



RESEARCH ARTICLE

**BMI STATUS OF PRIMARY SCHOOL GOING CHILDREN IN VILLAGE AREA OF WEST BENGAL**

**Banashree Biswas<sup>1</sup> and Asish Paul<sup>2\*</sup>**

<sup>1</sup>Kishorepur Girls High School, Gotalahat, Krishnapur

<sup>2</sup>Department of Physical Education, Jadavpur University, Kolkata-32, West Bengal

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**ABSTRACT**

School children in this country are lagging in health and fitness parameters with 40 percent of kids not having a healthy Body Mass Index (BMI). The purpose of the study was to find out the status of B.M.I. level of primary school children of class 1 age ranging from 5-6 years which can show the nutritional status and indicate the body composition in early childhood level. 50 girls and boys of each group were selected from 4 schools of 24pgs(s) in West Bengal. The village culture prevailed having some higher socioeconomic condition based on agriculture and the caloric intake capacity flattened with mid-day meal. B.M.I. was calculated using very well-known formula. The status of BMI level was very poor which indicated the poor nutritional status. No significant differences were found in case of boys and girls considering the 'p' value. The discriminations were not found in case of boys and girls considering their health and body perspective.

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**INTRODUCTION**

Movement is the Principal characteristics of living organism. In sports field movement is the most basic factor. This takes place in the form of running, walking, jumping, throwing, bending etc. Sports activities are the implications of movement in varied range and intensity. Movement is related to physical fitness. For higher economic value of movement high physical fitness is required. Speed, Strength, & endurance are the three principal criteria of physical fitness. This three are of great important in any type of movement. For this reason, it is important to the boys and girls for the better speed, higher strength and greater endurance.

BMI a simple measure of adiposity can easily indicate the health status. In the village area the socioeconomic condition is so poor that the little kids suffer from malnutrition. It is a burning problem to identify the child suffers from malnutrition and provides him/her sufficient diet. Under this circumstance the present researcher as a Primary school teacher accept this problem to find out the present status of BMI in her own school and neighbouring 3 other primary school.

The main purposes of this study were to study the existing status of BMI of little child, to compare the status of boys and girls, to Compare the height and weight of the student of class I. The study may give some light about the existing status of BMI of the little kids and may give some idea about some very basic Anthropometric measures.

Slaughter et al. (1982) have shown that the mean height of the 10.0 – 10.9 and 11.0 – 11.9 years of American boys were 144.1 and 147.8 cm. Crony (1981) has shown that the

average lower limb length of 11 and 12 years London boys as 66.04 cm. and 68.58 cm. Teeple and Massey (1976) has shown that the mean sitting height of 11 and 12 years old boys were 77.0 and 79.2 cm. Bhatnagar et al (1990) observed that the average sitting height of 11 and 12 year old boys as 64.24 and 64.70 cm. Teeple and Massey (1976) has shown that the average height of 11 and 12 years old boys were 147.6 and 152.4 cm. According to Barray and Cureton, 1961; Parizkova, 1961; Montoye et al, 1972 and Cureton et al., 1975, the association of age, body size and body composition with physical performance has been found to vary from low to moderate in children, depending on several characteristics of investigation. A number of researchers have demonstrated that body size and body composition are major aspects of physique, related to physical performance in pre-pubescent children (Boileau et al., 1977 and Slaughter et al., 1982). Morphological characteristics are fundamental to successful performance of sports activities.

Results of recent kinanthropometric research have tended to suggest that certain physical traits such as physique, body fat, lean body weight and proportionality characteristics could significantly influence athletic performance (Hebbinck, 1984). Lu et al. (1962), studied on 128 children, 56 boys and 72 girls, aged from three to eight years and concluded that three factors, the height, the chest girth and the calf girth are satisfactory in determining the weight for children. Wear and Miller (1962), worked over 300 junior high school boys aged from 11 years 11 month to 16 years 9 month and observed that the subjects who were medium in physique and normal in development were the best performers. Subjects of heavy physique (over weight) were the poorest performers. Bookwalter et al. (1952), worked over 1977 elementary school boys and found that large boys, classified as thin

medium grid channels, performed equally well on the Indiana Motor Fitness Test; for average size thin boys performed better than medium physique boys; the very obese were the poorest physical performers.

## MATERIALS AND METHODS

After reviewing the information of different other related work, the procedures with specific direction, upholds towards a logical conclusions has been planned and performed. In this study the researcher made an attempt to find out the status of BMI of little kids of age group of nearly 5-6 years of villages of 24 Pgs(S). 50 students of each group of boys and girls were taken as the subjects of this study.

### Design of the study

The Height and Weight of all the 100 boys and girls were measured. The present researcher have not taken any consideration about daily food intake quantity, status of life style or any other personal, family or social matter. With the help of one physical education teacher and three other assistants, the measurements were taken.

Data were taken in four days and the total time taken was near about 2 hrs./day. It was collected in the late winter season (February – March) when the temperature was nearly about 10-120 C (min.) & 25-300 C (max.), humidity were very low.

The researcher himself was present with his associates and directly supervises the procedure and sometimes records the data as required. The anthropometrical measurements were taken in the class room.

### Criteria measured

Two anthropometric measures were the criteria. In the present study according to the procedure referred by Johnson and Nelson were taken in to consideration. The anthropometrical measurements were:

- i. Standing height (in mtr.)
- ii. Weight (in K.G.)

