Advanced International Journal of Multidisciplinary Research
E-ISSN: 2584-0487 editor@aijmr.com
Volume 2, Issue 1, January - February 2024
CrossRef DOI: 10.62127/aijmr.2024.v02i01.1013

Awareness on Nutritional Anemia and its Prevention among Adolescent Girls

Amrita

Research Scholar, Department of Home Science, R.C.U. Palamu, Jharkhand

Abstract

Background:

Adolescence is the period of rapid growth with physical & physiological development and profound biological, emotional, social, and cognitive changes in human beings. Nutritional anemia is the common & worldwide public health problem among adolescent girls and overall prevalence of nutritional anemia varies from 40-90%. It may produce adverse effects like increased risk of morbidity and mortality and affects adolescent's future health.

Objective:

This study aimed to assess the awareness on nutritional anemia and its prevention among adolescent girls.

Method:

A non experimental descriptive design was adopted to assess awareness on nutritional anemia and its prevention among adolescent girls at Keezhakasakudi, Karaikal. A total of 60 adolescent girls between 10-15 years of age were selected by convenience sampling technique. Data was collected by using self structured interview schedule. Both descriptive and inferential statistics were used to analysis the gathered data.

Results:

The study results reported that the majority 63% (38) of adolescent girls had inadequate awareness, 27% (16) had moderately adequate awareness and only 10% (6) had adequate awareness on nutritional anemia and its prevention. The overall mean was 9.6 with standard deviation±2.49. The results of the present study also revealed that there was statistically significant association between level of awareness on nutritional anemia with age of the adolescent girls.

Conclusion:

Nutritional anemia as the major non communicable disease and contributing negative impact on health, it 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.

Keywords: Awareness, Nutritional anemia, Prevention, Adolescent girls.

INTRODUCTION

Anemia, when caused by severe iron deficiency is termed as iron-deficiency anemia (IDA). Although, some functional consequences may be observed in individuals who have iron deficiency without anemia.

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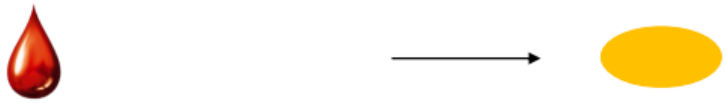
Cognitive impairment, decreased physical capacity, and reduced immunity are commonly associated with iron-deficiency anemia. In severe iron-deficiency anemia, the capacity to maintain body temperature may also be reduced. Severe anemia is also life-threatening. As the most common cause of anemia is iron deficiency, these terms are often used interchangeably. However, it is important to realize that anemia resulting from iron deficiency characterizes a very late stage of iron deficiency.

Anaemia is a critical public health problem in India that affects women and children throughout the lifecycle. Anaemia in boys and girls limits their development, learning ability, reduces concentration in daily tasks, increases their vulnerability to infection, increases school dropout rates, reduces physical fitness and work productivity. Anaemia in girls during pregnancy is associated with premature births, low birth weight, and peri-natal and maternal mortality. Adolescence is an opportune time for interventions to address anaemia, as it is an important time of growth and development. Missing out on nutrition education and IFA supplementation at this time may push young boys and girls further into the cycle of iron deficiency and anaemia. In adolescent girls, apart from meeting growth needs, sufficient iron intake is also essential before and during pregnancy. What is Iron? Iron is one of the essential nutrient required by our body , as it cannot madeby our body on its own. Iron is so important to your body that is has been referred to as the body's gold. Most of the iron in your body is found as part of proteins called hemoglobin, which is found in red blood cells of blood. Hemoglobin in blood carries the oxygen you breathe into your lungs to all tissues throughout the body. Human blood contains a red pigment called haemoglobin, which is rich in iron. It carries oxygen to different parts of body. Deficiency of iron in diet leads to decreased amount of haemoglobin, making the blood thin and less red in colour which leads to less supply of oxygen to different parts of the body; this state is known as anaemia.



