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Health status of madrasa school girls: A comparative analysis

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Abstract
Health is wealth. Achieving good health status is one of the important objectives of education and studying health status of pubescent girl's student in different school is also important area of research in physical education. Purpose: Present study was designed to find out the health status and health risk of minority girls studying in Madrasa School at VII-VIII standard and compare them with general schools' girls. Material and Methods: A total of 33 Madrasa school girls studying in standard VII and VIII were selected randomly for this study (G1). Along with 31 general school girls studying VII-VIII standard were also selected randomly (G2) for this study to compare the health status between two groups. Height, weight and BMI were considered as criterion measure for the study. Stediometer and standard weigh machine were used to collect the data. BMI was measured by using standard anthropometric equation. Maximum score, minimum score, mean score and standard deviation were used as descriptive statistics. Mean difference was analyzed using t-test. Only 0.05 level of confidence was set up to judge significance level in this study. Result: Result revealed that the mean value of height, weight and BMI of G1 group were higher than the G2 group. Computed t-value indicated that mean difference between G1 and G2 for height was not statistically significant but mean difference between G1 and G2 for weight and BMI were statistically significant. Conclusion: From the findings it was concluded that Madrasa school girls of VII-VIII standard had better health status than general school girls of the same standard.

Keywords: health status, body mass index, madrasa girls, general school girls, pubescent stage

Introduction
As technology has made our lives easier people are become less active nowadays. For this reason risk of many chronic diseases are increased, such as heart disease, stroke and type-2 diabetes, as well as weight gain and obesity. Among these obesity is increasing day to day and reached in alarming stage for the students particularly adolescent female students. Several studies reported prevalence of obesity among school children and adolescents [1, 2, 3]. Musaiger and Gregory (2000) reported that the mean BMI for Bahraini girls aged 13yrs and above exceeds that of their American counterparts, indicating a trend towards fat accumulation in the Bahraini girls [4]. Sampei et al. (2003) conducted a study on ethnicity and anthropometry and body composition and found that the Japanese pre- and post-menarche girls had lower weight and height values when compared with the Caucasian girls [5].
Achieving good health status is one of the important objectives of education thus health status of the school students is important criteria for school administration. There are so many caste and religious students studied together in schools of West Bengal India and there socioeconomic condition is also differing greatly. Therefore there health status might not be same.
Health status can be assessed easily by calculating BMI. Present study tried to reveal the health status of the adolescent female students belong to two different categories in respect of their religion and caste. In Madrasa only the students from Muslim community are studied and in general school major portion of the students belong to general caste and they are usually from Hindu religion. Both have different culture, rituals and customs. Findings will be helpful to know the real status of health of the school girls in respect of their two different religion and caste.

Materials and Methods
Subject
A total of 33 Madrasa school girls studying in standard VII and VIII were selected randomly for this study (G1). Along with 31 general school girls studying VII-VIII standard were also selected randomly (G2) for this study.

Criterion measure
Height, weight and BMI were considered as criterion measure for the study.

Test and Tools Used
Stediometer and standard weigh machine were used to collect the data. BMI was calculated by using standard anthropometric equation.

Statistical Design
Maximum score, minimum score, mean score and standard deviation were used as descriptive statistics. Mean difference was analyzed using t-test. Only 0.05 level of confidence was set up to judge significance level in this study. All statistical calculations were done using standard statistical software (Excel 2010).

Results and Findings
Maximum score, minimum score, mean and standard deviation of height, weight and body mass index (BMI) were calculated for both G1 and G2 group and presented in Table-1 and findings have presented graphically in Figure-1(A), (B) & (C).

