# Survelince of junk food as a factor causing Dental Caries

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### **ABSTRACT:**

**Aim** To find the prevalence of dental caries due to junk food intake in younger individuals. **Introduction** The frequent consumption of simple carbohydrates, especially in the form of dietary sugars is associated with increased risk of dental caries. Due to lack of availability of quality food stores in rural and poor neighbourhoods, food insecurity and changing dietary beliefs resulting from acculturation including changes in traditional ethnic eating behaviours, can further deter helpful eating and increase risk for early childhood caries and obesity. Unfortunately today's world has been adapted to a system of consumption of junk food which has several adverse effects on health. Thus the study was conducted to find the prevalence and awareness of dental caries due to consumption of junk food intake in younger individuals between 18-35 years of age group, in Chennai district.

**Materials and methods** A questionnaire was created and circulated as google forms. 100 responses were collected and results were analysed using Spss software.

**Results** The study concluded that though people are aware about ill effects of junk food, they still opt for it. The reasons include changing lifestyle and working habits. Junk food affects people's physical development in detrimental ways, including unhealthy weight gain, which

can result in self-esteem problems in future. It is a cross sectional study future analytical study required for more accurate results.

**Conclusion** The study concluded that people are more attracted to words like junk food. It is due to the time effective and cost effective nature of junk food. Junk food can affect a child's physical development in detrimental ways, including unhealthy weight gain.

Keywords Adverse effects, dental caries, empty calories, junk food, unhealthy diet.

#### Prevalence of dental caries due to junk food intake among younger individuals

#### INTRODUCTION

Junk food is an empty calorie food. Empty calorie food may be high calorie or calorie rich food which lacks micronutrients such as vitamins, minerals or amino acids and fibre but has high energy. It does not contain nutrients needed to keep our body healthy. Poor nutritional value hence it is unhealthy. Junk food' is an informal term applied to some foods which are perceived to have little or no nutritional value, but which also have ingredients considered unhealthy to consume at all (1–5). Junk food' is that it contains high levels of refined sugar, white flour, trans fat and polyunsaturated fat, salt, and numerous food additives such as monosodium glutamate and tartrazine; at the same time, it is lacking in proteins, vitamins, essential minerals, fiber, among other healthy attributes. These foods have little enzyme producing vitamins and minerals and contain high levels of calories in their place. A food that is high in fat, sodium, and /or sugar and provides high calories yet useless in value is generally known as junk food. It is cost effective and time effective.

Ingredients of junk foods give great taste and make them addictive (6–10). Fat and sugar in combination are capable of producing a dopamine- driven surge of intense pleasure in people with a propensity for addictive behavior. It is hazardous to health. High fat content, particularly cholesterol, sugar and salts have their adverse effects on health. Soaring calorie content with sugar can lead to obesity. High cholesterol from junk food affects liver on the long run where it is metabolized as it strains liver, damaging it eventually (11–13).Dense sugar content can cause dental cavities and type 2 diabetes mellitus (14–18).Cholesterol and salt are known to set off blood pressure, stroke and heart disease. Excessive salts affect the functioning of kidneys. These junk foods contain colors, which are often inedible, carcinogenic and harmful to the body. Flavorings and colorings can be allergic causing asthma, rashes and hyperactivity (19–21).Increased consumption of sugar sweetened beverages, candy, chips, and cookies provides excessive calories to child, increase the risk of caries, and when combined with inadequate intake of fruits and vegetables, deprives the child of nutrients essential to growth and development (19,22,23).

Consumption of whole grains and dairy products has been shown to decrease an individual's appetite, while diets high in sugar cause people to feel hungry and seek more calories (24–26). Routine snacking on refined carbohydrates such as candies, cookies, cakes, fruit drinks, soda, processed foods such as potato chips, pasta, sweetened cereals; French fries, etc are a

high risk factor for caries to develop(27). Snacking several times throughout the day and allowing the snacks to stay on teeth cannot be neglected as an important cause of dental caries(28)(29)(30). Improvised brushing habits can prevent caries up to a certain extent.Our team has extensive knowledge and research experience that has translate into high quality publications(31–45) Thus, the aim of the study is to analyse the prevalence and awareness of dental caries due to junk food intake in younger individuals.

## **MATERIALS AND METHODS:**

A self prepared questionnaire with 10 questions was created and it was circulated as google forms to younger individuals. 113 responses were collected. Responses were converted to excel and analysed using Spss software version 23.0 and the statistical test used was chi-square test.