Cut off levels of hemoglobin for diagnosis of Anemia

Age/Sex	Hb Gram/dl
Children 6 months to 6 years	11
Children 6 to 14 years	12
Adolescents 15-19 years	12
Adult male	13
Adult female	12
Adult female pregnant	11

If the level falls below those above, then the person is diagnosed as having anaemia. Classification of anaemia according to WHO.

CAUSES AND EFFECTS OF ANAEMIA

Common causes of anaemia There are many different types of anaemia. They could be nutritional or non -nutritional causes (heavy/chronic bleeding, infections, genetic disorders or cancers). Nutritional anaemia, particularly, is the most widely prevalent form of anaemia in the country. Causes of Iron Deficiency Anemia and nutritional anaemia are: Poor Dietary intake of iron resulting in deficiency of

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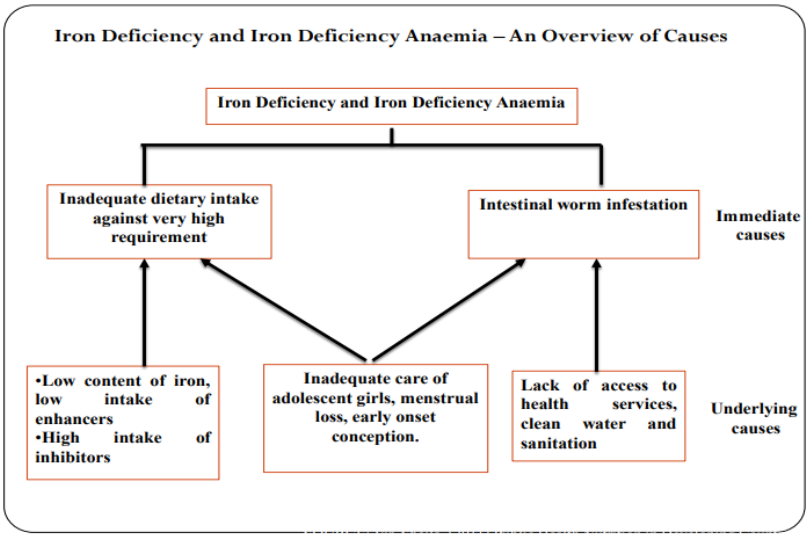
iron in the body and thus Iron deficiency anaemia (less intake of iron rich foods; Gender discrimination in food allocation in a family aggravates the situation. Low bio-availability of iron- Habitual intake of cereal based diet high in phytate and poor consumption of iron absorption enhancers such as vitamin C result in low availability of iron Dietary deficiency of vitamins such as Folic Acid, Vitamin C, Vitamin B12

Non nutritional causes of anemia:

Accelerated increase in requirement for iron during adolescent period

- Hookworm infestation
- Infections such as Malaria
- Loss of blood in case of heavy menstrual bleeding.

Teenage marriage and early pregnancy



Teenage pregnancy places double burden on the physically and physiologically immature body of girls and results in increasing the likelihood of anemia, maternal mortality, pregnancy complications and birth of low birth weight babies.

Iron deficiency anaemia develops after normal stores of iron have been depleted in the body. Thus the signs of anaemia may not be clinically visible until the anaemia is severe (Hb less than 7-8 gms/dl).1 However, adverse impact on health occurs even before this stage is reached.

Who is affected? The high risk groups for anaemia include- Women of child

- bearing age who have blood loss through menstruation
- Pregnant and lactating women who have an increased requirement of iron
- Adolescents and children who have rapid growth phases People with poor dietary intake of iron through a deficient diet. **Intergenerational cycle of Anemia -** An adolescent girl who enters the reproductive age with low iron stores and becomes pregnant during adolescence or later is at greater risk of giving birth to a low birth weight and preterm baby. The baby is also born with low iron stores and due to poor infant feeding practices is more likely than ever to enter adolescence with
- low iron stores in the body. Thus this vicious cycle of iron deficiency anemia continues.

