



## Research Article

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## Comparative Study of Eating Habits, Bmi and Physical Activity among Adolescence

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**Abstract:** The purpose of the study was to compare the Eating Habits responses, BMI and Physical Activities between boys and girls of 13 years to 15 years old age group from Don Bosco Higher Secondary School, Silchar, Assam. The study was formulated as a true random group design. Equal number of subjects were assigned into two groups i.e. boys and girls. The sample size of the study was eighty (N=80) in total with both male (N=40) and female (N=40). Only the regular school going students and day-scholar students were included. The test was conducted for all the subjects on selected questionnaires and anthropometric measurements. Physical Activity Questionnaire for Adolescents (PAQ-A) was used to determine the last 7 days physical activity level and Adolescent Food Habits Checklist (AFHC) was used to determine eating habit and food choices. Moreover, the anthropometric measurements were also taken for each participant to check their Body Mass Index (BMI). To determine whether there is significantly different in selected variables among girls and boys, Descriptive Statistics, Independent t-test was applied and level of significance was set at 0.05 level. The statistical findings reveals that there was no significance difference in the variables between boys and girls. Hence, the formulated hypothesis was rejected. According to the collected data, boys have the small percentage of more participation in their Physical Activities, Healthy Eating and also the normal range in their BMI, but the statistical finding shows that there was no significant difference in the variables. So, the conclusion was drawn as there was no significant difference in their Physical Activities, Healthy Eating and BMI between the boys and girls of Don Bosco Higher Secondary School, Silchar, Assam.

**Keywords:** BMI, PAQ-A, AFHC, Anthropometrics, Independent t-test.

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## INTRODUCTION

Adolescence is a time of nutritional vulnerability along with a rapid physical growth that demands a good nutrient. During this stage, their dietary habits contribute the nutritional related health problem for their long-term health. Unfortunately, In India not every family has a good income so, poor nutrition is more prevalent in rural areas and also for the larger families with uneducated or unskilled parents from small income backgrounds. Meanwhile, unbalanced diets and lack of physical activity are giving rise to overweight and obesity, mostly in urban populations and wealthier families. Apart from the family backgrounds, the consumption of processed foods which are high in fat and sugar become trends in adolescence as well as in adults which lead to unhealthy lifestyle. Adolescence period is the right time to enhance their nutritional deficiencies that may have occurred in early life and to build up on growth, and establish good dietary behaviors. A balanced diet and regular exercise are important for all age groups; however, it may be most pertinent to adolescents because this is the period that many habits acquired in later life are formed. This also extends to the degree of students' engagement with various forms of physical activity both within during the school hours and outside the school, as well as the relationship that exists between regular physical activity and academic performance as well as

the general well-being of students. Regular physical activities also help the student to improve their academic performance, together with social and emotional wellness. There are several simple methods to measure the amount of obesity (overweight) and one of the most common methods are categorized as BMI from their body weight that can be determined based on the division of body weight (kg) to the square of height (m)<sup>2</sup>, BMI can be used to measure weight categories and may suggest health and nutritional status. BMI is a reference value to assess whether a person's weight is in a standardized range relative to their body height and is typically used to monitor the health status of students in schools. The BMI consists of four weight categories, i.e., underweight, normal weight, overweight and obese. BMI is also an age-independent and can applies to both genders. For children aged 2 to 20, BMI is interpreted differently. It is calculated the same as for adults but then compared to what is expected for other children or youth of the same age. The BMI is compared to the percentiles for children of the same sex and age rather than comparisons against fixed thresholds for underweight and overweight. A BMI below the fifth percentile indicates underweight while above the 95th percentile indicates obesity. Children with BMI ranging from the eighty-fifth to ninety-fifth percentiles are considered overweight.

## METHODS

To achieve the purpose of the study, equal number of subjects were assigned into two groups i.e. boys and girls. The total of eighty (N=80) students with both male (N=40) and female (N=40). Only the regular school going students of 13 years to 15 years old age group from Don Bosco Higher Secondary School, Silchar, Assam were included. The test was conducted for all the subjects on selected questionnaires and anthropometric measurements. The variables including questionnaires and measurements were administered inside the classroom of Don Bosco Higher Secondary School in their respective classes. All the students were well explained regarding the test and questionnaires to

accurate the result of the collecting data. Physical Activity Questionnaire for Adolescents (PAQ-A) was used to determine the last 7 days physical activity level and Adolescent Food habits checklist (AFHC) was used to determine eating habit and food choices. Moreover, the anthropometric measurements were also taken for each participant to check their Body Mass Index (BMI). To determine whether there is significantly different in selected variables among girls and boys, Descriptive Statistics, Independent t-test was applied and level of significance was set at 0.05 level.