Table 1: Descriptive statistics for Height, Weight and BMI of G1 and G2 group

Parameters	Height (M)		Weight (Kg)		BMI (Kg/M Sq)	
Groups	G1	G2	G1	G2	G1	G2
Maximum Score	1.55	1.54	44	39	25.83	16.44
Minimum Score	1.26	1.29	28	14	13.32	8.41
Mean Score	1.44	1.42	36.6	29	17.85	14.26
Standard Deviation	0.09	0.08	5.42	7.06	3.62	2.24
T-Value	0.526		2.70		2.66	
Remarks	Not Significant		Significant		Significant	

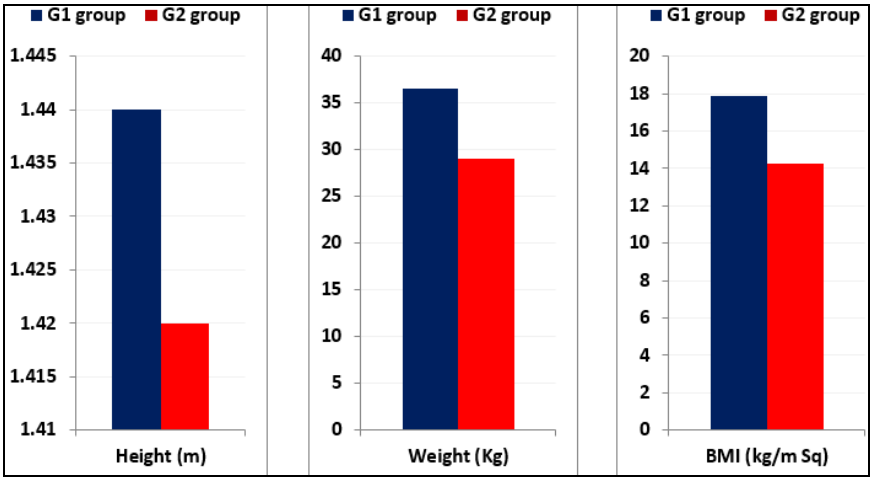

Fig 1(A, B, C): Graphical representation of findings of health status of G1 and G2 group

BMI norm proposed by World Health Organization (WHO) as it used to predict the health status and health risk for adult population is not usually applicable for children. It used differently for boys and girls from the age of 5 years to 20 years. Though the process of calculation is same but compared to typical values for other children of the same age. Instead of comparison against fixed thresholds for underweight and overweight, the BMI is compared against the percentile for children of the same sex and age [6]. As per the norm a BMI that is less than the 5th percentile is considered underweight and above the 95th percentile is considered obese. Children with a BMI between the 85th and 95th percentile are considered to be overweight [7].

The mean value of BMI of both G1 and G2 groups of present subjects was below the 50th percentile (<18.8 Kg/m^2) but BMI of G1 group (17.85 Kg/m^2) was nearer to its 50th percentile value where as the BMI of G2 group (14.26 Kg/m^2) was below the 10th percentile compare to its standard norm of WHO, NCHS and CDC, 2007 [6]. Results of present study revealed a very poor health standard of G2 group which is need to be take serious steps to rectify by the school authority, parents and the Govt. of West Bengal. Recent studies in Britain have indicated those females between the ages 12 and 16 have a higher BMI than males of the same age by 1.0 kg/m^2 on average.[6] Rao, Joshi and Kanade (1998) [8] conducted a study on Indian adolescent girls and found the girls from LSE not only had lower attained weight, height, skinfold thickness at triceps and body fat but also had a significant difference ($p < 0.05$) in menarcheal age (15.4 yr) as compared to girls from HSE (12.1 yr) [8]. Bhadra, Mukhopadhyay and Bose (2005) conducted a study on Bengalee Hindu girls of West Bengal and found that the BMI of pre-menarche school girls was 15.1 Kg/m^2 which was lower than the 50th percentile. For the menarche girls the BMI value was reached 18.1 Kg/m^2 they reported **[9].** Nawarycz and Ostrowarycz-Nawarycz (2007) reported that the children from Lodz city in Poland particularly girls, reveal significantly lower BMI values defining obesity (c95) as compared to the IOTF norms [10].

Conclusion

From the above findings following conclusions were drawn in present study:

1. The Madrasa girl students had significantly higher health status in respect of BMI than General school girls.
2. Obesity was not prevalence in Madrasa girls as well as in general school girls.

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