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**REVIEW ARTICLE**

# Study of Types of Anemia in Pregnant Mothers Attending As Outpatients in Obstetrics and Gynecology Department of District

Dr. Kavita Bhatnagar[1], Dr. Shalini Gupta[2], Dr. Neelam Rajput[3]

[1]Assistant Professor, [2]Associate Professor, [3]Professor, Department of Obstetrics and Gynaecology, K D Medical College, Hospital & Research Center, Mathura, UP, India

**Corresponding Author**
Dr. Neelam Rajput
Professor, Department of Obstetrics and Gynaecology, K D Medical College, Hospital & Research Center, Mathura, UP, India

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**ABSTRACT**
The objective of this qualitative research is to determine the proportion and categorise the types of anemia among pregnant women attending the outpatient department of a district hospital. A self-administered cross-sectional survey was carried out with 200 participants; this showed that 54. 8 % of women in the sample were anemic, and children and teenage girls were most likely to be iron deficient. Some of the nurses' known offenders include; The factors listed include heavy account of menstrual blood loss, parity and poor nutrition. This is why early identification and intervention of the deficiency and the correct intake of the supplements can prevent the complications that are associated with preterm birth and low birth weight. The study also recommends that much attention be given to antenatal care and education sessions for the prevention of anemia.

**Keywords**: anemia, pregnancy, iron deficiency, risk factors, antenatal care.



## INTRODUCTION

Pregnancy anemia is one of the most critical and frequent complications that affects many women especially in the developing nations. Because of hormonal changes that take place during pregnancy, the pregnant woman's blood volume increases, her body requires more iron for the development of the fetus among other reasons. Approximately, 1 in 5 pregnant women is anemic and pregnant anemic women are at a higher risk of delivering preterm, low birth weight and postpartum hemorrhage. The most frequent form of anemia during pregnancy includes; iron-deficiency anemia, folic acid anemia and vitamin B12 anemia. The above-stated conditions are usually diagnosed or inadequately managed, particularly within outpatient care facilities, whereby the patient's overall health status is likely to deteriorate. The purpose of this research is to assess early detection type and the degree of anemia among pregnant women with reference to Obstetrics speciality in a district hospital. It can use the finding and design strategies or prevention and control measures to reduce cases of anemia in women as well as enhance the health of both the mother and the fetus.

## LITERATURE REVIEW

### Anemia in Pregnancy

**According to the authors Siriwong, 2012,** Pregnancy anemia is a public health concern in many countries with effects on the health of both the mother and the unborn child. Some people are at risk during pregnancy because their iron, folate and vitamin B12 requirements rise when expecting a child as they aid in the development of the fetus, and to support the increase in blood volume. Epidemiology of anemia in society differs; however, there is evidence of high incidences in the developing countries (Siriwong, 2012). Numerous researchers show that anemia frequents pregnant women in the second and third trimesters because the body needs red blood cells and nutrients. Several observations explain group differences in anemia, which is more frequent among marginal and migrant populace, having poor nutrition and inadequate antenatal care opportunities. Thus the

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most common type is the iron deficiency and then other forms such as folate or vitamin B12 deficiencies. Consequently, there are other hereditary factors that cause anemia during pregnancy, which are found in certain populations, including Thalassemia.

