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Original Research Article

A Cross-Sectional Study of Influence of Media and Advertising on Dietary Behaviours of School Children

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ABSTRACT

Introduction: Globally, an increase in overweight and obesity has been observed in the recent times. Also, it has been observed even in the younger age groups like school children and adolescents, due to increased exposure and influence of media and advertising.
Material and Methods: The study was conducted in a high school in an urban area in India. The template of the Global School-based Student Health Survey, Core Expanded Questions for the Dietary Behaviours Module was used for this study. Specifically, the sub-part of questionnaire on 'Role of the Media and Advertising' was taken.
Results: In the present study, the age of children was from 11 to 15 years. 34.2% of the children were aged ≥11 to ≤12 years, 32.6% were aged 13 to 14 years while the remainder 33.3% were ≥15 years of age. Hundred percent children watched television, videos, or movies and often saw advertisements for carbonated soft drinks or fast foods. All the children stated that they were able to buy soft drinks and fast foods in school from the canteen.
Discussion: In the present study it was observed that all the children had exposure to television, while most had to internet also. These sources increase the influence of the media and advertising on the children, especially where their dietary habits are concerned.
Conclusion: It is evident that advertisement of soft drinks and fast foods has an influence on the school children and in turn compounds the problem of childhood obesity and other lifestyle diseases.

Keywords: Children, Fast foods, Obesity, School, Soft drink.

INTRODUCTION

The world over, an increase in overweight and obesity has been observed in the recent times. It is especially so in the developing countries. Also, it observed even in the younger age groups like school children and adolescents. International organisations like the World Health Organization (WHO) and the Centers for Disease Control and Prevention (CDC) have been making a wide variety of attempts to address this as well as the related problems. It has been observed that amongst other reasons, increased exposure and influence of media and advertising is responsible for this by changing the dietary behaviours of school

children. [1]

The Global School-based Student Health Survey (GSHS) was developed by the WHO and the CDC in collaboration with UNICEF, UNESCO, and UNAIDS. The goal of the GSHS is to obtain systematic information from the students to support school health and the youth health programs as well as policies globally. [1,2] The purpose of GSHS is to provide the data on health behaviors as well as protective factors among students so as to - help countries develop their priorities, establish programs, and also advocate for resources for the school health and the youth health programs and policies. Besides GSHS also aims to allow international agencies and countries, to make comparisons regarding prevalence of health behaviors and protective factors. In addition, another aim of GSHS was to establish trends in prevalence of the health behaviors and the protective factors by country so as to help in evaluating the school health and youth health promotion programs. [1-3]

Research conducted in the past has generated results proving that during adolescence, obesity is associated with hyperlipidemia, raised blood pressure (hypertension), abnormal glucose tolerance, and adverse psychological and social consequences. Also, obesity acquired during childhood or adolescence may persist into adulthood and increase risk later in life for coronary heart disease, diabetes, gallbladder disease, some types of cancer, and osteoarthritis of the weight-bearing joints. Obesity may be associated with soft drink consumption and consumption of foods frequently found in fast food restaurants. Besides, nutritional deficiencies (protein-energy malnutrition, iron, Vitamin A, and iodine deficiency) affect school participation and learning. Fruits and vegetables are good sources of complex carbohydrates, vitamins, minerals, and other substances important for good health. Dietary patterns that include higher intakes of fruits and vegetables are associated with several health benefits, including a decreased risk for some types of cancer. As part of a school health programme, school meal programs can be a source of healthy foods to students (who may not have other regular sources of food) and can promote daily attendance, class participation, and academic achievement. Schools can teach nutrition education as part of health education curricula to help students develop the knowledge, skills, and behaviours needed to foster lifelong healthy eating habits. [2,3] In a study conducted in a school in Meerut, India, the prevalence of obesity was found to be increased and associated with changes in diet and lifestyles. Children were found to be consuming more of high energy fast foods, besides shifting towards a sedentary lifestyle. Childhood obesity has an increased association with the risk of coronary heart disease in later life and even cancer. [3] In view of this knowledge, the present study was conducted in a school, where students from the age group 11 to 15 were included in the study.

