

Iron Deficiency Anaemia and Reproductive Health in Women

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Introduction

Iron is one of the minerals that our bodies require to perform certain critical processes. Iron's basic and important role (as a component of haemoglobin) is to deliver oxygen from the lungs to cells in our bodies, and it is a necessary nutrient for the body. "Iron insufficiency is a condition caused by a lack of iron in the body," according to the CDC (Centers for Disease Control and Prevention). Iron is required for erythroblasts to produce haemoglobin. If the iron supply is insufficient, HB synthesis fails and the quantity of red blood cells declines. Anaemia is another name for this illness. Anaemia is defined as a haemoglobin concentration below a particular threshold. The WHO recommends a haemoglobin level of 120 gm/L for non-pregnant women (age 15 and up) and 130 gm/L for men (15 years and up). Furthermore, iron insufficiency is classified into three types:

- Mild Deficiency is defined by decreased reserves with normal Hb and iron-dependent protein synthesis.
- Marginal deficiency is defined by low iron storage and diminished iron-dependent protein production, but normal haemoglobin levels.
- a lack of iron anaemia consists of decreased concentration of circulating RBCs which results in decreased concentration of Hb within blood cells resulting in compromised transport of oxygen to tissues, iron stores are further depleted and the concentrations of iron-dependent oxidative enzymes are reduced. Anaemia has become a major public health concern in recent years [1].

Anaemia has become a major public health concern in recent years. "Iron insufficiency is the most frequent nutrition shortfall in both poor and developed countries". Poor countries and underprivileged groups suffer the most globally, like with other diseases. Pregnant women and children are the most anaemic population group in the poorest nations, with the least access to interventions and services. "In women, anaemia prevalence falls with income in every region/country," according to a World Bank report on anaemia. In many nations, prevalence is twice as high in the poorest as in the richest. Anaemia is the most common type of anaemia, according to the findings of a study conducted in Abbottabad. Although iron insufficiency is frequent in both developing and developed countries, studies show that it is more prevalent in developing countries. Multiple causes and implications of anaemia in developing nations have been recorded in the literature, but these have not been compiled into a single source. Thus, the goal of this literature review was to examine and consolidate the data from the literature on the burden, causes, outcomes, and key interventions for developing nations related to anaemia [2].

An exhaustive literature review was conducted by retrieving publications from sources such as PubMed, Google Scholar, Science Direct, World Bank,

and WHO. Various data, including World Health Organization and World Bank reports, as well as Pakistan Demographic and Health Survey 2013, Demographic health survey (DHS) reports, and UNICEF figures, were also analysed. Relevant articles were found using the text words and phrases 'anaemia,' 'iron deficiency,' 'risk factors of anaemia,' 'outcomes of anaemia,' 'interventions,' and 'developing nations'. Descriptive studies, observational studies, correlational studies, and comparative studies were all covered. Instead of just the abstracts, full papers were vetted and included. An electronic search was conducted for papers published in the previous year [3].

Iron deficiency is a primary cause of anaemia and is more widespread in developing nations, putting additional strain on their health-care systems at a time when resources are already scarce. Females and children are in the high-risk group, but females are at a larger risk for physiological reasons. The presence of some social elements exacerbates the difficulty. Despite the fact that various interventional initiatives are already in place, its incidence remains very high. This necessitates more examination of remedies and options. Anaemia is three to four times more common in impoverished countries than in developed countries. Pregnant women (56%), school-aged children (53%), and non-pregnant women (44%), are the most affected population groups in developing countries [4].

Anaemia affects roughly 1.62 billion individuals globally, according to the World Health Organization (WHO), regardless of its cause. Preschool-age children have the highest prevalence (47%), followed by pregnant women (41%), non-pregnant women (30%), school-age children (25%), and individuals over 60 (24%); men have the lowest prevalence (12%). However, internationally, the most numerous demographic group is non-pregnant women (468.4 million)". There are two types of iron deficiency causes. One is increased iron requirements, whereas the other is decreased iron intake/absorption [5].

Description

Increased iron requirements may be related to the body's growing needs during development, blood loss, worms, pregnancy, infections, inflammatory bowel disease, or donations. Furthermore, women who have gynaecological illnesses or have substantial blood losses during their menstrual periods are at a higher risk of acquiring anaemia. Anaemia is related with and exacerbates genetic illnesses such as thalassemia and sickle cell disease. Furthermore, bone marrow illnesses that restrict red cell synthesis, chronic renal failure, rheumatoid arthritis, and tuberculosis are some of the causes of anaemia. According to the WHO, Southeast Asia and Africa are the most impacted regions. Western Pacific and Europe are the least affected regions. Globally, iron deficiency is thought to account for approximately 50% of anaemia. Furthermore, iron deficiency ranks ninth among the risk factors included in the GBD (Global burden of disease). "The majority of WHO Member States (132 to 159, depending on population group) have a moderate-to-severe public health burden of anaemia for mothers and young children, implying that more than 20% of the population group in these countries is affected." Although interventions are currently in place, the prevalence remains high. These numbers indicate that this issue should be revisited and treatments adjusted to meet the needs of the population. Anaemia prevalence has a "social imbalance" in all countries worldwide. It is more common in lower socioeconomic strata and among those with poor educational attainment. Anaemia is prevalent in wealthy countries, particularly 48 hours after delivery, with a prevalence of 50-80% in developing countries.

During the entire pregnancy, there is an increased need for around 700-

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850 mg of body iron, while lactation leads in extra iron loss via breast milk. Lactation amenorrhoea, on the other hand, compensates for this loss. The condition worsens with recurrent pregnancies since the body's iron levels are reduced. The severity of anaemia in preschool children has been linked to birth order, implying a steady depletion of mothers' iron stores after multiple pregnancies. Reduced absorption may be attributed to the effects of certain drugs that inhibit iron absorption from the diet. Another alternative is a lower intake of iron-rich foods. In developed countries, the typical daily dietary iron intake ranges between 10 and 15 milligrammes.

Conclusion

Under typical settings, only 5% to 10% of this amount, or 1-3 mg/day, is absorbed. This is about increasing iron consumption. Anaemia is found to be more prevalent in large families and in moms with lower literacy levels. It is also heavily influenced by cultural ideas. Some cultural groups shun iron-rich dietary sources, which accounts for a considerable part of the world's population. Obesity can also contribute to iron deficiency. Obesity increases the risk of iron insufficiency due to poor food absorption in transitional nations, according to research. Obese people are more likely to be iron deficient, according to cross-sectional research in developed countries.

Acknowledgement

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Conflict of Interest

None.

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