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Research Article

BODY MASS INDEX OF SCHOOL GOING ADOLESCENTS OF JABALPUR, MADHYAPRADESH

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A B S T R A C T

Body mass index is a simple non expensive non surrogate method to measure obesity, malnutrition and other health issue of a population. It is widely used method in determining public health. As per "The state of world children 2016" India ranks tenth in terms of underweight prevalence in the world. A cross-sectional study was carried out in the schools of Bilhari Jabalpur located in rural area of Jabalpur, students was effectively interviewed by predesigned questionnaire regarding Socio-demographic profile that is current residence, age, economical status and family size and life style practices like the physical activity questions. 266 adolescents of 13-17 years studied out of which 100 were male and 166 were female. Our study shows that 15.7% of male and 33% of female were underweight. And only 13.5% of male and 19.5 % of female normal. Study reveals that the economic status of the adolescents are the most important factor of their nutrition.

INTRODUCTION

Body mass index is a simple technique of measurement of an individual's health. One can easily find its ideal weight according to height. It is a measure of weight adjusted for height. It has traditionally been the chosen indicator by which to diagnose underweight and overweight. Body Mass Index is influenced by varying degrees of physical activity and socioeconomic factors, food habits, lifestyle, occupation, ethnic differences. Tackling childhood malnutrition could prevent stunting. (7) and further severe diseases. The currently available growth references are according to Indian Academy of Pediatrics for growth monitoring. For children and adolescents between 2-20 years old BMI is interpreted relative to a child's age and sex, because the amount of body fat changes with age and varies by sex. Percentile specific to age and sex classify underweight, healthy weight, overweight and obesity in children. The BMI-for-age determine for an individual indicates the relative position of the child's BMI value among children of the same sex and age. During this transition phase problem of both underweight and overweight arises. This is a crucial age for physical activity counseling because childhood levels of physical activity are strong predictor of physical activity in adolescence (2). This is an age at which children are beginning to have independence and influence on their food choices and food preparation (3, 4, 5). And with this increasing autonomy, it is important that the children themselves receive and recall nutrition counseling for it to be effective.(8).

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Diet and health are synonymous with the well-being of an individual. In absence of proper and adequate nutrition, a person can develop several developmental malformations. Many research studies have documented that malnutrition affects body growth and development, especially during the crucial period of adolescence (1).Aim of this study is to provide information and guidance as well as nutrition counseling for teenagers. And to throw a light on current health of teenage of rural adolescents.

MATERIAL AND METHODS

Sampling Site

Bilhari - A cross-sectional study was carried out in the schools of Bilhari Jabalpur located in rural area of Jabalpur, students (n=266) was effectively interviewed by predesigned questionnaire regarding Socio-demographic profile that is current residence, economic status and family size and life style practices like the physical activity questions. 266 adolescents studied.The subjects were measures wearing light clothing and without footwear. Weight was measured to the nearest 0.5kg using a bathroom scale which was calibrated on weekly basis with known weights. To ensure consistency and avoid variability single machine was used.Height was measured with the subject standing erect with head in the Frankfurt plane and ankles pressed against the wall on which the measuring tape has been fixed.

Bmi range	NO.	No.
Normal	39	52
underweight	42	88
Over	13	16
Obese	6	10
Total	100	166

Definition of Categories

Body mass index was calculated by CDC calculator for teenagers. CDC BMI Classification was used to find out BMI of adolescents. The health status of the subject are classified as, Over weight 85th to 95th , obesity as at or greater than 95th percentile BMI-for-age, normal BMI was defined as at or greater than 5th percentile and less than 85th percentile BMI-for-age, and underweight was defined less than 5th percentile BMI-for-age.

Table showing demographic profile of study subjects

Factors	underweight	Normal	overweight	obese
Economic status				
Lower	90 (69.2%)	30(32.9%)	4 (13.7%)	2(12.5.%)
Middle	40(30.76%)	54(59.3%)	20 (68.9%)	6(37.5%)
Higher	0(0)	7(7.6%)	5(17.2%)	8 (50%)
Family size				
Nuclear	56(43.07%)	56(61.53%)	20(68.96%)	7(43.75%)
Joint	74(56.9%)	35(38.46%)	9(31.03%)	9(56.25%)
Physical activity				
>2hours	35(26.92%)	46(50.54%)	5(17.24%)	2(12.5%)
<2hours	48(36.92%)	33(36.26%)	8 (27.58%)	4(25%)
No activity	47(36.15%)	12(13.18%)	16(55.17%)	10(62.5%)
Food habits				
Vegetarian	50(38.46%)	35(38.86%)	11(37.93%)	4(25%)
Non-vegetarian	80(61.53%)	56(61.53%)	18(62.06%)	12(75%)

RESULT

In total, 266 subjects were studied 100 were male and 166 were female. The prevalence of underweight was 48.87% while prevalence for overweight and obesity reported 16.91%. that means the prevalence of underweight is much more higher as compared to the prevalence of the obesity and overweight in teenage of the studied area. Subjects belonging to lower economic status are prone to be more underweight than in middle and higher one. Also we can conclude that nuclear family size subjects having more normal BMI as compared to the joint family size subjects. Though the prevalence of underweight is much higher than the prevalence of obesity or overweight but the childhood obesity should not be avoided because it is the most important public health problem given its increase and adverse health consequences.

CONCLUSION AND DISCUSSION

Today it is expected that malnutrition can kill seven million children a year, either directly or by worsening the impact of infectious diseases. (WHO technical report series 845,1995). Improper diet and unawareness towards the lifestyle lead to not only the under nutrition or malnutrition but also to the serious diseases like anemia, stunting, low immunity. The study throws a light on present health of teenage of local area population. Also, the study provide information and guidance as well as nutrition counseling for teenagers.

Such type of study was not done before in the area so it will definitely help in further study. A study done by dr. Mariya *et al* 2018 at Pune shows that out 200 students of average age 13.5±2.5years 119 were underweight and only 26 were normal that means more has to be done for the teenagers(6). Jabalpur is a metro city of Madhya Pradesh but underweight is still a problem in many rural area of it.

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