

# Iron Nutritional Status, Clinical and Health Complications of Women in the Reproductive Age from Rural Area

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## Abstract:

The aim of the present investigation is to describe the iron nutritional status and clinical implications of women in the reproductive age from rural area. The records from the pinhead showed that there are about 950 women in the age group of 18-45 yrs. Out of these 950 women, a sample size of 300 members were taken for this study. These women were divided into two groups i.e., <35yrs and >35yrs, clinical and Health complications were recorded.

**Key words:** Epidemiological study, Iron Deficiency Anaemia and clinical aspects.

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## Introduction:

Anemia is the most prevalent nutritional deficiency disorder in the world. Globally, anaemia affects 1.62 billion people, which corresponds to 24.8% of the population. The highest prevalence of anemia exists in the developing world where its causes are multi-factorial. National Family Health Survey statistics, (2014) reveals that every second Indian woman is anaemic and one in every five maternal deaths is directly due to anemia.

Iron is essential for the oxygen carrying capacity of haemoglobin and myoglobin as well as being a component of many enzymes which are liquids for the adequate functioning of the brain cells, muscle cells and the cells of immune system. Iron deficiency is the most common nutritional disorders in the developing world. It effects the liver of many millions of human beings throughout the life cycle especially young children and women of reproductive age. Iron deficiency is usually common cause, other common contributory factors being deficiencies of the folic acid, B<sub>12</sub> vitamin A and genetically determined hemoglobinopathesis (UNICEF, 1998).

Iron deficiency anemia (IDA) is a common nutritional problem world-wide, particularly for women of reproductive age in developing countries. It is estimated that 90% of all anemic individuals are to be found in developing countries, among the developing countries highest prevalence is voted in South Asia. In India the rational level prevalence of anemia amongst pregnant women was reported to be 87% (Demayer and Tegman, 1985).

## Materials and Methods

The records from the pinhead showed that there are about 950 women in the age group of 18-45yrs. Out of these 950 women a sample size of 300 members were taken for the study. These women were divided into two age groups i.e., <35 and 35-45 years. For this study two villages were selected, villages are Amarthaluru and Chebrolu near (Guntur Dt). Clinical examination is the most important part of nutritional signs and



symptoms of dietary deficiencies present among the people. Dietary and nutritional intakes were taken using 24 hours recall method; data was collected on the dietary consumption of subjects.

The subjects were given two bowls (a small and a big size), which are standardized in the department and food intakes of both liquids and solids were measured; the consumption was noted down in terms of those bowls, meant for measuring larger quantities like rice and the small cup for measuring small quantities like vegetables. The quantities of raw food consumed per day were determined. And the nutrients like calories protein, calcium, iron, oxalic acid, vitamin-C and folic acid were calculated using food consumption table (ICMR, 1989).

### Results and Discussion:

Iron is an essential trace element for the formation of Hb of red cells of blood and plays an important role in transport of O<sub>2</sub>. IDA is the most important and wide spread nutritional deficiency disorder in the developing countries affecting women, children and also adult men. WHO (1986) reported that iron deficiency is caused mainly by inadequate dietary intake.

S.No	Clinical aspects	<35yrs (n=150)%	>35yrs (n=150)
1.	<b>Tongue</b>		
	Normal	58 (31.8)	41 (27.3)
	Pale	92 (61.3)	109 (72.6)
2.	<b>Eyes</b>		
	Pale	102 (68.0)	125 (83.3)
	Night blindness	–	–
	Bitot's spots	–	–
	Xerophthalmia	–	–
	Normal	48 (32.0)	25 (16.6)
3.	<b>Nails</b>		
	Normal	52 (34.6)	44 (29.3)
	Pale	90 (60.0)	103 (68.6)
	Brittle	2 (1.3)	1 (0.6)
	Spoon shaped	6 (4.0)	2 (1.3)
4.	<b>Feet</b>		
	Cracks	40 (26.6)	62 (41.3)
	Normal	110 (73.3)	88 (58.6)
5.	<b>Skin</b>		
	Pale	83 (55.3)	127 (84.6)
	Normal	67 (44.6)	23 (15.3)

