Change of anthropometric character with age in adolescent

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Introduction:

In adolescence human gets chance of second phase of growth, if adolescent growth acceleration happens if children have deficiency in nutrition, they get chance to catch up growth. In South East Asian Region a large number of adolescents, who constitute 20% of the population in these countries, suffer from malnutrition and anaemia, which adversely impacts their health and development. In previous study of Salboni (2011), 76 (10.1 %) suffered from grade-II thinness and 186 (24.8 %) suffered from grade-I thinness out of 749 subjects.[1] Longitudinal study represent that elevated body mass and BMI cause of chronic disease in early childhood.[2]Adolescent girls are suffering from iron deficiency(3); excess weight has been proved to be a stronger predictor of risk of morbidity and mortality in comparison with overall obesity(4).By help of conicity index abdominal obesity helps to detect nutritional status(5). Cellularity of adipose tissue (hyperplasia) practically doubles with onset of puberty and then plateaus in late adolescence and early adulthood.(6). Children from poor socioeconomic status suffer from under nutrition(7).

Methodology: Subject; Kolia Amir Ali High School & Chandpur Upendranath High school students, those schools are situated in Howrah district of WestBengal, India 100 boys are participating in this study, weight is measured by weighing machine, height is measured by anthropometry, and boys of this study group are adolescents of 10-18 years. Socio economic data are collected through interview method.

Results:

Weight and height of study boys are increasing with their increasing ages, which signifies adolescence's puberty at this age, their mean height (150.6 cm) weight (41.96 kg),BMI 18.62 kg/sqm; 3 boys are obese; they need to control their obesity; it may affect their further health they become prone to heart disease, diabetics, obesity may lead to early maturity that fastens puberty.

Discussion: Chronic energy deficiency is caused due to low body mass index, low BMI has shown low fat mass, fat free mass; even body mass index has correlation with socio-economic status. Children with low height with age causes with cumulative effects of under nutrition and which further causes infection, low weight when enters into parenthood and bear underweight children ,Acute under nutrition cause of under nutrition in children, wasting is cause of infection. Poor immunity in children, in adolescence ratio between weight and height varies with age and sex. In this study, it is shown that 22% boys are underweight; this shows moderate prevalence of the group, so they need proper nutritional supplement, diet counselling to improve their nutrition. Under nutrition may affect mental development of boys, and donot achieve their academic achievement. A total of 21.1% girls in high range 418 girls belong to healthy range 178 girls are from unhealthy range based on Rohrer Index range. In Salboni girls(5), under nutrition not only effect physical growth but effects cognitive development. In this study height, weight and BMI of the Bengalee boys and girls are poor in comparison to rural adolescents of India. However, Shabar boys were taller up to 12 years of age compared to Indian boys (7) Body composition assessment helps to growth measurement in adolescent. Males experience their growth spurt about two years later (8).

Conclusion:

In this study 52 boys belong to normal body mass index, which has good indicator of nutritional status, that shows most of boys are healthy, but 22 boys are under nutrient if those boys do not catch up their growth with help of better nutritional supplement, In block level there are counselling centres for adolescents; they provide proper health education to adolescences and iron supplements can help them lots. Under nutrition can influence morbidity; it effects growth and nutrition deficiency leads to Anaemia.

Implication: This study represents nutritional status of study boys, they are under nutrient, in future research may leads to find specific reason of under nutrition, micro nutrient deficiency

Result:

Table 1: Age wise height, weight, BMI of study group:

Age	weight(kg)	Height(cm)	BMI(kg/sqm)
10	38.7(6.56)	145.04(6.31)	18.42
11	38.9(6.66)	146.10(9.710	18.26
12	38.9(5.93)	146.65(7.82)	18.17
13	40.7(7)	150.44(5.59)	17.99
14	41.9(8.92)	152.20(5.12)	18.13
15	42.2(11.92)	152.30(3.97)	18.26
16	43.5(4.52)	152.30(3.12)	18.69
17	43.6(4.76)	153.10(3.32)	20.46
18	44.6(5.05)	153.30(3.97)	19.05
19	45.8(5.7)	153.85(5.44)	19.56

Table2: Nutritional status of study group on basis of Body mass index

Different BMI code		Frequency	Percent	Cumulative Percent
	1	22	22.0	45.0
	2	52	52.0	97.0
	3	3	3.0	100.0
	Total	100	100.0	

1=Underweight, 2=Normal, 3= obese

Table 3:Mean ,Media, Standard division of weight, height and body mass index

Variables		Weight(kg)
Mean		41.96
Median		42
Std. Deviation		6.919
Percentiles	25	39
	50	42
	75	46

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