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DETERMINATION OF ADOLESCENT FOOD HABITS ON THE BASIS OF AGE, HEIGHT AND WEIGHT

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ABSTRACT

Significant differences between nutritional and fast food habits were observed at the 13-15 years and 16-18 years age groups of boys and girls respectively. The girls in the age group and boys had non-significant difference. Body weight showed non-significant difference for fast food and nutritional diet for boys and girls. Body weight of boys increased by 8.90% over normal body weight of 13-15 years. Lower body weight was observed in 16-18 boys adolescent and 13-15 years and 16-18 years girls where body weight was lower than normal body weight. Fast food did not affect in the enhancement of body weight. Nutritional food had significant role in boy weight increase in both age groups.

Figure : 00 References : 13 Tables : 07
KEY WORDS : Adolescent-Age, Height, Weight

Introduction

Adolescence is an intermediary period where many changes take place in body. Among adolescents, an increase in height and body weight occurs. It has been well recognized that people with higher relative weight usually have higher food intake[13]. However, controversial results have been reported on the association between food consumption and overweight and obesity, which can be attributed to both over estimation and under estimation of unhealthy foods. Moreover, to avoid high-calorie foods has been associated with attempts to lose weight in adolescents[3,7].

Body shape is a multidimensional built which is central to emotional well-being in which the attitudinal component is in agreement with body size, a factor associated with confidence[3].

Currently, there is a lack of data referring to the association between body self-perception and eating

TABLE-1: Demographic Profile of the adolescents

S.NO.	Area	Number of Adolescents					
		Boys		Girls		Grand Total	
		Number	Percentage	Number	Percentage	Number	Percentage
1.	Gwalior	80	55.17	65	44.83	145	100
2.	Laskhar	70	44.30	88	55.69	158	100
3.	Morar	50	51.55	47	48.45	97	100
	Total	**200**	**151.02**	**200**	**148.97**	**400**	**100**

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patterns among overweight in adolescents. Therefore, this information is needed for manipulative interventions to improve an effective nutrition and weight counselling between adolescents.

The aim of this study was to assess the adolescent's food habits on the basis of age, height and weight.

Methodology

This study was conducted in 400 adolescents [100 boys and 110 girls of (13 to 15 years) and 100 boys and 90 girls of (16 to 18 years)] were selected randomly from Gwalior, Morar and Laskhar for conducting this research work which represents the whole Gwalior City (Table-1).

Variables: The independent variable (body shape) and dependent variable (height and weight) were used in samples under study in order to determine the adolescent's food habits.

Independent variables:

Age: All adolescents were listed according to age groups.

Dependent variables:

(A) Height: Height was measured with the help of measuring rod/scale. The rod/scale was made to straight on a levelled ground. The subject was asked to remove foot wear and head wear and stand erect. While predicting adult height is a difficult task, individuals have used both

TABLE-2: Analysis of adolescent's food habit on the basis of their height

S.NO.	Height	Age Group							
		Boys				Girls			
		13-15 years		16-18 years		13-15 years		16-18 years	
		N F	FF	N F	F F	N F	F F	N F	F F
1.	4'4"	1	3	1	3	2	2	1	2
2.	4'5"	6	10	7	12	8	10	6	10
3	4'6"	2	2	2	4	2	3	1	1
4.	4'7"	7	9	9	8	9	11	9	15
5.	4'8"	1	1	1	2	1	2	3	2
6.	4'9"	3	10	10	11	3	8	2	8
7.	5'0"	9	2	3	3	4	3	1	6
8.	5'1"	2	12	1	2	9	12	7	3
9.	5'2"	4	3	2	11	2	3	2	5
10.	5'3"	1	5	3	1	5	3	1	3
11.	5'4"	6	1	-	2	1	1	-	2
12.	5'5"	-	-	-	2	-	3	-	-
13.	5'6"	-	-	-	-	-	1	-	-
14.	5'7"	-	-	-	-	-	2	-	-
	Total	42	58	39	61	46	64	33	57

NF: denotes nutritional food, FF: denotes fast food.

TABLE-3: Statistical Analysis of Adolescent's (13-15 years) food habit on the basis of their height.

S. No	Adolescent	Age Group				t value	df	Significance
		13-15 years						
		Nutritional food		Fast Food				
		Mean	Standard Deviation	Mean	Standard Deviation			
1.	Boys	3.81	2.78	5.27	4.14	1.98	98	S
2.	Girls	4.18	3.12	4.57	3.87	0.56	108	NS

S: denotes significant; NS: denotes non-significant at 0.05 level.

the bone age in calculations and a measure using mid parental height as most individuals have an adult height that is within 2 inches of the mid-parental height. This is calculated :

For girls:

(father' s height -13cm) + mother's height/2

For boys:

(father' s height +13cm) + mother's height/2

(B) Weight: A weighing machine was used to take weight of the subjects in kg. Weighing machine was placed on leveled ground and adjusted to zero before measurement. The subject was made to stand erect without touching anything on the weighing balance with minimum clothing and weight was recorded in kg.

