

Food consumption patterns among adolescents and their relation with obesity

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Received: 11.03.2020 Revised: 12.04.2020 Accepted: 28.05.2020

Abstract:

Background: In developing countries like India faces problems of obesity as well as malnutrition and underweight and it is a challenge for health care providers to educate the children's and their family regarding obesity and malnutrition and underweight.

Objective To identify food consumption patterns and their relation to obesity among adolescents.

Methods Descriptive research design used to conduct the study. Sample size selected for analysis was one hundred school-going adolescents. The inclusion criteria includes those children whose parents gave consent, the children in the age bracket (15-19 years and those children who have been in that school for more than a year. A study conducted in selected schools at Karad Taluka, a structured questionnaire used to collect data which also includes Height, weight, and BMI score

Results: 42(42%) were obese according to their BMI score and 19(19%) adolescent students were overweight. There was a significant association between selected questions regarding food consumption patterns and obesity among adolescents at the level of $p<0.05$

Conclusion: The study concludes that school-going adolescents have excess weight, and most of them consume junk foods.

Keywords: Food consumption patterns, adolescents, and obesity.

1. Introduction:

In developing countries like India faces problems of obesity as well as malnutrition and underweight, and it is a challenge for health care providers to educate the children's and their family regarding obesity and malnutrition and underweight. [1] WHO estimated that since 1975 obesity has increased three times worldwide. Three hundred forty million adolescents aged between 5-19 were overweight in 2016. The obesity prevalence among children in age group 5-19 has risen from just 4% to over 18% from 1975 to 2016 which surprising . In 2016 18% of girls and 19% of boys showed overweight as rise has shown in boys and girls simultaneously [2]

obesity during Childhood is a known factor to overweight and non-communicable diseases among adults. the severity of the problem among children in India is unclear due to the sparcity of well-conducted nationwide studies and lack of uniformity in the cut-points used to define childhood overweight and obesity [3]

The period adolescence considers as a crucial time when most of the body growth and development occurs.[4] Due to the nutrition transition and economic development, the obesity prevalence among children has increased significantly in developing countries.[5] children's faces problems of obesity and overweight. Childhood obesity has recognized as a public health prime problem as during adulthood, there are long-term adverse effects of childhood obesity [6] food consumption patterns of adolescents' are essential determinants of their health.[7] A

study conducted by Neha Rathi et al. indicates that the Indian adolescents had destructive food consumption patterns. Findings show that to promote healthy eating in adolescence, there is a necessity to design effective nutrition promotion strategies, and also pay attention to food supply and availability is essential.[8] Obesity in adolescents has found to have a relation with the occurrence of diseases such as diabetes, hypertension, dyslipidemia, osteoarthritis, and many more diseases during adulthood.[9]

Necessary to know the obesity prevalence and food consumption patterns among adolescents and their relation with obesity to take appropriate preventive measures, and the community shall be aware of what problems lead to obesity. The present study aims to identify obese adolescent students and food consumption patterns and their relation to obesity among adolescents.

2. Methods

To conduct the study descriptive research design used. Sample size selected for analysis was one hundred school-going adolescents. The inclusion criteria include those children whose parents gave consent, the children having the age bracket (15-19 years and those children who have been in that school for more than a year before the data collection. After receiving permission from the authority and ethical letter, a study conducted at selected schools at Karad Taluka, and Data collected by using a structured questionnaire. Height, weight, and BMI score obtained from the school-going adolescents.

3. Results

Table no no.1 Prevalence of obesity among adolescents:

BMI $BMI = Wt(Kg)/H^2$ (m)2	Weight categories	Frequency (F)	Percentage (%)
27.5+	Obese	42	42%
23-27.4	Overweight	19	19%
18.5-22.9	Healthy Weight	28	28%
>18.5	Underweight	11	11%

Table no.2 Food consumption pattern among adolescents:

Question of food consumption pattern	Frequency(F)	Percentage (%)
How do you spend the pocket money?		
a) for snacks	49	49%
b) for school material	29	29%
c) for saving	10	10%
d) not taken	12	12%
Which type of snacks do you consume in a day?		
a) vadapav	38	38%
b) samosa	25	25%
c) bhel	20	20%

d) other snacks	17	17%
Do you eat snacks in between meals?		
a) Yes	35	35%
b) No	65	65%
How many times do you take food in a day?		
a) Once	3	3%
b) Twice	35	35%
c) Three	54	54%
d) Four	8	8%
Do you go to school without having breakfast?		
a) Yes	46	46%
b) No	54	54%

Table no. 3 Association between Food consumption pattern and obesity among adolescents:

Question of food consumption pattern	Obese	Overweight	Healthy Weight	Underweight	Chi-square Value	P-value
How do you spend the pocket money?					18.842	0.0266
a) for snacks	28	11	8	2		
b) for school material	10	4	10	5		
c) for saving	2	3	4	1		
d) not taken	2	1	6	3		
Which type of snacks do you consume in a day?					24.252	0.0039
a) vadapav	17	9	9	3		
b) samosa	12	6	6	1		
c) bhel	10	3	7	0		
d) other snacks	3	1	6	7		
Do you eat snacks in between meals?					1.169	0.7604
a) Yes	13	6	12	4		
b) No	29	13	16	7		
How many times do you eat in a day?					6.013	0.7386
a) Once	2	0	0	1		
b) Twice	15	7	10	3		
c) Three	22	9	17	6		
d) Four	3	3	1	1		

