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An Epidemiological Study on Prevalence of Anaemia Among The Adolescents in Upper Primary School, Ramakrishnapuram Village, Kothakota Mandal, Wanaparthy District, Telangana State, India

Muralikrishna P[1], Pyarsani Harshitha[2], Dr. T. jagadeeshwara Chari[3], Dharavath Ram Kumar[4]

[1]SGT Teacher, P.S Yaparla, Pebbair Mandal, Wanaparthy, Telangana
[2]M.V Raman School, Athmakur, Wanaparthy Dist. Telangana
[3,4]Lecturer in Fisheries, Government Degree & PG College (A), Siddipet

ABSTRACT:
Anaemia is a global health challenge and India is no exception. Large number of studies including National Family Health survey -5 has quantified the prevalence of amenia among children, adolescents, women is reproductive age group pregnant and Lactating mother and adolescents. Hower, there is a lack of studies arrange rural adolescents, especially in Wanaparthy district of Telangana. This study was conducted among adolescents' students of a governmentupper primary located in Ramakrishnapuram village of Wanaparthy district to detect the prevalence of anaemia and study the associated socio demographic factors.

KEYWORDS: - Adolescents, Anaemia, government, reproductive age group, Wanaparthy.

INDRODUCTION:
Anaemia is defined or a condition in which the number of red bloodcells and consequently their oxygen – carrying capacity is insufficient to meet the body's physiological needs. Specific physio logical needs of an individual vary with age, altitude, smoking behaviour and pregnancy. Iron deficiency is the most common cause of anaemia globally, but other nutritional deficiencies (Floate, vitamin B12 and Vitamin A), acute and chronic inflammation, parasitic infections, inherited and acquired disorders of Haemoglobin synthesis, RBC's production or RBC's survival,can all cause anaemia. Although clinical evaluation of anaemia requires multiple laboratory tests to identify the severity, type and cause of anaemia, Haemoglobin concentration is the most reliable indicator of amenia at the population level. Anaemia is an important public health problem globally. World health organization (WHO) estimates that 1.62 billion people globally (95% CI 1.5 – 1.74 billion) are affected with anaemia which corresponds to 24.81 of the world population. Public health significance of anaemia among populations in India needs no reiteration. National Family Health Survey-5 (NFHS – 5) 2019-21 identified that 67.1% of children aged 6-59

months, 57.0% of women in reproductive age group (15-49 years) and 25% of men during most productive period of their lives (15 – 49 years) (less than 13 g/dL) were anaemic. Children age 6-59 months who are anaemic (less than 11 g/dl%) is 67.1%. NFHS – 5 (2019-20) Telangana State.Anaemia among children and adults

Sl. No.		Urban	Rural	Total
1	Children age: 6-59months whoare anaemic(less than 11 g/dL %	64.7	72.8	70
2.	Non pregnant women age:15-49 yearswho areanaemic (less than 12) – 55.4	55.4	59.1	57.8
3.	Pregnant women age:15-49 yearswho areanaemic (less than 11)	50.4	54.4	53.2
4.	All women age: 15-49 years whoare anaemic	55.2	57.6	56.6
5	All womenage 15 -19 years who are anaemic	63.6	64.7	59.7
6	Men age 15-49 yearswho areanaemic (less than 13 g/Dl)	13.2	15.3	15.3
7	Men age 15 – 19 years who areanaemic (less than13)	25.8	25.1	19.2

In view of significant health implications of anaemia especially on maternal and child health, as well as huge social and economic loss, the government of India has initiated programmes decreased the burden of anaemia among children, adolescent girls, non-pregnant women in reproductive age group and pregnant and lactating women through direct as well as indirect interventions. The present study was undertaken to study the prevalence of anaemia among school attending adolescents of Ramakrishnapuram village of Wanaparthy district (Telangana State).

MATERIALS AND METHODS:

A cross sectional study was conducted during Sep, 2022 in upper primary school, Ramakrishnapuram, Wanaparthy district of Telangana state. A pilot study was conducted to refine the study instruments standardize laboratory procedures and obtain approximate prevalence rate for calculation of sample size. A sample of blood collected by Primary health centre (PHC) Apparala staff sent to Telangana Diagnostics. (Ghub), Gadwal for calculation. The upper primary school, Ramakrishnapuram was selected for the study, based on under-standing that students would represent the rural adolescents and convenience of the study.

