A QUESTIONNAIRE-BASED STUDY TO ASSESS THE AWARENESS OF HARMFUL EFFECTS ASSOCIATED WITH JUNK FOODS CONSUMPTION AMONG ADOLESCENT

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ABSTRACT

Objectives: The present study aimed to assess the awareness of the harmful effects associated with junk food consumption. The frequent consumption of Junk food causes our bodies to store more fat and sugar, which has detrimental impacts on our health. Assessing the awareness of side effects associated with junk food can help to improve the health status and alert people about the harmful effects of junk food.

Methods: A questionnaire-based study was conducted among adolescents and the questionnaire was administered to 100 people to assess their knowledge about awareness of harmful effects associated with junk foods. The completed questionnaire was collected and statistically analyzed.

Results: The result of the present study showed that among 100 people, 54% opted for junk food twice a day because of taste as the predominant factor which was responded to by 70%, the awareness of nutritional labels and chemicals present in the junk food was responded to by 53%, and 43%, respectively. The awareness of illness due to junk food consumption was responded to by 81%.

Conclusion: The present study showed that most people were aware of the negative effects of junk food, but half refused to change their eating habits. Frequent consumption of junk foods causes many health problems. Further educational programs are required to provide information on nutrition education and junk food. This will help people to reduce their junk food intake.

Keywords: Junk food, Side effects, Questionnaire, Awareness, Adolescent.

INTRODUCTION

Lifestyle changes in modern society have resulted in a shift in eating habits from healthy to tasty foods. Healthy food has been substituted by the modern tasty food mantra – junk food. Junk food was coined in 1972 by Michael Jacobson, Director of the unit of science, Washington [1]. Junk food means empty nutrients food, which has high calorie and lack nutrients such as vitamins and minerals. The healthy nutritional food accepted by the World Health Organization includes fruits, vegetables, nuts, beans, and seeds. People have preferred junk foods because of the simple procedure to make, taste, and long shelf life [2]. Junk food items come under two categories: Fast food and snack food. The contents of junk foods include refined sugar, white flour, trans fat, polyunsaturated fatty acid, salt, additives like monosodium glutamate and tartrazine, and so on [3]. Junk food has a low nutritional value and eating animal products may lead to chronic diseases and premature aging [4-6]. Poor nutrition can harm physical and mental development, weaken the immune system, and make people more vulnerable to a variety of specific and general diseases [7].

The prevalence of fast-food consumption has been raised drastically and is positively correlated with metabolic abnormalities [8]. The availability of junk foods in schools and colleges has contributed to obesity [9]. According to the World Health Organization, 300 million children aged between 5 and 19 years were reported to be overweight or obese in 2016. In the same report, more than 1.9 billion adults aged 18 and older have been reported as overweight of these 650 million adults were obese [10]. Obesity is on the rise in developing countries as a result of high-calorie diets. Obesity is prevalent throughout India, affecting all regions. The maximum is 46.51% in the south, while the lowest is 32.96% in the east. Obesity was found to be higher in women than men [11]. The risk factors associated with obesity were unhealthy food habits, a sedentary lifestyle, lack of physical exercise, etc. Nutrients deficient diet which raises the risk of developing Type 2 diabetes, high cholesterol, and high blood pressure, all of which increase the risk of stroke and heart disease [12].

Processed food is highly harmful, especially ultra-processed food with high sodium content, unhealthy fat, and added sugar. The trans-fat and sugar in processed food hurt the digestive and cardiovascular systems [13]. The sugar content can cause dental caries and Type 2 diabetes mellitus. The incorporation of coloring agents and chemicals in junk food has a deleterious effect on human health [14]. Monosodium glutamate is one of the commonly used food additives which increase the taste of the food. Commercially available products such as natural flavor, maltodextrin, and barley malt contain monosodium glutamate. Some of the ingredients such as corn syrup, corn starch, rice syrup, brown rice syrup, and milk powder have been reported to cause MSG toxicity in sensitive individuals [15].

