Study on Body Mass Index and Anthropometric Measurement of DAV students

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ABSTRACT

The prevalence of overweight and obesity among children has reached epidemic proportions across the world. Obesity in children's has been recognized as a significant health problem worldwide that requires inhibitory exertion. Prevention is best targeted at school going children, but relatively few research studies have focused on obesity among school going children's and most of those that have, were conducted in other states of India. Childhood obesity is emerging as a major health problem.. The aim of this study was to describe the impact of physical education program on obese children's of selected age group in the state of Punjab.

Keywords: *DAV Schools, Anthropometric Measurements, Punjab.*

INTRODUCTION

The last quarter of the twentieth century has seen childhood obesity emerging as an epidemic in developed countries and a cause of concern worldwide as it is being reported in significant numbers from nations previously considered poor or developing. It is no longer a problem of only the affluent countries.

The World Health Organization (WHO) describes Obesity as one of today's most important 'Public Health Problems', and has designated Obesity as a 'Global Epidemic' and also one of today's most neglected Public Health Problems(Health & Survey, 2002). More than 1.4 billion adults 20 years and older are overweight. Approximately 35 million overweight children are living in developing countries and 8 million in developed countries. Thus, addressing obesity should be a priority. Overweight in adolescence is a marker of overweight in adult age, and is associated with the diseases

such as diabetes mellitus and cardiovascular disease. A study conducted by Alok et al. in urban and rural areas of Surat city in the 14–16 years age group found the prevalence of obesity to be 12.8% in rural and 14.6% in urban adolescents. JP Goyal et al. conducted a study on the prevalence of obesity in adolescents aged 12–15 years and RK Goyal et al. conducted a study in adolescents aged 12–18 years belonging to different socioeconomic status (SES) in Surat. The study data were collected to measure the prevalence of obesity in the adolescents aged 14–16 years and to review specific causes contributing to overweight and obesity.

RESEARCH METHODOLOGY

The study consisted of two parts: 1) Cross-sectional survey of children in grade tenth DAV schools randomly selected from the state of Punjab. Data were checked for completeness and accuracy. Coded data were computerized and analysed by using IBM SPSS Statistics Version 25. The descriptive statistics were presented in frequency tables, range, minimum and maximum descriptive, mean, standard deviation and variance for boys and girls separately(Ricardo, Gil, & Araújo, 2002).

The school teachers from department of physical education personally took different anthropometric (height, weight, triceps, biceps, abdomen, suprailiac, calf and fat percentage) measurements at the examination room after instructing the students to took off heavy clothes. The sample size (N) of students is 150. One suitable weight balance measuring to nearest 0.5 kg was used(Division & Report, 2017). Students were weighed while wearing light school uniform. Suitable metallic meter scale measuring to the nearest 0.5 cm, fixed on the scale was used. Body Mass Index was calculated by dividing weight in kg by square height in meters(Chou & Huang, 2017).

FINDINGS

Data were checked for completeness and accuracy. Coded data were computerized and analysed by using IBM SPSS Statistics Version 25. The descriptive statistics were presented in frequency tables, range, minimum and maximum descriptive, mean, standard deviation and variance for boys and girls separately. The school teachers from department of physical education personally took different anthropometric (height, weight, triceps, biceps, abdomen, suprailiac, calf and fat percentage) measurements at the examination room after instructing the students to took off heavy clothes. The sample size (N) of students is 150. One suitable weight balance measuring to nearest 0.5 kg was used. Students were weighed while wearing light school uniform. Suitable metallic meter scale measuring to the nearest 0.5 cm, fixed on the scale was used. Body Mass Index was calculated by dividing weight in kg by square height in meters(Therapy, 2016).

Table No. 1: Descriptive Statistics (Boys)

	N	Range	Minimum	Maximum	Mean	Std. Deviation	Variance
Height	150	38.0	141.0	179.0	161.647	7.6677	58.794
Weight	150	42.0	58.0	100.0	75.887	8.4038	70.625
BMI	150	15.3	25.0	40.3	29.135	3.0116	9.070
Triceps	150	13.0	19.0	32.0	25.033	2.9751	8.851
Biceps	150	14.0	12.0	26.0	17.060	2.3294	5.426
Abdomen	150	13.0	27.0	40.0	31.653	2.7733	7.691

The table number 1 depicted that, the difference between the largest descriptive (179.0) and smallest descriptive (141.0) a value were 38.0 and provides an indication of statistical dispersion. The arithmetic mean was 161.647. The amount of variation or dispersion of a set of data values was 7.6677. The expectation of the square deviation of a random variable from its mean was 58.794. It measures how far a set of (random) numbers are spread out from their average value. The difference between the largest descriptive (100.0) and smallest descriptive (58.0) value were 42.0 and provides an indication of statistical dispersion. The arithmetic mean was 75.887. The amount of variation or dispersion of a set of data values was 8.4038. The expectation of the square deviation of a random variable from its mean was 70.625. It measures how far a set of (random) numbers are spread out from their average value. The difference between the largest descriptive (40.3) and smallest descriptive (25.0) values were 15.0 and provides an indication of statistical dispersion. The arithmetic mean was 29.135. The amount of variation or dispersion of a set of data values was 3.0116. The expectation of the square deviation of a random variable from its mean was 9.070. It measures how far a set of (random) numbers are spread out from their average value. The difference between the largest descriptive (32.0) and smallest descriptive (19.0) values were 13.0 and provides an indication of statistical dispersion. The arithmetic mean was 25.033. The amount of variation or dispersion of a set of data values was 2.9751. The expectation of the square deviation of a random variable from its

mean was 8.51. It measures how far a set of (random) numbers are spread out from their average value. The difference between the largest descriptive (26.0) and smallest descriptive (12.0) values were 14.0 and provides an indication of statistical dispersion. The arithmetic mean was 17.060. The amount of variation or dispersion of a set of data values was 2.3294. The expectation of the square deviation of a random variable from its mean was 5.426. It measures how far a set of (random) numbers are spread out from their average value. The difference between the largest descriptive (40.0) and smallest descriptive (27.0) values were 13.0 and provides an indication of statistical dispersion. The arithmetic mean was 31.653. The amount of variation or dispersion of a set of data values was 2.7733. The expectation of the square deviation of a random variable from its mean was 7.691. It measures how far a set of (random) numbers are spread out from their average value.

CONCLUSION

This was the first study in the state of Punjab that has examined the height, weight, triceps, biceps, abdomen, suprailiac, calf and fat percentage measurements for childhood obesity and used qualitative methodology(Abuse et al., 2016). The prevalence of overweight and obesity in school children in the state of Punjab was lower than that reported amongst most children in the other states. This is important given the social changes that the community is undergoing and the rapid expansion of fast food outlets and western dietary influences(Pandit & Ojha, 2013). The focus group data provided important contextual information validated some findings from the cross sectional study and informs the development of future obesity prevention interventions appropriate to the local setting. With the diagnosis of overweight or obesity rising across the Punjab, the need for early interventions is critical(Ja, 2003). There is a clear need for the collective effort of government officials, parents and teachers to provide measures that enhance prevention, control and management of overweight and obesity among Punjab DAV school children. School nurses could make substantial changes by assessing, monitoring and providing health teaching for parents and their children(Nutrition & Manangement, 2000).

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