Sampling frame of the study included all students studying in 5^{th}, 6^{th} and 7^{th} class of the school. The socio-demographic and anthropometric data was recorded on a pre – tested questionnaire knowledge of the study participants was classified as good satisfactory and poor based on questions scale with questions ranging from functions estimations was done at the school by Ghub, Telangana Diagnostics, Dept, H, M&FW, GOT, Gadwal. WHO recommended levels for diagnosis and classification of anaemia were utilised to classify the cases as mild, moderate and severe anaemia.

TABLE: 1 Classification of anaemia according to WHO

Age (Years)	Mild	Moderate	Severe	Normal
5-11	11-11.9	8-10.9	Less than 8	more than 12/13
12-14	11.11.9	8-10.9	Less than 8	More than 12/13
15-19	11-11.9	8-10.9	Less than 8	More than 12/13

TABLE I : Classification anaemia according to WHOMild anaemia – 11 to 11.9

Moderate - 8 to 10.9 Severe - Less than 8

Note: According to the Technical Handbook on Anaemia in Adolescents.

Children 6 to 14 years 12 HB Gram/dL

Data was compiled on Microsoft excel sheet and analysed using statistical Software SPSS version 19. Students defeated to have moderate and severe anaemia were suggested

Balanced diet rich in Iron.

Iron supplementation

Prevention and treatment of hookworm infestation

Additional Interventions:

Fortification of food with iron.

Prevention of Malaria

Early Identification and Referral.

COMMON IRON RICH FOODS:

Chana Sag: SPINACH: Kantewali chaulai, Onion stalks Mustard leaves: Fenugreek leaves (methi), mint, Anika sag Lentil: Bengal Gram, whole, Soya bean, Gingelly seeds, (Til), Red Gram Dal (Arnar), Plantain green (Unripe kela), Black gram dal (Urd dal or Kaskalah, water melon, Seethaphal, Mutton.

COMMON VITAMIN - 'C' RICH FOODS:

Cabbage, Drumstick leaves, Coriander leaves, Amla.

Health education of the students and teachers was conducted as a partof the Survey.

RESULTS:

RESULT: severity of Anaemia

	Severe less than8	**Moderate8-10.9**	**Mild 10.9- 11.9**	**Normal More than12/13**	**Total**
Boys	0(0%)	3.(14.3%)	10)47.6%)	8 (38.1%)	21
Girls	0 (0%)	7 (29.16%)	15 (62.5%)	2 (8.34)%	24
Total	0 (0.%)	10 (22.22%)	25 (55.56%)	10 (22.22%)	45

A total of 45 students ages 10-12 years of both sexes (boys 21, Girls 24) participated in the study. The study revealed that 25 adolescents were anaemic. The prevalence of anaemia among study population as per severity is shown in figure 1.