An earlier study reported that the administration of MSG at a dose of 0.6 (mg/g of body wt) induced oxidative stress and hepatotoxicity in experimental rats [16]. Because of MSG, regular fast-food consumption has been linked to Chinese restaurant syndrome (CRS), which can lead to conditions such as obesity, hepatotoxicity, and nephrotoxicity [17]. CRS was first reported in 1968. Chinese food and soups are very popular in India. MSG is the main addictive ingredient present in Chinese food. The syndrome seems to occur in some people and may include nausea, tremor, numbness, or burning in and around the mouth, sweating, tightness in the chest, facial pain or swelling, and headache and muscle pain [18]. Therefore, due to the harmful effects of junk food, special attention should be paid to controlling fast food intake. As far as we know, there is limited data on adolescents' views on factors that promote or prevent fast food intake. This study was carried out to assess the awareness of harmful effects associated with junk food consumption among adolescents.

METHODS

Study design

It is a cross-sectional, observational, and questionnaire-based study. The structural questionnaire consists of 10 questions. The questions were structured about the frequency of taking junk food, preference and awareness about chemicals present in junk food, nutritional labels, illness caused by junk food, factors influencing taking of junk food, side effects, and outcome of junk food.

Study population

The survey was conducted based on a questionnaire after obtaining permission from the ethical committee. The questionnaire was administered to 100 people of different age groups at Kundrathur, Chennai, Tamil Nādu. Among the 100 respondents, 37% were male and 63% female. The participants of the present study were entirely voluntary and neither were forced nor coerced at any level. The questionnaire was distributed and the objective of the study was explained to them, then they were provided 15 min to fill out the questionnaire. They were assured that the confidentiality of their information would be strictly protected. The completed questionnaire was analyzed and interpreted based on pie chart graphs.

RESULTS

1. Gender-wise distribution of participants
    In our study, 100 people participated and completed the questionnaire, so the study's response rate was 100%. Fig. 1 shows the gender-wise distribution of participants. Female 63% and males 37% responded to the study.
2. The frequency of eating junk food is represented in the following figure. The frequency of taking junk food is responded to by people, 54% of people respond twice, 24% once a day.18% of people said that they eat junk food whenever they get the chance.
3. The reason behind that the preference for junk food as an alternative food is depicted in Fig. 3. 52% of respondents said that the taste is the reason why people prefer junk food as an alternative food. About 28% of the individuals indicated hunger relief, 15% indicated easily available, and 5% responded due to time-saving they could prefer junk food.
4. The respondent's favorite junk food was mentioned in the following figure. About 65% of respondents preferred noodles and fried rice, followed by 18% opting for pizza and burgers, 11% opting for deep-fried meat and soft drinks, and the remaining 6% opting for chips and biscuits.
5. Factors associated with junk food consumption were represented in Fig. 5. The main factor influencing the consumption of junk food is taste. About 70% chose taste, followed by 24% due to hunger and 6% of respondents chose junk food flavor.
6. Awareness of nutritional labels was depicted in Fig. 6. About 53% of people are fully aware of junk food's nutritional label, and the remaining 47% are not aware of the nutritional label.

