Evaluation of Nutritional Status in Children of Semi-Urban Group between 3-6Yrs.

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ABSTRACT

Obesity is a major health problem in India. Studies have been conducted in various states of India to find out the prevalence of obesity in children which leads to health hazards. The nutrition transition is associated with a change in dietary habits and decreasing physical activity. Hence this study is carried out to investigate the prevalence of childhood obesity in school children under 7 years of age in, semi-urban areas of Chennai. To study the assessment of nutritional status using a reliable measure among under 7 age group in semi-urban and in Chennai. Our study incorporates analysis of 250 children of both genders aged below 7 years in, semi-urban l areas. Body mass index, Body surface area, skin fold thickness and total body fat were calculated. The data was statistically analysed using ANOVA. Our study showed that the prevalence of childhood malnutrition among under 7 age group is statistically significant in semi-urban areas. From our study we conclude that apart from BMI ,skin fold thickness may be used as a better index to assess the nutritional status and childhood obesity is more prevalent hence the need for effective intervention and preventive strategies is necessary both at local and national level.

Keywords: Malnutrition, BMI, skin fold thickness, under 7 age group.

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INTRODUCTION

Malnutrition in children is becoming a major health issue with its drastic consequences, as it is becoming the more neglected form of human deprivation. It is very important for us to develop a healthy world especially in children because they are going to be the future citizens. As per records, 26.6% of preschool children are underweight and 32.5% are stunted. Most of the developed countries have intervened vigorously to reduce the morbidity with regard to their nutritional status but today India still seems to be the major contributor with prevalence of 54% for underweight,52% for stunting and 72% for wasting.[1]

The major cause for child mortality in developing countries in the first five years of life, is malnutrition. The common reasons being lack of maternal and child care, which is in the cause for low birth weight ,prevalence of infestations, lack of health care and improper drinking water.[2] Though studies have been done regarding malnutrition, few studies have noted that obesity is becoming an epidemic in developing countries.[3,4,5,6]. Hence the need for this study became necessary to focus on the nutritional status in children between 3yrs and 6 yrs.

MATERIALS AND METHODOLOGY

This study is a cross-sectional study which analysed a total of 250 children from semi-urban area around Chennai. Before proceeding with the study ethical clearance was obtained. Well-informed consent was obtained from the principal of the school. A detailed questionnaire was prepared to collect the data through personal interview.

The school children were asked to remove their shoes before taking the anthroprometric measurements. Height was measured using measuring scale in cms. Weight was measured using standard weighing machine. The values were adjusted to the nearest reading. Skin fold thickness was measured using skin fold calipers in seven areas – chin, triceps, biceps, abdomen, waist, calf and knee.

Body mass index is calculated in weight divided by height squared. Mean of skin fold thickness of all the areas was calculated. Body surface area was calculated with the Dubois formula. BMI percentile between 5th percentile to 85th percentile were considered healthy, BMI percentile between 85th to less than 95th percentile were considered overweight, and BMI percentile equal to or greater than 95th were considered obese .

With all the above data's, readings were tabulated in ±mean standard deviation. A detailed statistical analysis was done. ANOVA was applied to know the significance between all the parameters.

RESULTS

Table 1: Comparison of nutritional status among study population

VARIABLES	SEMI-URBAN	
	BOYS	GIRLS
BMI(kg/m²)	14.8±2.0	14.6±2.1
BSA(m²)	0.54±2.0	0.52±3.0
SFT(mm)	9.5±2.3	9.2±2.3
TBF(kg/m²)	0.25±2.2	0.19±2.1