## RESULTS

**Table 1:** Descriptive Statistics on PAQ-A, AFHC and BMI among boys and girls

Variables	Groups	N	Mean	Std. Dv.
PAQ-A	BOYS	40	2.93	0.706
	GIRLS	40	2.786	0.653
AFHC	BOYS	40	12.827	3.994
	GIRLS	40	12.348	4.522
BMI	BOYS	40	22.327	4.441
	GIRLS	40	22.633	4.233

Table 1 reveals that the mean and standard deviation of PAQ-A among boys were 2.93 and 0.706 and for girls were 2.786 and 0.653 respectively. This indicates that there was slightly difference in the physical activity performing in the last 7 days and boys had more participation in physical activity. It also reveals that the mean score and standard deviation of AFHC among boys were 12.827 and 3.994 and for girls were 12.348 and

4.522 respectively. This indicates that there is a slightly difference on their food habits and boys had more healthy responses in the checklist. Again, it reveals that the mean and standard deviation of BMI among boys were 22.327 and 4.441 and for girls were 22.633 and 4.233 respectively. This indicates that there is slightly difference on their body mass index ranges and boys had more normal range compare to girls.

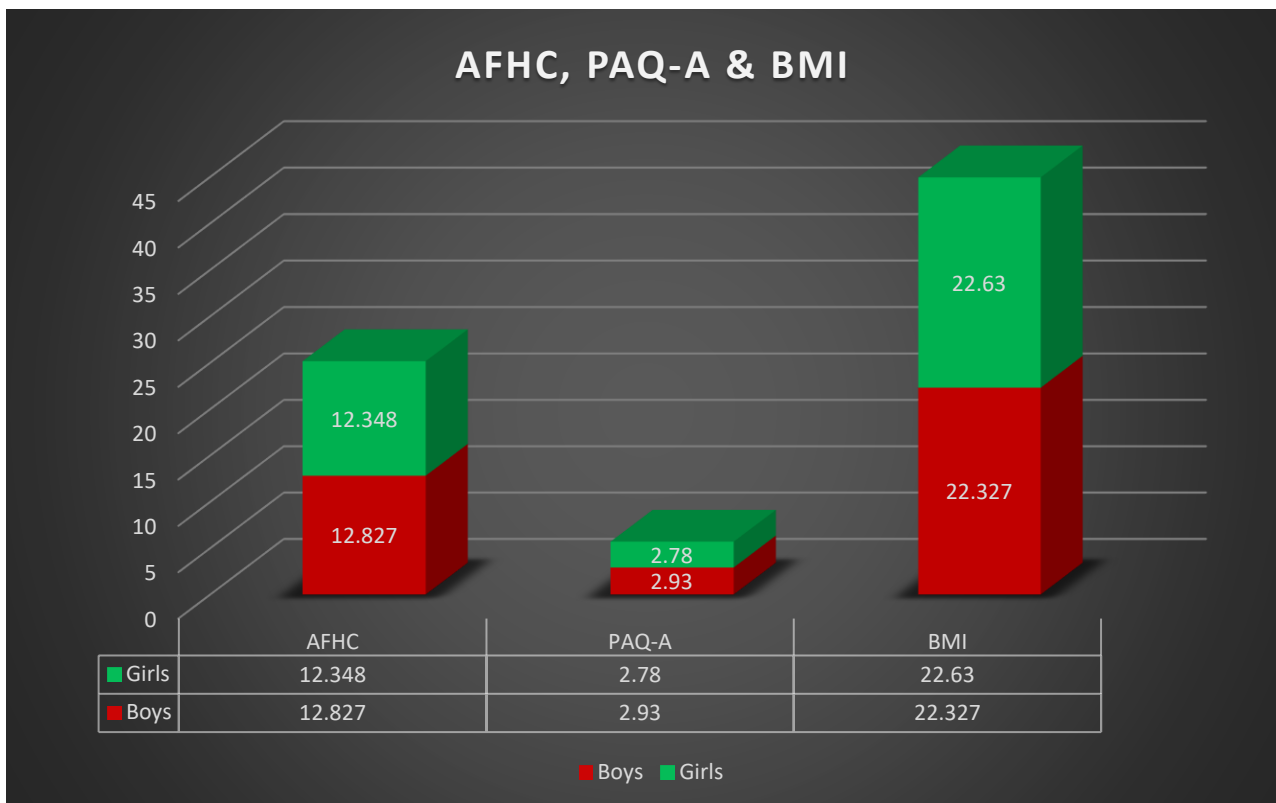
**Table 2:** Independent t test on PAQ-A, AFHC and BMI among boys and girls

