Original article

Nutritional status of Adolescent girls of urban slums of Hyderabad

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Abstract :

Background: Adolescence is the transition stage between childhood and adulthood and they form the future generation of a country. Adolescents' nutritional needs are critical for the well being of a society .

Objectives: To determine the nutritional status of adolescent girls in urban slums of Hyderabad.

Material & Methods: Present study was a community based cross sectional study done in Krishna Nagar which is an urban slum of the field practice area of Community Medicine Department. A house to house survey was conducted in the area and adolescent's girls were interviewed and examined after obtaining informed consent. Nutritional assessment was done using the anthropometry. The weight and stature were measured as per the WHO guidelines on anthropometry.

Results: Mean age was found to be 13.2± 5.6 standard deviation with majority belonging to Hindu religion and joint families. Present study found a high proportion of underweight adolescent girls (48.5%) and about one fourth (21.5%) being obese.

Conclusions: It is concluded that there is a high prevalence of under nutrition in the selected urban slum and hence health education and nutritional interventions needed on urgent basis.

Key words: Nutritional status, adolescent girls, urban slum

Introduction:

The term adolescence is derived from the Latin word 'adolescere; meaning "to grow, to mature." Adolescence has been defined by the World Health Organization as the period of life spanning the ages between 10 to 19 years[1].

There is some variation in the age definition for adolescents, who are often defined as those having the age of 10-19 years[2]. Currently the adolescents are classified into three groups:

a) The early adolescents having the age of 10to 13 years,

b) The middle adolescents with the age of 14 to 16 years and

c) The late adolescents of the age of 17 to 19 years.

This classification is based on biological, psychological and developmental basis[3]. Adolescents form a crucial segment of population and constitute, as it were, the vital 'bridge' between the present and the next generation[4]. Adolescents are tomorrow's adults, and 85% of them live in developing countries[5]. They are relatively healthy as compared to other lifecycle groups, and show roughly similar morbidity and mortality trends in developed and developing countries[6].

Adolescents constitute over 21.4 % of the population in India and adolescent girls constitute about 10 percent of the Indian population [7]. This age group needs special attention because of the turmoil of adolescence which they face due to the different stages of development that they undergo different circumstances that they come across, their different needs and diverse problems .

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The concept of adolescence itself is in fact relatively new. Until the 20th century, the passage from childhood to adulthood occurred relatively quickly, usually coinciding with puberty and subsequent childbearing. More recently, both biological and socioeconomic landmarks bracketing the transition to adulthood have moved in opposite directions. Many societies' have adjusted the definition of socioeconomic maturing and independence upward in the teen years.[2]

As a result, adolescence can no longer be viewed merely as a stage between childhood and adulthood, but is now a unique and important developmental period requiring specific programming and policy.

Adolescence is the future generation of any country. Their nutritional needs are critical for the well being of a society but for many years, their health has been neglected because they are considered to be less vulnerable to diseases compared to relatively young children or the old people. If the adolescents are well-nourished, they can make optimal use of their skills, talents and energies and would be healthy and responsible citizens. Adolescence, a second period of rapid growth may serve as an opportunity for compensating faltered early childhood growth though the potential for significant catch-up is limited.[8]

Aim & Objectives:

1. To assess the nutritional status of adolescent girls residing in an urban slum of Hyderabad
2. To ascertain the association between different socio-demographic characters and nutritional status.

Materials and Methods:

Present study was a community based cross sectionalstudy carried out in Harrazpenta, a field practice area of Department of Community Medicine, Osmania Medical College, Telangana A slum area, Krishna Nagar was randomly selected .Study population comprised of Adolescentgirls 10 – 18 years of age residing in the above area. A house to house survey was conducted in the area and all adolescent girls present at the time of survey were included in the study. A total of 196 adolescent girls were interviewed.

Adolescent girls who were not the residents of aboveslum, visitors, and recent immigrants (less than onemonth) were excluded from the study along with thosesubjects wherein the exact date of birth could not beascertained by physically available records. Marriedand /or pregnant adolescent girls were also excludedfrom the study. Remaining all adolescent girls were included in the study.

The exact age of the subjects was computed from birth certificate or school records available either at thehome or by visiting the school. After obtaining informed consent, adolescent girls were interviewed using a pre designed questionnaire and nutritional assessment was done using the anthropometry. The weight and stature were measured *as per* the WHO guidelines on anthropometry. Data was collected over a period of two months, from 1st December 20014 to 31st January 2015.Percentiles for different nutritional indices – heightfor age, weight for age and body mass index (BMI).

