# Prevalence and Preventive measures of Anemic Condition of Pregnant and Lactating Woman in Tadepalli Mandal, Guntur District

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**Abstract:**

Maternal under nutrition is associated with low birth weight and all its attendant adverse consequences. The present study was conducted to study the nutritional status of pregnant women and lactating mothers of low income group. An Anganwadi based cross sectional study was carried out among 50 pregnant women and lactation 35 of Vaddeswaram and 50 pregnant woman and 35 lactating woman from low income group of Ippatam, Tadepalli Mandal, Andhra Pradesh, attending the antenatal clinic for a period of six months. It was found that 46% in Vaddeswaram and 36% in Ippatam are become pregnant below 20years. 80% in Vaddeswaram and 36% in Ippatam are less educated. 34% in Vaddeswaram and 36% in Ippatam are nuclear families.92% in Vaddeswaram and in 96% in Ippatam are spending very meager amount i.e. below Rs. 4000.00 on food monthly.42% in Vaddeswaram 72% in Ippatam are taking food with lack of nutrients. A very high proportion i.e. 80% of women was found anemic. Thus it can be concluded that the hemoglobin levels of pregnant women and lactating mothers belonging to low income group is found to be very poor. There is a need to give special attention to these groups of pregnant and lactating women to improve their Hb% levels with increasing their nutritional status, by creating awareness programs, introducing low cost high nutritive value food which improves their Hb%.

**Key words:** Pregnant woman, Lactating, Nutrients, Iron rich foods, Hb%, Low income Group, Etc.,

## Introduction:

Pregnancy is an anabolic process and a woman's normal nutritional requirement increases during pregnancy to meet the needs of the growing fetus and the maternal tissues associated with pregnancy. Since the nutritional status of the expectant mother is one of the most important determinants affecting pregnancy outcomes (Ramakrishnan, 2004), good maternal nutrition is important for the health and reproductive performance of women and the health, survival, and development of their children (Mora and Nestel, 2000). The study by Mora and Nestel showed that out of 200 million pregnant women each year, many pregnant women in developing  countries suffer from nutritional deficiencies and these nutritional problems affect a woman's and her newborn infant's quality of lives. Therefore to have optimal maternal as well as perinatal outcome, nutrition in pregnancy should be well-maintained.

A study on dietary intake of expectant mother revealed that proper dietary balance of mother's diet is necessary to ensure sufficient energy and nutrient intake for adequate growth of the fetus without depleting maternal stores and damaging mother's own tissues to maintain her pregnancy (Mridula *et al*., 2003). Sufficient nutrition intake during pregnancy has enormous potential for promoting the nutritional status of the mother and her child.

Malnutrition resulting from inadequate dietary intake is associated with growth failure and development of protein-energy malnutrition, especially during the gestation (Kathleen and Drora, 2010). It was recognized that poor growth results not only from a deficiency of protein and energy but also from inadequate intake of micronutrients that are vital during pregnancy. Pregnant women need additional protein for initial deposition of pregnancy related tissue and to maintain new tissue (Kathleen and Drora, 2010). Maternal iron requirements are higher than average absorbable iron intakes. If a woman's diet does not contain enough iron to meet these needs, the body can meet fetal requirements only by drawing upon maternal iron stores. The demands of the developing fetus may cause the mother to develop nutritional iron deficiency anemia. The World Health Organization indicates that, on average, 56% of pregnant women in developing countries is anemic (Allen, 2000) and it is estimated that 82% of all pregnant women in the world suffers from zinc

