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Assessment of Severity of Anaemia and Associated Variables in 5-10 Years Age Group at a Tertiary Care Centre, Rewa

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ABSTRACT

Background: Anaemia is the most common haematological disease of the paediatric age group. Highest prevalence of anaemia is seen in developing countries. It is widely prevalent in India and affects both sexes and all age groups.[1] Because of the excessive morbidity burden and mortality risk with severe anaemia, international recommendations advocate the detection and treatment of severe anaemia in primary care settings.

Objectives: 1. To find out prevalence of anaemia, type of anaemia and associated variables in paediatric age group 5-10 years of age at a tertiary care centre Rewa.

2. To find out socio demographic, socio economic & other factors associated with anaemia.

Methods: The study was conducted in Paediatric IPD of Gandhi Memorial Hospital, Shyam Shah Medical College, Rewa (M.P) from (February 2018 to January 2019). It was a hospital based, observational, cross sectional study.

Results: Boys constituted 55.22% and girls constituted 44.7% of study population. Majority of mothers were educated up to high school and majority of fathers were educated up to high school. 54.7% study subjects were of class III SES and class II SES (33.83%). Amongst vegetarians, 57.14% subjects had moderate and 24.67% had mild grade of anaemia. Amongst non vegetarian 63.70% were moderately anaemic followed by 21.7% of severely anaemic. Study subjects of rural (60.2%) population had more of moderate (61.9%) and severe (23.1%) anaemia. Total 52 study subjects had habit of pica, 36.58% had severe & 35.13% had mild grade of Anaemia.

Conclusions: Anaemia is still a major health problem in our country**.** Childhood anaemia continues to be a significant public health problem in school children between 5-10 years

Keywords: anaemia, socioeconomic status, pica

INTRODUCTION

Anaemia is the commonest haematological disease of the paediatric age group. Highest prevalence of anaemia is seen in developing countries. It is widely prevalent in India and affects both sexes and all age groups. [1] Because of the excessive morbidity burden and mortality risk that accompanies severe anaemia, international recommendations advocate for the detection and treatment of severe anaemia in primary care settings.According to National Family Health Survey (NFHS-4) [2] prevalence of anaemia among children less than five years of age in urban was 66.3% and in rural population it was 69.9% and overall it was reported to be 68.9% in Madhya Pradesh [3].

Anaemia is a major determinant in deciding public health dimension. WHO has categorized the health impact of anaemia on the basis of prevalence among various states and Madhya Pradesh is a high magnitude area for prevalence of anaemia.

Anaemia is defined as a reduction in the total circulating red cell mass below normal limits (<11.5gm/dl in age group 5- 11 years). Anaemia is categorised into Mild (11-11.4gm/dl), moderate (10.9- 8gm/dl) and severe (<8gm/dl) in age group 5-11 years. Anaemia reduces the oxygen carrying capacity of blood, leading to tissue hypoxia. In practise, the measurement of red cell mass is not easy, and it is usually diagnosed based on a reduction in and hematocrit (the ratio of packed cell to total blood volume) [4].

A large proportion of people are of low socioeconomic groups in India. Therefore, these people are generally exposed to poor living conditions, have poor diet and limited access to health care and are more likely to face infections (e.g. malaria), have iron deficient diet and limited availability of iron supplements which ultimately can lead to anaemia. Therefore, we examined the association of parent's education, occupation and household wealth in children 5 -10 years age in India.

AIMS AND OBJECTIVES:

1. To find out prevalence of anaemia, type of anaemia and associated variables in paediatric age group 5-10 years of age at a tertiary care centre Rewa.

2. To find out socio demographic, socio economic & other factors associated with anaemia.

MATERIALS AND METHODS: The study was conducted in Paediatric in-patient ward (IPD) of Gandhi Memorial Hospital, Shyam Shah Medical College, Rewa (M.P) from (February 2018 to January 2019). It was a hospital based, observational, cross sectional study. Paediatric patients aged between 5-10 years (diagnosed as anaemic as per WHO classification of anaemia) were chosen for the sample and for the purpose of data collection convenient sampling was used. Samples were taken from paediatric ward and we have chosen diagnosed anaemic patients among all admitted patients. After applying inclusion exclusion criteria and getting verbal consent from parents/guardians of patients we collected data through pre tested semi structured questionnaire. In this way we could register 201 patients in our study in a period of 6 months. Proforma included the information on various socio-demographic factors, general and specific information, general examination with Haematological investigations. Questionnaire was filled by asking the patient's attendant and haematological report was obtained from hospital record of patient and a resident who had no previous knowledge of patient's haemoglobin level was asked to assess the various sites for signs of pallor. Data was collected, compiled and analyzed as Percentage for qualitative variables and mean, Standard Deviation for quantitative variables.

