ORIGINAL ARTICLE

PREVALENCE OF ANEMIA AMONG PREGNANT WOMEN VISITING LIAQAT MEMORIAL WOMEN AND CHILDREN HOSPITAL, KOHAT, KHYBER PAKHTUNKHWA, PAKISTAN

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ABSTRACT

Objective: The primary goals of our research were to determine the prevalence of anemia among pregnant women and to identify the underlying causes of anemia in this population.

Materials & Methods: A cross-sectional study was conducted from March to September 2024. The sample consisted of 298 women visiting Liaqat Memorial Hospital in Kohat, Khyber Pakhtunkhwa, Pakistan. A relevant literature review was conducted using Google Scholar and PubMed platforms, and a questionnaire was developed based on the findings of the literature survey. Microsoft Office 2010 and SPSS version 22 were used for data collection, analysis, and interpretation.

Results: Our study showed that the prevalence of anemia was 27.5% among pregnant women, likely due to inadequate iron intake and poor dietary habits. Additionally, other factors such as illiteracy (55.7%) and multi-parity were also involved.

Conclusions: It was determined that most women were diagnosed with anemia and related factors, which contributed to low hemoglobin levels. A common factor was their low socioeconomic status, which adversely affected their lifestyle. Furthermore, it was observed that the diets of anemic patients often lacked fruits and meat.

Keywords: Anemia, Pregnant Women, Iron Intake, Diet, and Illiteracy

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INTRODUCTION

Anemia is a significant public health issue worldwide, impacting a vast population. The WHO defines anemia as a condition where hemoglobin levels in red blood cells (RBCs) fall below 11 g/dL. Despite ongoing efforts, anemia continues to be a persistent global health problem, with a prevalence of 24.3%, totaling approximately 1.92 billion cases in 2021. The condition is prevalent among preschool children and women of reproductive age (WRA), defined as 15–49 years, in developing countries. About 32 million women globally are affected by anemia. The rates are notably higher in South Asian countries, where about 47% of non-pregnant women and 52% of pregnant women are affected. [1] Evidence indicates that pregnant women are most at risk due to increased micronutrient needs and physiological changes during pregnancy. [2]

Anemia is disproportionately common among low socioeconomic groups and is closely related to nutrition, infectious diseases, and other factors. Malaria, schistosomiasis, HIV infection, cancer, and chronic conditions such as heart failure and inflammatory bowel disease have shown a strong and significant connection with anemia during pregnancy and its related complications for mothers and newborns. [3] Many factors can cause anemia, with 95% of cases resulting from iron deficiency. Iron deficiency anemia is the most prevalent type of anemia during pregnancy and a major health concern worldwide.

According to data from the World Health Organization, prevalence rates range from an average of 14% in industrialized countries to an average of 56% (range 35-75%) in developing countries. [4] When a pregnant woman is anemic, the inadequate supply of oxygen to the fetus can lead to various complications, including miscarriage, premature birth, low birth weight, and fetal development problems. [5] The impact of iron deficiency anemia in preg-

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nant women includes 12%-28% fetal mortality, 30% perinatal mortality, and 7%-10% neonatal mortality. [6] In Pakistan, infant, child, and maternal morbidity and mortality rates are high. More than half of the population is anemic, causing serious health issues among mothers, children, and newborns. In Pakistan, the prevalence of anemia among married women aged 15 to 44 is reported to be 26% in urban areas and 47% in rural areas. [7]

MATERIALS AND METHODS

A cross-sectional descriptive study was conducted at Liaquat Memorial Hospital, Kohat, from February to September 2024. The study lasted one month after the synopsis was approved by the ethical review committee of Khyber Medical University Institute of Medical Sciences, Kohat. The study area was the Gynecology OPD of Liaquat Memorial Hospital, Kohat. A total of 298 pregnant women were selected as the sample size. Using a simple random sampling technique, 298 women were chosen for data collection. Data were gathered with a semi-structured questionnaire covering various dependent and independent variables. Initially, a literature review was performed using Google Scholar, PubMed, journals, and books on the selected topic, and this information was thoroughly studied. The review helped shape the study's aims and objectives. The questionnaire was then developed based on the literature review, aligned with the study's objectives and relevant knowledge of the subject. Pregnant women visiting Liaquat Memorial Hospital in Kohat were interviewed using the structured questionnaire for data collection. Data analysis and interpretation were carried out using Microsoft Office 2010 and SPSS version 22.

RESULTS

Among a total of 298 women, 196 were found to be anemic with a hemoglobin level of less than 11 g/dL (mean 10.1). See Table 1 for details. Most of the patients were taking iron supplements. Table 2 presents various etiologies and risk factors associated with iron deficiency anemia.