**Table 1: Percentage of women with different clinical symptoms in the reproductive age group (18-45yrs)**



In clinical aspects tongue seems to reveal the changes that occur due to the nutrient deficiency (Iron, Riboflavin, Vitamin B<sub>12</sub>, Niacin, Folic acid etc.). 61.3% of the women were <35 years of age and 72.6% were > 35 years of age group had pale tongue, and 31.8% in younger age group and 27.3% in higher age group had normal tongue, changes in eye such as pale, dry and scaly at corners, night blindness could occur due to deficiency of micro nutrients like Iron, Vitamin A, Riboflavin, Vitamin B<sub>6</sub>, Niacin etc. 68.0% in <35 yrs age group and 83.3% in >35 yrs age group showed pale eyes but 32.0% in <35 yrs age group and 16.6% in >35 yrs age group showed normal eyes.

Changes in brittle, ridged, spoon shaped, pale nails due to iron and calcium deficiency. Only 34.6% and 29.3% of the women in both age groups showed normal nails. Rest of them had pale nails in 60.0% and 68.6%, brittle nails in 1.3% and 0.6% and spoon shaped nails in 4.0 and 1.3 per cent.

Changes in feet such as cracks could take place due to Vitamin -A deficiency, 26.6% in <35 yrs and 41.3% in > 35 yrs showed cracks 73.3% in <35 yrs and 58.6% >35 yrs have normal feet.

Skin changes were shown in both the age groups due to Vitamin - A deficiency, both the age groups had pale skin but majority of the pale skin shown in >35 yrs age group due to metabolic disorder and prolonged nutrient deficiency.

Physiological conditions including growth and pregnancy in women (ICMR, 1989) need iron intake. Thus adequate amount of iron must be obtained from the diet in order to replace the obligatory iron losses from the body to provide growth until adult hood is reached.

Ill effects of anaemia	Mean±S. D.	
	<35yrs	>35 yrs
Weakness	72.5±4.2	80.4±2.8
Easily fatigue	28.6 ±3.5	35.4±5.5
Dizziness	20.4±6.9	24.6±3.6
Frequent Headache	35.1±5.5	45.7±7.7
Reduced physical work capacity	22.3±1.6	35.3±4.5
Shortness of breath	19.5±4.2	22.9±5.0
Poor appetite	17.3±5.8	28.9±2.4

**Table 2: The mean Health complications of the women in the age group of <35yrs and >35 yrs**

In the present study health complications such as weakness, Easily fatigue, Dizziness, Frequent Headache, Reduced physical work Capacity, Shortness of breath and Poor appetite of women were categorized according to illness of anaemia, In this study weakness showed highest mean values in both <35yrs and >35 yrs of women than other complications. Frequent Headache is more common in both age groups, >35 yrs of age group women suffer more than <35 yrs of age group women due to increased age and stress factors. Reduced physical work Capacity also seen >35 yrs due to metabolic disorders and hormonal problems. Dizziness, shortness of breath and other complications were observed more among >35 yrs of age group women (Beard, 2005) also reported similar ill effects of anemia in adolescent girls.



Age	Iron (mg)	Folic acid ( $\mu\text{g}$ )
<35yrs	9.17 $\pm$ 1.2	191.9 $\pm$ 2.5
>35Yrs	8.35 $\pm$ 4.6	184.7 $\pm$ 5.3
RDA	30	100

**Table 3: The mean nutrient intake of the women in the age group <35yrs and >35 yrs**

The mean intake of iron is 22.4mg per day in females and 24.8 mg per day in males. Iron intake in the present study is much lower than the RDA(Recommended Dietary Allowance);also according to NNMB data (22mg) the consumption of iron is lower than the RDA (30mg). In the present study the mean consumption of folic acid in <35yrs age group is 191.9 $\pm$ 2.5 and 184.7 $\pm$ 5.3 in >35 yrs age group of women. In both the groups mean consumption of folic acid is above the RDA (100  $\mu\text{g}$ ).

The major approach to control Iron Deficiency Anaemia (IDA) is the medical supplementation with iron and folic acid and food based approaches i.e., dietary diversification and fortification of foods iron cereal based such as wheat and maize to counter parasitic infestation (Helen, 1997 and Dibley,2011).

### Conclusion:

The present clinical symptoms and health complications are more in women and adequate nutrition is also important. In this study iron intake is very poor. So iron intake can be improved by consuming iron rich foods and iron fortified supplements.

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