Do you go to school without having breakfast?					3.974	0.2643
a) Yes	18	12	13	3		
b) No	24	7	15	8		

Description of sample characteristics

As regards age, 50(50%) of the adolescent students were in the age group of 10-15 years, and the remaining 50(50%) were in the age group of 16-19 years. Majority 78(78%) of adolescent students were the males, and the remaining 22(22%) were female students. Most of the adolescents 79(79%) belong to Hindu as religion 8(8%) were Muslims. The majority of 70(70%) were living in a joint family, and 29(29%) were living in a nuclear family. Majority of the adolescent students 62 (42.00%) fathers occupation were doing the job, 38(38%) was a farmer. Most of the adolescent students, i.e. 30(30.00%), had monthly family income Rs.5.000-Rs.10000, followed by 24(24%) had income10000-15000RS, and 16 (16%) had income15000-20000RS and 30(30%) had income above Rs. 20000.

Prevalence of obesity among adolescents:

Table No.1 reveals that totally 100 adolescents were selected from that majority of the adolescent students 42(42%) were obese according to their BMI score, 19(19%) adolescent students were overweight, 28(28%) were healthy weight category, other remaining adolescent students were 11(11%) in underweight.

Food consumption pattern among adolescents:

Table no. 2 shows that Most of the adolescent students 49 (49%) Were spend the pocket money on snacks and remaining students 29(29%) spent their pocket money on other school material. Regarding snack consumption 38(38%) adolescent students were consume Vadapav 25(25%) consuming Samosa, 20(20%) were eating Bhel, and the remaining 17(17%) consuming other snacks. Most of the adolescent students 35(35%) were consume snacks in between meals and 65(65%) students were not eating snacks in-between meals. Majority 54(54%) students consume meals three times a day, 35(35%) spend twice a day, remaining 8(8%) consumed food four times a day. Most of the adolescent students 54 (54%) students were going to school with taking breakfast, and the remaining 46(46%) students were going without taking breakfast.

Food consumption patterns among adolescents and their relation with obesity:

Table no. 3 shows a significant association between spending the pocket money for snacks, for school material, for saving and for not taken with obesity. ($p=0.0266$). and snacks do you consume in a day that is vada-pav, samosa, bhel, and other snacks with obesity. ($p=0.0039$) No significant association between eating snacks in between meals, times to eat in a day, and going to school without having breakfast with obesity. ($p>0.05$)

4. Discussion

The majority of adolescent students, 42% were obese according to their BMI score, and 19% of teenage students were overweight.

The prevalence of obesity shows 17.7% in black and 7.7% in white girls at nine years old, and the rates also doubled during the study period. The prevalence of overweight and obesity was doubled By age 19, more than half of black girls were overweight, and more than one third were obese. Almost half of white girls were overweight, and nearly 1 of 5 girls were obese. [10]

Yet another observational study carried out on the overweight prevalence and obesity in adolescents. Totally 500 adolescents were enrolled, comprising 305girls and 195boys. The overall incidence of overweight and obesity was 11.2% of which 21 (4.2%) were obese, and 35 (7%) were overweight.[11]

In our study, a significant association between spending the pocket money for snacks, for school material, for saving and for not taken with obesity ($p=0.0266$) and snacks do you consume in a day that is vada-pav, samosa, bhel and other snacks with obesity. ($p=0.0039$). Augusto Cesar Barreto Neto et al. a cross-sectional study, study results show food intake has shown more dispersion in the group of healthy foods (51.1%). Higher median scores for the consumption of junk foods found among children having mothers more than nine years of schooling

($p<0.001$).[12] Lakhwinder Kaur et al. Findings revealed that 57% of adolescents had a normal BMI. A positive association between eating pattern and BMI found($X^2=5.9$, df= 2, $p=0.01$)[13] Ghazi Daradkeh et al. The overall overweight prevalence and obesity were (18.5% and 19.1%) respectively. Their results showed that the fast-food frequency, fruits, and vegetable intake significantly correlated with BMI ($P=0.03$, 0.01, 0.001).[14]

Our study shows a significant association between spending the pocket money for snacks, for school material, for saving and for not taken with obesity. ($p=0.0266$). And snacks do you consume in a day that is vada-pav, samosa, bhel, and other snacks with obesity. Similar to it, yet another study shows home availability of snacks was associated with higher snack consumption ($B = 1.03$, $P < 0.05$). sensitivity to peer influence shows more snacks intake ($B = 3.07$, $P < 0.01$) and also more snacks purchasing from their pocket money (odds ratio 3.27, $P < 0.01$). Children's behaviour related to snack purchasing explained part (8.6%) of the association between peer influence and children's snack consumption.[15]

5. Conclusion

school-going adolescents have Excess weight and consume junk foods. The consumption of foods by adolescents found associated with obesity which shows there is a need to pay attention to nutritional interventions for obese adolescents.

Acknowledgement Sincere thanks go to all the school going adolescents who have provided us with their valuable time and willingness to participate in the study.

Conflicts of interest There are no conflicts of interest.

Financial Support and sponsorship: Nil

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JOURNAL of CRITICAL REVIEWS

ISSN- 2394-5125

VOL 7, ISSUE 08, 2020

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