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Women in general are more prone to anaemia than men because of smaller stores of iron and the onset of menstruation imposes additional requirement of Iron to compensate for menstrual blood loss. In Indian girls, the highest prevalence of anaemia is reported between the ages of 12-13 years which also coincides with the average age of menarche. In girls, the lower total food intake or energy intake by compared to boys, combined with menstrual losses cause adolescent girls to be at greater risk of Iron deficiency and IDA. Prevention and Control of Anaemia in Adolescents Primary prevention of anaemia is achieved through well- balanced diet rich in iron and other vitamins and minerals involved in iron absorption or in the production of RBCs/Haemoglobin. a) Balanced diet rich in Iron Adolescence is a significant period for physical growth and sexual maturation. Adolescents need to eat a balanced diet i.e. a diet that provides all nutrients (carbohydrates, proteins, fats, vitamins and minerals) in required amounts and proportions for maintaining health and general well-being. Eating a balanced diet means consuming different types of food items like pulses, chapatti or rice, green vegetables, locally available fruits and milk every day.

Functions of various food components and why it is important for adolescents:

- Proteins are required for body building and help in repair and maintenance of body tissues. Egg, milk, pulses, fish, meat, ground nut are some examples of body building foods.
- Fats are high-energy foods and provide fat-soluble vitamins. Oil, ghee, butter, cheese, egg, fat of meat, fish, ground nut oil, and mustard oil are some examples of fat.
- Carbohydrates form the major component of most diets and are the main source of energy. Rice, potato, sugar, banana, jaggery, sugarcane, honey are the examples.

In developing countries like India, anemia is the major health problem. Severe anemia can result in a stroke or heart attack. Adolescence in contrast to puberty is not a single stage but a range of 13 to 18 years and is accomplished by its profound changes in growth rates, body compositions and marked physiological and endocrinal changes. Adolescent girls are very important section of our society as they are our potential mothers and future homemakers. It is essential to protect their health and ensure good health and nutritional status among the future generations. For this it is necessary to create awareness among the adolescents and hence a need has been felt to find out the level of awareness among adolescents. Building knowledge and creating awareness are the various methods to prevent anemia among adolescents. Bringing behavioral changes, motivating to adopt healthy eating habits, learning to practice home based food fortification and monitoring menstrual bleeding are to be taught to adolescents. Methods of prevention and dietary treatment of nutritional anemia through lifestyle changes are not yet done in large scale by any researcher in this study area. This research will prove that creating awareness is a good method of inculcating knowledge and bringing lifestyle changes. These are very necessary steps to prevent nutritional anemia. This research will also make adolescents aware of iron rich foods around them so that they can incorporate them in their daily diet without additional burden on family food budget. The recipes developed in this research will help them to know about various methods of cooking the locally available iron rich foods.

REVIEW OF LITERATURE

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Public Health Nutrition project (2005) was conducted a study on prevalence of anemia among different population groups in Bangladesh. The study concluded that the prevalence of anemia is 53% among adolescent girls and 49% in pregnant women.

Gawarikar, et al. (2005) conducted a study on prevalence of anemia among adolescent girls. The study reveals that overall prevalence of anemia among the adolescent girls of weaker economic group was 96.5%, middle income group was 65.18% with severe anemia higher income group was 2.65%.

Basu, et al. (2005) conducted a cross-sectional study on prevalence of anemia among adolescent girls. It was concluded that significantly higher among adolescent girls (25.9%) as compared to boys. Anemia was observed more in rural (25.4%) as compared to urban (14.2%) adolescent girls.

Togeja GS, et al. (2006) conducted a study on prevalence of anemia among pregnant women and adolescent girls in 16 districts of India. The study revealed that the overall prevalence of anemia among adolescent's girls was 90.1%.

