



IMPACT OF MEDIA ON FOOD PREFERENCES AND NUTRITIONAL STATUS OF SCHOOL CHILDREN AGED 7-9 YEARS

Nutritional Science

Chandana sri Kadarla

Student, Department of Nutrition and Dietetics, Sarojini Naidu Vanita Maha Vidyalaya, Exhibition grounds, Nampally, Hyderabad, Telangana, India.

Sudhikshitha Ramishetti

Research Guide and Assistant Professor, Department of Nutrition and Dietetics, Sarojini Naidu Vanita Maha Vidyalaya, Exhibition grounds, Nampally, Hyderabad, Telangana, India.

ABSTRACT

In India, around 40-50% of advertisements during children's programmes are for junk foods (high in fat, salt and sugar content). It is estimated that children are spending more time in front of a screen. This study aimed to investigate the Impact of Media on Food Preferences and Nutritional Status of School Children aged 7-9 years in Hyderabad, Telangana. A sample 150 school children (81 boys and 69 girls) was randomly selected, and non-experimental research was conducted through a descriptive survey using offline questionnaires. It was included with questions regarding general information, anthropometry, past medical history, television viewing pattern, dietary habits, food frequency questionnaire, and rating scale for hunger and satiety. The findings were revealed that most of boys were normal weight category, while girls tended to be overweight, when plotted on WHO growth charts. Television viewing pattern showed that 48% of children watched for 1-2 hours, 24.7% for 3-4 hours, 18% for 5-6 hours and 9.3% for more than 6 hours daily. Past medical history of subjects showed that 23% were suffering from dental diseases (80%- dental cavities, 17.1% - tooth ache, 2.9%-bleeding gums), 4% were suffering from ocular disease (eye sight). There was statistically insignificant difference between the mean impact of media and dietary preference of children ($p^*=0.29(>0.05)$). Statistical analysis revealed that a weak correlation between Impact of Media and Dietary preferences (+0.33). A strong correlation was observed between the Impact of media and past medical history (dental diseases and ocular diseases) (+0.86). Thus, this study reinforces the importance to educate children and parents regarding healthy eating habits and to control children's television viewing patterns and timings for better food choices and future circumstances.

KEYWORDS

food preferences, impact of media, dental diseases, nutritional knowledge.

INTRODUCTION

'School-age' refers to children between the ages of 6 - 12 years. It is a phase of gradual growth, yet there may be sporadic bursts of growth. However, this stage is not as demanding as infancy and adolescence. Often referred to as the "lull before the storm," this stage gets the body ready for adolescence's rapid growth and development. This period of childhood is characterised by rapid motor and neuromuscular development in addition to sluggish but consistent growth. Gradual advancements in various tasks are a result of improved motor abilities, including strength and coordination. Children's good eating habits and television viewing have a high correlation, according to research reports. By seeing food advertising on television, which encourage snacking, or by engaging in unhealthy snacking, which is highly prevalent when watching television, watching television increases calorie intake. Because watching TV replaces physical exercise, it also reduces energy consumption. (Nutrition-A Lifecycle Approach book, Ravinder Chadha, Pulkit Mathur, Published by Orient Blackswan Pvt. Ltd, Chapter 22-page no:335)

The commercials try to convince the audience that the promoted products have a higher nutritional value than is the case. So, the advertisements that are being shown disseminate false or incorrect information about the items, which may affect how children and parents understand what it means to be "healthy" and, in turn, how well they understand nutrition. Audio-visual advertisements and editorial material (such TV shows and films) frequently make false health claims in relation to unhealthy eating. Nutritional knowledge might be one strategy to partly shelter children from these negative effects. That is, children might thus need cognitive control in order to choose healthier foods over unhealthy foods and to overcome their instinct of eating unhealthy over healthy food options. This cognitive control can be achieved through nutritional knowledge. (Alice Binder et al., 2020)

