

# Prevalence of Anemia Risk Factors in Pregnant Women

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**Abstract:** ***Objective:** To study the prevalence and risk factors of women with anemia during pregnancy. **Materials and methods:** This study was performed based on 100 pregnancies delivered during the years 2016 in Hind institute of medical sciences. Anemia was defined as hemoglobin (Hb) lower than 11 g/dl during pregnancy. This test were estimated by hemoglobinometer. **Result:** Out of 100 pregnant women, 40 (40%) pregnant women were anemic and 60 pregnant women were non anemic (60%). Also, among these anemic pregnant women, majority (55 %) of these women were mildly anemic, whereas 35% were moderately and 10% were severely anemic. **Conclusion:** Prevalence of anemia was higher in the pregnant women at the second trimester (51.1%) and also at the 20-35 years age group (62.79%).*

**Keywords:** Pregnancy, Anemia, Prevalence, Hb concentration

## 1. Introduction

World Health Organization defines anemia as hemoglobin below 11g/dl as the lower limit acceptable and 10.5g/dl in the second half of pregnancy. Anemia can further be classified into mild anemia (10 -10.9g/dl), moderate anemia (7-9.9g/dl) and severe anemia (<7g/dl)[1].

The prevalence of anemia in pregnancy varies considerably because of differences in socioeconomic conditions, lifestyles and health seeking behaviors across different cultures.[2]

Pregnancy is a period of a significant increase in iron requirement over and above the non-pregnant state[3]. Although iron requirements are reduced in the first trimester because of the absence of menstruation, they rise steadily thereafter from approximately 0.8 mg per day in the first month to approximately 10 mg per day during the last 6 weeks of pregnancy[4]. The increased iron requirement is due to expansion of maternal red blood cell mass for increased oxygen transport, including transfer of iron, to both the growing foetus and the placental structures, and as a needed reserve for blood loss and lochia at parturition[5]. Due to increased iron requirements, pregnancy is also a period of increased risk for anaemia. Thus, a high proportion of women become anaemic during pregnancy.

Women go through a variety of physiological changes during pregnancy. Changes in the blood circulatory system are particularly notable, permitting normal fetal growth. Even in normal pregnant women, the hemoglobin concentration decreases with dilution according to the increase in the volume of circulating blood. Since iron and folic acid in amounts necessary to the fetus are preferentially transported to the fetus, the mother is likely to develop iron deficiency anemia and folic acid deficiency anemia. About 20% of pregnant women suffer anemia, and most of the cases are iron deficiency, folic acid deficiency, or both [6]

## 2. Materials and Methods

### Study area and Duration

The study was conducted on hemoglobin that obtained from blood sample of anemic pregnant women submitted to laboratory from February 2016 to march 2016 at Hind institute of medical sciences.

### Study Population

Blood sample were collected from a total of 100 anemic pregnant women. All these pregnant women in-patients attending the hind institute of medical sciences.

We included only those who came to Hind Hospital for antenatal check up and came for delivery as well. As anemia is classified into three degree according to WHO are mild, moderate and severe. Hb cut-off values of anemia were 10.0-11.9 g/dl (mild), 7.0-9.9 g/dl (moderate) and <7.0g/dl (severe).<sup>7</sup> World Health Organization's guideline was used for interpretation and classification of anemia.[7]

## 3. Results

A total of 100 pregnant women samples were collected and analyzed for this study from February 2016 to March 2016. The age group for this study was considered from 18-45 years.

Table 1 shows that among the total pregnant women, 40 (40%) pregnant women were anemic and 60 pregnant women were non anemic (60%).

**Table 1:** Anemic and Non anemic pregnant women

Total pregnant women	Anemic	Non anemic
100	40(40%)	60(60%)

Also, among these anemic pregnant women, majority (67.14%) of them were mildly anemic, whereas 28.57% were moderately and 4.29% were severely anemic as can be seen in Table 2 .

**Table 2:** Grading of anemia

Age Group	Mild	Moderate	Severe	Prevalence
18-20	5	3	2	10(25%)
21-35	12	8	1	21(52.5%)
>36	5	3	1	9(22.5%)
Total	22(55%)	14(35%)	4(10%)	40(100%)

#### 4. Discussion

During this study, out of 100 pregnant women, 40 (40%) pregnant women were anemic and 60 pregnant women were non anemic (60%). Also, among these anemic pregnant women, majority (55 %) of these women were mildly anemic, whereas 35% were moderately and 10% were severely anemic.

Our study further revealed that anemia was mostly recorded at the age group of 20-35 years and those at the second trimester of pregnancy. Results of our work corroborates well with the reports of WHO on the prevalence of anemia in developing countries. Data of our study indicates that the prevalence of anemia in our study was closer to that recorded among the pregnant women of Biratnagar, Nepal (47.25%) and Venezuela (34.4%) which further supports our interpretation.[8,9]

Our observation is quite in agreement with the earlier observation that iron deficiency is the commonest cause of anemia in developing countries and that is why WHO has emphasized on the need of epidemiological studies.[10,11]

Ma AG and Chen XC et al (2004) reported 41.58% in pregnant people of Qingdao province of China were anemic and the subjects with iron deficiency anemia had much higher rates of vitamin C, folate and B12 deficiencies than those in the non anemic subjects and especially in the deficient rates of ascorbic acid and folate in the anemia group. Moreover, they observed that the decreasing trends of Hb concentrations were accompanied by the decreases of serum levels of vitamin A, ascorbic acid, folate and B12 and concluded that multiple vitamin deficiencies may be associated with anemia in pregnant mothers in the last trimester.[12] However, the work of Karaoglu et al (2010) on pregnant women of East Anatolian province of Turkey, registered a percentage of 27.1% of anemic pregnant women.[13]

#### 5. Conclusion

Prevalence of anemia was higher in the pregnant women at the second trimester (51.1%) and also at the 20-35 years age group (62.79%).

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