deficiency (Ma *et al.*, 2004). Rao (1991) found that the major cause of anemia in our country is iron deficiency to inadequate intake of irons or its bioavailability, or both from diets predominantly based on cereals and other plant foods. Thangaleela (1996) found that iron deficiency in the mother, not only affect her own iron status but also the iron status of the newborn. One more study on iron deficiency conducted by Dawn (1997) opined that iron deficiency anemia is the commonest nutritional anemia (60%) in pregnancy in India. Iron deficiency occurs during pregnancy because of inadequate food iron intake, mal-absorption and blood loss. Nutritional microcytic anemias (10%) are due to deficiency of folic acid and/or vitamin B-12. Positive relation between maternal hemoglobin level and birth weight and height of infant was reported by Nerlekar, *et al,* (1989). Devdas (1977) found that nearly 50-60 percent of expectant and nursing mothers had anemia, vitamin A deficiency whereas study conducted by Chawla et *al,* (1996) reported the main limiting nutrients in the diet of mothers were energy, protein, vitamin A and calcium. About 38 percent mothers had hemoglobin level below 10.0 gm /100 ml and were anemic. In 80 per cent of women, no extra food is taken during pregnancy and lactation, which in turn reflects the nutritional status of newly born. The fatty acid composition of the mother's milk is influenced by the lipid composition and relative proportion of lipid and carbohydrates in maternal diet. Most cross sectional studies of populations that differ in protein intake do not indicate much difference in milk protein concentration. (Dewey, 1997). Rao *et al,* (1980) reported that in India, anemia is the most common nutritional problem and it affects more than half the total population, pregnant and lactating women. The estimated prevalence in our country amongst pregnant women and lactating women is 50 percent and 10 percent respectively. Mukherjee (1994) stated that iron deficiency anemia is a significant cause of risk for pregnant women and their infants. Durge *et al,* (1985) reported that 25 percent of the expectant mothers were apparently healthy and 75 percent showed signs of nutritional deficiency. 93 percent women were anemic. Thangaleela, T. (1994) stated that out of 1040 expectant mothers, stillbirth was seen in 0.32 percent of the non-anemic, 0.42 percent of the mildly anemic, and 1.76 percent of the moderate anemic and 7.29 percent of the severely anemic groups.

Thus, the complications during delivery very higher among the anemic mothers than among the non-anemic ones. The number of mothers who had an Apgar score of above 8 was found to be higher among the infants born to non-anemic mothers, than those born to anemic

mothers. Reddy (1989) stated that, iron deficiency anemia is a major nutritional problem in India affecting almost all segments of the population, the most affected groups being pregnant women. The prevalence of anemia in pregnancy continues to be high especially among low-income groups. Reported prevalence ranges from 40-50 percent in urban areas, 50-70 percent in rural areas. (Anonymous, 1990). While compering prevalence of anemia among pregnant and non-pregnant women of developing and developed countries. Anonymous (1991) found that an estimated 44 percent of women in developing countries suffer from nutritional anemia compared with 12 percent of non-pregnant women. 55 percent pregnant women compared to 42 percent non-pregnant women in developed countries. While comparing same situation, Anonymous (1992) reported that an estimated 51 percent pregnant women, 35 percent non-pregnant women and 36 % of lactating women suffer from nutritional anemia in the world. Pant M. (1993) stated that, studies conducted at NIN indicate that a low plasma vitamin-A level in pregnant women during the third trimester of pregnancy is associated with a lowered maternal hemoglobin concentration and low increments in plasma progesterone content, reflecting fetal-placental dis function. Vinodini Reddy (1993) observed that only 12.5 percent of pregnant women are normal and the rest of them suffer from different degrees of anemia; 40.8 percent mild; 33.6 percent moderate and 13.1 percent severe degree of anemia.

Anemia in pregnancy is a major health problem. It has an important relation to various states of maternal morbidity and also maternal mortality hence it was interesting to investigate the relationship between, health, diet and socio-economic background of anemic pregnant women of low income group. The present study was conducted to study the nutritional status of pregnant and lactating women of low income group. Since maternal nutritional anemic problems are critical health problems in rural areas, Assessment of Hb levels of pregnant women and lactating mothers are important to identify the anemic problems and to design appropriate nutritional interventions. This study was to identify the Hb levels of pregnant and lactating women in Tadepalli Mandal a rural area in Andhra Pradesh.

**Material and Methods**

**Study on population:** Pregnant and lactating women from low income group attending the antenatal clinic in two villages i.e. Vaddeswaram, Ippatam were selected.

**Sample size: 50** pregnant women, 35 lactating from Vaddeswaram, 50pregnant woman and 35 lactating mothers from Ippatam were selected.

**Settings:** Anganwadi centers of Tadepalli Mandal, Andhra Pradesh.

**Study period:** The study was carried out for a period of six months.

**Study design:** Anganwadi based cross sectional study.

**Methodology:**

All pregnant and lactating women belonging to low income group and attending the antenatal clinics and Anganwadi centers were screened for Hb level testing. It was possible to screen 70 %pregnant women and 45% lactating mothers for anemic condition. Height, and weight were measured as per standard guidelines laid down by World Health Organization (WHO) Nutritive value of the diet consumed by the pregnant women was calculated by a Day's sample study and it was compared with the standard recommended allowances given by ICMR. Hematological and other investigations were carried out for the target group.

