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Prevalence of Anemia in Multigravida Women and Its Associated Risk Factors in Teaching Hospital, University of Lahore

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ABSTRACT

Background: Anemia during pregnancy remains an important maternal-health concern, particularly in lower-resource settings. Women with multiple pregnancies may be vulnerable because of repeated nutritional demands, short birth intervals, socioeconomic disadvantage, and limited nutrition-related knowledge. This study aimed to assess anemia and associated risk factors among multigravida pregnant women attending the University of Lahore Teaching Hospital.

Methods: A descriptive cross-sectional study was conducted among 150 multigravida pregnant women attending the antenatal clinic or gynecology ward of the University of Lahore Teaching Hospital, Lahore. Participants were recruited through non-probability purposive sampling between April and June 2026. Data were collected using a structured questionnaire adapted from a previous instrument and hemoglobin information from laboratory reports and/or antenatal charts. Descriptive statistics were analyzed using IBM SPSS; the thesis states that chi-square testing was planned for associations, with $p < .05$ considered statistically significant.

Results: The thesis reports that most participants were from low- or middle-income groups and that many had low educational attainment. A previous history of anemia was reported by 57.7% of participants, and 56% had a history of menorrhagia before pregnancy. Tea consumption after meals was reported by 78.5%, iron supplementation by 63.1%, fruit intake by 85%, and green leafy vegetable consumption by 82%. The thesis narrative describes limited knowledge about anemia, iron requirements, and iron-rich foods. The exact hemoglobin-based anemia prevalence and complete inferential-test results were not clearly available in the summarized results used for this manuscript and are not estimated here.

Conclusion: The findings highlight potentially important dietary, socioeconomic, obstetric, and knowledge-related concerns among multigravida women attending this hospital. Antenatal nutrition counselling, appropriate iron supplementation, and education about tea timing and iron-rich foods may be useful. The hemoglobin-based prevalence and associations should be reported from the verified SPSS output before submission.

Introduction

Anemia during pregnancy is a major maternal-health concern because it can affect maternal well-being and pregnancy outcomes. The burden is often greater in lower-resource settings where nutritional deficiencies, limited access to antenatal

care, and socioeconomic constraints may overlap. The source thesis describes pregnancy-related anemia as an important issue in Pakistan and notes that repeated pregnancies may increase nutritional demands and reduce the opportunity to replenish iron stores between pregnancies (Azzam et al., 2025; World Health Organization, 2020). Potential consequences of maternal anemia include reduced physical capacity and increased vulnerability to complications during pregnancy and childbirth. The source thesis also discusses possible fetal consequences, including low birth weight and preterm birth. Prevention therefore requires early identification, suitable antenatal follow-up, adequate nutrition, and adherence to prescribed supplementation (World Health Organization, 2020). Risk factors described in the source thesis include low socioeconomic status, limited education, repeated pregnancies, short birth spacing, previous anemia, menstrual blood loss, dietary practices, and gaps in knowledge about iron-rich foods. Drinking tea immediately after meals may reduce non-haem iron absorption, while adequate dietary diversity and appropriate iron–folic acid supplementation can support maternal iron status (Al-Shahethi et al., 2024; Garg et al., 2021).

Although research has examined anemia among pregnant women generally, the source thesis emphasizes the need to focus on multigravida women attending the University of Lahore Teaching Hospital. Local information can help clinicians identify common patterns and strengthen antenatal education. Accordingly, this study aimed to determine the prevalence of anemia based on hemoglobin levels and explore socioeconomic, obstetric, and dietary factors associated with anemia among multigravida pregnant women.

Materials and Methods

Study design and setting

A descriptive cross-sectional study was conducted at the University of Lahore Teaching Hospital, Lahore, Pakistan. The study period was reported as April to June 2026.

Participants and sampling

The target population comprised multigravida pregnant women attending antenatal services or admitted to the gynecology ward. The planned sample was 150 participants, selected through non-probability purposive sampling. Eligibility criteria included multigravida status (two or more pregnancies), attendance at the clinic or hospital admission, and willingness to participate. Primigravida women, women with specified chronic conditions such as thalassemia or chronic renal disease, and women who declined participation were excluded.

Data collection instrument

Data were collected using a structured questionnaire modified from an instrument reported by Garg et al. (2021). Section A captured demographic and socioeconomic information, including age, education, socioeconomic status, parity, birth spacing, and antenatal visits. Section B addressed clinical and potential risk factors, including dietary practices, iron supplementation, previous anemia, and other health conditions. Hemoglobin values were obtained from laboratory reports and/or antenatal records.

