

Prevalence of Anemia Among Adolescent Girls in a Rural Area of Jharkhand, India

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Abstract

Background: Anemia accounts for a majority of the nutritional problem across the globe. The prevalence of anemia is inordinately higher among developing nations, because of low socioeconomic status and indigent access to the healthcare services. Adolescent period is signalized by marked physical activity and rapid growth spurt; therefore they need additional nutritional supplements and are at utmost risk of developing nutritional anemia. This study was carried out to find out the prevalence of anemia among adolescent girls.

Materials and Methods: This study was a cross-sectional study conducted among 255 adolescent girls. After getting informed consent from the subjects, the information regarding age, socio demographic status, menstrual history, and short clinical details were recorded. Blood samples were collected and analyzed using automated hematology analyzer.

Results and Discussion: Overall prevalence of anemia was found to be 48.63% (n = 124). The majority of the anemic girls (55.64%, n = 69) were having mild degree of anemia. Among 255 girls, 188 (73.73%) were from the early adolescent age group (10–14 years). Prevalence of anemia (52.24%) was high among the late adolescents and those belonging to low socioeconomic class.

Conclusion: There is a significant relationship between anemia and socioeconomic status, dietary modification, nutritional supplementation, and helminthes control; in addition, compliance with consumption of iron and folic acid tablets will prevent anemia to a great extent among adolescent girls.

Keywords: Adolescence, Anemia, Nutritional Supplementations, Socioeconomic Status

Introduction

Anemia accounts for a majority of the nutritional problem across the globe and it is principally engendered by deficiency of iron. Although it occurs in all the age group, prevalence is on a higher side among women of childbearing age.^[1] Its prevalence is inordinately higher among developing nations, because of low socioeconomic status and indigent access to healthcare services.^[2] In developing countries, the adolescent group is more exposed to nutritional challenges and adolescent girls are more vulnerable to the disease. Studies showed that adolescent anemia was the greatest nutritional problem encountered in developing countries. India had reported high prevalence of anemia among adolescent girls, which is apparently higher when compared with the other developing nations.^[3,4] The period between 10 and 19 years of age has been defined as adolescence by the World Health Organization.^[5] This period has been considered as the transitional phase from childhood to adulthood. During this phase, major psychological, behavioral, and physical developments ensue; because of marked physical activity and rapid growth spurt adolescence needs additional nutritional requirements. According to

recent statistics, there were about 1.2 billion adolescents worldwide, who constitute one fifth of the total world's population and the figures are escalating. Developing countries account for about 5 million adolescents of the total adolescent population, and in India about 21% of the total population are adolescents.^[6,7] Presently, the prevalence of anemia among adolescent girls is on the rise in India. Since adolescent period signalizes the beginning of menstrual period in girls, they are at a higher risk for nutritional anemia. In rural areas of India, girls get married and become pregnant during the late adolescent period, thus increasing the risk of adolescent anemia and low birth weight babies.^[8] There were many studies focused on anemia among pregnant women and children, but only few studies were available on anemia among adolescent girls. This study was aimed to find out the prevalence of anemia among adolescent girls and to correlate with socio demographic status in a rural area of south India. Adolescent girls are chosen for the study as by improving anemia and awareness among adolescent girls, maternal morbidity and mortality especially during pregnancy can be improved. There are only few studies focusing on adolescent anemic girls. In view of the above, this study was carried out to find out the prevalence and factors associated with anemia among adolescent girls.

Prevalence of Anemia among adolescent girls

Nutritional anemia is prevalent everywhere throughout the world, with an expected number of one billion individuals being anemic. Adolescence is a time of fast development and with inadequate and improper food habits, one is vulnerable to all kind of nutritional deficiencies. Adolescence, a period of conversion from childhood to adulthood, involves a crucial situation in the life of people. This period is described by an uncommon quick pace of development. Adolescents are the best human resources but their health has been neglected for many years because they were considered to be less effected by the disease (anemia) than the age groups of children and old people. The global attention has been directed to the health of adolescents only in the last decade. (Agrawal et al., 2018). Anemia, the deficiency of iron is yet to be a state of major global health concern for scientists and decision makers. Adolescence period is a basic time of life on the grounds that mental development spray requires adequate nourishment so as to achieve solid adulthood. The insufficiency of iron shows the condition of malnutrition in the adolescent girls. Its consequences are insufficient nourishment, blood loss, provocative and irresistible infections. Folic acid inadequacy happens as a result of less consumption and absorption of iron is the maximum widely recognized type of iron deficiency. NFHS-3 expresses that in India, the pervasiveness of anemia had been stated to be 55.8 percent in women and 30.2 percent in men at the age of 15–19 years (Fishman et al., 2000).

