

A Study on Soft Drink Consumption Pattern and Its Impact among School-Age Children of Bareilly

Shivangi Mishra¹ and Dr. Indra Mathur²

¹Research Scholar, Food Science & Nutrition, Bhagwant University, Ajmer, Rajasthan, India.

²Professor, Food Science & Nutrition, Bhagwant University, Ajmer, Rajasthan, India.

ABSTRACT **Background:** Soft drink use has been related to a higher risk of illness. It affects a variety of body systems. According to studies, school-aged youngsters consume more than adults. However, there has been little study done on the factors that influence frequent soft drink use among school-aged children. **Aim:** This study intends to find out if there are any variations in the factors that influence frequent soft drink intake among school-aged children. **Methodology:** The link between soft drinks and children's health is investigated in this study. For data collecting, a survey research approach employing a questionnaire is used, and the data is analysed using statistical software. Data was quantitatively examined. From Bareilly, a sample of 100 children was obtained. **Results:** After applying questionnaire approach and quantitative data analysis, students were examined or their consumption and risk Associated with soft drink. **Conclusion:** Based on the data, it can be stated that all forms of soft drinks are damaging to children health and pose a risk to future generations.

Keywords: Body weight, Child health, Heart disease, Soft drink, Teeth disorder

Address for correspondence: Shivangi Mishra, Research Scholar, Food Science & Nutrition, Bhagwant University, Ajmer, Rajasthan, India.

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INTRODUCTION

Soft drinks today come in a wide variety of flavours. They can be classed based on their sugar and fruit juice concentration, flavour, carbonation level, principal non water constituents, and functioning, among other factors¹. Functional beverages, which include drinks supplemented with juices, vitamins, and minerals, sports and energy drinks, wellness drinks, and nutraceuticals, are a fast developing segment of the industry. Many functional beverages have been created to give specific medical or health advantages, such as heart health promotion, improved immunity and digestion, and energy increase².

Fig. 1: Pesticide quantity in soft drinks

Functional drinks have a wide range of target markets, and products are frequently adapted to specific target groups, such as by age and gender, with a rising focus on children, women, and elderly.

TOXIC ADDITIVES OF SOFT DRINKS

Water, sugar, carbon dioxide, acidulants, flavourings, colourants, synthetic preservatives (lawful limitations),

antioxidants, and/or emulsifying agents are common ingredients in soft drinks.

Caffeine

Caffeine from carbonated beverages is absorbed faster than caffeine from other beverages. Caffeine stimulates the neurological system, which makes sleep difficult. It also aggravates hyperacidity by worsening premenstrual syndrome, dehydration, and inducing stomach acid production. Because coffee makes it difficult to sleep, the body is more likely to create C-reactive protein, which is linked to heart disease. Caffeine use has been associated to birth abnormalities, cancer, sleeplessness, irregular heartbeat, high blood pressure, high cholesterol, breast tumours, and nutritional depletion².

Carbon Dioxide

The toxin we expel from our bodies through our lungs is the same gas utilised to make soda fizzy. This gas is beneficial to plants but harmful to humans.

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Harmful Sweeteners

Carbonated drinks contain more calories than the average user needs, whether from artificial sweeteners or needlessly high levels of sugar. All much sugar might lead to weight gain and a rising prevalence of cavities³.

Acid

The Pediatrics Dental Health site states that most carbonated drinks include phosphoric acid, citric acid, or carbonic acid, in addition to the acids created by oral bacteria when they feed on sugar. Enamel can be eroded by any of these factors. According to Delta Dental, saliva's calcium helps to re-mineralize teeth after they've been exposed to modest quantities of eroding acid, but it's no longer adequate with the rising intake of carbonated drinks³.

Contaminated Water

The carbonated drink industry uses a lot of water and, like any other firm, uses the lowest product ingredient sources.