7. Awareness of chemicals present in junk food was depicted in Fig. 7. When people were asked about their awareness of chemicals present in junk food, 51% said that they were aware of the chemicals present in junk food but were not concerned. About 43% said that they were aware of the chemicals in junk food, while 6 % said that they were not aware.
8. Fig. 8 represents the awareness about the harmful effects of junk food. About 81% of people are aware of the diseases caused by junk food and the remaining 19% are not aware of the harm caused by junk food.
9. People were asked about junk food being unhealthy and whether they could avoid it completely Fig. 9 depicted the percentage of responses. About 51% of people refuse to avoid junk food and 49% are willing to avoid junk food altogether.
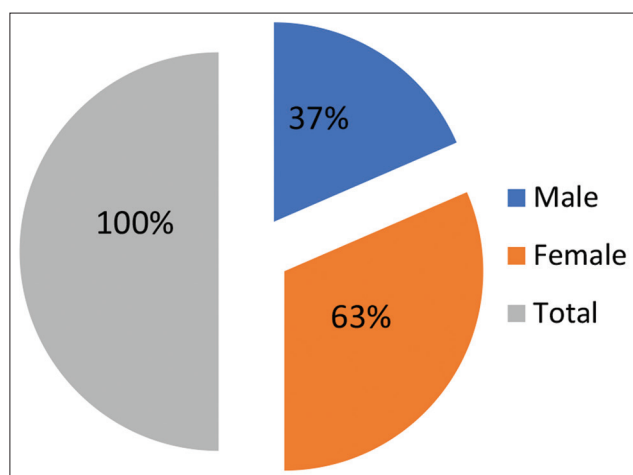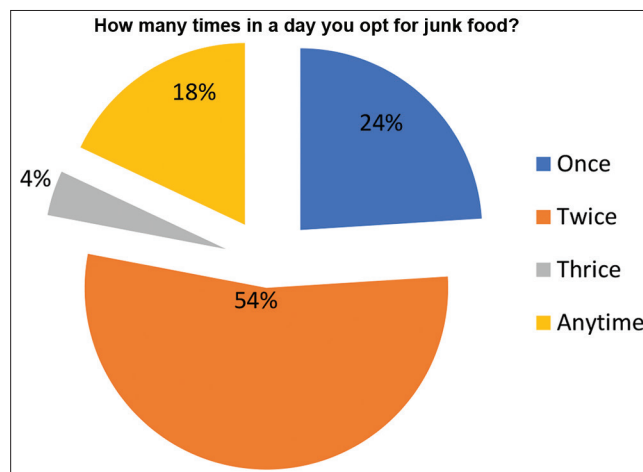

Fig. 2: Frequency of junk food per day

Fig. 3: The preference for junk food

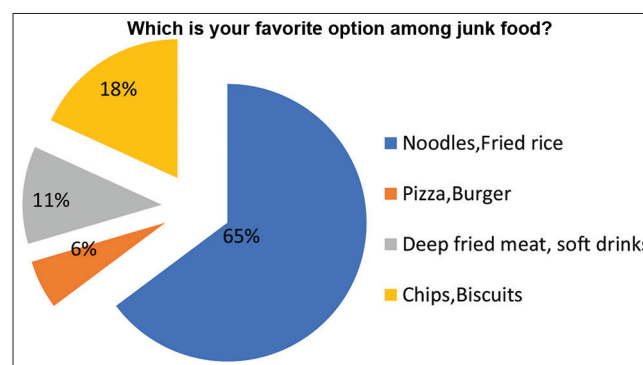**Fig. 4: The favorite junk food**

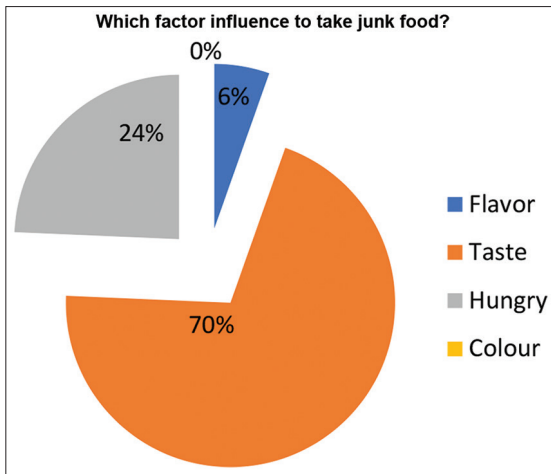**Fig. 1: Gender-wise distribution of participants**