FIGURE 1

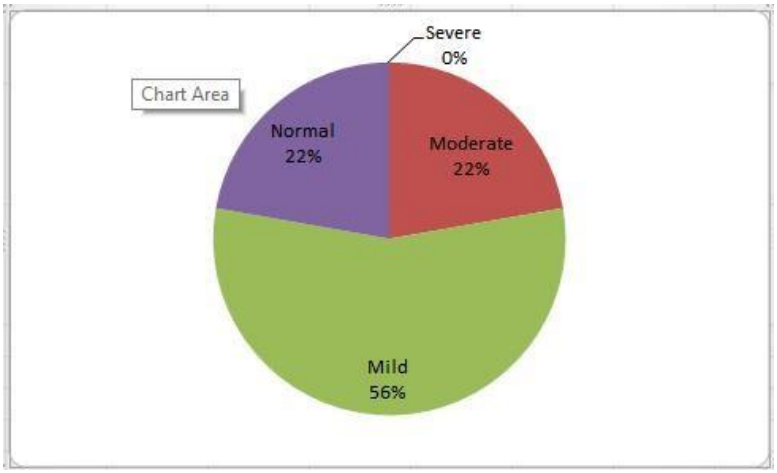


TABLE 2: Distribution of severity of Anaemic based on Socio-demographic factors

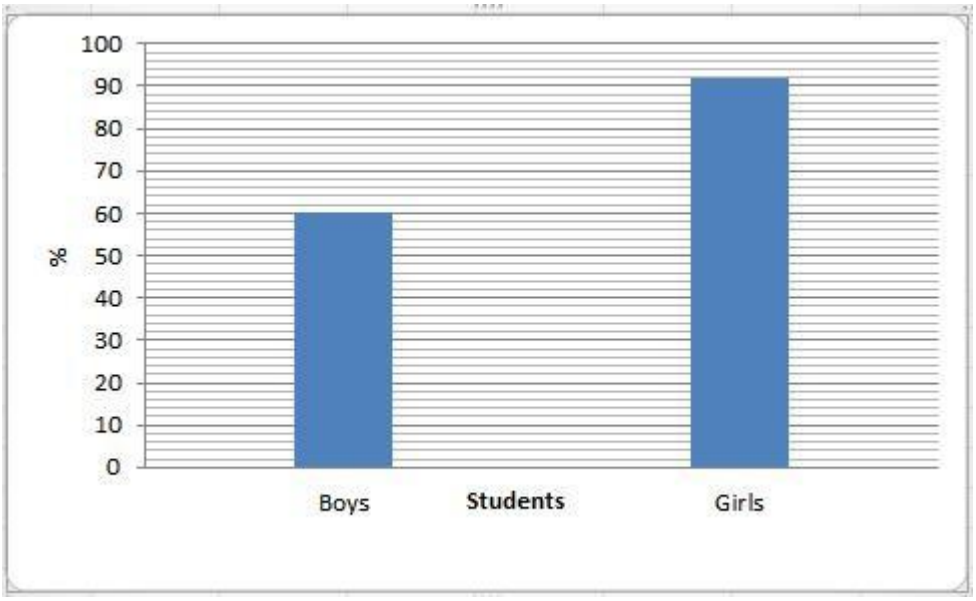
Characteristics/Variable		**Severity of Anaemia (gm/L)**				**Total**
		Severe less than 8	Moderate 8-10.9	Mild 10.9-11.9	Normal More than 12/13	
Age (years)	10-12	0	10	25	10	45
Sex	Boys	0	3	10	8	21
	Girls	0	7	15	2	24
Type of Family	Nuclear	0	6	22	10	38
	Joint	0	4	3	0	7
Religion	Hindu	0	9	21	9	39
	Others	0	1	4	1	6
Occupation of head of the family	Labourer	0	10	25	10	45
	Self-employee	0	0	0	0	0
	Service	0	0	0	0	0
Educational qualifications	Illiterate	0	3	10	4	17
	Primary	0	5	9	4	18
	Secondary/Higher	0	2	6	2	10
Per capita income (Rs. Month)	Less than 2000	0	0	0	0	0
	2,000-3,999	0	0	0	0	0

	4,000-5,999	0	0	0	0	0
	6,000 and above	0	10	25	10	45

Type of diet	Non-veg	0	10	25	10	45
	Veg	0	0	0	0	0

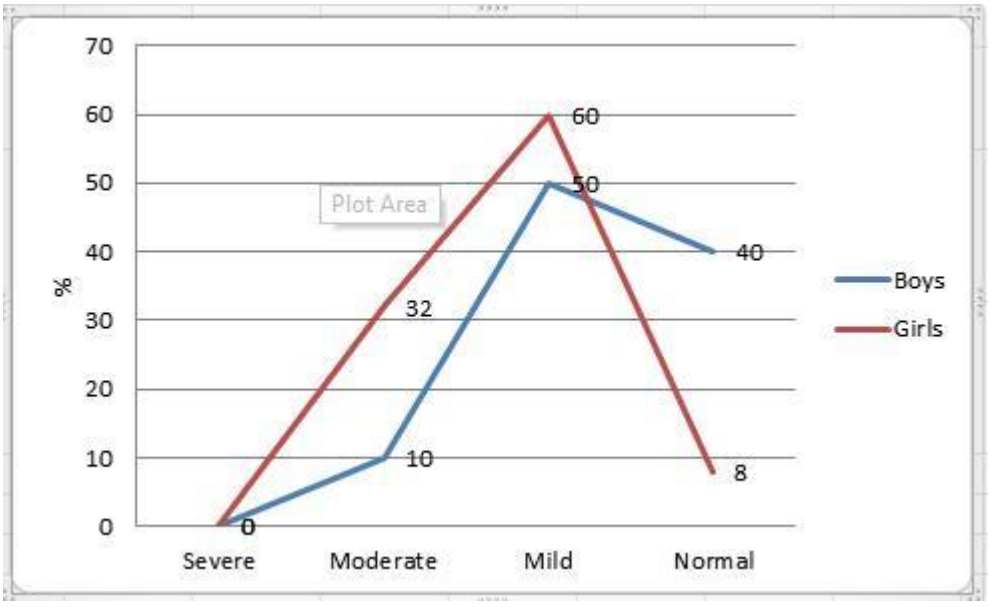
Note: For Girls more than 12 of HB% is normal.Boys more than 13 of HB% is normal.