SOFT DRINKS IMPACT ON THE ORGAN SYSTEM

Soft drinks may pose health dangers in a variety of situations, according to researchers. The following headings go through each of these points in further depth.

Obesity and Disorders Associated with Excess Weight

The obesity issue has been linked to an increase in the intake of sugar-sweetened soft drinks. In numerous communities, increased body weights and calorie intakes have corresponded with rising sugar-containing soft drink use⁴. It raises the chances of getting type 2 diabetes and cardiovascular disease, as well as doubling the chances of dying young⁵. Sugar-free drinks and body weight in youngsters were investigated over the course of an 18-month trial. 641 mostly normal-weight children were allocated randomly to drink 250 ml of a sugar-free, artificial sweeteners drink (sugar-free group) or a sugar-containing drinks with 104 kcal per day (sugar-containing group) (sugar group). They discovered that substituting non-caloric drinks for sugar-containing drinks lowered weight growth and fat build up in youngsters of normal weight⁶.

Dental Health Consequences

Except for bottled waters, most non-diet soft drinks contain significant levels of sugar or high-fructose corn syrup, both of which are cariogenic. Drinking acidic beverages weakens, irritates, and exposes teeth to damage and erosion⁷. In adults, children, and adolescents, dental erosion can result in significant tooth surface loss, resulting in oral sensitivity, eating and drinking issues, and aesthetic dissatisfaction⁸.

Gastrointestinal System Effects

Soft drinks have a pH of 2.5-3.4, resulting in a very acidic gastrointestinal environment. Only the stomach can withstand an acidic environment up to pH 2.0 throughout the digestive tract, which starts at the mouth and finishes at the anus. However, before reaching the stomach, the acidity of soft drinks goes through all of the digestive system's other organs, resulting in an abnormally acidic environment. As a result, acid sensitivity is high in the mouth, throat, and esophagus⁹.

Effect on Kidneys

When phosphoric acid levels are high, kidneys have a harder time excreting it. As a result, the kidneys have to do more effort. Soft drinks deplete calcium in the body, causing an excess of calcium to build in the kidneys, leading to nephrolithiasis (kidney stones)⁴.

Effect on Bones

Phosphoric acid, which is found in carbonated beverages, is extremely dangerous and causes blood to de-oxidize. Phosphoric acid is used to make water softeners in detergent making companies. Ca²⁺ and Mg²⁺ ions are removed from hard water using a water softener. The function in the human body is the same: it removes Ca²⁺ from bones, producing osteoporosis⁹.

MATERIALS AND METHODS

Study Design

The purpose of this study was to look at the link between soft drinks and children's health. For this, a sample of 100 school-aged children was recruited from Bareilly. The participants ranged in age from 12 to 18 years old and were healthy. The subjects were chosen for the study on the basis of their willingness to cooperate, the investigator's ease of access, and the target group's availability. Convenience stores, restaurants, and supermarkets provided soft drink samples. The quantitative technique was applied in this study.

Statistical Analysis

The data analysis was broken down into two sections: description and research question analysis.

Research Instrument and Data Collection

As a mode of inquiry from the respondents, a self-administered and well-developed questionnaire was employed.

Question	Answer (%)	
	Yes	No
Is it probable that you will consume soft drink on a daily basis?	10	90
Is it important for you to consume soft drink every day for the next month?	5	95
For you drinking soft drink is good?	45	55
For you drinking soft drink is enjoyable?	90	10
I'm healthy because I drink soft drink.	40	60
I acquire weight by drinking soft drink.	50	50
Taste of soft drink is important to you.	95	5
The majority of your important persons consume soft drink on a daily basis.	35	65
My family believes that I should consume soft drink on a daily basis.	5	95
Every day, my family consumes soft drink.	15	85
When it comes to soft drink, I want to follow my family's lead.	10	90
I have the option of drinking soft drink every day.	30	70
It would be difficult to drink soft drink every day.	80	20
Do you get to pick what you want to drink all of the time?	50	50
Is there any soft drink in your fridge?	35	65
My parents serve soda drink to me with my meals.	5	95
Do you have a soft drink habit at school?	75	25

RESULTS

The goal of this research was to see what factors influenced soft drink consumption among school-aged children. Here we provided an overview of the sample's demographic features, soft drink consumption trends, and research findings.