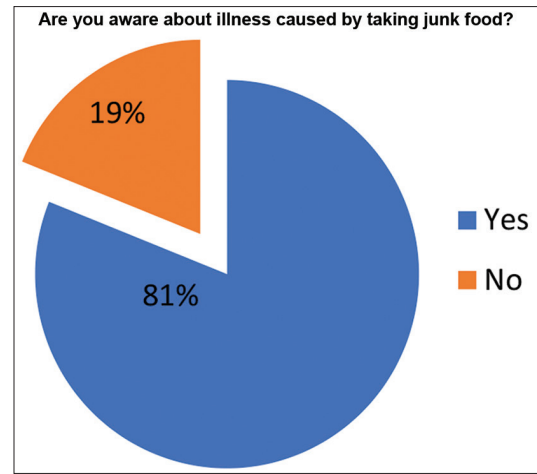**Fig. 5: Factors associated with junk food consumption**

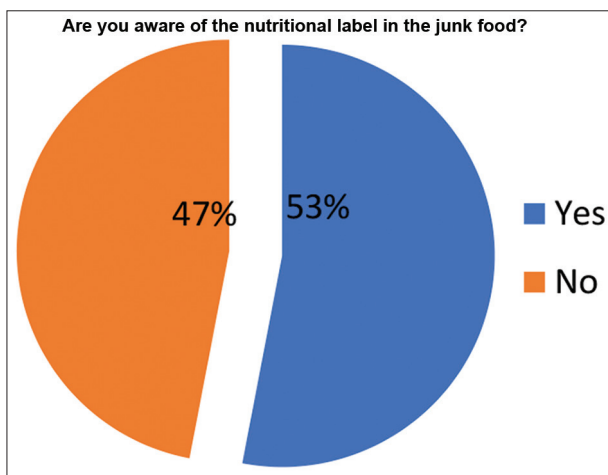**Fig. 8: Awareness of harmful effects of junk food**
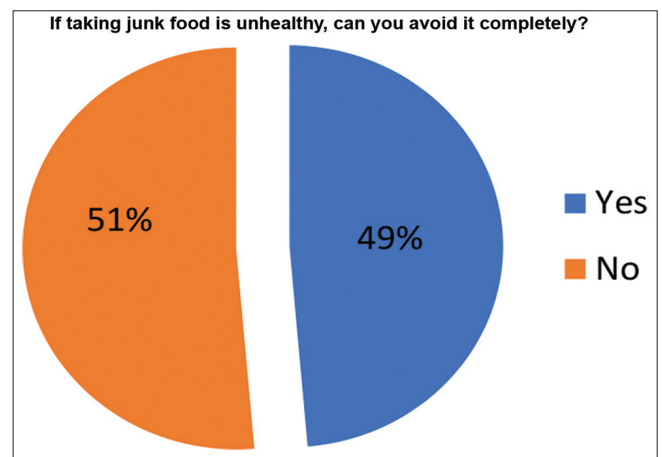

Fig. 6: Awareness of nutritional labels on junk foods

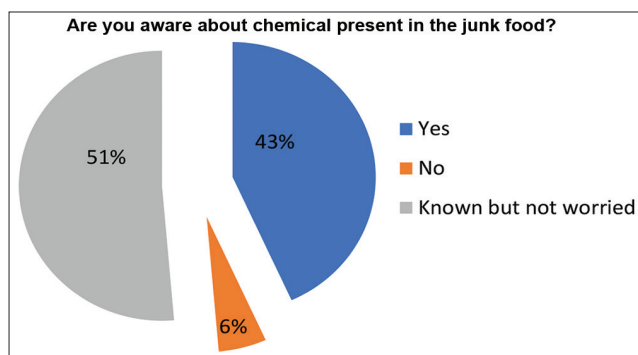**Fig. 9: Percentage of responses to avoid junk food**

