Original Research Article

Consumption Pattern and Knowledge about Ill Effects of Junk Food amongst School Children in Urban Area of Jorhat

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ABSTRACT

Introduction: Increased inclination to replace traditional meals with energy-dense imbalanced junk foods is responsible for the inception of many diseases especially Non Communicable Diseases among school going adolescents.
Objective: To study the consumption pattern and knowledge about ill effects of junk food in school children of Jorhat urban.
Materials and methods: A cross-sectional descriptive study was undertaken in schools of urban area of Jorhat district of Assam over a period of one year from June 2016 to May 2017.
Results: Among the study participants who consumed junk food frequently (≥5 days), consumption ranges between 5.6% to 24.1% while those who had the practice of taking junk food infrequently (1-4 days), we found that their habit ranges from 49.4% to 70.8% in different junk food products. Expenditure pattern of pocket money revealed that 33.3% (majority) of the adolescents spend their pocket money to pay vehicle rent, 16% use it to buy chips, 13.5% spend their pocket money to buy ice cream while 6.9% of the adolescents spend it on chocolate. Knowledge on ill effects of junk food revealed that 51.5% (majority) pointed out stomach problem and 16.8 % mentioned obesity as ill effect of junk food consumption while 22.4% of the participants do not know the ill effect of junk food consumption.
Conclusion: Consumption of junk food amongst urban school going adolescents in Jorhat district of Assam is highly prevalent. General awareness about the ill effects of junk food amongst the adolescents was average which warrant appropriate public health interventions.

Keywords: Junk food, adolescent, Jorhat district, ill effects

INTRODUCTION

Adolescence is a grey area in the spectrum of life due to the results of many transitions, *viz.* physical and psychological and changes from being a child to adult. [1] The age between 10-16 years is one of the vulnerable periods in adolescent. India, as we know is undergoing rapid nutritional transition. [2] There is an increased inclination to replace traditional meals with energy-dense imbalanced foods that may lead to the inception of many diseases especially Non Communicable Diseases (NCDs). [3] The term junk food was first coined as slang in public interest in 1972 by Michael Jacobson, Director of the Center for Science, Washington D.C. [2] As per National Institute of Nutrition (NIN), Hyderabad 'Junk food are foods containing little or no proteins, vitamins or minerals but

are rich in salt, sugar, fats and are high in energy (calories)'. [4]

When junk foods are consumed very often, the excess fat, carbohydrates, and processed sugar found in them contributes to increased risk of obesity, [5] cardiovascular disease, diabetes [6,7] weight gain, and many other chronic health conditions. Now, as a matter of fact few psychosocial changes in children such as the search for identity, concern for appearance and active lifestyle can have a strong impact on nutrients intake and food choices. As a result some dietary patterns are quite common among adolescents; to mention a few: snacking, usually on energy-dense foods; meal skipping, particularly breakfast, or irregular meals; wide use of fast food; and low consumption of fruits and vegetables. [8,9] Globally it has been seen that there is a rise in consumption of these energy-dense nutrition poor foods. [10-14] India like many other countries of south-east Asia is also facing this nutritional transition. Study carried out in schools of Pune, Maharashtra found 66.8% adolescents consuming junk food. [15] Similar studies have been done all across India. [16-26]

However Assam in the north east of India has scarce data relating to dietary pattern and junk food consumption of adolescents. Hence, there is a need to conduct a study regarding the same. The present study was thus conducted to assess the pattern of junk food consumption and knowledge about its ill effects among adolescent school going children of Jorhat district of Assam.

Objective
To study the pattern of junk food consumption and knowledge about its ill effects in school children of urban area of Jorhat.

MATERIALS AND METHODS
The study was a Cross sectional descriptive study. The study was undertaken in schools of urban area of Jorhat district of Assam over a period of one year from June

2016 to May 2017. Study universe consisted of all the students of 10-16 years studying in schools of Jorhat urban.

