Anaemia- Need for Training
Knowledge Assessment of ANMs in Simdega, Jharkhand

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Introduction

According to the World Health Organization (WHO), anaemia affects half a billion women of reproductive age worldwide. In 2011, 29% (496 million) of non-pregnant and 38% (32 million) of pregnant women aged 15-49 years were anaemic. South Asia and Central and West Africa bear the most of the burden of anaemia cases. Failure to address anaemia leads to women to poor health and poor quality of life and has an intergenerational effect on health outcomes of the population. Children are mentally and physically affected and are not able to live up to their true potential while adolescents and youth too are not able to contribute fully to the progress of their respective societies and to the economic wellbeing of their country. Therefore the WHO nutritional targets for 2025 include reduction of anaemia by 50% by 2025.

Burden of Anaemia in India and Jharkhand

According to the National Iron Plus Initiative (NIPI), Government of India’s flagship programme for Anaemia, India is among the countries with the highest prevalence of anaemia across all age groups. Based on a study the highest prevalence of anaemia among adolescent girls India was observed in Jharkhand. Poor social and economic factors further aggravate the precarious health conditions of women, children and adolescent alike, who do not have affordable and accessible health care options in remote areas of the state. Anaemia accounts for 20% of maternal deaths in India. The prevalence of anaemia (Hb less than 12gm/dl) in Jharkhand for women aged 15-49 years was 70% as per NFHS 3 (2005-2006).
2006). According to the HMIS 2014-2015 amongst the for tested cases 3631 women had haemoglobin less than 11gm/dl and 103 had haemoglobin less than 7gm/dl in Simdega district.

![Prevalence of Anaemia across all age groups in India](image)

Source: National iron plus initiative, Ministry of Health and Family welfare, Government of India
National Family Health Survey 3 –NFHS 3

**Scope and objective of Anaemia Control Programs**

The national guidelines for control of iron deficiency anaemia have four purposes:

1. To bring to attention of programme managers the serious negative consequences of anaemia for the health and physical growth, mental and economic productivity of individuals and populations
2. To broadly identify platforms of service delivery and indicate role of service providers
3. To lay out Iron Folic Acid (IFA) supplementation protocols across the lifecycle for prevention of anaemia.
4. To define a standard treatment protocol for facility based management of mild, moderate and severe anaemia, segregated by levels of care.

**Objective of Assessment of ANMs on Anaemia**

Rigorous and quality trainings are required for health personnel to deliver health care services with efficiency and accuracy. This is possible through appropriate knowledge of physiology, symptoms and clinical manifestation of the disease or condition. The ANM (Auxiliary Nurse Midwife) is the one of the fundamental pillars of the health system in our country as she is the only health personnel available in remote areas, and can make a huge difference to the success or failure of an intervention or programme.

- To assess knowledge of ANMs on:
  - Anaemia and its impact

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4 National Iron Plus Initiative, Ministry Of Health and Family Welfare, Government Of India
b. Influence of dietary habits on anaemia  
c. Options and delivery platforms for treatment of anaemia  
d. Current widely held practices that influence anaemia

All these factors will determine her ability to influence the wider population to adopt healthy practices - preventive and curative.

**Methodology**

Sample Frame: 6 Health blocks of Simdega district (Bano, Bolba, Jaldega, Kolebiera, Thetitangar and Simdega)  
Sample Composition: ANMs, GNMs  
Sample Size: 191

Questionnaire: 29 multiple choice questions in Hindi and English to assess:
- Knowledge of respondents about Anaemia and its adverse outcomes  
- Knowledge about severity of anaemia and its impact  
- Knowledge of the current programme of Anaemia control

*If the respondents encircled at least 2 correct options out of multiple correct options for a question, it was coded as correct.* The time allotted for the test was 40 minutes.

**Findings**

1. **Training**

   *64% of the ANMs had not received any training* on Anaemia control programme.
2. Knowledge Haemoglobin and Anaemia

a. 83% knew the correct definition of anaemia—“condition in which the number of red blood cells (RBCs) is reduced.

b. 84% understood the role of RBCs – “to deliver oxygen from lungs to tissues and carbon dioxide from tissue to lungs.”

c. 95% of the respondents knew that the physiological parameter measured to diagnose anaemia was haemoglobin level and 99% knew that a haemoglobin meter is used at the sub center level to detect it.

d. However only **78%** knew normal haemoglobin levels. Therefore the remaining would possibly not be able to identify anaemia even if they measured it correctly.

e. When assessing their knowledge of severity of anaemia where they were asked to identify the range of haemoglobin level which they considered to be severe case of anaemia, 86% of the respondents identified the option correctly. However when they were given a scenario about a 4 months pregnant woman's haemoglobin being 8g/dl, **only half of them could identify it as a case of severe anaemia.** This underscores that their knowledge on haemoglobin level and type of anaemia is very poor.
f. Over 81% of the respondents knew Malaria and/or Tuberculosis could impact haemoglobin levels. Since Jharkhand is a malaria endemic state, the impact of malaria on haemoglobin levels was appreciated by majority of the respondents.

3. Knowledge on Signs and Symptoms and Adverse Effects of Anaemia
   a. Over 80% of the respondents could identify that hyperactivity is not a sign and symptom of anaemia
   b. Only 70% knew at least 2 adverse effects of anaemia. It is crucial that all ANMs know all the adverse effects of anaemia to be able to counsel women on the detrimental effects on anaemia and motivate them for its prevention. These include decreased work out put and work capacity, low birth weight babies and preterm birth and poor learning ability and diminished concentration in children.
   c. 97% ANMs agreed that anaemia could contribute to maternal deaths. This implies that the respondents did understand the gravity of the anaemic condition in pregnant women.
   d. 94% recognized the burden of anaemia prevalence in children under 5

These factors highlights that training has the potential to improve anaemia detection as ANMs are already aware about the extent of this problem.

