

PREVALENCE OF ANAEMIA IN ADOLESCENT GIRLS IN AN URBAN AREA OF MEERUT

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ABSTRACT:

Research Question: What is the prevalence of anaemia in an urban area of Meerut.

Objective: To find out the prevalence of anaemia in adolescent girls.

Study Design: Cross sectional Study.

Setting: The study was conducted in an urban area of Meerut

Statistical Analysis: Chi-square test

Results: The overall prevalence of anaemia in adolescent girls was found to be 36.5%. Majority of anaemic girls were having mild anaemia (53.2%) and in only 5.9% anaemia was severe in nature. Rest 40.9% were moderately anaemic.

Introduction:

Adolescence is a period of dramatic growth and development. As a child evolves into an adult, a complex myriad of psychologic alterations take place. WHO defines adolescence as the period between 10 to 19 years of age¹. Adolescence in India has been defined to be a period between 10 to 18 years².

Adolescence is a period where significant growth changes occur necessitating optimum nutritional requirement. During adolescence, 20% of the adult height is attained and 50% of the adult bone mass gained. The main nutritional problems affecting adolescent population include under nutrition and iron deficiency beside others. Limited data available worldwide shows poor nutritional status which has serious implication for adolescent girls both in terms of their own health and poor pregnancy outcomes for their infants such as low birth weight and neonatal mortality³. It is well known that women of reproductive age have poor iron status (an estimated prevalence of 47% across developing countries), and that it worsens during pregnancy (59%). Adolescence is an ideal time to study pre-pregnancy iron status because many girls around the world will have had their first child by age of 19 years⁴.

It is important to define the exact etiology of nutritional anaemia in a population for its effective control by

supplementation programmes. Since very few studies so far have been conducted in Western part of U.P., the present study was proposed to find out the prevalence of anaemia in adolescent girls in an urban area of Meerut.

Material And Methods:

The present cross-sectional study was carried out in urban population of Meerut City registered at Urban health training centre, Deptt. of Community Medicine, L.L.R.M. Medical College, Meerut. Out of 1530 families covered through house to house visit during the survey, 556 adolescent girls aged 10-18 years were studied taking an optimum sample size for study by an estimated anaemia prevalence of 40% in adolescent girls with relative precision of 10% at 95% confidence interval.

In order to have an effective completion of study a house to house survey was done from locality to locality till the desired study sample was covered. During home visit members of the family were listed and eligible persons i.e. adolescent girls aged 10-18 years were interviewed and examined. A detailed information was collected on a predesigned and pretested proforma about sociodemographic and other contributory factors for anaemia by oral questionnaire method supplemented by physical examination and Haemoglobin estimation by Sahli's Haemoglobinometer. Anaemia was assessed by WHO criteria of anaemia.

Observations:

Table 1
DISTRIBUTION OF ANAEMIA IN ADOLESCENT GIRLS ACCORDING TO ITS SEVERITY

No. of Adolescent Girls				
Severity	Hb (gm%)	No.	%	Prevalence (%)
Mild	10-cut off	108	53.2	19.4
Moderate	7 - < 10	83	40.9	14.9
Severe	< 7	12	5.9	2.2
	TOTAL	203	100.0	36.5

Among 556 adolescent girls covered in the study 203 were found to be anaemic with a prevalence of 36.5%. The prevalence of mild, moderate and severe anaemia was 19.4%, 14.9% and 2.2% respectively.

Table 2
CASTEWISE DISTRIBUTION OF ANAEMIA IN ADOLESCENT GIRLS

Caste Group	No. of Adolescent Girls	Anaemia Cases	Prevalence (%)
Savarna Hindu	312	98	31.4
Scheduled Caste	124	61	49.2
Other Backward Class	120	44	36.7
TOTAL	556	203	36.5

$$\chi^2=8.94, df=2, p<0.02$$

Table 2 shows that prevalence of anaemia was significantly higher (49.2%) among the scheduled castes as compared to 36.7% and 31.4% among the other backward class and savarna Hindus respectively ($p<0.02$).