Inclusion criteria
- School Children of 10-16 years studying in class VI to X of selected schools in Jorhat urban.
- Student willing to participate in the study after taking permission from the Principal of the school
- Schools with more than 16 students in each class
- Students available on the day of interview

Exclusion criteria
- Absentees on the day of visit
- Schools with less than 16 students in each class
- Schools with only Classes IX & X.

Sample size:
Sample size was calculated using the formula

$$n = \frac{z^2 pq}{d^2}$$

where,
n= minimum sample size
z=1.96 for 95% confidence interval
p(prevalence)=66.8% [15]
q(100-p)= 100-66.4=33.2%
d(maximal allowable error)=5% of 66.8%
Minimum sample size (n) comes out to be= 764
Total sample size= 800

Taking the prevalence of consumption of junk food to be 66.8% [26] with relative precision of 5% and 95% confidence interval, the minimum sample size was calculated as 764. For convenience of selection of the study participants, the final sample size was rounded off to 800.

Sampling design:
A Multistage sampling design was undertaken in the study to select the required number of participants from the

study universe to make the sample representative of the population.

Out of the total thirty five middle and high schools in the Jorhat town, initially 25 schools got selected by applying the inclusion and exclusion criteria. Then, out of those 25 schools, 10 schools were selected by Simple Random Sampling (SRS). From each school, 80 students were randomly selected as study participants. These students were picked up equally each from VI, VII, VIII, VIII, IX and X, i.e., from each class 16 students were selected randomly. As each class have multiple sections, all sections of a class were combined to form a student pool from where these 16 students were randomly picked up. A total of 800 students were thus selected during the study period.

Data collection technique:

During the study, school Headmaster/Headmistress/Principal of the randomly selected schools were given prior information one week before data collection.

On the day of the visit, students were randomly selected each from class VI to X. They were then assembled in one room (auditorium) and questionnaire was distributed to them. After that, they were briefed about the questionnaire and were asked to fill the same.

Data entry was done in MS Excel software 2010 and analysis was done using the SPSS software version 20.

Ethical clearance was obtained from the Institutional Ethics Committee (Human) of Jorhat Medical College and Hospital, Jorhat prior to the start of the study. To conduct the study in schools permission was obtained from the Inspector of Schools of Jorhat district followed by Headmaster/ Headmistress/Principal of the randomly selected schools.

RESULTS

Current analysis showed that 70% (majority) of the participants were belonged to Government schools. Gender wise

distribution of the study participants have shown that 60.7% of the study participants were boys while girls constituted 39.3%. Of the total participants 55% of them belonged to middle adolescence age group (14-16 years) as compared to 45% who belonged to early adolescence age group (10-13 years). The mean age for all study participants was 13.43±1.680 years and median age was 14 years. 86.8% (majority) of the participants were Hindu, followed by 9 % Muslim. 54.1% (majority) of the study participants were from general caste followed by 34.9% who were OBC (Table 1).

Demographic details of the study population

Table 1: Demographic Characteristics.

Variables (N=800)	Number (%)
School	
Government	560(70.0)
Private	240(30.0)
Gender	
Boys	486(60.8)
Girls	314(39.3)
Age (in completed years)	
10-13	360(45.0)
14-16	440(55.0)
Mean age (years)	13.43±1.680
Median age (years)	14
Religion	
Hindu	694(86.8)
Muslim	72(9.0)
Christian	9(3.1)
Sikh	25(1.1)
Caste	
General	433(54.1)
OBC	279(34.9)
ST	68(8.5)
SC	20(2.5)

Frequency of various junk food consumption

On analysing the consumption frequency of various junk foods we found that among the study participants who consumed junk food frequently (≥5 days), ranges between 5.6% to 24.1% while those who had the practice of taking junk food consumption infrequently (1-4 days) we found that their habit ranges from 49.4% to 70.8% in different junk food products (Figure 1).