Popular cartoon characters are used as promotional figures or even present candy and snack brands as part of a movie narrative to appeal to children. Cereals with high sugar content are promoted as a healthy breakfast full of fibres; candy products are framed as having health attributes beneficial for children's growth or an active lifestyle. All these instances show how unhealthy foods i.e., foods heavy in sugar, fat, and salt and low in nutritional value, make up a significant portion of the food environment that is shown for children in advertising content. Children tend to overload on sugary and salty foods rather than the necessary amounts of fruit and vegetables. This can in the long run negatively affect the development of their body weight. And obese

children are likely to stay obese when they grow up, which raises serious implications for long-term health concerns, as obesity is connected to a variety of cardiovascular diseases and some types of cancers. (Brigitte Naderer, 2020)

MATERIAL AND METHODS

The study was conducted to assess the Dietary habits and Nutritional status in school children by using the non-experimental research design i.e., a Random selective sampling. The study was conducted based on descriptive survey among the school going children located in Hyderabad (Organisations and Individual households) in Telangana. A Convenient random sampling method was used to select the subjects. The sample consisted of a total of 150 subjects. The subjects included both girls and boys in the age group 7-9 years. The information required for the study was collected using an offline questionnaire method through a well-designed closed ended question. The objectives of the study were kept in mind while constructing the questionnaire. The questionnaire mostly consisted of Multiple-choice questions, where the respondent was given options to choose from. For few questions options like yes or no was provided, and respondent was asked to provide with reason for choosing such option. The questionnaire was divided into the following sections. General information (name, age, gender, religion, type of family, nationality, annual income of parents, economic status, parent's education), Anthropometric measurement (height in cms, weight in kgs), Past medical history (questions regarding dental, ocular diseases, present illness, medications), Information on Television viewing pattern (duration of viewing, in between adverts, brands of foods to specify, the types of meals kids typically eat that were shown in advertisements, and the types of foods they ask parents to bring after watching advertisements and whether they enjoy seeing ads while they are eating are asked), Dietary habits (It was divided into three parts. Questions about dietary preferences, frequency of skipping meals, number of meals per day, frequency of snacking, and types of outside foods were asked in the first section. Questions regarding physical activity were also asked here, which was included with type of physical activity and its time duration. Second part included the questions regarding consumption pattern of selected foods such as Cereals, pulses, vegetables, green leafy vegetables, fruits, meat & poultry, dietary products, added sugars, dietary fats and their frequencies. Third part included with hunger and satiety rating scale).

Statistical Analysis

The data pertaining to sociodemographic profile details, Anthro

pometry, Food frequency questionnaire, Past medical history, Information on Television viewing pattern, Dietary habits was analysed in Excel sheets. Mean and standard deviation was expressed for height, weight, age (TABLE 1) of both genders separately and plotted on WHO 2006 and IAP 2015 combined growth charts 0-18 years. ANOVA test was applied to find out significant difference between the impact of media and dietary preferences. (TABLE 2). Pearson correlation coefficient in this study was applied in between impact of media and dietary preferences and in between impact of media and past medical history. (TABLE 3 and 4 respectively).

RESULTS AND DISCUSSION

Based on Nutritional status, it was observed that mean height i.e., 125.3cm in boys and 123cm in girls, the mean weight was observed with 25.3kg in boys and 24.9kg in girls, the mean age was observed with 8.4 years in boys and 9 years in girls. From the growth charts, it was observed that mean height and weight of boys were observed with normal category, whereas girls were observed with overweight category.

Table 1: Mean Anthropometric Measurements

Category	Mean height (Mean+-SD)	Mean weight (Mean+-SD)	Mean age (Mean+-SD)
Boys	125.3+-8.78	25.3+-5.73	8.4+-0.77
Girls	123+-8.80	24.9+-5.74	9+-5.74

From the ANOVA test, between the impact of media and dietary preferences (TABLE 2) the findings were observed as P*=0.29(>0.05) hence, statistically insignificant difference was observed which accepts null hypothesis(H0) by rejecting alternative hypothesis(H1).

Table 2: One-way ANOVA

Impact of media:	n	%	Dietary preference:	n	%
1. TV viewing time:	72	24.7%	1. Frequency of snacking:	60	40%
2. Mostly liked food brands:	57	42%	2. Frequency of outside foods:	27	18%
3. Children who asked parents to bring outside foods after watching advertisements:	119	79.3%	3. Type of outside foods:	74	49.3%
4. Children who watched TV/used mobile while having food:	114	76%	4. Dietary preference:	100	66.7%
p value	0.29				

The study findings were similar to a study which reported i.e., statistically insignificant difference; p= 0.23 (p>0.05; statistically insignificant difference) between the impact of media and the food intake among the school children (5-11 years).