BMI –Body mass index, BSA- Body surface area, SFT- Skin fold thickness,TBF-Total body fat
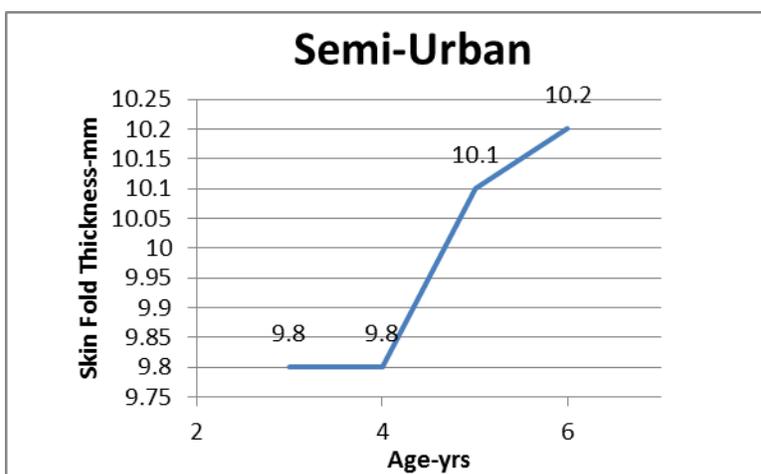
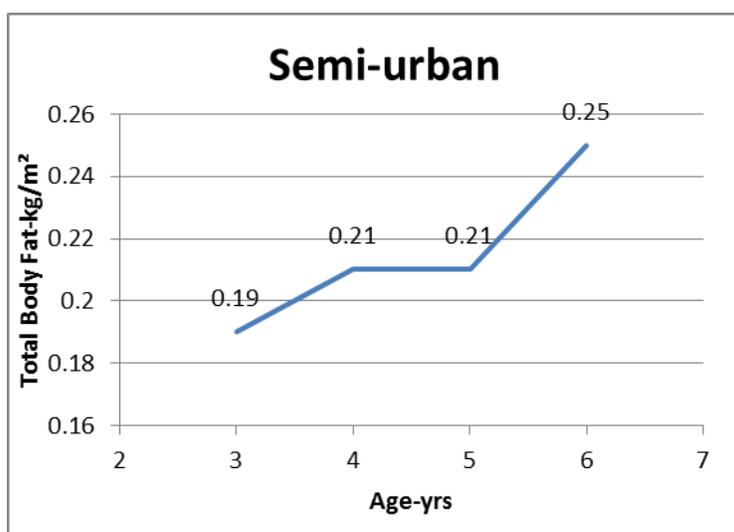

Figure 1   p value < 0.005

Figure 2   p value < 0.005

DISCUSSION

In this study, the assessment of nutritional status of school children by correlating the dietary and anthroprometric parameters, shows that around one half of the category from semi-urban areas are malnourished [7]. The reason attributing to this malnourishment may be due to poverty.[8] It is always a disadvantage of low-income groups. The variation in height and weight is due to the worse nutritional status. The use of skin folds thickness in the assessment of nutritional status was based on the assumption of caloric intake.

Few studies have shown that the body weight and height of infants were probably the best indicators of malnutrition and obesity. A deficit in the nutritional status does have a alarming effect on the mental and motor ability. We may also say that the cause of malnourihment is due to improper monitoring of adequate intake in day-care centers, lack of parental care, non-availability of sufficient income.

From the results thus obtained, the remaining children seem to be in normal health, but they may be prone to obesity in adolescent period if they fall prey to junk foods, intake of foods rich in high calories and insufficient physical activity. Hence these children who may become obese may be prone for dental caries also apart from other health related problems.[9]

CONCLUSION

Obesity and malnutrition were significantly associated in school children which may increase due to improper monitoring of food intake, adequate physical activity. Health care professionals must involve by taking strict measures against malnutrition and obesity which may cause health hazards.

REFERENCES

[1]   Omran AR. The epidemiologic Transition in the Americas Panamerican Health Organisation and World Health Organisation 1996.
[2]   Tanner and Whitehouse R.H. Revised standard of triceps and subscapularis skinfold in British children.1975.
[3]   Monterio CA. The nutritional transition in brazil 1995
[4]   Dehghan M. Childhood obesity, prevalence and prevention.2005.
[5]   Popkin BM.The nutrition transition in low-income countries: An emerging crisis.1994.
[6]   DeOnis M. Prevalance and trends of overweight among preschool children in developing countries.2000.
[7]   Paulson QX. Effets of body weight on Childhood obesity.2000.
[8]   Estrade E. Childhood obesity; complications 2004.
[9]   Relationship between body mass index and dental caries among adolescent children in South India 2011.