



A Study on Anemia among HIV Aids Womens in India– Causes and Remedial Measures

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Abstract

Health status in India can be understood with its historical perspective, health concerns and health infrastructure in pre- independence and post- independence phases and the analysis of effectiveness of health care systems for the different expected beneficiaries of the society. Anemia in pregnancy is an important cause of maternal and neonatal mortality. It is a recognized co-morbidity of HIV infection. The present study reveals that the causes and impacts of Anemia deficiency faced by the HIV Aids affected women's in India, the policy measures taken by government for improving the health conditions of HIV affected peoples in India respectively.

Keywords: Iron Deficiency, Anaemia, HIV Aids, Nutritional deficiency, Hemoglobin content, Infections.

Introduction

Anemia affects nearly 800 million women worldwide. In India, it is classified as a major public health problem as it is estimated that 52 percent of non pregnant women of reproductive age are anemic. Although the primary cause of anemia is iron-deficiency, it is seldom present in isolation. More frequently it coexists with a number of other causes, such as malaria, parasitic infection, nutritional deficiencies, and hemoglobin apathies. The importance of iron-deficiency as cause of anemia varies by region. While as low as 50 percent of anemia in sub-Saharan Africa may be attributable to iron-deficiency (due to high prevalence of HIV, hookworm, malaria, and other infectious diseases) the proportion of anemia caused by iron-deficiency increases to over 70 percent among premenopausal women in India

According to the World Health Organization's 2009 Global health risks' report, iron-deficiency anemia accounted for 400,000 deaths and 1.5 percent of the global Disability Adjusted Life Years in 2004. This cost is disproportional borne by developing nations as 60 percent of the morbidity and 95 percent of the mortality related to iron-deficiency are derived from the poorest nations of the world. South Asia and sub-Saharan Africa bear about 70 percent of the global mortality burden attributable to iron-deficiency anemia.

Health Care in Twelfth Five Year Plan:

In the Twelfth Five year Plan, that starts next year (2012), the planning Commission has decided to increase its spending on health to 2.5 per cent of the GDP (Sinha Kaunteya; 20th Nov. 2011, Times of India) from 1.2 percent in 2009 which is among the lowest in the world. The Indian government has intended to increase public spending on health from 1.2 per cent of GDP to 3 per cent by the end of 2022. The consequence of low public spending on health is leading to high private out-of-pocket expenditures

Table 1.1.Cut –off points for the diagnosis of Anaemia

Age Group	Hemoglobin level
Children 6 month-6 years	11
Children 6-14 years	12
Adult male	13
Adult female (Non pregnant)	12
Pregnant woman	11

Source: K. Park, (2000). Text book of Preventive and social medicine, 16th edition

HIV and AIDS in India

India has the third largest HIV epidemic in the world. In 2015, HIV prevalence in India was an estimated 0.26 percent. This figure is small compared to most other middle-income countries because of India's huge population (1.2 billion) this equates to 2.1 million people living with HIV. In the same year, an estimated 68,000 people died from AIDS-related illness.

Overall, India's HIV epidemic is slowing down, with 32 percent decline in new HIV infections (86,000 in 2015), and a 54 percent decline in AIDS-related deaths between 2007 and 2015. The HIV epidemic in India is driven by heterosexual sex, which accounted for 87 percent of new infections in 2015. However, the epidemic is concentrated among key affected populations such as sex workers. The vulnerabilities that drive the epidemic are different in different parts of the country. The five states with the highest HIV prevalence (Manipur, Mizoram, Nagaland, Andhra Pradesh and Karnataka) are in the south or east of the country. Some states in the north and northeast of the country have also reported rising HIV prevalence.

Risk Factors for Anaemia

Anemia is the most common cause of maternal deaths, accounting at number five of all maternal deaths (more than one lakh women in India die of pregnancy-related deaths, out of which 22,000 are related to nutritional anemia). Severe anemia accounts for 20.3% of maternal deaths. The risk of dying from hemorrhage and infection is five to ten times greater among anemic women compared with non-anemic women. Anemia among women also contributes to infant health by intra-uterine growth retardation, low birth weight and ultimately perinatal mortality, and a higher risk of irreversible brain damage in infants. Anaemia is more likely to occur during:

- ❖ Preschool age when growth is rapid.
- ❖ Adolescence when there is rapid growth and menstrual loss of iron.
- ❖ Pregnancy, when there is rapid growth of fetus and maternal tissues.

Nutritional anemia is widely prevalent in many parts of the world, particularly in developing countries. Although many nutrients and co-factors are involved in the maintenance

of a normal hemoglobin concentration, the most common nutrient deficiency in nutritional anemia, from the public health.