Validity and reliability

The thesis reports that the questionnaire was reviewed by subject specialists and pre-tested. It reports a content validity index of 0.89 and Cronbach's alpha of 0.81. These values are reproduced as stated in the source thesis and should be checked against the original validation record before journal submission.

Ethical considerations

The source thesis states that approval was obtained from the University Research Ethics Committee and permission was sought from hospital administration. Participants were informed about the study, confidentiality, and voluntary participation, and written informed consent was obtained.

Statistical analysis

The thesis reports use of IBM SPSS Statistics for descriptive analysis, including frequencies, percentages, means, and standard deviations. Chi-square testing was identified for assessing associations, with $p < .05$ considered statistically significant. The specific SPSS version, exact anemia prevalence, and complete association-test outputs should be inserted from the final verified analysis.

Results

A total of 150 multigravida pregnant women were included in the study. The demographic profile showed that the largest age group was 26–30 years (44.3%), followed by 31–35 years (30.9%) and 36–40 years (24.7%). Educational attainment was generally low, with 20.1% reporting no formal education and 34.2% reaching fifth–metric level. More than half of participants (52.3%) belonged to the low socioeconomic group.

Table 1. Demographic characteristics of participants

Variable	Category	Frequency (n)	Percent (%)
Age	20–25 years	1	0.7
	26–30 years	66	44.3
	31–35 years	46	30.9
	36–40 years	37	24.7
Education	Illiterate	30	20.1
	Primary	34	22.8
	Fifth–Metric	51	34.2
	Intermediate	9	6.0
	Graduation	25	16.8
Socioeconomic status	Low	78	52.3
	Middle	51	34.2
	High	20	13.4

Clinical, dietary, and knowledge-related findings showed that 57.7% had a history of anemia in previous pregnancies, 35.6% had experienced complications in previous pregnancies, and 55.7% reported menorrhagia before pregnancy. Green leafy vegetables and fruits were consumed by 81.9% and 85.2% respectively, while 55.7% reported meat intake. However, 78.5% consumed tea after meals, a potentially modifiable dietary practice relevant to iron absorption. Iron supplementation was reported by 63.1%.

Table 2. Clinical, dietary, and knowledge-related characteristics

Variable	Response	Frequency (n)	Percent (%)
History of anemia in previous pregnancies	Yes	86	57.7
History of complications in previous pregnancies	Yes	54	35.6
Any chronic disease	Yes	28	18.8
Worm infestation	Yes	48	31.5
History of malaria	Yes	19	12.1
History of bleeding	Yes	41	27.5
Menorrhagia before pregnancy	Yes	84	55.7

Green leafy vegetables intake	Yes	123	81.9
Meat intake	Yes	83	55.7
Fruits intake	Yes	127	85.2
Tea consumption after meals	Yes	118	78.5
Received iron supplementation	Yes	94	63.1
Know about anemia	Yes	87	58.4
Know iron is important in pregnancy	Yes	53	34.9
Know sources of iron-rich food	Yes	71	47.0

Table 3. Descriptive statistics of selected study variables

Variable	Mean	Std. Deviation
Socioeconomic Status	1.61	0.714
History of anemia in previous pregnancies	0.58	0.496
History of complications in previous pregnancies	0.36	0.480
Any chronic disease	0.19	0.392
Worm infestation	0.32	0.466
History of malaria	0.12	0.327
History of bleeding	0.28	0.448
Menorrhagia before pregnancy	0.56	0.498
Green leafy vegetables intake	0.82	0.386
Meat intake	0.56	0.498
Fruits intake	0.85	0.356
Tea consumption after meals	0.79	0.412
Received iron supplementation	0.63	0.484
Know about anemia	0.58	0.495
Know iron is important in pregnancy	0.35	0.478
Know sources of iron-rich food	0.47	0.501