Fig. 7: Chemicals present in the junk foods
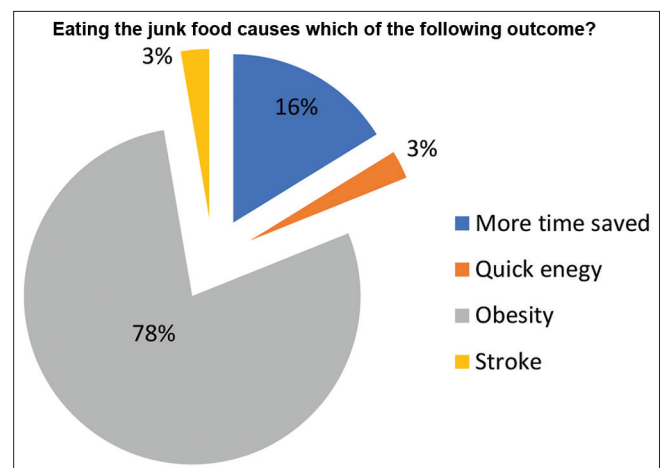

Fig. 10: The outcome of junk food consumption

10. The data represents the outcome of junk food consumption in Fig. 10. The outcome of junk food consumption was asked, 78% opted for obesity, followed by 16% who said that they had more time saved. Of the 6%, 3% opted for stroke with the remaining 3% saying quick energy.

DISCUSSION

This survey helps us in analyze the awareness and harmful effects of junk food among people. Based on our survey study, people favored junk food as an alternative because of the taste of the junk food and they preferred noodles and fried rice as their favorite optional junk food.

The study done by Antony and Bhatti reported that 50% of teenagers consumed junk food 3–4 times per week [19]. In another study, about 65.1% of people were junk food users, consuming fast food more than 4 days a week [20]. In addition, deliciousness, advertising, availability of fast food, and marketing are also associated with frequent consumption of fast-food items [21].

The people who responded to the awareness of nutritional labels and a chemical present in junk food were 53% and 43%, respectively. Among

100 people, 51% of people responded that they had the awareness of chemicals but were not worried. According to Tamanekar *et al.* [22], 66.2% of people were aware of the chemicals present in junk food, and among the chemicals, they were aware monosodium glutamate. The awareness about the illness due to consumption of junk food was responded to by 81%, even if they had been aware of the harmful effects of junk food but they are not accepted to avoid it completely. This was in concordance with the study conducted by Gopal *et al.*, [23] which reported that 85% of people considered junk food unhealthy, and the remaining 15% responded as healthy. About 78% of people answered about the consumption of junk food causes obesity. Excessive consumption of fast food contributes to 9.7–13.9% overweight of school-age children in India in a decade. India's fast-food sector and fast-food consumption have risen quickly [24]. Multiple studies have also linked high junk food consumption to obesity [25,26].

Obesity is one of the most well-known negative consequences of junk food consumption and in the early years of life which alters the immune system by triggering changes in the concentration and activity of cytokines and the number of immune cells, eventually leading to the onset or exacerbation of many diseases such as cardiovascular diseases, Type 2 diabetes, hypertension, asthma, sleep apnea, and allergy. [27]. Therefore, it is essential to educate adolescents on the importance of a healthy diet and the necessary measures to be taken to avoid consuming junk food. It can be helpful for long-term health.

CONCLUSION

Junk food consumption is increasing day by day due to its taste, availability, ready-to-eat package, and less time-consuming preparation. People prefer junk food despite having enough knowledge about the harmful effects of junk food. Furthermore, more research studies are needed to raise awareness among people about unhealthy eating habits and the diseases they can cause. National and regional programs on nutrition education are needed to reduce the consumption of junk food. This could be very beneficial in avoiding junk food in the future.

AUTHOR CONTRIBUTION

All authors contributed equally to this work.

CONFLICTS OF INTEREST

No conflicts of interest.

AUTHORS FUNDING

None.

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