RESULTS:

Among 201 study subjects, Total of 111 (55.2%) males and 90 (44.72%) females belonging to 5-10 year age were included in study.

Table1: Age & Gender wise distribution of study subjects (N=201)

Age	Male (n=111)	Female (n=90)	Total	Percent
5	20 (18%)	15 (16.6%)	35	(17.41%)
6	21 (18.9%)	22 (24.4%)	43	(21.4%)
7	20 (18%)	16 (17.7%)	36	(17.9%)
8	13 (11.7%)	10 (11.1%)	23	(11.44%)
9	14 (12.6%)	10 (11.1%)	24	(11.94%)
10	23 (20.7%)	17 (18.8%)	40	(19.9%)
Total	**111 (55.22%)**	**90 (44.7%)**	**201**	**100%**

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Table 2: Distribution of study subjects according to grading of Anaemia (N=201)

Sr.no	Grades of anaemia	Number of study subjects	Mean Hb (gm/dl)	Total %
1	Mild anaemia (11-11.4gms/dl)	37	11.1	18.4%
2	Moderate anaemia (8-10.9gms/dl)	123	9.7	61.19%
3	Severe anaemia (<8gms/dl)	41	6.4	20.39%
Total		**201**	**9.06**	**100%**

Mean Hb value among study subjects was 9.06 gm/dl (SD =1.77 gm/dl). Mean Hb for mild anaemia was 11.1 gm/dl, for moderate and severe anaemia mean Hb was 9.7 gm/dl & 6.4 gm/dl respectively.

Table 3: Variables associated with anaemia in the study subjects (N=197)

Variables		Total Anaemic (n=201)
Education of Father	Literate	86.7%
	Illiterate	13.33%
Education of Mother	Literate	82.75%
	Illiterate	17.25%
Socioeconomic status of family	I (Upper class)	3 (1.4%)
	II (Upper middle class)	68 (33.8%)
	III (Middle class)	110 (54.7%)
	IV (lower middle class)	17 (8.4%)
	V (lower class)	3 (1.4%)
locality of study subjects	Rural	121 (60.2%)
	Urban	80 (39.8%)
Birth Order	1	48 (23.8%)
	2	86 (69.9%)
	3	40 (32.5%)
	4	27 (13.4%)
Dietary habits	Vegetarian	38.30%
	Non Vegetarian	61.69%

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Deworming (n=73) (36.3%)	Mild Anaemia	17.8%
	Moderate Anaemia	54.79%
	Severe Anaemia	27.39%
Presence of Pica	Mild Anaemia	25%
	Moderate Anaemia	46.15%
	Severe Anaemia	28.84%

DISCUSSION:

Majority of mothers were educated up to high school and more than half of fathers had received formal educations up to high school. Maximum study subjects were belonging to class III SES, followed by class II. Amongst vegetarians, 57.14% subjects had moderate grade anaemia followed by mild grade (24.67%) of anaemia and amongst non vegetarian majority were moderate anaemic (63.70%) followed by severely anaemic (21.7%). Study subjects belonging to rural (60.2%) population were having more moderate (61.9%) and severe (23.1%) anaemia. Total 52 study subjects had habit of pica, 36.58% had severe & 35.13% had mild grade of Anaemia and 36.3% had taken medication for deworming and majorities (54.8%) of them were having moderate anaemia. majority of children had 2nd birth order (69.9%) followed by 32.5% had 3rd birth order and 23.8% had 1st birth order.

CONCLUSIONS: Anaemia is still a major health problem in our country**.** Childhood anaemia continues to be a significant public health problem in school children between 5-10 years.

Hence in rural settings where ASHA and ANM mostly rely on the clinical signs for detecting anaemia, must give 1st preference to conjunctival pallor and if long standing conjunctival pallor is present along with tongue pallor and nail bed pallor, then ASHA & ANM should immediately refer that child to the CHC/DH.

Since the haematological parameters are interrelated with each other as well as with the gender and age groups and dietary habits, constant monitoring and intervention strategy is needed while providing nutritional supplementation to eradicate anaemia.

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