

Prevalence of Anemia among School going Children of Low Socio-economic Group

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ABSTRACT

The aim of the present study was to estimate the prevalence of anemia among school going children and to study the socio-demographic factors associated with anemia. Study was conducted in a rural area of Nagpur District. A total of 350 children (203 males and 147 females) were selected between the age group of 10-16 years old. All confounder factors with socio-demographic characteristics were recorded in the predesigned proforma. Data was statistically analyzed by using chi square test and student t test. Out of 350 children, 160 were found to be anemic among this 21.8 % had severe anemia, 15.6 % had mild anemia and 62.5 % had moderate anemia. Study reveals that overall prevalence of anemia among school going children was found to be 45.7 %. Study findings shows that a significant association of anemia with socio-economic and parents education status.

Key words: Anemia, school going children, hemoglobin, Socio-economic strata.

INTRODUCTION

Anemia is a condition characterized by abnormally low levels of healthy red blood cells or hemoglobin. Anemia one of the more common blood disorders it can lead to health problems because RBCs. Contain hemoglobin, which carries oxygen to the body's tissues. Anemia can cause a variety of complications including fatigue and stress on body organs. The important reasons for widespread anemia are inadequate intake and absorption of iron from cereal based diet, inadequate consumption of green leafy vegetables and citrus fruits, faulty feeding practices and lack of dietary diversification. Apart from aforesaid factors, illiteracy, poverty and general economic and social development have a bearing on the incidence of anemia among people of our country. Anemia is a critical health concern because it affects growth and energy levels. The health consequences of anemia in children and adolescents are well documented. In children, anemia affects physical growth and

mental development. Other consequences including reduced levels of energy and productivity and impaired immune system function. Anemia can be mild, moderate or severe enough to lead to life-threatening complications. More than 400 different types of anemia have been identified. Many of them are rare. The National family health survey (NHFS) has reported that a large percentage of women and children in India are anemic. It shows an alarming 5 % increase anemic rate every year. This pilot study tries to find out the problem of anemia in school going children and to study various factors related to anemia.

MATERIAL AND METHODS

The entitled study was carried out among school going children in rural area of Nagpur District. 203 males and 147 females were selected on the basis of random sampling technique. Detailed background information such as socio-economic status, medical history and family history was

obtained through administering a well framed interview proforma. For hemoglobin estimation blood sample was collected and transferred to a prenumbered EDTA tube. Hemoglobin estimation was done by the Sahli's method. For the study of RBCs morphology a thin smear was also prepared and stained with leishmans stain and examined under the microscope. Classification of anemia as recommended by WHO (1992) and NIN (1986) was followed for categorization of the children. The statistical analyses were done using Epi Info 3.3.2 version.

RESULTS AND DISCUSSION

The general profile of the studied children is shown in table 1. Out of 350, there were 58 % male and 42 % females.

Majority (53.1%) of the children belonged to more than 14 years group while 46.8 % in 13 -14 years age group. Most (38%) of the found in NT cast while 34.8 % and 27.1 % children found in SC

and OBC cast respectively. Out of 350, 67 there were belonging to upper income family while 129 and 154 were belonging to middle and lower income family. Education history shows most of the children were belonged to illiterate family. Total 103 children were found primary and middle education history of their parents. In this study found that there were only 40 students having father and mother education history is SSC and above. Prevalence of anemia with relation to age and sex are shown in table 2. According to NIN classification it was found that out of 350 children, 190 (54.2%) children were non anemic and 45.7% were suffering from various degree of anemia as their Hemoglobin level ranges between 7.0 g/dl to 11.0 gm/dl. Out of 160, 69 children were anemic in the age group of 13 -14 years. More (56.8 %) prevalence of anemia was found in more than 14 years age groups. Among anemic children, most (65.6%) of the children were male while 34.3 % were female.

Our findings of prevalence rate of anemia bear apparent similar with a baseline survey

Table 1: Profile of the study Children

Characteristics	Males (203)	Females (147)	Total
Age (years)			
13 - 14	99	65	164
> 14	104	82	186
Cast			
OBC	51	44	95
SC	82	40	122
NT	70	63	133
SES			
Upper	41	26	67
Middle	70	59	129
Lower	92	62	154
Mothers education			
Illiterate	-	83	83
Primary	-	18	18
Middle	-	26	26
SSC and above	-	20	20
Fathers education			
Illiterate	124	-	124
Primary	27	-	27
Middle	32	-	32
SSC and above	20	-	20

conducted in Indonesia in October 1996, students showed a mean anemia prevalence of 29 % for girls and 23 % for boys. But high rate of prevalence found in a 1997 survey of 12-18 year old girls in rural India

found an anemia prevalence rate of 82.9% among girls in school and 92.7% among girls not in school. According to RBCs. Morphology, anemic children were distributed are shown in table 3. Among 160

Table 2: Prevalence of anemia with relation to age and sex

Age groups (yrs)	Degree of Anemia	Number of subjects		
		Male	Female	Total
13 – 14	SevereHb< 8 g/dl	13	6	19
	ModerateHb< 10 g/dl	25	16	41
	MildHb<12 g/dl	7	2	9
> 14	SevereHb< 8 g/dl	12	4	16
	ModerateHb< 10 g/dl	37	22	59
	MildHb<12 g/dl	11	5	16
Total		105	55	160

Table 3: Distribution of anemic children on the basis of RBCs. morphology

Red Blood Cell Morphology	Children with anemia (160)
Normocytic normochromic	00
Normocytic hypochromic	43
Microcytic hypochromic	93
Dimorphic	24

Table 4: Prevalence of anemia with relation to socio-demographic factors

Variables	No. of subjects (n=350)	No. of anemic subjects (n= 160)	%
SESUpper	67	16	4.5
Middle	129	33	9.4
Lower	154	110	31.4
Mothers education			
Illiterate	83	40	27.2
Primary	18	7	4.7
Middle	26	5	3.4
SSC and above	20	3	2.0
Fathers education			
Illiterate	124	89	43.8
Primary	27	7	3.4
Middle	32	5	2.4
SSC and above	20	4	1.9

anemic children, 58.1 % had a Microcytic hypochromic picture in the peripheral smear while 15 % had a dimorphic picture. Prevalence of anemia with relation to socio-demographic factors is shown in table 4. Most (31.4 %) of the anemic children were lower socio-economic family while only 4.5 % of anemic children found in upper socio-economic family. Study results found that the percentage of anemic children is more in illiterate family as compare to those having middle and SSC and above education. Socio-economic status and family education were found significantly association with anemia. Findings of this study is correlate with other study, results shows that socio-economic status and family education were significantly associate with anemia.

CONCLUSION

The overall prevalence of anemia among school going children was found to be 45.7 %. Study reveals that anemia affects with relation to various

variants. Out of 160 anemic children, 21.8 % had severe anemia, 15.6 % had mild anemia and 62.5 % had moderate anemia. Study finding shows that a significant association of anemia with socio-economic status and parents educational status. It suggests a need to develop strategies for intensive adult education and to improve the socio-economic status of the rural population. A significant association of the prevalence of anemia with educational status of parents reflects better among literate family as well as better socio-economic conditions. It is concluded that over all socio-economic development and education level increase in rural population will surely help in reducing the prevalence of anemia.

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