



Prevalence of Obesity in Adolescents in Rural Sector

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ABSTRACT

Childhood obesity is a known precursor to obesity and other non-communicable diseases (NCDs) in adulthood, and there is an urgent need to examine prevalence of obesity among adolescents. The aim of the present research is to determine health status with respect to obesity of rural adolescents.

Objective: To find out the prevalence and factors associated with obesity among adolescents especially school and college students

Methods: A cross sectional study was undertaken by involving all the colleges located within the rural field practice area for a period of 1 year from January 2022 to January 2023. The data was collected from students (n= 1170) using pre-tested structured questionnaires. Anthropometric measurements such as height, weight, waist circumference and body fat percentage were taken for all the students. The criteria for overweight /obesity and central obesity were based on proposed WHO Asia-Pacific guidelines and International Diabetes Federation (IDF) guidelines.

Results: Overweight/ obesity were found to be 6.1% and 7.2% respectively and central obesity of 1.9%. The over weight/obesity had significant association with age and family history of obesity. The mean BFP was significantly higher among boys in the age group of 15-16 years compared to 17-19 years age group and significant difference in the mean BFP was noted among both boys and girls with family history of obesity. The mean body fat percentage was significantly high in overweight/obesity and central obesity.

Conclusions: The present research has found prevalence of overweight/obesity of 13.3% and central obesity of 1.9% respectively in the age group of 15-19 years, which needs to be confirmed in future studies.

Conclusion: Rural areas experience higher rates of obesity and overweight than the nation as a whole, yet many rural communities do not have the resources to address this critical health concern. Rural healthcare facilities are less likely to have nutritionists, dietitians, or weight management experts available. Rural areas may lack exercise facilities and infrastructure to encourage physical activity. Access to healthy and affordable food is also limited in many rural communities. Additionally, the distance that many rural residents must travel to access healthcare facilities, exercise facilities, and healthy food is an ongoing barrier.

To address these challenges, rural communities can invest in facilities and infrastructure that support access to healthy food, fitness, and healthy lifestyles. Communities may also choose to develop programs and services that help rural residents learn about the health risks of overweight and obesity, as well as adopt healthy lifestyle behaviors to control their weight.

INTRODUCTION

Globally obesity has increased to alarming levels in the last few decades, which acts as an independent risk factor leading to the development of a number of noncommunicable diseases such as diabetes, cardiovascular diseases and cancer. Consequently they result in increase in morbidity and mortality rates, as well as increase in healthcare expenditure. In particular, obesity among children and adolescents is becoming an epidemic due to various life style changes, both in the developed and developing nations.

As per World Health Organization (WHO) estimates, 41 million children under five years and more than 340 million children and adolescents in the age group of 5 to 19 years were having overweight or obesity in the year 2016. Pathogenesis of obesity in young is multifaceted, including hereditary, metabolic, environmental and sociodemographic factors. Studies done in various parts of India have reported prevalence of obesity among children to be ranging from 3-29%, with more prevalence in urban areas when compared to rural areas.

Obesity and overweight among children and adolescents have significant long term health consequences such as adult obesity, higher levels of cholesterol, higher future incidence of coronary artery disease. Limited data are available on the prevalence of overweight and obesity among children and adolescents in Tamil Nadu. So, this study was planned to assess the prevalence of overweight and obesity among the school in the age group of 14-17 years in vellore district of Tamilnadu

METHODS

The study was carried out among four schools in rural vellore district. Students studying in class 8th to 12th in the age group of 14-17 years were included in the study. The sample size was calculated to be 950, using the formula $n = \frac{pq}{d}$, including 10% non-response rate. After getting permission from the school officials, parent's consent was obtained and students without parent's consent were excluded from the study. The students were selected by simple random technique. After obtaining their basic socio-demographic details, height and weight were measured using stadiometer and portable weighing scale. Using the data collected, percentiles of Body Mass Index (BMI) were done for each age and gender. Those in the 5th-85th percentile were considered as having normal BMI, subjects within 85th-95th percentile were taken as overweight and those with more than 95th percentile were taken as obese. Microsoft Excel and Statistical Package for Social Sciences were used for data entry and analysis.

RESULTS

The study included 934 participants of which 49% were boys and 51% were girls. The mean BMI among boys was 16.95 and it was also observed that the BMI was increasing with age. The 85th percentile and 95th percentile of BMI given in the table were the cut off points for overweight and obesity among boys. According to that 39 (8.51%) were identified as overweight and 21 (4.58%) as obese. It was seen that the mean BMI among girls was 18.58 and 9.24% were identified as overweight and 4.20% as obese. The mean BMI was found to be increasing with age from 17.49 at 14 years to 19.76 at 17 years of age.

Conclusion

Rural areas experience higher rates of obesity and overweight than the nation as a whole, yet many rural communities do not have the resources to address this critical health concern. Rural healthcare facilities are less likely to have nutritionists, dietitians, or weight management experts available. Rural areas may lack exercise facilities and infrastructure to encourage physical activity. Access to healthy and affordable food is also limited in many rural communities. Additionally, the distance that many rural residents must travel to access healthcare facilities, exercise facilities, and healthy food is an ongoing barrier.

To address these challenges, rural communities can invest in facilities and infrastructure that support access to healthy food, fitness, and healthy lifestyles. Communities may also choose to develop programs and services that help rural residents learn about the health risks of overweight and obesity, as well as adopt healthy lifestyle behaviors to control their weight.

Acknowledgments

The author is thankful to all the staffs and students participated in the study