or beverage to a child?	N	1511	1355	3087	3096	9049
	%	16.7	15.0	34.1	34.2	100

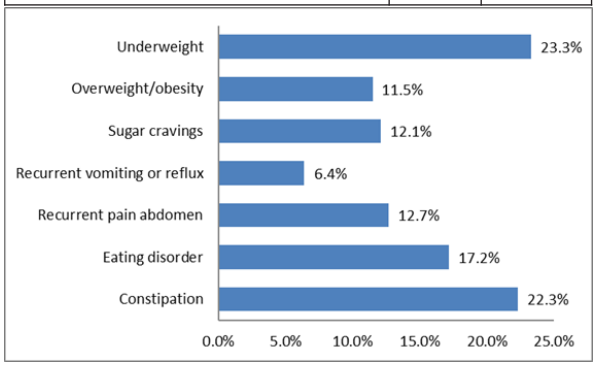


Graph 2: Parental Awareness About Safety In Reference To Frequency Of Consumption

When participants were asked about their perception of how frequently packaged snacks or beverages should be consumed safely, the majority (34.2%) indicated once every two weeks or never, followed closely by 34.1% who suggested once a week. Notably, 16.7% of respondents in the study deemed daily consumption of packaged snacks acceptable. In the present study, it was also noted that 36.9% of parents think that the packaged juices are healthy. Out of 9088 responses, 77.1% answered that healthy snacking options are available while going for family outing.

Table 2: Accessibility To Packaged Snacks, Juices, Beverages, Junk Food

From where does your child mostly get the packaged food or drinks?	Numbers	Percentage
In the vicinity of school	702	7.8
In the vicinity of residence	2541	28.2
In the vicinity of park	1384	15.4
In the school	2147	23.9
From grandparents/relatives	2222	24.7
Total	8996	100.0



Graph 3: Distribution Of Alimentary Ailments In Study Population

From the above table it is evident that the majority of the participants answered that their children getting access to packaged food in the vicinity of residence (28.2%), followed by grandparents (24.7%) and in the school (23.9%). 37% of parents responded that they store packaged snacks/ juices at their homes.

In our study we wanted to know if children were suffering from common alimentary ailments and their association with frequency of consumption of packaged snacks/ juices/ junk food. 9557 responses recorded as follows- underweight (23.3%,) Constipation (22.3%), Eating disorder (17.2%), Recurrent pain abdomen (12.7%), Sugar carvings (12.1%), Overweight (11.5%) and Recurrent vomiting (6.4%). In following table association of packaged snacks/ juices/ junk food and constipation was assessed.

It is evident that those who consume daily junk food have more constipation than those who consume in lower frequency ($p<0.001$), similarly the proportion of constipation was more in daily intake of packaged drinks ($p<0.001$), carbonated drinks ($p<0.001$) and Junk foods like pizza ($p<0.001$). Among those parents who answered that they store packaged snacks and drinks at home, constipation is more among their children. Those who said daily consumption is safe, have constipation among their children ($p<0.001$).

It was also found that those who consume packaged food or drinks or carbonated drinks or junk food like pizza daily or twice a week are prone to eating disorders.

Overweight or obesity is significantly associated ($p<0.001$) with those children who consume frequent packaged drinks, carbonated drinks, junk foods like pizza, also in those where the packaged foods are being stored at home and among those who feel packaged juices are healthy. Similar results were found with association of sugar cravings.

Recurrent pain abdomen was associated with those consuming frequent packaged food ($p<0.001$) and not significantly associated with frequency of consumption of junk food, packaged juices, carbonated drinks.

Recurrent vomiting is significantly associated with children consuming frequent packaged drinks, carbonated drinks.

Table 3: Association of alimentary ailments with frequency of consumption

Questions	Constipation				Chi-Square test	P value
	Yes		No			
	N	%	N	%		
How many times does your child eat packaged snacks?	1 or more packet in a day	880	31.0%	1956	69.0%	<0.001
	Twice in a week	409	22.8%	1383	77.2%	
	Once in a week	584	18.6%	2560	81.4%	
	Once in a fortnight or never	236	16.4%	1202	83.6%	
How frequently does your child drink packaged juices?	1 or more packet in a day	641	40.5%	943	59.5%	<0.001
	Twice in a week	382	27.5%	1008	72.5%	
	Once in a week	590	19.6%	2414	80.4%	
	Once in a fortnight or never	496	15.5%	2695	84.5%	
How many times does your child drink carbonated drinks and store bought sweetened beverages?	1 or more packet in a day	602	43.9%	769	56.1%	<0.001
	Twice in a week	371	27.7%	968	72.3%	
	Once in a week	579	21.0%	2174	79.0%	
	Once in a fortnight or never	554	15.3%	3071	84.7%	
How frequently does your child eat junk food like noodles/pasta/pizza etc.?	1 or more packet in a day	572	46.5%	658	53.5%	<0.001
	Twice in a week	358	25.4%	1054	74.6%	
	Once in a week	630	19.6%	2589	80.4%	
	Once in a fortnight or never	548	16.8%	2706	83.2%	
Do you keep packed snacks or juices stored at home?	Yes	1200	35.6%	2171	64.4%	<0.001
	No	907	15.8%	4835	84.2%	
Do you think packaged juices are healthy?	Yes	1151	34.2%	2217	65.8%	<0.001
	No	965	16.8%	4786	83.2%	
How many times do you think it is safe to give packaged snack or beverage to a child?	1 or more packet in a day	672	44.5%	839	55.5%	<0.001
	Twice in a week	359	26.5%	996	73.5%	
	Once in a week	612	19.8%	2475	80.2%	
	Once in a fortnight or never	464	15.0%	2632	85.0%	

Underweight is inversely associated with packaged snacks, packaged juices, carbonated drinks, junk food like pizza, those who stored at home and those who feel it is healthy. Underweight is more among those who consumes lesser junk food and those who do not store junk food at home.