From the Pearson correlation coefficient in this study (TABLE 3) it was observed that low positive association presented between Impact of media and Dietary preferences with (r=0.33).

Table 3: Pearson Correlation Coefficient Between Impact Of Media And Dietary Preferences

Impact of media:	n	%	Dietary preference:	n	%
1. TV viewing time:	72	24.7%	1. Frequency of snacking:	60	40%
2. Mostly liked food brands:	57	42%	2. Frequency of outside foods:	27	18%
3. Children who asked parents to bring outside foods after watching advertisements:	119	79.3%	3. Type of outside foods:	74	49.3%
r value	S value				
0.33	0.94				

From the Pearson correlation coefficient in this study (TABLE 4) it was observed that high positive correlation presented between Impact of media and Past medical history with (r=0.86).

Table 4: Pearson Correlation Coefficient Between Impact Of Media And Past Medical History

Impact of media:	n	%	Past medical history	n	%
1. TV viewing time:	72	24.7%	1. Dental diseases:	35	23%
2. Mostly liked food brands:	57	42%	2. Dental cavities:	28	80%
3. Children who asked parents to bring outside foods after watching advertisements:	119	79.3%	3. Ocular diseases:	6	4%
r value	S value				
0.86	0.51				

Consumption of Food while using mobile or watching television: According to the consumption of food while using mobile or watching television, the results shown that 114(76%) were consumed food while using mobile or while watching television and 36(24%) were not consumed food while using mobile or while watching television.

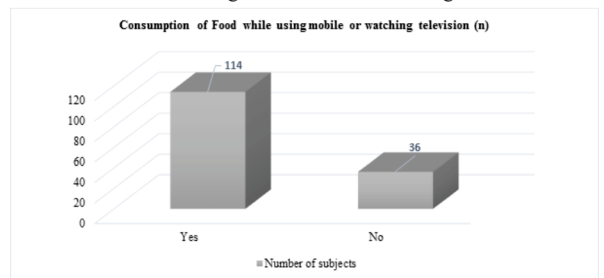


Figure 1: Distribution Of The Subjects As Per The Consumption Of Food While Using Mobile Or Watching Television

CONCLUSION

'School-age' refers to children between the ages of 6 - 12 years. It is a phase of gradual growth, yet there may be sporadic bursts of growth. In order to screen and track the nutritional condition of school-aged children and adolescents, the World Health Organisation (WHO) has created growth reference standards. It is estimated that children are spending more time in front of a screen (television, computer and mobile), rather than in outdoor recreation. Children's physical activity is diminished, and eye strain is increased, as a result. According to studies, television advertising has an impact on children's food preferences and shopping lists, leading to the inclusion of unhealthy items that raise the risk of obesity, dental caries, micronutrient deficiencies, etc. The study also concludes that the average of height, weight, and age is plotted on WHO growth charts, the majority of boys fall into the Normal weight category (mean height: 125.3 cm, mean weight: 25.3 kg, mean age: 8.4 years), and the majority of girls fall into the Overweight category (mean height: 123 cm, mean weight: 24.9 kg, mean age: 9 years). As per the obtained past medical history, subjects of 23% were suffering from dental diseases (80% were suffering with dental cavities, 17.1% were suffering with tooth ache, 2.9% were suffering with the bleeding gums) whereas, 77% were not and regarding ocular diseases, 4% were suffering from ocular disease (eye sight), whereas 96% were not. The study revealed that according to the television viewing time, 48% of the subjects were watched for the duration of 1-2 hours, 24.7% were watched for 3-4 hours, 18% were watched for 5-6 hours and 9.3% were watched for > 6 hours duration of time. According to number of meals of the subjects, highest percentage i.e., (90)60% were consumed 3 meals a day, followed by (32)21.3% were consumed 2 meals per day, (26)17.3% were consumed > 3 meals per day, and the least percentage i.e., (2)1.3% were consumed < 2 meals per day. According to Frequency of consumption of outside foods, (69)46% were consumed outside food weekly, (43)22.7% were consumed outside food very rarely, (27)18% were consumed outside food daily and only (20)13.3% were consumed outside food monthly. According to the food frequency questionnaire cereals and millets, fats and sugars were consumed on daily basis by most of the children and meat, seafoods consumed very less/never by most of the children. It can be concluded that there was an impact of media on food preferences, past medical history like dental diseases and ocular diseases of children. Therefore, the results of the study recommends that, there is the importance to educate children and their parents regarding healthy eating habits and to control children's television viewing pattern and timings for better food choices and future circumstances.