Risk factors for Anemia Prevalence among adolescent girls

In India, mostly adolescent girls are highly anemic because of deficiency of nutrients. Deficient nourishment in adolescence have severe effects during the reproductive years and after. Frequently, adolescent girls get married and become mothers even before the development age is completed in India, in this way multiplying the hazard for anemia. The anemia which occurs from the deficiency of nutrients in adolescent girls ascribes to the high maternal mortality rate, the high frequency of low birth weight of infants, high perinatal death rate, and the resulting high fertility rates. This adolescent period is additionally significant because of the ever-increasing proof that the over powering anemia in pregnant women can be all the more handily accomplished if a satisfactory iron status can be guaranteed during

adolescence. Around 43 percent of young age mortality is identified with pregnancy. Child-bearing in the age between 15-19 years denies adolescent girls of accomplishing their development as indicated by their hereditary potential (Biradar et al., 2012). Iron deficiency causes antagonistic results as the disease progress. It influences the development of adolescent girls as well as their attentiveness, memory, work execution and attendance in school. It additionally causes delays in the beginning of menarche, affects the immune system eventually leading to infection. If an anemic adolescent girl gets pregnant it may increase the foetal morbidity and mortality, the perinatal risk, the incidence of Low Birth Weight (LBW), overall increase among Infant Mortality Rate (IMR) and Maternal Mortality Rate (MMR) (Siva et al., 2016).

Literature Review

Anemia during adolescence influences the development and growth of girls and boys expanding their vulnerability to drop out-of-school. Thus, investing in adolescent girls who are suffering from anemia is important for their future growth and development. Anemia is described by the low level of hemoglobin in the blood. Hemoglobin is important for moving oxygen from the lungs to different tissues and organs of the body. Anemia occurs because of the nutritional deficiency iron, folate, nutrient B12, and some different supplements. Insufficiency of iron is the well-known form of malnutrition in India. Deficiency of Iron influences an approximately 50 percent of the population of India (Shah et al., 2016). As per NFHS-2 in India, under the Government Reproductive and Child Health Program, iron and folic acid tablets are given to pregnant women, adolescent girls, children in order to control anemia. Since anemia is such a severe health issue in India, NFHS-2 undertook direct measurement of the haemoglobin levels of all adolescent girls of age 15-19 years.

Adolescent girls are at high risk of iron deficiency because of rapid development and formative procedure which cause increased necessity of both micro and macro nutrients. This period is related with frequent menstrual blood loss during menarche, hormonal changes and deficient dietary iron intake accelerating anemia. The deficiency of nutrients during adolescent period can have serious results throughout the reproductive age and afterwards (Patel et al., 2018)

Need for the Study

The adolescent period marks the transitions between childhood to adulthood. This stage is described by physical development, emotional, mental and social progress. It carries a unique and more closeness with the world over adolescent's close family. Changing social and psychological condition along with expanding urbanization represents various risk and challenges before adolescent's health and nourishment. There exists less research on the relationship of lifestyle patterns and health/dietary status among adolescent girls in urban regions (Sivagurunathan et al., 2015).

Adolescents are not only the future; they work, learn and enhance to family and community life. Investment in adolescent's presence is true in spirit and UNICEF is obliged to underneath existing human rights treaties. Adolescence is that significant decade where once impoverishment and disparity regularly go to the following generation as adolescent girls give birth to undernourished children. The intergenerational transmission of undernourishment is generally seen among adolescent girls. Investing in adolescent girls is additionally the best method to quicken the battle against impoverishment, disparity, and gender discrimination. Enormous progress has been accomplished for children and youth

in early and middle childhood (UNICEF, 2012). Adolescent age group is the key of opportunity to precise nutritional status of children. If we intervene properly during this stage we can prevent results of nutritional deficiencies in future. Nutritional requirements of adolescent girls are generally ignored which is lead to stunting and poor health. One of the significant results of the physiological changes and the dietary disregard which occurs during this period is iron deficiency. In a tropical country like India helminthic pervasion is common which can lead to severe blood loss which in turn results in anemia.

Objectives

The current study aims

- To assess the socio-demographic profile of OOS anemic adolescent girls in India
- To analyse the socio-demographic-anthropometric differences among OOS anemic girls in India.
- To assess the food consumption pattern of OOS anemic adolescent girls in India.
- To study the reliance of OOS adolescent anemic girls on public health care system in India.

Discussion

The result of present study revealed that the highest percentage of adolescent girls 68%(38) had inadequate awareness on nutritional anemia and its prevention,27% had moderately adequate awareness and only 10%(6) had adequate awareness on nutritional anemia and its prevention. This was supported by the study conducted by Gracy. S & N Junior Sundresh on knowledge regarding prevention and management of anemia among adolescent girls, in Bhadravathi showed that majority of adolescent girls (57%) had inadequate knowledge, only (43%) had moderate level of knowledge and none of the adolescent girls had adequate knowledge. The findings of the present study corresponded with another study conducted by Premaletha T & Safeena on Prevalence of anaemia and knowledge of adolescent girls regarding anaemia in higher secondary Schools of Palamu (Jharkhand) corporation which reported that 51% had poor knowledge, 38% had average knowledge and only 11% had good knowledge regarding anemia. The findings of present study revealed that the overall mean of awareness on nutritional anemia was found to be 9.6 which showed moderate awareness. Still there is widespread prevalence of anemia among adolescent girls and there is a need to change the attitude and behavior of adolescents to combat anemia. The findings of present study was found less than the study results conducted by Chandrasekhar M et al. on assessment of Knowledge of Adolescent Girls Regarding the Prevention of Iron Deficiency Anemia in Selected Rural Areas of Palamu (Jharkhand) which found the mean knowledge score of adolescent girls was 12.58. Hence it is necessary to organize health education programme with more focus on specific issues and information on anemia such as healthy dietary pattern including intake iron and vitamin C rich foods, reducing junk foods, fast foods and avoiding tea and coffee to enhance iron absorption and proper utilization of deworming and iron supplementation provided by school health programme.