Expenditure pattern of pocket money

In our study who got pocket money (550) there were 669 responses. Of these

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33.3% (majority) of the adolescents spend the money to pay vehicle rent, 25.1% of the adolescents saves their pocket money, 16% use it to buy chips, 13.5% spend their pocket money to buy ice cream and 6.9% of the adolescents spend it on chocolate.
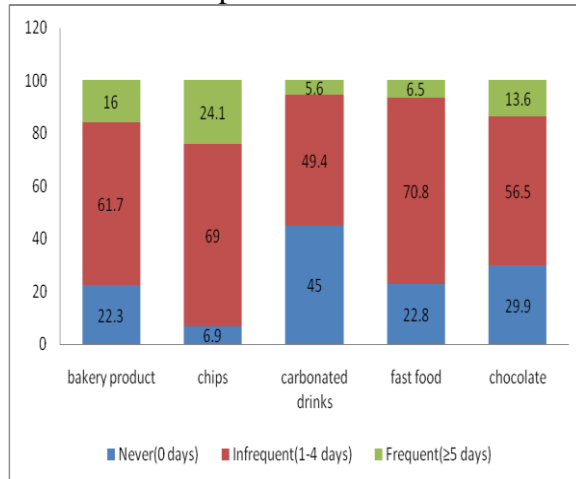

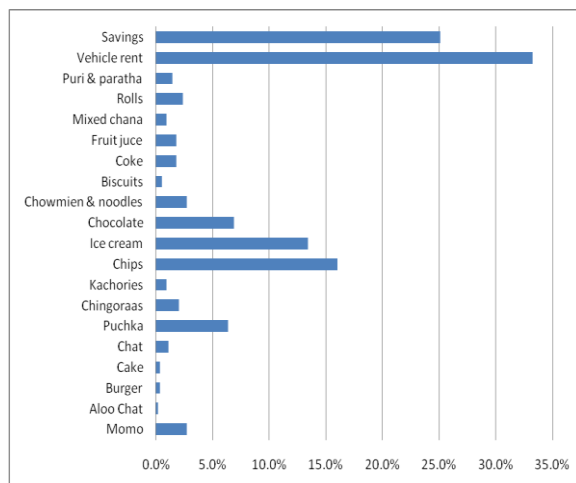**Figure 1: Frequency of eating various junk foods (n=800)**

Figure 2: Expenditure pattern of the pocket money

Knowledge on ill effects of junk food

In our study we enrolled 800 study participants and assessed their knowledge regarding ill effects of junk food consumption. We found that 51.5% (majority) pointed out stomach problem as ill effect of junk food consumption. 22.4% of the participants reported that they do not know the ill effect of junk food whereas 18.63% pointed out obesity as an ill effect.

On further analysis we found that study participants belonging to government schools consumed more chips than private schools (p=0.00). In regard to consumption of carbonated drinks, we found that male

respondents drank more carbonated drinks compared to female (p=0.01). It was also seen that eating of chocolate was more amongst the female adolescents compared to male adolescents which was statistically significant (p=0.00).
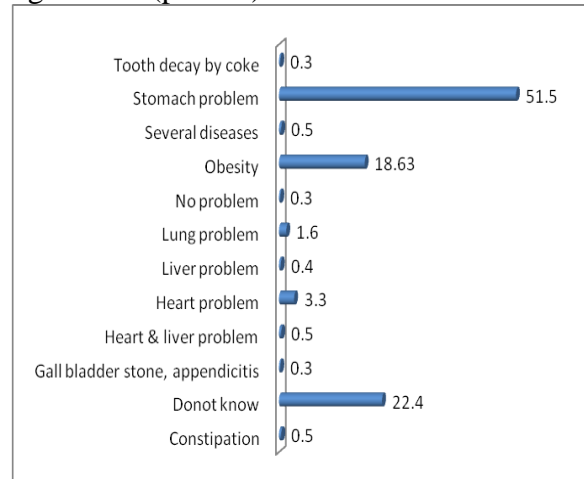

Figure 3 Knowledge on ill effects of junk food (N=800)