DISCUSSION:

The present study aimed to explore the prevalence and frequency of consumption of packaged food, drinks, and junk food among school-going children, as well as parental perceptions regarding their consumption frequencies and associated gut ailments. The findings shed light on several important aspects of children's dietary habits and their potential health implications.

The results revealed a substantial prevalence of packaged food and drink consumption among the study population, with varying frequencies reported by parents. Notably, a considerable proportion of children were found to consume these items on a daily basis (30.8% for packaged snacks,17.3% packaged juices,15.1% carbonated drinks, 13.5% junk food), indicating a high level of exposure to processed and unhealthy foods from an early age. Previous studies like Poudel et al., (2018), highlighted the widespread availability and consumption of junk food (33.8% in adolescents) (5). A CSE survey done in 2017 on school going children reported much higher daily consumption of packaged food i.e. 53% (6). Easy availability, aggressive marketing, peer influence, convenience, taste preferences, family habits, cultural influences, and lack of nutritional education are some factors contributing to increased consumption of packaged snacks, beverages, and junk food in children.

We wanted to know about parental perceptions of acceptable consumption frequencies of packaged snacks or beverages. While a significant proportion of parents advocated for moderate consumption frequencies (once every week), with the majority suggesting consumption once every two weeks or never. It is alarming that a notable percentage (16.7%) deemed daily consumption acceptable. This discrepancy highlights the urgent need for education and awareness initiatives targeting parents to promote better understanding of the health risks associated with excessive consumption of packaged snacks and beverages. It was also noted that 36.9% of parents think that the packaged juices are healthy. On the contrary High sugar content, lack of fiber, nutrient dilution, high liquid calories make packaged juices unsuitable healthy option, which parents were clearly unaware of.

Previous research supports the importance of parental knowledge and attitudes in shaping children's dietary behaviors (7). Parents play a crucial role in establishing and modeling healthy eating habits for their children, and their perceptions of what constitutes acceptable dietary practices significantly influence children's food choices. Therefore, interventions aimed at improving parental awareness and understanding of the nutritional value and health implications of packaged snacks and beverages are essential for fostering healthier dietary behaviors in children.

Furthermore, studies have shown that parental perceptions of food safety and acceptability directly impact children's dietary intake patterns (8). Parents who perceive daily consumption of packaged snacks as acceptable may inadvertently contribute to the normalization of unhealthy eating habits among their children. Thus, interventions targeting parental knowledge and attitudes and need for clear guidelines on recommended consumption frequencies are crucial for addressing the pervasive issue of childhood obesity and promoting better nutritional outcomes (9).

The findings of the study highlight the significant role played by various factors, including grandparents, schools, and the home environment, in children's access to packaged and junk food. Grandparents emerged as a notable source of access to packaged food, with nearly a quarter of respondents indicating that children obtain such items from their grandparents. This underscores the influence of intergenerational dynamics on children's dietary habits and the need for interventions targeting multiple generations to promote healthier eating behaviors.

Similarly, schools were identified as a key environment where children access packaged food, emphasizing the importance of school-based initiatives to promote nutritious food choices and limit the availability of unhealthy snacks. Even when schools design a healthy lunch and breakfast menu, packaged snacks, juices and junk food is available in school canteens.

Furthermore, the home environment emerged as a major contributor to children's access to packaged snacks and beverages, with over a third of parents reporting storing such items at home. This again underscores the need for interventions targeting parental behavior and home food environments to promote healthier food choices and reduce the availability of unhealthy options. Previous research supports the notion that environmental factors, including access to food outlets and the availability of unhealthy snacks at home, significantly influence children's dietary behaviors (10).

The outcomes of our study unveil a significant correlation between the regularity of packaged snacks, juices, and junk food consumption and various alimentary ailments among children. Among respondents, a

substantial portion reported grappling with underweight, constipation, eating disorders, recurrent pain abdomen, sugar cravings, overweight, and recurrent vomiting.

Our analysis highlights that children who indulge in daily consumption of junk food, packaged drinks, carbonated beverages, and junk foods like pizza are more susceptible to constipation compared to their counterparts with lower consumption rates. Additionally, constipation appears to be more prevalent among children whose parents stock packaged snacks and drinks at home and those who perceive daily consumption as safe.

Moreover, frequent consumption of packaged food, drinks, carbonated beverages, and junk food emerges as a risk factor for eating disorders and overweight or obesity in children. These findings underscore the role of dietary factors in the development of obesity-related health conditions and the importance of promoting healthier eating habits from a young age to mitigate these risks (11).

Furthermore, recurrent pain abdomen exhibits a significant association with frequent consumption of packaged food, underscoring the potential gastrointestinal implications of unhealthy dietary practices. However, the lack of a significant association between recurrent pain abdomen and the consumption of junk food, packaged juices, and carbonated beverages warrants further investigation.

These findings highlight the detrimental effects of a diet high in processed and unhealthy foods on children's gastrointestinal health, emphasizing the need for dietary interventions and education programs targeting parents and children alike (12).

CONCLUSION:

The findings of this study provide valuable insights into the dietary habits and associated health outcomes among school-going children. Efforts to promote healthier food environments, increase parental awareness, and implement evidence-based interventions are essential for combating the growing prevalence of childhood obesity and related health issues.

Conflict Of Interest

None

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