Pawashe, (2006) conducted a study on iron nutritional status of adolescent girls belonged to an urban slum and rural areas. A study reveals that higher percentage of the rural girls (37.5%). Therefore, the prevalence was similar in both urban and rural girls who had not attend menarche with increasing age, urban girls who had attained menarche showed an increase in the prevalence of anemia.

Sunita, et al. (2007) conducted a descriptive study to assess the prevalence of anemia among adolescent girls in Trichy. Random sampling technique was used and 105 schools going adolescents were selected and blood samples were taken. Samples were collected and analyzed and a record of one-week dietary recall was maintained. The result showed that 82% of girls were anemic based on their dietary intake. The report was concluded that anemia is in emerging problems among the world population, nearly 2000 million adolescent girls were suffering from iron deficiency anemia.

OBJECTIVES OF THE STUDY:

1. To investigate the prevalence of nutritional anemia in Palamu District of Jharkhand.
2. To organize awareness workshop in selected schools for Adolescent girls.
3. To assess awareness about nutritional anemia among adolescent's girls.
4. To compare the awareness level before and after attending the workshop.

Statement of the Problem

Adolescence is the period of lifetime between 10 to 19 years of age as per WHO. It is the period where there is rapid growth with physical & physiological development and profound biological, emotional, social, and cognitive changes in human beings.Adolescent period forms the basis of development of many habits which may persist for lifelong including eating habits. Adolescence needs extra nutrients to meet their increasing demands of rapid growth and development. Majority of adolescents develop nutritional anemia due to lack of necessary nutrients in the diet, imbalanced diet, craving for junk foods and fast foods, having the habit of skipping meals and peer group influence universal problem of adolescent girls particularly in low economic under developed and developing countries including India. Nutritional anemia is the common & worldwide public health problem among adolescent girls and overall prevalence of nutritional anemia among adolescent girls in Northwest Ethiopia was 25.5%. Prevalence of anemia among adolescent girls differs in different parts of India and findings of research

studies revealed that 35.9% in Karaikal 48.63% in Tamil Nadu, 50% in Bihar Nutritional anemia in adolescent girls may lead to decreased oxygen carrying capacity of
the blood which in turn caused decreased work capacity, inability concentrate in academic activity and problems in menstruation. It may also produce impact on their future life when the adolescence enters into reproductive age; it may produce adverse effects like increased risk of morbidity and mortality during antenatal, intra natal & postnatal period and also low birth weight babies. Hence it is necessary to know the existing level of awareness among adolescent girls in order to adhere to the preventive steps to reduce its prevalence.

Conclusion

Anemia is global public health problem affecting both emerging and developed countries with major consequences for human health as well as social and economic growth. Anemia affects mainly women of child-bearing age, young children, and adolescent girls About one-third of the global population are anemic. Adolescence is a transition from dependent childhood to independent and responsible adulthood. The World Health Organization (WHO) defined adolescents as the population of 10 to 19 years of age. It is estimated that out of the 27 million people in Nepal, around 23 percent are adolescents . Adolescent children are one of the major risk groups for anemia. The prevalence of anemia among adolescents is 27% in developing countries, and 6% in developed countries. Iron deficiency anemia (IDA) constitutes the major proportion of anemia during adolescent period. Accelerated development, hormonal changes, malnutrition and starting of menstrual periods in girls are major causes in this period. Because iron is an essential element for the function of various organs, its deficiency may lead to impaired perception and learning difficulties resulting in declined school success. The situation of Nepal is severe where 36% of those aged 15-49 years, 42% of the pregnant women and 40% of the lactating mothers are reported anemic. The few studies carried out among adolescent girls in Nepal reported that prevalence ranges from 42-60 % (13-16). Only one study included male adolescents: prevalence was 56.3%. This study was conceived and designed with the objective to determine prevalence and distribution of anemia in terms of age and gender, among adolescent population.

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