Data was analyzed using SPSS version 17. Mean, standard deviation and percentile values were calculated for weight, height and BMI for all ages. Appropriate statistical tests were applied wherever necessary and p value <0.05 was considered as statistical significant.

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Results:

Table 1: Socio demographic profile of the study population (N=196)

S.no.	Age	Number	Percentage
1.	Early adolescence	88	44.8 %
2.	Late adolescence	108	55.2 %
Education status			
1.	Illiterate	33	16.8%
2.	Literate	163	83.2%
Occupation			
1.	House hold work	28	14.3%
2.	Student	123	63.7%
3.	Labourer	45	22%
Religion			
1.	Hindu	126	64.3%
2.	Muslim	54	27.5%
3.	Others	16	5.2%
Type of family			
	1.Nuclear family 2. Joint & extended joint family	121 75	38.2 61.8

Socio demographic profile of the study population revealed that 88 girls belonged to early adolescence that is less than 13 years. Mean age was found to be 13.2± 5.6 standard deviation.

Among the 196 girls 16.8% were found to be illiterate. With regard to occupation a majority of 63.7% of the girls were students. 64.3% of the study subjects were Hindu by religion and belonged to joint and extended joint family (61.8%).

Table no 2: Nutritional status according to BMI of the study population

Nutritional status according to BMI	BMI < 18.5	BMI 18.5-24.99	BMI >25
	95 (48.5%)	59 (30%)	42 (21.5%)

Body mass index (BMI) of the study population found that almost half proportion (48.5%) were underweight (BMI < 18.5) and about 21.5% were overweight (BMI >25). 30% of the study population were normal in terms with BMI (18.5-24.99). The association between BMI and age was found to be statistically significant (p=0.01)

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Table no 3: Mean height, weight, BMI of adolescent girls in different age groups

Age group (in years)	Mean weight (in kg) ± S.D.	Mean height (in m) ± S.D.	Mean BMI ± S.D.
Early adolescence	39.2 ± 5.62	1.48 ± 0.02	16.7 ± 2.5
Late adolescence	43.5 ± 4.8	1.53 ± 0.05	18.2 ± 2.7
p value	<0.001	<0.001	<0.001

* Independent t test

The mean weight, height and BMI was calculated and compared between the two age groups (early & late adolescence). The association between age and the mean values of height, weight and BMI was found to be statistically significant (p<0.001).

Discussion:

Under the newly launched Reproductive, Maternal, New born, Child and Adolescent Health (RMNCH+A) programme under the umbrella of National Health Mission (NHM) has identified "adolescent" age group as distinct life stage in the overall strategy. The nutritional status of adolescent girls and young women is inextricably linked to the birth weight of their children and subsequently to child survival. Hence the present study has been done to elicit the nutritional status of adolescent girls in selected urban slum of Hyderabad.

Body Mass Index is an age independent anthropometric criteria. It is an indicator of acute under nutrition, the result of more recent food deprivation and/or illness [9]. The nutritional status as per the BMI found that in the present study found a high proportion of underweight adolescent girls (48.5%) and about one fourth (21.5%) were obese.

Similar kind of results were observed in a community based cross sectional study by K. Prashant and Chandan Shaw [10] in a urban slum of Nalgonda town, which observed that the prevalence of underweight as 42.6%.

A similar study done by Sweta singh[11] in Varanasi District observed that 26.6% of adolescent girls were underweight and 16.3% were found at high risk of overweight and obesity and most of the girls in the study area were having normal BMI (57%). This variation in the findings may be attributed to different geographical conditions and socio economic conditions.

The mean height in the present study was 1.505 which was comparatively more in the late adolescence age group. The mean weight was 41.35 which was also higher in the late adolescence age group. The mean BMI value was 17.45 and lower BMI values were observed in early adolescence age group. A similar kind of study done by B.M. Vashist in Rohtak[12], Haryana observed a statistically significant difference between the age groups and the mean values of height, weight and BMI.

Conclusions:

In the present study which was conducted in an urban slum of Hyderabad found a high prevalence of under nutrition which suggests that that there is a need for nutrition education among the study population and more stress should be laid on effective implementation of existing nutritional programmes like Integrated Child Development Services scheme (ICDS) for adolescents.

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