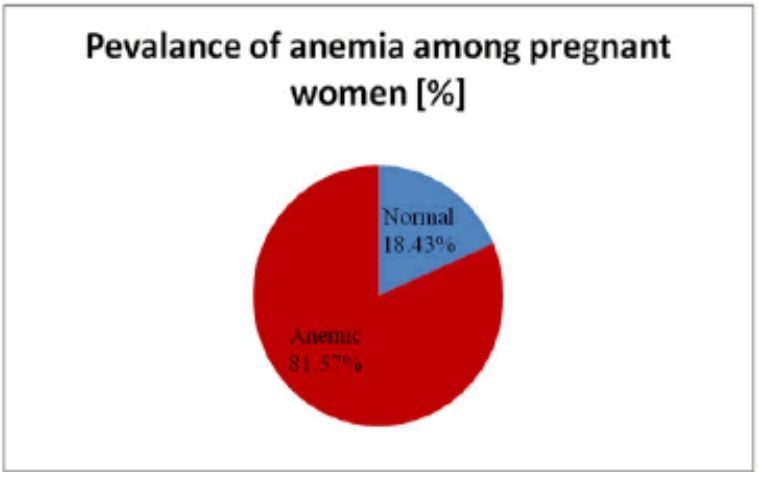


**Figure 1: Prevalence of anaemia among pregnant women**
(Source: https://www.hilarispublisher.com)

It is therefore quite important that anemia during pregnancy be diagnosed early enough and treated properly to prevent complications of preterm labor, low birth weight and maternal fatigue. There are three main forms of interventions which include; routine examination, better diet, and supplementation in cases of anemia among pregnant women. However, there are issues of healthcare disparity, cultural practices and cultural differences that hinder prevention and management.

**Prevalence and Risk Factors of Anemia in Pregnant Women**

**According to the author Acheamponget al. 2018,** Pregnancy anemia is a concerning condition in many countries today; some of the factors are socio-economic, cultural, and nutritional. It is common most especially in developing countries where there are sophisticated health boxes, poor nutrition, restricted health formal care, high order pregnancies, and poor health check up amongst other factors that negatively affect maternal health outcomes. Consequently, IDA is related to iron deficiency, though folate, vitamin B12 and other micronutrient deficiencies might be involved as well (Acheamponget al. 2018). The incidence of maternal anemia during pregnancy ranges from moderate to high and combines in some populations to as high as 50-60 percent, more so in sub-Saharan Africa. The delay in referral also impacts on the time of diagnosis of anemia and subsequent intervention; therefore a number of antenatal visits and accurate medical intervention should be considered as significant determinants of anemia. For example, pregnant women with high parity are at a higher risk due to the fact that parity significantly decreases nutrient reserves.

| Gestational Age | Mean± Std. Deviation | No. of Subject |
|---|---|---|
| 1st Trimester | 10.643±1.2283 | 14 |
| 2nd Trimester | 10.959±1.3924 | 85 |
| 3rd Trimester | 10.895±1.2956 | 101 |

**Figure 2: Mean Hemoglobin estimation among Pregnant Women**
(Source: Acheamponget al. 2018)

Anemia is classified on the basis of severity and levels of Hb and can further complicate preterm birth, low birth weight and maternal morbidity. As such, it is important that pregnant women attend their visits for antenatal care and for early detection of anemia. Thereby, health related programs and interventions aimed at increasing nutrition before conception, early ante-natal care, and iron consumption should go a long way in decreasing the high anemia levels and subsequently improving the maternal and feta physiological well-being.

**Iron Deficiency Anemia in Reproductive-Age Women**

**According to the author Taha et al. 2014,** IDA is the most common type of anemia in the world, affecting many women of childbearing age because of the need for higher amounts of iron during menstruation and child bearing period. This is further

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worsened by inefficient consumptions of foods, significant menstrual flow, and lack of adequate iron foods or supplements (Tahaet al. 2014). One of the precursor groups which are significantly exposed to the risk are pregnant women due to the increased iron demand for fetal growths. IDA, therefore, has been found to produce many effects on the health of the mother and, especially, the fetus and the infant born out of the pregnancy: preterm, low birth weight, and developmentally delayed infants.

| Variables | n (%) |
|---|---|
| Age | |
| 12-22 | 13(41.9) |
| 23-33 | 13(41.9) |
| 34-44 | 5(16.1) |
| >50 | 0 |
| Marital Status | |
| Married | 25(80.6) |
| Unmarried | 5(16.1) |
| Divorced | 1(3.2) |
| Nationality | |
| Saudi | 25(80.6) |
| Non Saudi | 6(19.4) |
| Education | |
| Primary | 0 (0) |
| Secondary | 10(32.3) |
| Higher | 21(67.7) |
| Spouses education | |
| Primary | 3(9.7) |
| Secondary | 23(74.2) |
| Higher | 5(16.1) |
| Occupation | |
| Employed | 7(22.6) |
| Unemployed | 24(77.4) |
| Spouse's occupation | |
| Employed | 25(80.6) |
| Unemployed | 1(3.2) |
| Smoking status | |
| Non smoker | 31(100) |
| Smoker | 0(0) |
| Ex-smoker | 0(0) |