Variables	Groups	N	Mean	Std. Dv.	t-ratio
PAQ-A	BOYS	40	2.930	0.706	0.946
	GIRLS	40	2.786	0.653	
AFHC	BOYS	40	12.827	3.994	0.502
	GIRLS	40	12.348	4.522	
BMI	BOYS	40	22.327	4.441	0.314
	GIRLS	40	22.63	4.23	

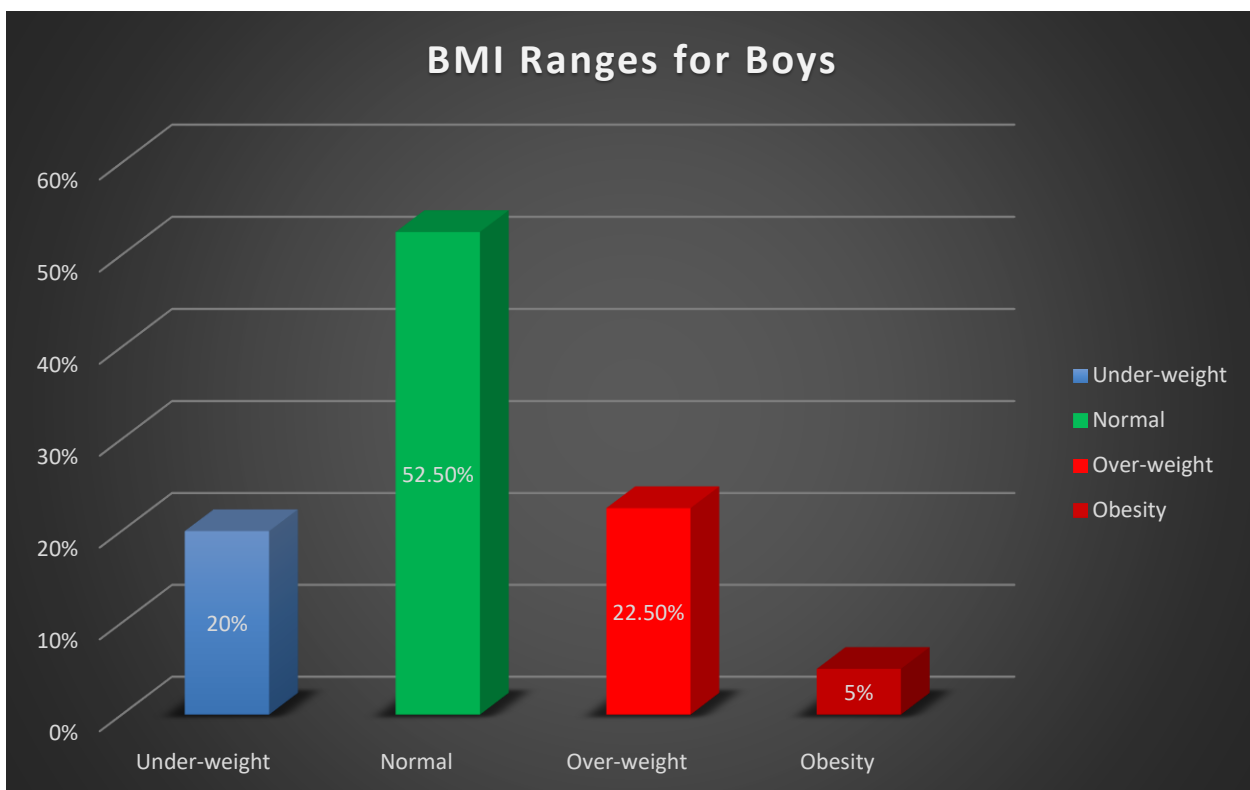
\*Significant at 0.05 level, df (78) = 1.991

Table 2 reveals that there is no significant difference found between boys and girls in all the variables, since the obtained value was smaller than tabulated value on level of significant at 0.05 for the degree of freedom 78.