Data collection

All the 400 respondents were inclusively approached by the researcher. By personal contact, all the respondents were contacted with the help of the structured schedule developed for the study. The statistical analysis was performed to calculate percentage, t-test, Arithmetic Mean and Standard Deviation[9].

Result and Discussion

Dietary habits, age, height and weight

Adolescent boys of 5'0" of height had nutritional food habit followed by 4'7" in the 13-15 years age group, whereas boys of 5'1" height had fast food in their diet. In another 16-18 years of age; boys of 4'9" had maximum nutritious food whereas adolescent of 4'5", 4'9" and 5'2" height had fast food in their diet. Adolescent girls of 4'7" and 5'1" height had preferred nutritious food in their daily diet at the 13-15 years age (Table-2). Remarkably, in the same age group of girls of 5'1" height preferred fast food in their diet. Interestingly, both nutritious and fast foods were found popular in adolescents' boys and girls of 4'7" height in the age group of 16-18 years. Statistical analysis showed that 13-15 years boys had mean height and SD 3.81±2.79 under nutritional food habit whereas girls had mean and SD 5.27±4.14 under fast food habit. It showed significant difference between nutritional food and fast food. In the same age group, mean height and SD in girls were 4.18±3.12 and 4.57±3.87 under nutritional and fast food habit which showed non-significant difference between nutritional and fast food habit (Table-3).

TABLE-4: Statistical Analysis of Adolescents (16-18 years) food habit on the basis of their height

S. No	Adolescent	Age Group				t value	df	Significance
		16-18 years						
		Nutritional food		Fast Food				
		Mean	Standard Deviation	Mean	Standard Deviation			
1.	Boys	3.64	3.38	5.08	4.16	1.81	98	NS
2.	Girls	3.30	2.95	5.54	4.45	2.58	88	HS

HS: denotes highly significant at 0.01 level; NS: denotes non-significant at 0.05 level

TABLE-5: Analysis of adolescent's food habit on the basis of their weight

S.NO.	Weight (Kg)	Age Group							
		Boys				Girls			
		13-15 years		16-18 years		13-15 years		16-18 years	
		N F	F F	N F	F F	N F	F F	N F	F F
1.	30-32	4	1	1	1	1	2	1	1
2.	33-34	2	8	5	9	7	9	6	8
3	35-36	4	2	2	2	2	1	2	2
4.	37-38	1	6	9	11	5	12	10	10
5.	39-40	6	2	1	3	2	2	1	3
6.	41-42	2	8	6	9	5	7	5	12
7.	43-44	5	1	2	4	4	1	2	2
8.	45-46	3	7	8	13	9	9	5	2
9.	47-48	6	2	1	2	1	2	1	9
10.	49-50	2	10	4	1	1	6	-	1
11.	51-52	1	1	-	6	1	2	-	7
12.	53-54	1	1	-	-	3	7	-	-
13.	55-56	1	3	-	-	1	1	-	-
14.	57-58	1	1	-	-	4	1	-	-
15.	59-60	1	3	-	-	-	2	-	-
16.	61-62	1	1	-	-	-	-	-	-
17.	63-64	1	1	-	-	-	-	-	-
	Total	**42**	**58**	**39**	**61**	**46**	**64**	**33**	**57**

NF: denotes nutritional food, FF: denotes fast food.

On the other hand, adolescent boys and girls of 16-18 years had non-significant and highly significant differences in both food habits[5] at 0.01 level (table 4). In another age group of 16-18 years, the mean height and SD of boys 3.64±3.38 and 5.08±4.16 in girls which showed non-significant difference. Whereas, the mean of height and SD 3.30±2.95 and 5.54±4.45 in boys and girls respectively; the t-test indicates that adolescent boys of 13-15 age, had significant differences between nutritional and fast food habits (Table 4): whereas, girls in the same age group had non-significant differences. On the other hand, adolescent boys and girls of 16-18 years had non-significant and highly significant differences in both food habits at 0.01 level (Table-4).

Adolescent boys (13-15 years) whose body weight (kg) between 39-40 and 47-48 had maximum nutritious food habit followed by 43-44, 30-32, 35-36. Whereas, fast food habit was observed whose body weight was 49-50 (kg), 41-42 and 33-34. At the age of 16-18 years, adolescent boys had nutritious food habit whose body weight were 37-38 and fast food habit at the 45-46 (kg) (Table-5).