**Figure 3: Demographyandeducationalindicators**
(Source: Tahaet al. 2014)

The other factors like age, marital status, and education level were also considered essential factors by influencing the prevalence of anemia. While educated women receive more information about the need for proper nourishment, anemia exists in such subgroups suggesting that mitral factors such as heavy menstruation and pregnancy demands still threaten women's health (Yadav et al. 2014). Also, hematological parameters that could be affected are low levels of hemoglobin and transferrin saturation which represent IDA. Some of those include screening, early diagnosis, and treatment and the use of iron supplements, especially during pregnancy. It was therefore important to treat iron deficiency in reproductive age women not only to reduce maternal anemia but also for the kid the woman is carrying.

## METHODS

### Study Design and Participants

This study was cross-sectional descriptive that was done between September 2012 and February 2013 in the Obstetrics and Gynecology outpatient clinic in the King Faisal University Health Centre Al-Ahsa, KSA. This paper also sought to establish the extent of iron deficiency anemia among women of child bearing age. Two hundred consenting women were included in the study for the survey purpose (Ngonzi and Julius, 2016). They included all females who have never had a previous diagnosis of breast cancer and who attended the clinic at the time of the study in this age range as pregnant or non-pregnant women. Recruiting of participants involved a purposive sampling method, and patients with hematological disease or with other chronic diseases that might interfere with iron metabolism were excluded from this study.

### Data Collection and Questionnaire

In order to collect the required data, a structured questionnaire comprising of three section was used. To this end, section one of the questionnaire involved questions about the other members such as age, marital status and their level of education. The second domain was participants' gynecological clinical history including cyclic function, pregnancy and gynecological diseases. For this purpose the third

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section was with hematological markers including; Hb, Hct, and transferrin saturation (Zehraet al. 2014). The amount of hemoglobin necessary for the survey of the participants was measured using a small portable hemoglobinometer for comparing the hematocrit and transferrin saturation. The information on the respondents' menstrual cycle and pregnancy history was elicited either from the respondents or from their medical reports provided they agreed to divulge such information.

**Statistical Analysis**

All statistical test was performed using statistical Package for Social Science (SPSS) software package version 20. In the case of the continuous variables averages or means and standard deviations were used. Hypothesis testing was conducted with the use of chi square test in order to determine the correlation between the demographic and clinical measures used in the study and the prevalence of diseased such as age, marital status, pregnant or not among others as recognized by Gawde et al. (2013). To determine the degree of risk attributable to the potential risk factors in anemia, logistic regression analysis were done and the odds ratio of every individual risk in the affected population with 95% confidence interval was used. For all the analyses, the level of significance of $p < 0.05$ was employed.

## RESULT

**Demographic Characteristics of Participants**

In total, 200 women were the participants of the study, their average age was 25.97 ± 7.17 years. The respondents were married individuals in majority (82%) and the majority of the respondents have had at least a secondary level of education (65%). Thus, the prevalence of anemia as stated earlier in the paper crossed to two groups; fifty percent of pregnant women want anemia while fifty percent of non pregnant women also want anemia. Fifty percent of pregnant women and fifty one percent of non-pregnant were tested positive for anemia (Prakash et al. 2015). The occurrence of anemia distribution was most notably enhanced amongst the pregnant women, particularly those who suffered from severe menstrual blood loss. Participants with anemia were slightly older, however the effect of age on the occurrence of anemia was not statistically significant Among the two groups, one group was anemic and the other was non anemic.

**Prevalence and Severity of Anemia**

Precise incidence of anemia within the sample population was 54.8% and 102 individuals had their hemoglobin level below normal. In this regard, 77.4% had elevated transferrin saturation level and 39.2% of Palestinians had low hematocrit levels. Anemia was also marked but not severe; out of the anemic patients 60.8% were mildly anemic, while the rest 39.2% had moderate anemia (Seema, 2017). There were no significant cases of anemia indicated in the study More or less, the study gave no indication of severe anemia detected in the study. On the basis of the comparison of the number of participants with anemia, it can be stated that pregnant women have lower hemoglobin levels as compared with non-pregnant women. The findings suggest that there is high prevalence of anemia in the reproductive-age women including the pregnant mothers.

