Prevalence Of Anaemia In Adolescent Girls Of Rural Dehradun

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Abstract: Anaemia is a major health challenge in developing countries and is a significant contributor to maternal mortality. During adolescence, anaemia is more prevalent in girls especially in lower socioeconomic strata.

This paper assesses the prevalence of anaemia among adolescent girls in rural Dehradun and to study the associated factors. A cross-sectional survey was executed among 100 female subjects in the age group of 10-19 years. Sociodemographic details, anthropometric and Haemoglobin measurements were obtained data was analysed. The prevalence of anemia was found to be 74% among adolescent girls. Pearson's Correlation Coefficient shows significant association of anaemia with family income and body weight.

Keywords: Adolescent Girls, Anaemia, BMI, Malnutrition

I. INTRODUCTION

Adolescence has been defined by the World Health Organization as the period of life spanning the ages between 10 to 19 years. Most Important physical, psychological, and behavioural changes take place in this period making this a vulnerable period in the growth and development cycle. Girls are more likely to be affected due to various social and economic reasons. In an

Indian family with limited income and, the girl child is more likely to be neglected. The adolescent girl deprived of nutrition and education and is supposed to perform all the household chores. On top of this, the additional challenge of menstrual blood loss makes them highly vulnerable to Anaemia.

As per the estimates of the World Health Organization, the 1/6th of the World's Population is comprised of Adolescents that is 1.2 billion people aged 10 to 19 years. India has the largest adolescent population in the world, about 21% of the Indian population comprises of Adolescents (that is 243 million people). Thus the Adolescents constitute a sizable proportion of Indian population.

A number of adolescent girls have been found Malnourished and Anaemic along with being the recipient of inadequate dietary intake in various studies. The "State of the World's Children 2011" report from UNICEF states that more than half (56%) of adolescent girls in India are suffering from Anaemia.

This study was planned to demonstrate the problem of anaemia in adolescent girls and to study the socio-economic and familial factors related to anaemia

II. MATERIALS AND METHODS

Dehradun is the capital of Uttarakhand. It is one of the 13 districts of Uttarakhand state and has a population of 16, 98,560 as per the 2011 census. The study was conducted across in the Sahaspur block which is one of the six community development blocks of the district. This block is having a sizeable population of minority (Muslim) and tribal (Tharu and Boxa) community.

The area is characterized with a typical rural setting where most of the men folk are involved in agriculture or are unemployed. The women and girls of the area are mostly involved in house hold chores; they do not have any say in the family affairs. They are excluded from receiving higher education and entirely dependent on their male counterparts. Being a patriarchal society, women and girls are not allowed to step out of their houses and have other social restrictions

placed on them.

A Cross Sectional Study was conducted in 10 randomly selected villages out of the total 108 villages in the Block. 10 adolescent girls (10-19 years) were further selected per village for this study on a random basis. Thus, the sample comprised of 100 adolescent girls.

Primary data was collected with the help of a pre structured interview schedule which was designed to obtain socio demographic information about the respondent, her health status, family characteristics and social environment including the availability of health facilities.

Haemoglobin Estimation was done by the cyan method using haemoglobin analyzer. It was measured in terms of g/dl. Capillary blood was drawn by finger prick method and was incubated for 5 minutes in Cuvette tube pre-filled with Cyanmethhemoglobin reagent and readings were noted.

III. RESULTS

Out of 100 participants, 74 subjects were found to be anaemic with varying degrees ranging from mild, moderate and severe which were 16%, 54% and 4% respectively. Table 1 and Figure 1 present a breakup of the same.

Correlation analysis shows significant association of Anaemia with family income and weight of the respondent.