MATERIALS AND METHODS

The study was conducted in a high school in an urban area in India, from August to September 2014. The GSHS, as recommended by the WHO and the CDC, is a school-based survey that is conducted primarily among the students aged 13–17 years. In the present study, students from the senior sections of a high school were taken, where the oldest ones were 15 years of age while the youngest in this group were 11 years of age. Inclusion criteria were: all children aged 11 to 15 years of age who were studying in this school during the time period of the study. The administrative authorities of the school were approached with the aim of conducting the study, in the

background of increasing lifestyle diseases amongst the school children. Since many of these problems are amenable to prevention, health talks were given to the teaching staff and students, before commencement of the study. The nominal rolls were taken for each class. Names were omitted so as to maintain anonymity. Informed consent was taken. The questionnaire was pilot tested for comprehension by the students. The GSHS uses standardized sample selection processand core questionnaire modules, core-expanded questions and some country-specific questions that are all combined to form one questionnaire which can be administered during a regular class period.

The ten core questionnaire modules address all the leading causes of morbidity and mortality among children and adults worldwide. These include dietary behaviors, amongst others. [1] Certain modifications were made in the questionnaire for the present study. The template of the GSHS, Core Expanded Questions for the Dietary Behaviours Module was used for this study. Specifically, the sub-part of questionnaire on 'Role of the Media and Advertising' was taken that had a total of seven questions from serial number twenty-one to twenty-seven and the same was administered by the principal investigator in the form of an interview. [2] Data thus collected was analysed using appropriate statistical software.

RESULTS

In the present study, the age of children was from 11 to 15 years. Since those who were 11 years of age and 15 years of age were comparatively few in number, the class intervals were made by clubbing the ages as shown in table-1.Distribution of the children as per their age was as shown in table-1. 34.2% of the children were aged ≥11 to ≤12 years, 32.6% were aged 13 to 14 years while the remainder 33.3% were ≥15 years of age.

Table-1: Distribution of children based on age group

Age Group	Number of respondents
≥11 to ≤12	234 (34.2)
13 to 14	223 (32.6)
≥15	228 (33.3)
Total	685 (100)

The questions asked as per the questionnaire had multiple responses to choose from. Hundred percent children answered in the affirmative and always, when they were asked the question number 21, i.e., 'When you watch television, videos, or movies, how often do you see advertisements for carbonated soft drinks or fast foods?'On being asked Question-22, 'During the past 30 days, how many advertisements for carbonated soft drinks or fast foods did you see when you watched television?', the responses obtained are as given in table-2. A vast majority in all the age groups had seen a lot of advertisements. Only a few of the older children had not been watching television since they were appearing for internal periodic examinations. The next question (Question-23) was, 'During the past 30 days, how many advertisements for carbonated soft drinks or fast foods did you see on the internet?'. The responses obtained are as given in table-3. Responses obtained were quite similar to those received for the previous question. Distribution of children based response to Question-24(During the past 30 days, how many text messages or mobile phone calls did you get that encouraged you to go to a carbonated soft drink or fast food company website?) is as shown in table-4. Over 97% of the children from ≥11 to ≤12 of age did not have individual or independent mobile phones. The older ones had, especially from the point of view of cycling to the school on their own/going for tuitions or extra classes

in the evenings etc. 15.2% of them had received a lot of messages, 43.5% had received a few while only 6% of them had received no such messages on their numbers during the last 30 days. All the children stated that they were able to buy soft drinks and fast foods in school from the canteen (Question-25: Can you buy carbonated soft drinks or get them for free in your school? and Question-26: Can you buy fast foods or get them for free in your school?)

Table-2: Distribution of children based response to Question-22

Age Group	Did not watch television during the last 30 days	A lot	A few	None	Total
≥11 to ≤12	0	186 (79.5)	48 (20.5)	0	234 (100)
13 to 14	0	212 (95.1)	11 (4.9)	0	223 (100)
≥15	21 (9.2)	182 (79.8)	4 (1.8)	21 (9.2)	228 (100)
Total	21 (3.1)	580 (84.7)	63 (9.2)	21 (3.1)	685 (100)

Table-3: Distribution of children based response to Question-23

Age Group	I did not use the internet during the past 30 days	A lot	A few	None	Total
≥11 to ≤12	0	38 (16.2)	196 (83.8)	0	234 (100)
13 to 14	0	223 (100)	0	0	223 (100)
≥15	16 (7.0)	192 (84.2)	4 (1.8)	16 (7.0)	228 (100)
Total	16 (2.3)	453 (66.1)	200 (29.2)	16 (2.3)	685 (100)