Description

Demographic Characteristics

Table 2 shows the demographic characteristics of the research participants. A total of 100 school-aged children (N = 100) were included in the research. The gender breakdown was similar, with male accounting for more than half of the participants (65%). The children's ages varied from 10 to 12, with an average of 11 years (SD = 0.64).

Description of Patterns of Soft Drink Intake

In Table 1, the study participants' soft drink consumption trends are shown. Soft drink consumption pattern and attitude of school age children regarding soft drink can easily be observed by questionnaire responses.

DISCUSSION AND CONCLUSION

The purpose of this study was to look at the factors those impact school-aged children's soft drink consumption habits. The findings revealed that while the majority of youngsters do not use soft drinks on a regular basis, two-thirds did. There were no differences between males and females or between individuals in the 'healthy weight' and 'at risk of overweight' groups, when it came to the soft drink factors and both behaviors.

Soft drink and sports drink ingredients have been demonstrated to have negative consequences. Both beverages are best enjoyed during the summer, although excessive use can be harmful to one's health. In compared to sports drinks, soft drinks are more damaging. Carbonated soft drinks were discovered to have greater harmful impacts on health. In comparison to soft drinks, which are expensive and hazardous, natural local beverages are incredibly healthful, affordable, and easy to get.

Frequent use of soft drinks in everyday life not only harms overall fitness but also leads to hazardous diseases including

Table 2: Demographic Parameters of the Study Sample's Frequency	
Characteristics	N
Age (in years)	
10	35
11	50
12	15
Gender	
Male	65
Female	35
Ethnicity	
Indian	100
Who the Child Lives with	
Parents	75
Boarding school	25
BMI-for-Age Weight Status Category	
Healthy weight	60
At risk of overweight	13
Overweight	27

cancer, liver damage, renal failure, and obesity. On the other side, certain mafia-like firms who sell local soft drinks in markets are messing with people's health, and consumers have no idea how damaging these fake soft drinks are to their health. Soft drinks are used by children for a variety of reasons, including refreshment, flavour, health, and price. The majority of children buy soft drinks from supermarkets and restaurants. According to the findings, there is no link between the soft drink we choose and why we consume it.

REFERENCES

1. Canadean Beverage Categories Definitions (2008). <http://www.liquidforecasts.com/CanadeanDefinitions.pdf>
2. Tenge C. and Geiger E. (2001). "Alternative functional beverages," *MBAA Technical Quarterly*, vol. 38, pp. 33-35.
3. Sara C. (2013). Sports medicine training center; Are electrolyte drinks more beneficial than water.
4. Tahmassebi J. F. and Bani Hani A. (2020). Impact of soft drinks to health and economy: a critical review. *European Archives of Paediatric Dentistry*, 21: pp. 109-117.
5. Pischon T., Boeing H., Hofmann K. M. *et al.* (2008). General and abdominal adiposity and risk of death in Europe. *N Engl J Med*, 359: pp. 2105-20.
6. Seidell J., Katan M. B., Ruyter J. C. D. and Olthof M. (2012). A Trial of Sugar-free or Sugar-Sweetened Beverages and Body Weight in Children. *New England Journal of Medicine*, 367(15): pp. 1397-406.
7. <http://www.softdrinks/wikipedia> (accessed on 10.11.2020).
8. Milosevic A. (2017). Acid erosion: an increasingly relevant dental problem. Risk factors, management and restoration. *Prim Dent J*, 6(1): pp. 37-45.
9. Miner J. B. (2003). Soft drinks related to bone density and bone loss. 18(9): pp. 1563-9.