FIGURE 2



Prevalence of Anaemia in two sexes

FIGURE 3



Comparison of seventy of Anaemia between boys and girls.

Table (2) depicts the prevalence of anaemia as per various socio- demographic variables. The analysis reveals that prevalence of anaemia in the study population was significantly higher among girls as

compared to boys No association was detected between prevalence of anaemia and age, religion type of family, education andoccupation of the head of the family, per capita income, and type of diet.

The examination of prevalence of anaemia revealed that the prevalence does not follow a time trend, and the variation of prevalence in both sexes among adolescents of different age-groups was statistically insignificant (figure 2).

Fig.3. depicts the comparison of severity of anaemia between two sexes. It is seen that girls had, not only higher prevalence of anaemia, but mild, moderate and severe anaemia were also more prevalent among girls as compared to boys. The knowledge of adolescents regarding anaemia. Statistical analysis showed that level of knowledge was not associated with the prevalence of anaemia.

DISCUSSION:

The study revealed that anaemia is a significant public healthchallenge among rural adolescent in Wanaparthy district. In our study the upper primary school Ramakrishnapuram Adolescent students re 55.56% are mild, 22.22% of moderate, 22.22% of Normal and 0% of severe anaemic. And Girls are 62.50% of Mild anaemic it is greater than boys.

The study revealed that, based on WHO definition of anaemia 77.78% of study population were anaemic. The prevalence of anaemia was significantly higher among girls than boys. No association were found between prevalence of anaemic and age, religion type of family, education and incomes of head of the family and types of diet.

CONCLUSION:

As highlighted earlier, there is a lack of community based, studies on prevalence of anaemia among adolescents in rural Telangana. The study reveals that anaemia among rural adolescents is an important public health problem. The authors recommend that anaemia among adolescents should be studied through larger studies.NFHS-5, so that the public health importance of the disease can be quantified at state and national levels in this demographic group also. This will provide baseline data for planning and evaluating

intervention strategies to improve health of adolescents. The author also suggest that weekly Iron Tablets should be provided to all boys also, as the disorder is not uncommon among male adolescents.

References

1. WHO. Haemoglobin concentrations for the diagnosis of anaemia and assessment of severity. Vitamin and Mineral Nutrition Information System. Available from http://www. who.int/vmnis/indicators/haemoglobin.pdf. (last accessed on June 03,2015)
2. de Benoist B, Mclean Erin, Egli I, Cogswell. Worldwide prevalenceof anaemia 1993-2005. WHO Global Database on Anaemia, World Health Organization 2008
3. WHO. Global anaemia prevalence and number of individuals affected. Available from www.who.int/vmnis/ anamia/prevalence/summary/anaemia_data_status_t2/ en/ (lastaccessed on May 31, 2015)
4. International Institute for Population Studies (IIPS) and Macro International. 2007.National Family Health Survey (NFHS-3) 2005-06,India Volume 1. Mumbai: IIPS.
5. Rashtriya Kishor Swasthya Karyakaram. Strategy handbook. Government of India, Ministry of Health and Family Welfare, NewDelhi January 2014

6. A Strategic Approach to Reproductive, Maternal, Newborn, Child and Adolescent Health (RMNCH+A) in India. Government of India,Ministry of Health and Family Welfare, New Delhi January 2013
7. Deb S. Implementation of National Iron Plus Initiative for ChildHealth: Challenges ahead. Indian J of Public Health 2015; 59:1-2
8. Basu S, Basu S, Hazarika R, Parmar V. Prevalence of anemia among school going adolescents of Chandigarh. Indian Pediatr 2005;42(6):593-7
9. Verma R, Kharb M, Yadav SP, Chaudhary V, Ruchi, Ajay. Prevalence of anaemia among adolescents under IBSY in rural blockof a dist of northern India. Int J Social Sciences & Interdisciplinary Research 2013; 2:95-106
10. National Family Health Survey – 5 Report.
11. Reports of Telangana Diagnostics (G HUB).