Table-4: Distribution of children based response to Question-24

Age Group	I did not receive text messages or mobile phone calls during the past 30 days	A lot	A few	None	Total
≥11 to ≤12	228 (97.4)	0	2 (0.86)	4 (1.7)	234 (100)
13 to 14	14 (6.3)	36 (16.1)	138 (61.9)	35 (15.7)	223 (100)
≥15	0	68 (29.8)	158 (69.3)	2 (0.9)	228 (100)
Total	242 (35.3)	104 (15.2)	298 (43.5)	41 (6.0)	685 (100)

When they were asked the Question-27 (During the past 30 days, how many advertisements for carbonated soft drinks or fast foods did you see in your school?), the responses obtained are as shown in table-5. All these advertisements had been put up inside the school canteen or in its vicinity.

Table-5: Distribution of children based response to Question-27

Age Group	I did not see any advertisements for carbonated soft drinks or fast foods in my school	A lot	A few	None	Total
≥11 to ≤12	0	0	216 (92.3)	18 (7.7)	234 (100)
13 to 14	0	0	155 (69.5)	68 (30.5)	223 (100)
≥15	0	0	134 (58.8)	94 (41.2)	228 (100)
Total	0	0	505 (73.7)	180 (26.3)	685 (100)

DISCUSSION

In the present study it was observed that all the children had exposure to television, while most had to internet also. Fewer got to use a mobile phone personally. These sources increase the influence of the media and advertising on the children, especially where their dietary habits are concerned. This in turn, leads to an increase in the lifestyle diseases in this age group, like obesity and diabetes. Similar results were found in various studies conducted over the last few years.

In a study conducted in a school in Meerut, India, the prevalence of obesity was found to be increased and associated with changes in diet and lifestyles. Children were found to be consuming more of high energy fast foods, besides shifting towards a sedentary lifestyle. Prevalence of overweight and obesity, respectively, was found to be 19.7% and 5.3% in girls; 18.36% and 10.82% in the boys. Obesity was found to be associated significantly with a high intake of junk foods ($P < 0.05$) and binge eating, increased calorie intake ($P < 0.05$), decreased physical activity ($P < 0.05$), and prolonged watching of the television ($P < 0.05$). [4]

Another study conducted in Baroda, also found that an important role is played by diet in the growth and development of children and adolescents. Besides, development of healthy eating habits is of tremendous importance. There exists a dual burden of undernutrition and overnutrition. The study assessed the food habits and preferences, as well as dietary pattern of schoolgoing adolescents in an urban area. [5]

A study conducted in Lucknow also observed that obesity increases with changing lifestyles of families. The study revealed that consuming fast foods was one of the important correlates of overweight/obesity. Also, children of senior classes and belonging to higher socioeconomic group had less outdoor activities. Besides, consuming fast foods made them more predisposed to overweight/ obesity. [6]

Studies conducted in other countries of the world have also found similar results. It was found in California, that over58% of the adolescents drank soda or any other sugar-sweetened beverage daily, while more than 1.6 million adolescents (46%) consumed fast food at least twice a week. Adolescents who lived and went to school in areas with more number of fast food restaurants than healthier food outlets, were more likely to consume fast food and soda compared to the ones who lived and went to school located in the areas with healthier food environments. [7] Soft drink and fast food are energy dense foodstuffs which are heavily advertised and marketed to adolescents, and are more likely to be important risks of obesity. [8]

In another study, 26% of children who had access to soft drinks at school consumed them. Those who consumed more soft drinks at school, were more likely to consume more soft drinks overall. [9] Despite limited empirical evidence, there is growing concern that junk food advertisement and availability in and around schools has contributed to the childhood obesity epidemic. [10]

CONCLUSION

The purpose of the present study was to gain an insight into the dietary behaviours and factors affecting them among school going children, especially from the point of view of availability and consumption of soft drinks and fast foods. From the present study it is evident that advertisement of soft drinks and fast foods does have an influence on the school children and in turn compounds the problem of childhood obesity and other lifestyle diseases.

Since this problem is amenable to prevention, it will help to modify the school policies regarding the sale and availability of these food items in and around the schools. Besides, it will also be beneficial to introduce lifestyle changes after creating awareness amongst this target population.

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