4. Knowledge of Role of Iron in Anaemia
   a. 61% knew that Folic Acid is an essential factor for RBC synthesis
   b. When asked about the causes of iron depletion that can lead to anaemia only 61% opted for at least 2 options described below while 39% did not know that all 3 would lead to iron loss.
i. Iron loss during menstruation.
ii. Insufficient quantity of iron rich food in diet.
iii. Repeated pregnancies with less than 2 years interval
iv. All of the above

c. Only 70 % ANMs knew that lactating women have a higher requirement for iron. Based on the new new guidelines in the state for providing IFA supplementation to mothers in postpartum period for 100 days, this needs to be highlighted further among the health care providers.

d. 88% of ANMs did not identify at least 2 of causes iron deficiency anaemia from the option below, further strengthening the case for training.
   i. Increased iron intake
   ii. Increased iron loss from the body
   iii. Increased iron requirement
   iv. Decreased iron intake

5. Referral for Anaemia
   a. 41% of ANMs could not identify even 2 scenarios correctly about when a women should referred to a higher facility from the option below
      i. If Haemoglobin (Hb) level is less than 8g/dl.
      ii. Poor compliance or intolerance to iron therapy in mild to moderate anaemia.
      iii. If Haemoglobin does not rise in spite of taking IFA tablets in prescribed dose for a month.
      iv. All of the above.
It is crucial to train ANMs on when the women should receive curative treatment at higher facility levels.

6. Knowledge of Diet and Anaemia

Appropriate dietary habits advice by the health care providers is an important aspect of anaemia control programme, so it is necessary that the health care providers themselves are fully aware about the balanced diet required to prevent anaemia.

a. Only 40% respondents correctly identified the fact that Vitamin C rich food items help in increasing the absorption levels of iron in the body.

b. Only 63% of ANMs were able to identify at least 2 sources of sources of iron rich food such as green leafy vegetables, jaggery and poultry and fish.
7. Iron and Folic acid (IFA) Supplementation

a. When asked about the correct time for IFA tablet consumption 95% were able to correctly identify option 1, 3, and/or 4 from the options below.

1. In empty stomach conditions
2. With tea and coffee
3. After Breakfast
4. After Dinner

Based on the National Iron Plus Initiative the most ideal option is “on empty stomach” followed by “after breakfast” and “after dinner”. 76% of ANMs selected the option “after dinner” instead of the most ideal preference

b. Only 51% of the respondents knew that IFA syrup was for children under 5 years of age. This is possibly also reflective of low practice of use of IFA liquid for children under 5 years of age.

c. When asked about the recommended IFA dose for pregnant and lactating women only 19% of the respondents replied correctly the dose 100 mg iron and 500 mcg of folic acid. 81% ANMs do not have knowledge of
recommended IFA dose. This also impacts their counselling capacity to encourage women to consume IFA.

d. 87% knew the frequency for consumption (intake regime) being 1 Tablet daily for 100 days after first trimester of pregnancy.

e. 80% knew that said Sahhiyas (frontline workers) could administer the IFA tablets to pregnant women.

f. Over 86% of the respondents correctly identified the common side effects of IFA like black stool and constipation.

g. When asked about the conditions in which administration of IFA was contraindicated only 27% correctly identified at least 2 correct options or “all of the above”. However 73% actually are of the opinion that there is no contraindication.
   
i. Severe acute malnutrition.
   
ii. Acute Diarrhoea.
   
iii. Patients on repeated blood transfusions.
   
iv. All of the above.
   
v. There are no restrictions to administer IFA tablets.
8. Knowledge of Anaemia Control Program
   a. A question specific to the Weekly Iron Folic Supplementation (WIFS) programme was asked about the group for which blue IFA tablets or “Neeli goli” is meant, from the following options:
      1. Children under age 5
      2. Pregnant women
      3. Adolescents
      4. Women in reproductive age
   Close to 70% of the respondents correctly identified the “adolescents” group, for which the blue IFA tablets are given.

   ![Bar chart showing correct and incorrect responses to the question about Neeli goli administration]

   b. 81% were aware that administration of Albendazole tablet is a critical component in the treatment of iron deficiency anaemia
   c. When asked to identify the beneficiaries of SABLA scheme for supplementary nutrition, only 24% were aware that it was given to adolescent girls. The possible reason could be that SABLA scheme is not operational in Simdega district.

   The knowledge of anaemia control programme should be known to the health care providers to have maximum outreach and impact of the interventions.

Recommendations Based on Findings
   ➢ Training on Anaemia and its control 64% reported they still haven’t received formal training. They must be trained on the following topics based on the assessment results.
      o Detection of Anaemia: Although a moderate percentage of women understand the physiology of anaemia, its adverse effects and signs and symptoms theoretically, they are not able to apply this knowledge and understand anaemia severity based on haemoglobin level.
      o Addressing of cases and referrals based on degree of anaemia
- **Understanding the importance of Iron**: Only 60-70% of ANMs understand the requirement of folic acid and iron in pregnant and lactating women and causes of iron loss. Additionally, they don’t understand its importance and inclusion in diet, be it food or IFA supplementation.

- **Recommending and counselling women on correct dose and regime of IFA**

- **Understanding the importance of IFA for adolescent girls that builds into the life cycle approach**.

- Although it was not the scope of the study, based on field observations of the shortcomings of the Sahli’s method for haemoglobin estimation, it should be reviewed as it may not be the best method and in order to re-examine the patients with severe case of anaemia. Provision for Complete Blood Count (CBC) must be made at the District Hospitals on a priority basis. This will not only accurately diagnose the condition but also help in better treatment outcomes.