**Results and Discussion**

An Anganwadi based cross sectional study was carried out at the antenatal clinic among 100 pregnant women and 70 lactating mothers belonging to low income group from the two villages respectively.

Table -1 shows the age of the pregnancy

| S.No | Name of the village | Age of pregnant | Number | Percent |
|------|---------------------|-----------------|--------|---------|
| 1 | Vaddeswaram | below 20yrs | 23 | 46 |
|   |   | Above 20yrs | 27 | 54 |
| 2 | Ippatam | below 20yrs | 18 | 36 |
|   |   | Above 20yrs | 32 | 64 |

Though this is modern era still some of the girls are getting marriage under 18 years and getting risk during pregnancy. As the table-1 show the percentage of pregnancy below 20 years is 46% in Vaddeswaram and 36% in Ippatam.

Table-2 Shows Monthly Expenditure on Food

| S.No | Name of the village | Monthly expenditure on food | Number | percent |
|------|---------------------|-----------------------------|--------|---------|
| 1 | Vaddeswaram | < 3000 | 9 | 18 |
| | | >3000<4000 | 31 | 62 |
| | | >4000 <10000 | 10 | 20 |
| 2 | Ippatam | < 3000 | 12 | 24 |
| | | >3000<4000 | 33 | 66 |
| | | >4000 <10000 | 5 | 10 |

Accordingly Table 2 shows the monthly expenditure on food by the family members is less than Rs. 3000/- that is 18% in Vaddeswaram and 24% in Ippatam and less than Rs. 4000/- i.e. 62% and 66% respectively. And very less percent are spending above Rs.4000/- and Rs. 10000/- for food. This shows their lack of knowledge towards nutritional food.

Table – 3 Shows Body weight during pregnancy

| S.No | Name of the village | Weight | Number | percent |
|------|---------------------|--------|--------|---------|
| 1 | Vaddeswaram | 40 to 50 kg | 12 | 24 |
| | | Above 50 to 60kg | 18 | 36 |
| | | Above 60 to 70kg | 12 | 24 |
| | | Above 70 to 80kg | 8 | 16 |
| 2 | Ippatam | 40 to 50 kg | 12 | 24 |
| | | Above 50 to 60kg | 16 | 32 |
| | | Above 60 to 70kg | 14 | 28 |
| | | Above 70 to 80kg | 8 | 16 |

Table3 shows distribution of women according to weight. The prevalence of underweight was found to be 60% and 56% respectively. Only 24% and 28% of pregnant women were in the normal weight category. As expected 16% of women in both the villages are found to be overweight, Saxena V et al observed that 23.3% of pregnant women from the rural area were underweight, which is much lower than the present study.

Madhavi LH et al also reported the prevalence of underweight as 23.93%. The higher prevalence of underweight i.e. 60% and 70% in the present study is due to the fact that the study subjects exclusively belonged to lower income groups.

Table – 4 Shows Hb% of the Target woman

| S.No | Name of the village | HB % | Number | Percent |
|---|---|---|---|---|
| | | Between 7 to 9gm | 12 | 24 |
| | | above 9gm to 10gm | 18 | 36 |
| | | Above 10 to below11 | 10 | 20 |
| 1 | Vaddeswaram | above 11 to12gm of HB | 10 | 20 |
| | | Between 7 to 9gm | 10 | 20 |
| | | above 9gm to 10gm | 9 | 18 |
| | | Above 10 to below11 | 11 | 22 |
| 2 | Ippatam | above 11 to12gm of HB | 20 | 40 |

Table 4 shows prevalence of anemia. Very high proportions i.e. 80% and 60% of women were found anemic. The lowest hemoglobin level recorded was 7 gm/dl. Saxena V et al found in their study that 38% of pregnant women were anemic. While Madhavi LH et al reported a prevalence of 66.67%. The high prevalence of anemia in the present study compared to other studies is due to specific low income group.

**Conclusion**

Although it is clear that prenatal nutrition impacts the short- and long-term health of the infant and mother, many scientific questions remain unanswered due to the many challenges of performing high quality scientific research during pregnancy.

However, what is certain is that a woman's nutritional status and her nutritional habits should be assessed pre conceptionally, with the goal of optimizing maternal, fetal, and infant health.

Pregnancy-related dietary changes should begin prior to conception, with appropriate modifications throughout pregnancy and lactation, and appropriate supplementation of vitamins and minerals, especially with such diet choices that increase the risk of anaemia, so they have to improve the iron rich foods in the diet.

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