Table 3
PREVALENCE OF ANAEMIA IN ADOLESCENT GIRLS ACCORDING TO SOCIO-ECONOMIC STATUS

SES	PCI (Rs)	No. of Adolescent Girls	Anaemia Cases	Prevalence (%)
I Upper	> 1600	55	16	29.1
II Upper Middle	1000-1599	110	32	29.1
III Lower Middle	500-999	175	59	33.7
IV Upper Lower	200-499	151	65	43.0
V Lower	<200	65	31	47.6
TOTAL		556	203	36.5

$$\chi^2=10.4, df=4, p<0.05$$

Table 3 shows that the prevalence of anaemia was maximum in class V (47.6%) and significantly decreased ($p<0.05$) with the rise in socioeconomic status, the prevalence being minimum in class I and II (29.1% each).

Table 4
PREVALENCE OF ANAEMIA IN ADOLESCENT GIRLS ACCORDING TO CLEANLINESS INSIDE THE HOUSE

Cleanliness	No. of Adolescent Girls	%	Anaemia Cases	Prevalence (%)
Poor	156	28.0	95	60.9
Fair	257	46.3	72	28.0
Good	143	25.7	36	25.2
TOTAL	556	100.0	203	36.5

$$\chi^2=56.1, df=2, p<0.001$$

Table 4 shows that the prevalence of anaemia was significantly higher (60.9%) in adolescent girls who had poor cleanliness inside the house than fair and good cleanliness inside houses, prevalence being 28.0% and 25.2% respectively ($p<0.001$).

Table 5
PREVALENCE OF ANAEMIA IN ADOLESCENT GIRLS ACCORDING TO AWARENESS REGARDING ANAEMIA

Awareness regarding Anaemia (as illness)	No. of Adolescent Girls	Anaemia Cases	Prevalence (%)
Yes	175	51	29.1
No	381	152	39.8
TOTAL	556	203	36.5

$$\chi^2=6.09, df=1, p<0.02$$

Table 5 shows that the prevalence of anaemia was found to be significantly higher (39.8%) in those adolescent girls who were not aware about anaemia than 29.1% in those who were aware regarding anaemia ($p < 0.02$).

Discussion :

Anaemia ranks as one of the most common maladies affecting mankind all over the world. Overall prevalence of anaemia was 36.5% in adolescent girls which is in approximation with 34.5% reported by Rawat et al (2000)⁵ but lower than 73.7% reported by Mishra et al (1995)⁶ and multicentric study completed in three regions of India (Mumbai, Gujarat and Delhi)⁷ which showed anaemia prevalence as 62-65%, 57-65% and 48-50% respectively in adolescent girls was 19.4%, 14.9% and 2.2% respectively as compared to 19.0%, 14.1% and 1.4% respectively in rural Meerut⁵.

The causes of high prevalence of anaemia in scheduled caste community could be due to lack of money, either due to poverty or more number of children in the family and lack of knowledge about childcare practices. Reverse association was seen between SES and prevalence in adolescent girls as lower the socio-economic status higher was the prevalence of anaemia being maximum (47.6%) in class V and minimum 29.1% in class I and II. In Vasanthi et al (1994)⁸ study the mean Hb showed a rising trend with improved socio economic status and most of the children belonging to lower socio-economic status and most of the children belonging to lower socio-economic status were anaemic. This may be because of better availability of high quality food with better socio-economic status. Rawat et al. (2000)⁵ also observed a high (50.0%) prevalence of anaemia in class V.

Poor cleanliness is also associated with infections and intestinal infestation which in turn lead to nutritional deficiencies. Rawat et al (2000)⁵ observed 39.1% prevalence of anaemia in adolescent girls with poor cleanliness inside the house.

Recommendation :

The present study has shown that the problem of anaemia is widely prevalent. Extensive basic health and nutrition education should be included in school curriculum and all nutrition programmes. Nutrition education messages to the people via mass media like newspapers, TV, cinema halls etc.

on the following should be given- Inclusion of regular and adequate amount of iron rich foods or foods fortified with iron in the household diet, improvement of socio-economic status and proper implementation of family planning programmes. There should be strategy for anaemia prophylaxis programme for adolescent girls with intersectoral coordination.

References :

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