Table 1: Percentage distribution of level of awareness on nutritional anemia and its prevention among adolescent girls

Level of Awareness	Frequency	Percentage
Adequate	6	10
Moderately Adequate	27	51
Inadequate	38	68
Total	71	100

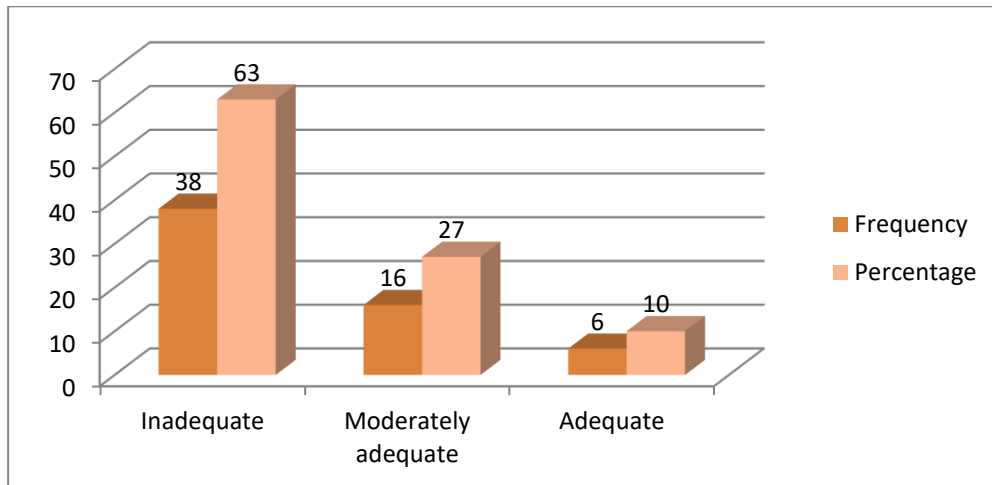
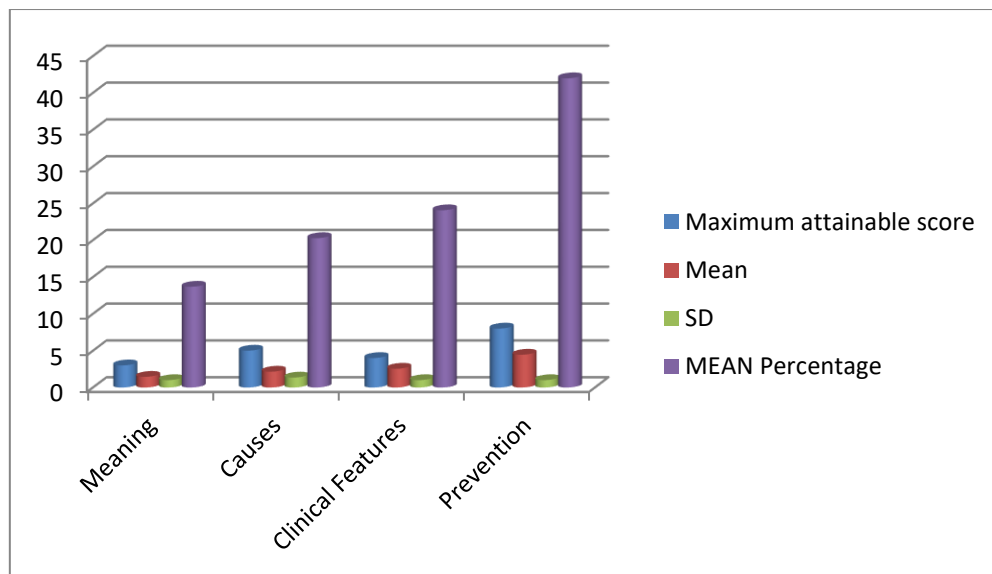


Table 2: Mean, standard deviation & mean percentage of level of awareness on nutritional anemia and its prevention

Items	Maximum attainable score	Mean	SD	Mean Percentage
Meaning	3	1.45	1	13.68
Causes	5	2.15	1.35	20.28
Clinical Features	4	2.55	1	24.06
Prevention	8	4.45	1	41.98



Conclusion

Nutritional anemia as the major non communicable disease is prevailing among adolescent girls and contributing negative impact on physical health as well as their academic performance and cognitive ability. It is necessary to create awareness on nutritional anemia and its prevention with multiple audio visual aids to enhance desired behavior change among adolescent girls. This also necessitates the need to organize counseling programs to adolescent girls in schools and colleges with much emphasis on impact of nutritional anemia on future health.

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