Criteria	Pearson's Correlation Coefficient - r
Family Income	0.703062
Weight	0.531218

Hemoglobin (gm/dl)	No. of girls (%)
<7 (Severe Anemia)	4
7-10 (Moderate Anemia)	54
10-12 (Mild Anemia)	16
>12 (Normal)	26
Total	100

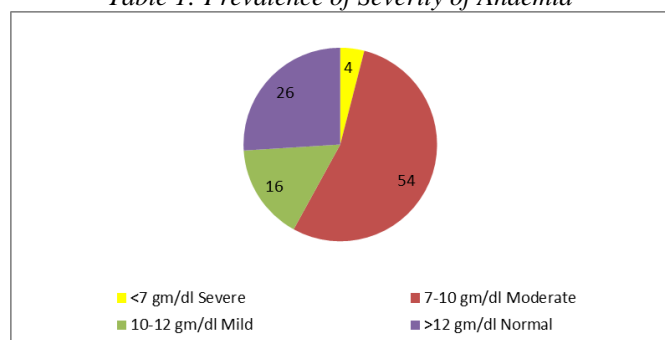*Table 1: Prevalence of Severity of Anaemia*

Figure 1: Prevalence of Severity of Anaemia

Among the respondents, 20% were from nuclear families and 60% of those belonged to families earning between INR 5000-10,000. 79% of participants' fathers were farmers or labourers. 93% of participants had attained menarche. Signs of Vitamin and Mineral Deficiencies were observed in 71% of the girls. Some form of illness was observed in all but 29% of the girls. These illnesses included fever, stomach ache, eczema, body ache, tooth decay and weakness. Malnutrition (as measured by Body Mass Index) was widely rampant in the area with 78% of the respondents being malnourished. The prevalence of varying degrees of malnutrition as per the

classification scheme of the United States Department of Health and Human Services, National Heart, Lung, and Blood Institute is per Table 2 and Figure 2.

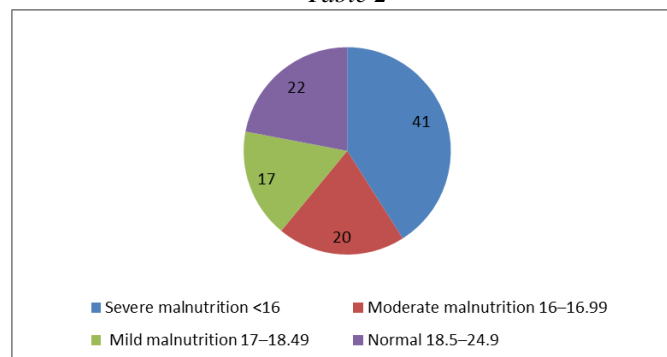|	Body Mass Index	No (%) of respondents
Severe malnutrition	<16	41
Moderate malnutrition	16–16.99	20
Mild malnutrition	17–18.49	17
Normal	18.5–24.9	22

Table 2

Figure 2: Prevalence of varying degrees of Malnutrition

All respondents felt that boys are receiving better and preferential treatment in the family as compared to the girls and in all the families the males ate meals first and the females ate thereafter. The patriarchal nature of the society and family was evident from the fact that in 74% of the respondent's families, all the important decisions were taken by father.

All the respondents informed that the male members of their families were regular consumers of alcohol and many were smokers as well.

IV. DISCUSSION

Although the Adolescents appear to be the healthiest subset of any population, there is more to this than meets the eye. Besides, these young people being vulnerable to a number of diseases/ conditions in all the dimensions of health that is physical, mental and social, it has been established that many of diseases that manifest themselves in the adulthood/later life have their roots in adolescence. This is especially ironic since many of the causes of mortality and morbidity in this age group are preventable, treatable and manageable thereby reducing ill-health and disability in the adult population.

According to the Report of the National Family Health Survey of 2005-06, as many as 47 percent of currently married adolescent girls aged 15-19 were chronic energy deficient and 56 percent were anaemic.

A.S. Indupalli's 2009 study conducted on 250 adolescent girls aged 13-19 years in an urban community of Gulbarga (Karnataka) revealed that 94% had anemia.

Kalamka.H.S,'s 2001 working in Nagpur in Maharashtra reported a prevalence of 60.16% as far as anaemia in adolescent girls was concerned.