**Risk Factors for Anemia**

Therefore, the results of the analysis of risk factors indicated that anemia was closely related to menstrual bleeding. Thus, 82.4% of anemic women stated they have heavy menstrual bleeding that played a key role in the development of anemia. The parity was also found out to be significant, whereby the number of pregnancies made by the woman also put the woman at a higher risk of having anemia (Tunkyi and Moodley, 2018). Using a logistic regression test it was found that pregnancy status, heavy menstrual bleeding, and parity are activities that influence the occurrence of anemia. The odds ratio for anemia was therefore higher in those who reported severe menstrual bleeding and therefore makes a strong plea to incorporate menstrual health in anemia intervention measures.

## DISCUSSION

This study has also shown that iron deficiency anemia is a common health condition among women of reproductive age and pregnant women in particular in the King Faisal University Health Centre. The general anemia status of the participants in the present study was 54. 8%, and the anemia was higher in pregnant women with 51.6 %. This is in line with the global statistics in which iron deficiency is rife most especially during pregnancy since there is an increase in demand for the mineral in the body due to fetal growth (Bhattacharjeeet al. 2017). The level of anemia was considered mild to moderate in the majority of the cases, and this indicates the fact that anemia is frequent; however, it does not necessarily become critical. However, conditions like mild anemia have potential complications including fatigue, reduced immune systems, and poor pregnancy milestones hence the need to check the disease frequently. Other factors found to increase one's chances of getting anemic includes; heavy menstrual bleeding, high parity. These lead to high iron loss, which worsening the anemia problem especially among women of multiple pregnancies, or long menstrual cycles. Nonetheless, speaking about ideas, the further investigation of the results showed that 32, 56 % of participants had a high level of iron deficiency anemia, thus education level failed to be a protection from anemia. It is important to increase iron intake and antenatal care as strongly associate pregnancy with lower mean hemoglobin concentration.

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**Future Directions**

The future research on anemia among pregnant women should be directed to identify better ways across the boundaries of the antenatal care outpatient clinic for early identification and timely management. Longitudinal epidemiological studies could facilitate observation where anemia occurs during pregnancy and its effects on the expectant mother and the birth outcome including premature birth, low birth weight, and developmental impairments. In addition, more efforts should also be made towards fortifications implemented during the pre-pregnancy and pregnancy period especially on iron and folic acids as well as vitamin B12 with rural areas (Mahashabdeet al. 2014). Due to the increased risk of anemia in those women who experience heavy menstrual bleeding or have high parity, further investigations should be made concerning more effective prevention and management of those cases. It is also important as a study area to understand the effectiveness of educational programs, and their part in raising the awareness and the compliance with the supplementation schedules. Further, assessing cultural factors and socio-economic factors in regard to prenatal care will also contribute to the development of better approaches to responsive health culture. Furthermore, increasing the utilization of technologies and inventions in the healthcare system; for instance, smart mobile devices for collecting records of iron consumption and anemia status, may bring a sound solution in optimizing maternal health especially in LMICs.

## CONCLUSION

In essence, anemia in pregnancy is one of the major public health challenges especially among pregnant women in developing nations, with adverse effects on both the mother and her unborn baby. It is intriguing to note that anemia was diagnosed commonly in pregnant women, and out of these, about 95 of them had iron deficiency anemia. Conditions like heavy menstrual bleeding, multiparity, and malnutrition are some of the factors that explain the high risks as a call for effort to be directed to the intervention. In addition to proper practice of one antenatal check-up, proper supplementation with iron, folic acid, and vitamin B12 prevents pre-terms, low birth weight, and tiredness in the mother. Typically, remembrance has been enhanced to mitigate such challenges as disparities of health and culture practices. To address this, there still needs to be more research conducted in increasing access to primary care, increasing educational campaigns and interventions and increased effectiveness of dietary change. In conclusion, it is critical for planning the strategies to decrease the load of the anemic condition in pregnancy and improve the status of pregnant woman and fetus.

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