DISCUSSION

Our study revealed that majority of the study participants consumed some sort of junk food (either bakery products, eating chips, carbonated drinks, fast foods or chocolate) infrequently, i.e., for 1-4 days (Figure 1). These findings were similar to the observations made by M Antony et al, [15] MS Bipasha et al, [27] M Singh [24] and S Goel, [18] B Vidya. [23] This rise in consumption of junk food may be due to the nutritional transition in human beings as well as changing lifestyle. [28] Globalisation and urbanisation have greatly affected one's eating habits and forced many people to consume fancy and high calorie fast foods. Moreover the appealing nature of the junk food owes to its taste (due to lavish usage of oils, salts and sugar); time factor as they are easy to prepare and ready to consume within no time; attractiveness as packing of such item has very attractive appearance; and advertisement factor due to free gifts, celebrities involved in promotional marketing and television advertisements by use of favourite cartoon characters/ animations. [29]

In the present study who got pocket money (550) there were 669 responses. We

found that of these 33.3% (majority) of the adolescents spend the money to pay vehicle rent, 25.1% of the adolescents saved their pocket money and rest of the adolescents spent it on junk foods. Among the junk foods most common items where pocket money was spent were chips (16%), ice cream (13.5%), chocolate (6.9%) and puchka (6.4%) (Figure 2). These findings were found almost similar with studies done in the past. [18,23,24,25]

Overall, our study showed that only few adolescents could point out specific ill effect of junk food and as many as 22.4% did not know the ill effects of eating junk food which was similar to previous study [15] where it was found that the general awareness of teenagers about the effects of junk food was relatively average and even they do not translate their average knowledge into good eating behaviour. In another study, [23] it was found that only 50% of the adolescents were aware regarding the adverse effect of junk food. Vinay Gopal revealed that 25% of the study populations were not aware regarding the harmful effects of junk food. Reason could be the lack of education and awareness regarding junk food in school curriculum, lack of knowledge in parents which in turn hampers the knowledge to be imparted to their children. [25] Saranya et al also found that knowledge of the adolescence about junk food was average or moderate. [19] PV Kotecha et al also noticed that a big gap between the knowledge and practice of the participant as despite knowing the harmful effects of unhealthy foods, they continued to eat junk food and the reason being their taste preference and strong desire to do so. [16] Our result showed significant difference between government and private schools with respect to consumption of chips which was contradictory to a previous study [30] that showed no difference. This could be probably due to more number of retail outlets nearby government school selling chips as there is no restriction imposed so far in government school compound. It was also seen that eating of chocolate was more

amongst the female adolescents compared to male adolescents which was statistically significant (p=0.00). Earlier study has also found that chocolate and sweets are preferred by girls. [31] This is probably to do with the mood moderator effect of chocolate as they increase the level of serotonin in the body that in turn improves the mood. [31]

Limitations

It was a cross-sectional study; as such the causal relationship of the risk factors could not be established.

Since this study is a part of the MD curriculum, the study was done single handedly and period of data collection and analysis was limited. For this reason, other classes and pre university students could not be included in which case results would have been more nearer to the actual population value.

As the dietary history assessment were based on memory of the participants there might be recall bias on the part of the participants.

CONCLUSION

In conclusion of the study, it can be said that the consumption of junk food amongst school going adolescents in Jorhat district of Assam is highly prevalent (100%).

All the study participants had the habit of taking some sort of junk food item. The common junk food items bought by the adolescents using their pocket money were chips, ice cream, chocolate, puchka, momo, chowmein, chingoraas and coke. General awareness about the ill effects of junk food amongst the adolescents was average and there was gap between their knowledge and practice in eating behaviour due to poor impact of education and awareness campaign in school curriculum, lack of knowledge amongst parents. Moreover there are no stringent rules/ guidelines/ restriction in bringing down sale and purchase of junk foods in the nearby educational institutions. Therefore there is an increased junk food consumption practice. In view of the above

if the government propagates healthy food production which will be an opportunity for employment generation and simultaneously will bring down NCD burden of our country. Therefore this is the time all stakeholders should come forward in favour of healthy food production and giving specific emphasis in changing the dietary habits of adolescent boys and girls at large so as to have a healthy generation in India.

Conflict of interest: The authors declare no conflict of interests.

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