## RESULTS AND DISCUSSIONS

The collected data were analyzed through the formula of BMI to arrive into definite conclusions. These results after calculations were presented in the table-1 thereafter with due analysis and discussions. The results of the anthropometric measures and the calculated value of BMI presented in the following table and discussions were made.

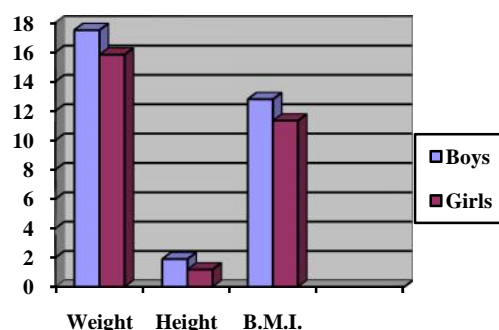
**Table 1** Mean, S.D. and 'p' values of mean differences of Weight, Height and B.M.I.

	Boys	Girls	'p' value
Weight	17.49 ± 2.43	15.82 ± 1.26	.323
height	1.89 ± .43	1.18 ± .37	.60
B.M.I.	12.78 ± 1.45	11.32 ± 1.19	.66

0.05% level of significance

It was clear that the average Weight (17.49kg.) and height (1.89mt.) of Boys was greater than the girls which were 15.82kg. and 1.18mt. respectively and the BMI value also in

case of boys (12.78) greater than the girls (11.32) but the 'p' value indicates that the differences were not significant.



**Figure 1** The comparative graphical representation of different measures and calculation

In a cross-sectional study that enrolled 160 schoolchildren from a public school in the city of Rio de Janeiro, 91 boys and 69 girls, aged 7 to 9 full years Silva et. al. (2008) found that the Mean BMI did not differ by sex ( $p = 0.7789$ ). Strass found that the self-reported weights were significantly lower than measured weight among girls aged 12-16 years compared with boys. Hills et. al. stated that females tend to underestimate their weight and in contrast, with males only those who are overweight or obese are likely to underestimate their weight. Tiggemann informed that the inaccurate information about weight or body image may also influence weight concern in adolescents. Body image was one of the most significant factors associated with trying to change weight among both male and females adolescents.

In a study first published on November 28, 2014 in the 'Financial express' reported that for the academic year 2013-14 covered 1,15,559 children in the age group of 7 to 17 years in 287 schools across 85 cities from 23 states in India. In a comparative study between boys and girls, it found that 65 per cent of girls have healthy Body Mass Index scores compared to 59 per cent of boys. Children in all five regions of the country were deemed more or less equally unfit with unhealthy Body Mass Index (BMI) scores of 37 per cent (Central), 54 per cent (East), 37 per cent (North), 38 per cent (South) and 36 per cent (West), said the study by EduSports, physical education and school sports enterprise.

## CONCLUSIONS

It has concluded that the Boys were taller and heavier than the Girls than the girls. The Body Mass Index (BMI) in case of Boys was higher than the Girls without any significant difference. Here in this study the lower BMI of both boys and girls indicated the poor health status in respect of caloric intake capacity, although the socioeconomic condition was good and there was the provision of mid-day meal, then it can easily be accepted that the social awareness about the food habits and proper lifestyle is required.

## References

1. Bhatnagar, D.P., Singal, P. and Grover, H. K. (1987). "Somatometric variable and body components in relation to socioeconomic status". N.I.S. Scientific Journal 10(3): 35.

2. Clark David H. and Clark H Harison. Application of Measurement of Physical Education. Mosby and company, New Delhi 1993.
3. Cureton, K.J. Boileau, R.A. and Lohman, T. G. Relationship between body composition measures and AAHPER test performance in young boys. *Res. Quart.*, 1975. 46:218-229.
4. Hills AP Byrne NM. Body composition, body satisfaction, eating and exercise behaviour of Australian adolescents. In: Parizkova J, Hills AP, editors. *Physical Fitness and Nutrition during Growth: Studies in Children and Youth in Different Environment. Medicine and Sport Science*. Volume 43. Basel: Karger; 1998. p. 44-53. *Australian and New Zealand Journal of Public Health* 2002; 26 (5) : 473-8.
5. Huntley, Charles Troy, "Effects of Selected Activities upon Physical Fitness and Motor Ability of First, Second and Third Grade Children. "*Dissertation Abstracts International* 34 (March 1974): 5688.
6. Johnson L. Barry and Nelson K. Jack. Practical Measurement for Evaluation in Physical Education, Surjit Publication, Delhi-1982.
7. Parizkova J. The impact of age, diet and exercise on man's body composition. *Ann. N.Y. Acad. Sci.* 1963. 110: 661- 674.
8. Silva HG, Chiara VL, Barros ME, Rêgo AL, Ferreira A, Pitasi BA, Mattos T. 'Diagnosing the nutritional status of school children: a comparison between Brazilian and international criteria', *J Pediatr (Rio J)*. 2008 Nov-Dec;84(6):550-5.doi:10.2223/JPED.1853.
9. Slaughter, M. H. Lohman, T.G. and Misner, J. E. *Association of somatotype and body composition to physical performance in 7-12 year old girls. J. Sports Med. Phys. Fit.* 1982. 20: 189-198.
10. Strauss RS. Comparison of measured and self-reported weight and height in a cross-sectional sample of young adolescents. *Int J Obesity* 1999; 23: 904-8
11. Tiggemann M, Pennington B. The development of gender difference in body size dissatisfaction. *Aust Psychol*1990; 25: 306-13.

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