Future research and limitations: The limitation of the study is only 7-9 years age group children were selected as an inclusion criterion for the study and various illness participants are included and the study was conducted from both government schools and also private schools but differentiation in terms of comparison between the government schools and private schools was not done, thus the result may not be differently representative for different localities. This study provides enough data about anthropometric measurements, dietary habits, dietary pattern, food preferences, television viewing pattern, and also about past medical history of subjects which will provide research area in future to analyse further comorbidities which could be short or long term health outcomes and may examine the dietary habits by providing nutritional knowledge about healthy eating habits, healthy food preferences, importance of physical activity, decreasing television viewing time in children. This can also be taken further by studying association of television viewing pattern in relation to other medical history and IQ levels of children.

REFERENCES

- [1] B. Alice, N. Brigitte, M. Jorg and S. Ines, 2020, The Impact of Media Consumption on the Development of Children's Nutritional Knowledge and the Moderating Role of Parental Food-Related Mediation: a longitudinal study, *Journal of Multidisciplinary Digital Publishing Institute (MDPI)*, 12:(1478) doi:10.3390/nu12051478, <http://www.mdpi.com/journal/nutrients>
- [2] C. Ravinder, M. Pulkit, 2015, *Nutrition – A Life Cycle Approach*. Nutritional requirements for school children. first edition, Orient Blackswan(p) limited, Chapter 22, pp 333-335
- [3] N. Brigitte, 2020, Advertising Unhealthy Food to Children: on the Importance of Regulations, Parenting Styles, and Media Literacy, *Journal of Springer*, vol.8, 12-18, doi.org/10.1007/s40429-020-00348-2
- [4] T. Ayda Sabaghzadeh and A. Zelha, 2017, Impact of TV Advertising on Children's Food Choices, *International Journal of Marketing Studies*, 9:(6), doi:10.5539/ijms.v9n6p24
- [5] H. Baldwin, B. Freeman, and B. Kelly, 2018, Like and share: Associations between social media engagement and dietary choices in children, *Journal of Public Health Nutrition*, 21:(17):3210-3215, doi:10.1017/S1368980018001866,
- [6] K. Bridget, F. Becky, K. Lesly, C. Kathy, A. Louise Baur, and G. Tim, 2016, The normative power of food promotions: Australian children's attachments to unhealthy food brands, *Journal of Public Health Nutrition*, 19:(16):2940-2948, doi.org/10.1017/S1368980016001452
- [7] D. Charlene Elliott, D.H. Rebecca Carruthers, J. Martin Conlon, 2013, Food Branding and Young Children's Taste Preferences: A Reassessment, *Canadian Journal of Public Health*, 104:(5), *Can J Public Health* 2013;104(5):e364-e368
- [8] J. Emma Boyland, C.G. Jason Halford, 2012, Television advertising and branding: Effects on eating behaviour and food preferences in children, *Journal of Elsevier*, Article number: doi.org/10.1016/j.appet.2012.01.032
- [9] J. Emma Boyland, A. Joanne Harrold, C. Tim Kirkham, C. Catherine, C. Jenna, E. Deborah, M. Terence Dovey, L. Clare Lawton, E. John Blundell and C.G. Jason Halford, 2011, Food Commercials Increase Preference for Energy-Dense Foods, Particularly in Children Who Watch More Television, *Official journal of the American Academy of Pediatrics*, 128:(1), DOI: 10.1542/peds.2010-1859