The following questions were added in the google form:

- 1. What is your age? a) 18-25 b)26-30 c)31-35
- 2. What is your gender? a)male b) female c)other
- 3. Is dental caries a disease? a)yes b)no
- 4. Do you think that prolonged dental caries cause any other complications in oral cavity? a)yes b)no
- 5. How many packets of chips do you take per day? a)1-2 b)3-5 c)above 5 d)sometimes e)never
- 6. How many chocolates do you have per day? a)1-2 b)3-5 c)above 5 d)sometimes e)never
- 7. Do you think that dental caries cause sensitivity? a)yes b)no
- 8. How often you go for dental check up? a)weekly b)monthly c)6 months d)yearly e)never
- 9. How often do you brush your teeth? a)after every meal b)twice a day c)only once d)never
- 10. How many carbonated drinks you consume per day?a)1-2 b)3-5 c)above 5 d)sometimes e)never
- 11. Do you think that junk food causes dental caries? a) yes b) no
- 12. Was this survey useful? a)yes b)no



Figure 1: Bar graph depicts the association between the age of the individual and count for the question. X axis represents the different age group and Yaxis represents the question"is dental caries a disease". Blue represents yes' and green represents no. The present observation shows statistically non-significant 0.970 value by using Pearson chi square test with confidence level of 95%. In the age group 18-25, 37% of the people responded that dental caries is a disease and 32% of the people responded that dental caries is not a disease.



Figure 2 represents the different age group and their responses for the question prolonged dental caries cause other complications in oral cavity" the present observation shows statistically non-significant 0.912 value by using pearson chi square test with confidence level of 95%. In the age group 26-30, 12% of the individuals responded that prolonged dental caries cause other complications in oral cavities and 5% of the individuals responded that prolonged that prolonged dental caries does not cause other complications in oral cavities.

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Figure 3 represents the different age groups and their responses for the question "junk food causes dental caries" the present observation shows statistically non-significant value 0.994 by using Pearson chi square test with confidence level of 95%. In the 18-25 age group, 60% of individuals responded that intake of junk food causes dental caries and 10.5% of individuals responded that intake of junk food does not cause dental caries.



FIGURE -4

Figure 4 represents the different age groups and their responses for the question "how often they go for dental check up" The present observation shows statistically non-significant value by using Pearson chi square test with confidence level of 95%. In 18- 25 age group, 47% of the individuals responded that they never go for a dental check up, 27% of the individuals responded that they go for dental check up yearly, 9% of the individuals responded that they go for dental check up for every 6 months, 5% of the individuals responded that they go for dental check up monthly and 3% of the individuals responded that they go for dental check up weekly.

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Figure 5 represents the different age groups and their responses for the question "how often you brush your teeth" The present observation shows statistically non-significant value by using Pearson chi square test with confidence level of 95%. In the 18-25 age group, 41% individuals responded that they brush their teeth only once a day, 25% of the individuals responded that they brush twice a day and 5% individuals responded that they brush after every meal.

#### DISCUSSION

In comparison to other Indian states, Tamil Nadu has a higher prevalence of dental caries. The current research sample has the lowest recorded prevalence rate among those for the Tamil Nadu area reported by other scientists, but the participants in those studies were younger. The current research included only participants with adult dentition, as well as newly erupted permanent teeth. Caries prevalence has increased globally, especially in emerging economies. In developing countries, however, prevalence is declining due to improved oral hygiene standards and the introduction of community-level preventive initiatives (46).

However, the rise in caries prevalence is mostly due to a lack of an oral health care system, which focuses primarily on curative treatment. In India, there is no national oral health care service as in other developed countries, although the government provides formal medical care in the form of primary health centres and community health centres. There is no provision for dental care; thus the study population has poor access to oral health care services. Dental caries is a chronic dental disease that affects children and is still a major public health issue (47). It is ranked third among all chronic non-communicable diseases that need global intervention for prevention and care by the World Health Organization (WHO) (48).

ICDAS (International Caries Detection and Assessment System) is a widely recognised system for determining the incidence of dental caries, in which the prediction of early enamel

lesions aids in early care preparation and population-level tracking of caries patterns(49). In terms of dental appointments, recent research on the visually disabled population indicated that the majority of the population had never been to the dentist. For example, Ahmad et al. found that 92 percent of people have never visited a dentist, while another study (50) found that 72 percent of people have never visited a dentist. Similarly in the present finding 49.5% of the people never go for a dental check up. Improper brushing means and technique are a significant contributor to periodontal problems and other oral diseases.in the present finding 53.2% of the people brush only once a day. Usage of fluoride toothpaste prevents dental caries up to certain extent (Figure 1-5).

### LIMITATIONS

The present study is a cross sectional study, future analytical study is required for more significant values. More awareness should be created against junk food intake to create a healthy dental population.

## **FUTURE SCOPE**

This study creates awareness about the harmful effects of junk food on tooth morphology. The study also focuses on how the improvised brushing habits prevent dental caries.

## CONCLUSION

The study concluded that people are more attracted to words like junk food. It is due to the time effective and cost effective nature of junk food. Taste factor is another important reason to an extent that influences people to opt for junk/fast food. Changing lifestyle and work habits are the main two major factors deciding consumer preference for junk food that is driving them towards junk health. Junk food can affect a child's physical development in detrimental ways, including unhealthy weight gain. It is a cross sectional study, future analytical study is required. More awareness should be created against junk food intake to create a healthy dental population.

### Author contribution:

A questionnaire was prepared by the author to analyse the problems faced by the younger individuals due to junk food intake. The data of the questionnaire and the result of the same was analysed in detail.

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### **Conflicts of interest:**

There is no conflict of interest.

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