In the present study, the prevalence of Anaemia was found out to be 74%. Chaturvedi etal10, and Kotecha et al11 reported a similar prevalence of 73.7% and 74.7% respectively.

The prevalence's of severe, moderate and mild anaemia were 4%, 54% & 16% respectively. High prevalence of mild and moderate anaemia necessitates due emphasis so as to bring down total prevalence of anaemia in adolescent girls. The health and social community has woken up to the importance of adolescent health in the past decade beginning with the world observing the International Year of Youth in 1985 and the World Health Assembly in 1989, when discussions were focused on the health of the young people.

Among the adolescents and the youth the girls are particularly vulnerable and more so in the developing countries where they are traditionally married at an early age and exposed to a greater risk of morbidity and mortality related to marriage and child bearing.

The prevalence of anaemia is disproportionately high in developing countries, due to lack of awareness, poverty, inadequate diet, co existing diseases, pregnancy/lactation and suboptimal health services.

The nutritional anaemia in this group attributes to high maternal and infant mortality, high incidence of low-birth weight babies and other perinatal morbidities.

It has been known that Anaemia affects physical growth, cognitive development, performance in school and reproduction. Anaemic mothers are more prone to giving birth to low birth-weight children, increasing the morbidity and mortality rates for both mother and child. Findings from National Family Health Survey (NFHS) –3 indicate that as many as 56 percent of girls and 30 percent of boys in the 15–19 age group are anaemic. Of these, 17 percent of the adolescent girls and 14 percent of the boys suffer from moderate to severe anaemia. Married women in the age group 15–24 are more likely to be anaemic than their unmarried counterparts. The prevalence of anaemia (all age groups combined) is higher in rural than in urban areas, for both women and men. Also, marginalised groups, especially scheduled tribes, show higher levels of anaemia prevalence than the rest of the population.

WHO / UNICEF has suggested that the problem of anaemia is of very high magnitude in a community when prevalence rate exceeds 40%. The underlying cause of anaemia is malnutrition and iron deficiency and it is indeed much alarming to note that the malnutrition and iron deficiency in these adolescent girls is much prevalent i.e. 74%. This necessitates that urgent steps must be taken for improving this scenario.

In this context, previously, the RCH programme being implemented by the Government of India had adolescent health as a programme component. Presently the health needs of the Adolescents are being catered through by the The Rashtriya Kishor Swasthya Karyakram (National Adolescent Health Programme), which was launched on 7th January, 2014.

The programme is based on the National Adolescent Health Strategy which it realigned the clinic-based curative approach to focus on a more holistic model based on a continuum of care for adolescent health and developmental needs. It introduced a holistic mix of community-based interventions through peer educators, and is underpinned by collaborations with other ministries and state governments. Anaemia in this age group has been identified as an important health challenge. The key principle of this programme is adolescent participation and leadership, Equity and inclusion, Gender Equity and strategic partnerships with other sectors and stakeholders. The programme envisions enabling all adolescents in India to realize their full potential by making informed and responsible decisions related to their health and well being and by accessing the services and support they need to do so.

The Rashtriya Kishor Swasthya Karyakram thus aims to comprehensively address the health needs of the 243 million adolescents in the country with the objectives of Improving Nutrition and Sexual and Reproductive Health, Enhancing Mental Health and Preventing Injuries and violence and Preventing substance misuse.

For these interventions, the relevant results of this study show that the factors such as family income, weight, meal order and Menstruation are the factors contributing to the prevalence of anaemia.

This study reveals that anaemia prevails in the rural areas and low socioeconomic strata which underlines the need to tackle this challenge. This may be done by awareness campaigns, deworming and iron supplementation campaigns and improvement in living conditions.

V. CONCLUSION

To conclude, despite being a time of Vulnerability, Adolescence is a time of greatest opportunity as well. This is the period when young people develop and establish their thinking, perspective; relationships with peers and other adults; it can be safely surmised that a healthy adolescence is a solid foundation for being a healthy adult.

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