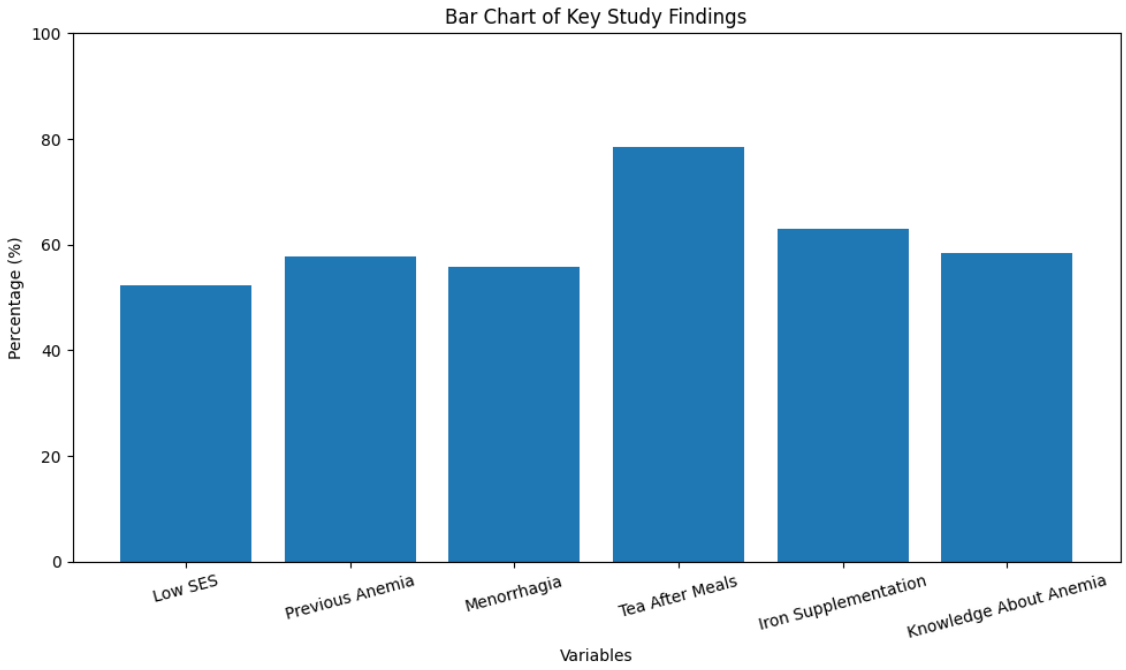


Figure 1. Bar chart of selected key study findings.

Discussion

The findings summarized in the thesis suggest that multigravida women attending the study hospital experienced a combination of socioeconomic, obstetric, dietary, and knowledge-related concerns. The reported frequency of previous anemia and menorrhagia indicates that prior blood loss and pregnancy history deserve attention during antenatal assessment. These patterns are broadly consistent with literature discussed in the source thesis, which identifies poor nutrition, low socioeconomic status, and short interpregnancy intervals as potential contributors to maternal anemia (Garg et al., 2021; Shehata, 2024). Tea consumption after meals was common in this sample. Because tea can inhibit absorption of non-haem iron when consumed with meals, antenatal counselling could explain practical ways to separate tea from iron-rich meals and prescribed iron supplements. At the same time, reported consumption of fruit and green leafy vegetables and the reported use of iron supplements suggest that education should focus not only on whether foods or supplements are used, but also on dietary variety, timing, adherence, and the appropriate clinical management of anemia.

The thesis also describes limited awareness about anemia, iron requirements during pregnancy, and iron-rich foods. Clear, culturally appropriate counselling may help address these knowledge gaps. Nurses and midwives can reinforce advice during antenatal visits, assess adherence and side effects, and encourage women to attend recommended follow-up appointments. Family-planning counselling and adequate birth spacing may also be relevant to women with repeated pregnancies.

These interpretations should be considered alongside important limitations. The study was cross-sectional and conducted at a single hospital, so it cannot establish causation and may not represent pregnant women in other settings. Purposive sampling may also limit generalizability. Most importantly, the exact hemoglobin-defined prevalence and full inferential statistics should be confirmed from the original dataset before drawing firm conclusions about associations.

Conclusion

This hospital-based study examined anemia-related risk factors among 150 multigravida pregnant women. The thesis reports frequent previous anemia, menorrhagia, tea consumption after meals, and incomplete uptake of iron supplementation, alongside limited knowledge about anemia and iron-rich foods. These findings support strengthening antenatal nutrition education, counselling on iron supplementation, and assessment of obstetric and dietary risk factors. The final manuscript should include the verified hemoglobin-based prevalence and complete statistical tests from the original SPSS output before submission.

Practical Implications

Antenatal services may consider routine review of hemoglobin results, individualized nutrition counselling, education about iron-rich foods and tea timing, assessment of supplement adherence, and follow-up for women with a history of anemia or

closely spaced pregnancies. These are practice implications based on the study context, not interventions tested by this cross-sectional study.

Limitations

The study was limited to one teaching hospital and used purposive sampling. The cross-sectional design does not establish causal relationships. The present article draft also does not report the exact hemoglobin-based anemia prevalence or complete chi-square results because these were not clearly available in the extracted source summary. These figures should be verified and inserted before the manuscript is submitted.

Conflict of Interest

The source thesis did not provide a specific conflict-of-interest statement for a journal article. Suggested statement for author confirmation: The author declares no conflict of interest.

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Author contribution

Nimra Arif is identified as the student researcher and author of the source thesis. A journal-ready contribution statement should be confirmed by the author and supervisor before submission.

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