Objectives of the Study

The Present paper entitled A Study on Anemia among HIV Aids women's – Causes and Remedial measures in India, has been consisted the following major objectives framed by the researcher are as follows

1. To study the various causes of Anemia Deficiency among the HIV affected women's in India.
2. To find out the problems faced by the HIV affected women's due to Anemia Deficiency.
3. To offering valuable suggestions provided by the state and Central Government in India.

Sources of Data

The present study entitled “A Study on Anemia among HIV aids women's – Causes and Remedial Measures in India” has consisted all sources related to the study obtained the secondary sources like Ministry of Health and family Welfare, Government of India and various records published by journals, Reports, Articles and websites respectively.

Causes of Anemia

Herbert (1992) Diversified from normal iron status have been summarized as follows:

a) Stages I and II negative iron balance (i.e. iron depletion)-In these stages, iron stores are low and there is no dysfunction. In stage I negative iron balance, reduced iron absorption produces moderately depleted iron stores. Stage II negative iron balance is characterized by severely depleted iron stores. More than 50 % of all cases of negative iron balance fall into these stages. When persons in these two stages are treated with iron, they never develop dysfunction or disease.

b) Stages III & IV negative iron balance (i.e. iron deficiency)-Iron deficiency is characterized by insufficient body iron, causing dysfunction and disease. In stage III negative

iron balance, dysfunction is not accompanied by Anemia; however, Anemia does occur in stage IV negative iron balance.

c) Stages I & II positive iron balance- Stage I positive iron balance usually lasts for overall years with no accompanying dysfunction. Supplements of iron or vitamin C promote regression to dysfunction or disease, whereas iron removal prevents progression to disease. Iron overload disease develops in persons with stage II positive balance after years of iron overload have caused progressive damage to tissues and organs. Again iron removal stops disease progression. Iron status has a variety of indicators. Serum ferretting levels are in equilibrium with body iron stores. Very early (stage I) positive iron balance may be best recognized by measuring total iron binding capacity (TIBC) (transferring IBC). Conversely, measurement of serum (plasma) ferritin levels may best reveal early (stages I &II) negative iron balance, although serum total iron-binding capacity may be as good as indicator.

Because anemia is the last manifestation of chronic, long term iron deficiency, the symptoms reflect a mal-function of a variety of blood systems. Inadequate muscle function is reflected in decreased work performance and exercise tolerance. Neurologic involvement is manifested by behavioral changes, such as fatigue, anorexia and pica especially pagophagia (ice eating).Nokes and colleagues, in their report of International Nutritional Anemia Consultative Group (1998) support earlier work by Polite and colleagues (1986) that abnormal cognitive development in children suggests the presence of iron deficiency before it has developed into overt anemia. Growth abnormalities, epithelial disorders and a reduction in gastric acidity are common. A possible sign of early iron deficiency is reduced immune competence, particularly defects in cell mediated immunity and the phagocytic activity of neutrophils which may lead to an increased propensity for infection. As iron deficiency Anemia becomes more severe, defects arise in the structure and function of the epithelial tissue, especially the tongue, nails, mouth, and stomach.

The skin may appear pale and the inside of the lower eyelid may be light pink instead of red. Fingernails can become thin and flat and eventually koilonychias (spoon shaped nails) may be noted. Mouth changes include atrophy of the lingual papillae, burning, redness, and in severe cases a completely smooth, waxy, and glistening appearance to the tongue (glossaries).Angular stomatitis may also occur, as may a form of dysphasia (difficulty in swallowing). Gastritis occurs

frequently and many results in cardiovascular and respiratory changes that can eventually lead to cardiac failure. Some behavioral symptoms of iron deficiency seem to respond to iron therapy before the Anemia is cured, suggesting they may be the result of tissue depletion of iron containing enzymes rather than the result of a decreased level of hemoglobin Iron absorption refers to the amount of dietary iron that the body obtains. Healthy adults absorb about 10% to 15% of dietary iron, but individual absorption is influenced by several factors. Storage levels of iron have the greatest influence on iron absorption. Iron absorption increases when body stores are low. When iron stores are high, absorption decreases to help protect against toxic effects of iron overload. Iron absorption is also influenced by the type of dietary iron consumed. Absorption of heme iron from meat proteins is efficient. Absorption of heme iron ranges from 15 percent to 35 percent, and is not significantly affected by diet. In contrast, 2 percent to 20 percent of nonheme irons in plant foods, such as rice, maize, black beans, soybeans and wheat is absorbed. Nonheme iron absorption is significantly influenced by various foods. Meat proteins and vitamin C will improve the absorption of nonheme iron.