Table 1: Showing Frequency of Anemia Among Women Visiting LMH Kohat

Frequency Of Anemia		Frequency	Percent	Valid Percent	Cumulative Percent
	Non-Anemic Women	102	34.2	34.2	34.2
	Anemic Women	196	65.8	65.8	100.0
	Total	298	100.0	100.0	

Table 2: Showing Frequency of Various Determinants Affecting Anemia Among Women Visiting LMH Kohat

S.NO	Variables	Yes	No
1	Iron Supplement Intake	216	82
2	History Of Acute or Chronic Infection	76	222
3	History Of Worm Infestation	25	273
4	History Of Miscarriage	107	191
5	History Of Hemorrhagic Disease	22	276
6	Suffering From Stress	122	176

DISCUSSION

In our study, the prevalence of anemia was found to be 65.8%, which was higher than the prevalence reported in previous international studies: 41.74% 57.2%, and 50.6% respectively. [8, 9] On the other hand, previous studies conducted in Pakistan have revealed a prevalence of 67.6% (10) and 77.10%. [10, 11] A cross-sectional study conducted at the Muara community health center, in December 2017, estimated that 63.5 % women were anemic, having low literacy level or illiterate, and 37.5% were non-anemic and healthy, having higher education status. [12]

According to a study conducted in Pakistan, among anemic pregnant women, 62.7% were found to be illiterate. There was a strong association observed between illiteracy and the occurrence of anemia, as well as with the severity of anemia. [13] In a cross-sectional study conducted in 2017, in Hossana Town, the prevalence of mild to moderate anemia was 56.6% and 40.8% respectively. Moreover, in another study conducted at Batunadua Health Center, in 2021; found that those women who have good and healthy eating had 18.2% prevalence of anemia

and among those with poor diet had 86.5% (7) anemia among pregnant individual. [2, 7]

In our study, 91.6% of women had no history of worm infestation; among them, 66.3% were anemic. While 8.4% of the women had experienced worm infestation, 60% of these women were anemic, indicating a significant relationship between anemia and worm infestation. This finding aligns with another study conducted in Ethiopia, where the prevalence of anemia among pregnant women infected with intestinal parasites (55.6%) was significantly higher than among women who were not infected (16.4%). [14] In another study in Pakistan, 38.46% of anemic women had a history of worm infestations. [3]

Iron supplementation is crucial during pregnancy to prevent or overcome iron deficiency anemia. In our study, 65.8% women were anemic who were not taking any iron supplementation. In an international study, over 80% of pregnant women reported using iron supplementation, but in the same study, the prevalence of anemia at 68.6% and among overweight 70.5% were anemic. While another study stated that increasing BMI and obesity were associated with a lower risk for anemia in pregnancy, where 35.4 % anemic women had normal BMI, 1.1 %were underweight, and 43.9% were overweight. [15] In an international study, over 80% of pregnant women reported using iron supplementation; however, the exact study reported a prevalence of anemia of 53.7%. [16] In our study, 62.3 of % with normal BMI were anemic, among underweight, 68.6% and among overweight, 70.5% were anemic. While another study stated that increasing BMI and obesity were associated with a lower risk for anemia in pregnancy, where 35.4 % anemic women had normal BMI, 1.1 % were underweight, and 43.9% were overweight. [15] In a study conducted in Faisalabad, two-thirds of respondents reported following a balanced diet during their pregnancy. At the same time, 22.5% did not. [17] In our study, 95% of the women consumed 1-3 meals per day, and among them, 66.4% were anemic. About half of the women included fruits in their diets 1-2 times per week, and 60.2% of them were anemic. Additionally, 46.3% did not include any meat in their diet, and 70.2% of the women were anemic.

CONCLUSIONS

Our study found that most women visiting LMH were anemic and exhibited multiple factors contributing to their low hemoglobin levels. Of the 16 factors we examined, the most notable were their monthly income and literacy status, which led to a low socioeconomic lifestyle, poor diet, and an inability to afford iron and folic acid supplements. Additionally, it was observed that anemia was more common in women who lacked dietary essentials such as fruits and meat, while it was less prevalent among those with a balanced diet. Further studies at the district level are recommended to gain more insight into the prevalence of anemia among pregnant women.

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Following authors have made substantial contributions to the manuscript as under

Authors	Conceived & designed the analysis	Collected the data	Contributed data or analysis tools	Performed the analysis	Wrote the paper	Other contribution
Shafique Z	✓	×	✓	×	✓	×
Minallah S	✓	✓	×	✓	✓	×
Ahmad AN	×	✓	×	×	✓	×
Shehzadi L	✓	✓	✓	×	✓	✓
Khaliq A	✓	✓	×	✓	✓	×
Shah A	✓	✓	×	✓	✓	×
Khan S	×	✓	×	×	✓	×
Ishtiaq M	✓	✓	✓	×	✓	✓

Authors agree to be accountable for all aspects of the work in ensuring that questions related to the accuracy or integrity of any part of the work are appropriately investigated and resolved.