Statistical analysis (Table 6) indicated those 13-15 years old adolescent boys had body weight mean and SD 3.41±3.08 and 2.47±1.84 and with nutritious and

TABLE-6: Statistical Analysis of Adolescent (13-15 years) on the basis of weight

S. No	Adolescent	Age Group				t value	df	Significance
		13-15 years						
		Nutritional food		Fast Food				
		Mean	Standard Deviation	Mean	Standard Deviation			
1.	Boys	3.41	3.08	2.47	1.84	1.76	98	NS
2.	Girls	4.27	3.69	3.28	2.52	1.57	108	NS

S: denotes significant; NS: denotes non-significant at 0.05 level

fast food habit's respectively. Its t-test indicated non-significant difference at 0.05 level. In girl's adolescent had body weight mean and SD 4.27±3.96 and 3.28±2.52 and with nutritious and fast food habit respectively. Its t-test also indicated non-significant difference in their body weight data.

Boys grew more than 5 inches between the ages of 13 and 15 years, whereas, girls grew only 1.6 inches during their teenage years after growing more rapidly than boys before adolescence. This confirms the finding of present study in case of fast food habit. Further, it was found that height growth or lack of it might be a profound effect on boys' and girls' behavior[4]. This might be due to more physical and internal hormonal activity in girls adolescent. Another reason could be the requirement of energy level *i.e.* Girls aged 16-18 need about 2,100 calories daily to maintain their weight. Boys of the same age need about 3,200 calories daily. 16-18 years adolescent boys had mean body weight SD 5.54±4.21 3.90±2.91 with nutritious and fast food habits respectively (Table-6). Its t-test indicated highly significant difference in body weight data. Even though, girls in the same age group had body weight and SD 5.18±4.06 and 3.67±3.08 with nutritious and fast food habits respectively. Its t-test indicated non-significant difference in body weight data (Table-7).

In another study, weight (80%) and height (90%) of 75% girls adolescent stopped at their age level[6] and eating patterns and attempts to change weight among adolescents[7]. Height and degree of weight increase of adolescent girls were lower than the standard level[10]. Mean height of boys and girls at age of 13 in both rural and urban areas varied very little from 145 to 148 centimeters with standard deviation of 5 to 6 centimeters. But as age increased the height of boys increased more rapidly than girls and by age 19 the mean height was 165 to 168 cms for boys in rural and urban areas, whereas it was 151 to 152 cms for girls in both rural and urban areas. The weight of adolescent boys and adolescent girls was higher in urban areas than in rural areas and within rural and urban areas it was higher for boys than for girls. Until the age of 14, fewer differences were seen in the weight of boys and girls and between rural and urban areas. It was found that the weight gain pattern then changed for both boys and girls and in rural and urban areas. At age 14, the mean weight for boys and girls and in rural and urban areas were in the narrow range of 37-40 kg but by age 19, the differences widened to 42-52 kg. As age increased, weight also increased more rapidly for boys than for girls. The mean weight of boys in rural areas increased from 39 kg at age 14 to 49 kg at age 19 whereas for girls it increased from 37 kg to 42 kg during the same period. The corresponding increases in weight in urban areas were from 40 kg to 52 kg for boys and from 39 kg to 45 kg for girls. On an average, weight gain was about 2.7 kg per year for boys and 1.2 kg per year for girls in both rural and urban areas[11]. In another study, male participants were 1.68 times as likely to report eating fast food, 1.24 times as likely to report consuming sweets, and 1.12 times as likely to report eating healthy food in comparison to female participants. This could be due to male adolescents are in more public contact than female adolescents[2].

Contrary to this some studies suggested that fast food consumption is not related to increased body weight[8]. This confirms that findings of present study; where fast food did not affect in the enhancement of body weight. Nutritional food had significant role in boy weight increase in both age groups (13 to 15 years and 16 to 18 years). The weight/age was being the most sensitive indicator among low socioeconomic class and high socioeconomic class in urban slum community with respect to identify their nutritional status[12]. Interestingly, height and weight of female adolescents were found lower than the standard level[1]. This could be due to poor diet and live under social pressure.

TABLE-7: Statistical Analysis of Adolescents (16-18 years) on the basis of weight

S. No	Adolescent	Age Group				t value	df	Significance
		16-18 years						
		Nutritional food		Fast Food				
		Mean	Standard Deviation	Mean	Standard Deviation			
1.	Boys	5.54	4.21	3.90	2.91	2.13	98	HS
2.	Girls	5.18	4.06	3.67	3.03	1.85	88	NS

HS: denote significant at 0.01 level; NS: denote non-significant at 0.05 level.

Further, the eating patterns, physical activity and attempts to change weight among adolescents. This happens as a result of more metabolic activity *i.e*. physical exercise. Good nutrition enables us to grow well and enjoy good health[7].

Conclusion

Significant differences between nutritional and fast food habits were observed in boys and girls adolescents' height of 13-18 years age. Lower body weight was observed in 16-18 boys adolescent and 13-15 years and 16-18 years girls where body weight was lower than normal body weight.

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