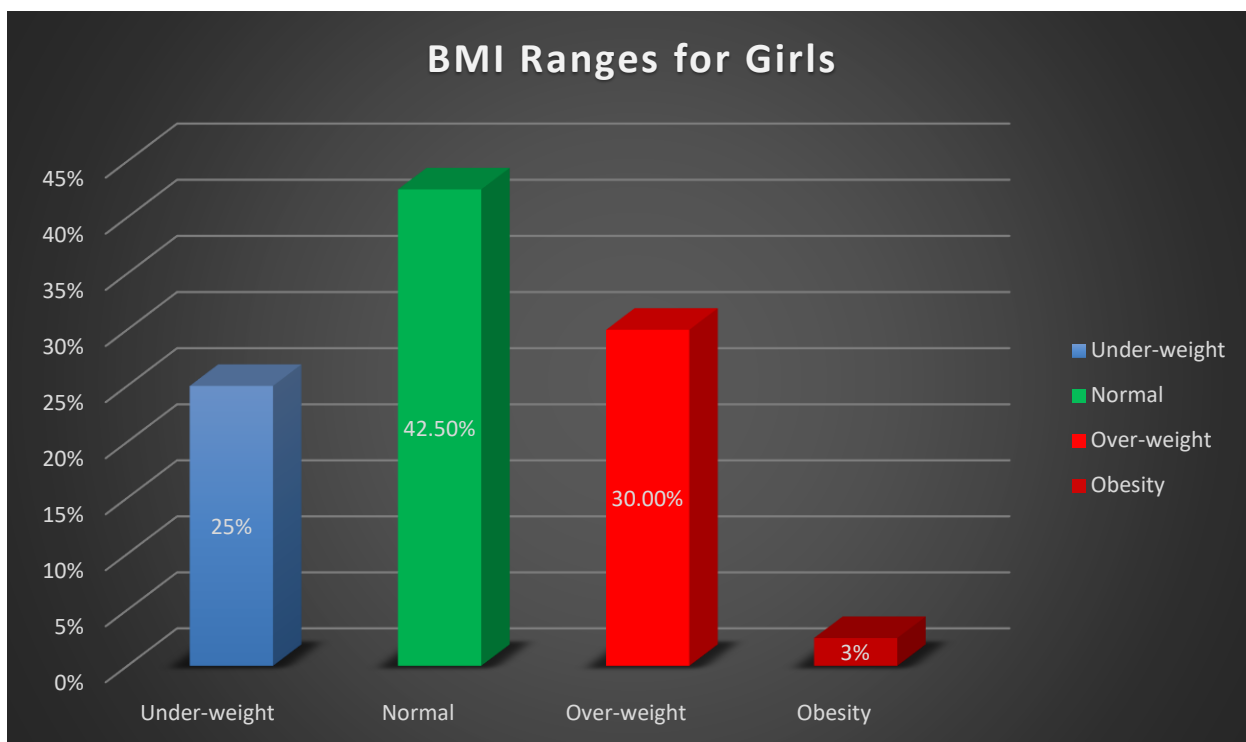
Comparison of mean for AFHC, PAQ-A and BMI the boys and girls are shown graphically



**Graph 1** Graphical Representation of mean difference of Adolescence Food Habit Checklist (AFHC), Physical Activity Questionnaire (PAQ-A) and BMI among boys and girls.



**Graph 2** Graphical Representation of BMI ranges percentage including under-weight, normal, over-weight and obesity for boys



**Graph 3** Graphical Representation of BMI ranges percentage including under-weight, normal, over-weight and obesity for girls.

## DISCUSSION

In the statistical findings there were no significance difference in the variables between boys and girls but in the mean values of the variables, the boys had more normal range in the BMI and also, less in the underweight range and overweight range which might be because of their participation in physical activities and healthy eating habits. According to the findings, the boys had more participation in the physical activities in the last 7 days before collecting the data and also, they have more healthy eating responses compare to the girls in the findings. Figure no. 2 and 3 shows the graphical representation of BMI ranges percentages of boys and girls, 20% of boys were in underweight range, 52.5% in normal range, 22.5% in overweight range and 5% in obesity range whereas 25% of girls were in underweight range, 42.5% in normal range, 30% in overweight range and 2.5% in obesity range. The result may be due to their different living styles, food choices, parenting, limited time for physical activity and different culture as the students were day-scholar.

## CONCLUSION

According to the collected data, boys have the small percentage of more participation in their Physical Activities, Healthy Eating and also the normal range in their BMI, but the statistical finding shows that there was no significant difference in the variables. So, the conclusion was drawn as there was no significant difference in their Physical Activities, Healthy Eating and BMI between the boys and girls of Don Bosco

Higher Secondary School, Silchar, Assam. Hence, the formulated hypothesis was rejected.

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