Tannins (found in tea), calcium, polyphenols, and phytates (found in legumes and whole grains) can decrease absorption non heme iron. Some proteins found in soybeans also inhibit nonheme iron absorption. It is most important to include foods that enhance nonheme iron absorption when daily iron intake is less than recommended, when iron losses are high (which may occur with heavy menstrual losses), when iron requirements are high (as in pregnancy), and when only vegetarian non heme source of iron are consumed. Iron deficiency anemia will be prevented by adequate dietary intake or iron such as green leafy vegetables such as amaranths, spinach, coriander leaves, drumstick leaves, radish leaves, vegetables such as beet root, drumstick, cereals like ragi, barley, rice (raw milled), legumes like Bengal gram dhal, black gram dhal, soya bean, nuts and oil seeds and fruits such as chicken, pomegranate and jaggary.

Remedial Measures

Measures which can be implemented for adolescent girls in order to improve their nutritional status (especially iron level) are:

- Inclusion of iron rich foods and regularity of meals need to be established among the adolescent girls. Foods like green leafy vegetables, meat, chicken, pulses and egg to be consumed in abundance so as to improve the nutritional stores of the body.
- Moreover vitamin C rich fruits should be consumed to enhance iron absorption. Fortifications of widely consumed foods with iron/folate. Regular deforming of adolescents.
- The strategy for Nutrition intervention in adolescence suggests components of promotion, prevention and treatment. Thus, promoting adequate nutrition with adolescents means enhancing control of adolescents over their food and food resources and improving their access to appropriate nutrition services in addition to strengthening food related skills and encouraging healthy eating and lifestyle.
- Prevention focuses on specific condition like malnutrition and specific micronutrient deficiencies. Treatment includes health care services to deal with nutritional aspects diseases in adolescents in an appropriate manner.

Government Policies

Soon after the first cases emerged in 1986, the Government of India established the National AIDS Committee within the Ministry of Health and Family Welfare. This formed the basis for the current apex Government of India body for HIV surveillance, the National AIDS Control Organization (NACO). The majority of HIV surveillance data collected by the NACO is done through annual unlinked anonymous testing of prenatal clinic (or antenatal clinics) and sexually transmitted infection clinic attendees. Annual reports of HIV surveillance are freely available on NACO's website.

The first National AIDS Control Programme (NACP) was implemented over seven years (1992–1999), focused on monitoring HIV infection rates among risk populations in selected urban areas. The second phase ran between 1999 and 2006 and the original program was expanded at state level, focusing on targeted interventions for high-risk groups and preventive interventions among the general population. A National Council on AIDS was formed during this phase, consisting of 31 ministries and chaired by the Prime Minister.

Ministry of Health- Government of India's Programmes

- ❖ National Rural Health Mission (NRHM)
- ❖ Janani Suraksha Yojana (JSY)
- ❖ Janani Shishu Suraksha Karyakram (JSSK)
- ❖ Navajati Shishu Suraksha Karyakram
- ❖ Scheme for Promotion of Menstrual Hygiene among Adolescent Girls (10-19 years) in Rural India
- ❖ Home Based New Born Care (HBNC)
- ❖ Mother and Child Tracking system (MCTS)
- ❖ National Urban Health Mission (NUHM)
- ❖ National Vector Borne Disease Control Programme (NVBDCP)
- ❖ Rashtriya Kishor Swasthya Karyakram
- ❖ Revised National TB Control Programme
- ❖ National Strategic Programme for TB Control
- ❖ DOTS Programme, MDR-TB and XDR-TB
- ❖ National leprosy eradication Programme (NLEP)
- ❖ National Programme of Prevention & Control of Cancer, Diabetes, Cardiovascular Diseases & Stroke Programme (NPCDCS)
- ❖ National Mental Health Programme (NMHP)
- ❖ National Programme for the Health Care for the Elderly (NPHCE)
- ❖ National Programme for Prevention and Control of Deafness (NPPCD)
- ❖ National Tobacco Control Programme
- ❖ National Iodine Deficiency Disorder Control Programme
- ❖ Pradhan Mantri Swasthya Suraksha Yojana (PMSSY)
- ❖ Rashtriya Arogya Nidhi
- ❖ The Integrated Disease Surveillance Project (IDSP)
- ❖ Universal Immunization Programme
- ❖ Pulse Polio Immunization
- ❖ Rashtriya Bal Swasthya Karyakram

Conclusion

As per the recent research and Government reports reveals that the of iron-deficiency anemia show that percent of Indian women aged 15–49 years are anemic. From the present study it was revealed that anemia is a major health problem among the women's especially HIV affected. Because of lack of proper information regarding dietary habits adolescents have a habit of skipping their meals because they are more conscious about their body structure. Anemia could be also the result of heavy periods and reduced iron intake, thus govt. should induced and generate awareness programs in Villages and Urban areas which will lead to healthy eating patterns and selection of appropriate foods. They should also be given education about enhancing factor intake of vitamin C which helps in the absorption of iron. From the study it was concluded that overall nutritional status of HIV affected women's was not up to the mark.

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