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PREVALENCE OF ANEMIA AND ASSOCIATED FACTORS AMONG A SAMPLE OF PREGNANT WOMEN IN PHC IN BAGHDAD CITY

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ABSTRACT

Background: Anemia during pregnancy can have a profound effect on both maternal and fetal health, adversely affect birth outcomes, and elevate the risk of chronic diseases in the child later in life. The aim of study Assessing the prevalence of anemia among a sample of pregnant women in Al- Kadhimiya, Al-Mansour, and Al-Saidiyah PHC centers Baghdad and identifying significant risk factors associated with the condition. **Method:** This descriptive cross-sectional survey was done at several primary health care centres from September 1, 2023, to May 1, 2024. Three hundred pregnant ladies were studied. The investigator used a structured questionnaire based on relevant literature and research objectives to collect data. This questionnaire covered demographics, medical history, lifestyle, and anemia-related factors. A haemoglobin level below 11 g/dL is considered anaemia, with severity graded as mild (10.0-10.9), moderate (7.0-9.9), or severe (<7) according to WHO guidelines. **Results:** Participants in the study had a mean age of 27.8 years (±6.7) and a mean haemoglobin level of 10.5 mg/dL (±0.9). They had 65.0% anaemia. 67.0% of individuals ate green leafy vegetables daily, and 98.0% took folic acid and iron supplements. Anaemia prevalence was substantially linked with younger age, education levels, bigger families, gravidity, parity, abortion history, number of children under 5, menstrual cycle regularity, and prior anaemia history ($p < 0.05$). **Conclusion:** The study found that many pregnant women had anaemia, mostly mild. Healthy eating was lacking in many people. Anaemia during pregnancy was substantially linked with participant age, husband's educational level, family size, gravidity, parity, abortion history, menstrual cycle regularity, and prior anaemia.

KEYWORDS: Prevalence, Anemia, Pregnant Women, PHC.

INTRODUCTION

Physiologic anemia occurs in pregnancy because plasma volume increases more quickly than red cell mass. Anemia is a widespread condition affecting pregnant women globally, particularly prevalent in developing nations.[1] Its presence during pregnancy poses significant health risks, including miscarriages, stillbirths, preterm births, low birth weight, and severe neonatal complications.[2] In 2015, the World Health Organization reported a global prevalence of 38% among pregnant women, underscoring the importance of anemia reduction in women's and children's health initiatives. In Saudi Arabia, anemia in pregnancy is a serious public health concern, with a prevalence rate of 40%.[3] Studies across various Middle Eastern regions reveal differing anemia rates among pregnant women, emphasizing the necessity for standardized national and local surveys to identify local risk factors, assess progress, and inform policymaking.[4] In Iraq, anemia prevalence among pregnant women is alarmingly high, marking it as a severe public health concern requiring immediate attention. The increased demand for iron and other essential nutrients during pregnancy heightens the risk of anemia among expectant mothers.[5] Additionally, limited access to healthcare services, poor nutrition, and inadequate prenatal care in developing countries contribute to the heightened risk of anemia during pregnancy.[6] The repercussions of anemia during pregnancy are profound, potentially leading to maternal morbidity and mortality, premature birth, low birth weight, and developmental delays in children.[7,8] Therefore, it is imperative to identify the risk factors associated with anemia during pregnancy and develop effective prevention and control strategies to alleviate the burden among expectant mothers in Iraq. Aim of the study Is to assess the prevalence of anemia among

pregnant women in Baghdad City, identify significant risk factors associated with the condition. Assess the dietary regimen in pregnancy.

METHOD

This cross-sectional survey was conducted at PHC centers in Baghdad (Al-Kadhimiya, Al-Mansour, and Al-Saidiyah) over eight months (September 2023–May 2024), including 300 pregnant women recruited via convenience sampling. Participants were pregnant women aged 18 years or older, with singleton pregnancies, capable of providing informed consent, and willing to participate. Exclusions included those on medications affecting blood pressure, those unwilling to participate, and those with hematological diseases. Data collection involved structured face-to-face interviews lasting 15–20 minutes. Visits to PHC centers were conducted thrice weekly, lasting 3–5 hours. A structured questionnaire covered four sections: sociodemographic data, obstetric and medical history, clinical and laboratory findings (including anemia assessment), and dietary habits using a Food Frequency Questionnaire. Anemia was defined as hemoglobin <11 g/dL, classified per WHO criteria: mild (10.0–10.9), moderate (7.0–9.9), and severe (<7).[9] A pilot study with 30 participants refined the questionnaire and identified logistical challenges. Ethical approval was obtained from the Arab Board for Medical Specialization and participating PHC centers, with verbal consent ensuring confidentiality. Data analysis used R software (v4.2.2), expressing continuous variables as means ± SD or medians with ranges and categorical variables as frequencies and percentages. Welch's t-test and Wilcox rank-sum tests assessed continuous variables, while $\chi 2$ or Fisher's exact test examined categorical differences. A p-value <0.05 was considered significant. This study assessed anemia prevalence, contributing factors, and dietary practices among pregnant women attending antenatal care in Baghdad, providing insights for targeted interventions.

RESULTS

The study included a group of 300 pregnant women with a mean age of 27.8 years (±6.7). Regarding educational attainment, the majority of women had received some form of higher education (42.0%), while 29.0% had completed high school, 29.0% had primary or middle school education, and 7.0% had no formal education. In terms of occupation, 62.0% identified as housewives, while 38.0% were employed. Concerning their husbands' educational background, a similar distribution was observed, with 38.0% having attained university or higher education. The mean body mass index (BMI) among participants was 28.8 kg/m² (±3.9). The median family size was 3.0 individuals. As in table 1.

Table 1: description of participant's sociodemographic profile, and BMI.

Characteristic	**N = 300[1]**
Age (years) (mean ± SD)	27.8 ± 6.7
Age quartiles	
18-22	81 (27.0%)
23-27	69 (23.0%)
28-33	99 (33.0%)
34-44	51 (17.0%)
Women level of education	
No formal education	21 (7.0%)
Primary / middle	87 (29.0%)
High school	66 (22.0%)
University / higher	126 (42.0%)
Women occupation	
Housewife	186 (62.0%)
Employed	114 (38.0%)
Husband level of education	
No formal education	21 (7.0%)
Primary / middle	78 (26.0%)
High school	87 (29.0%)
University / higher	114 (38.0%)
Family size	3.0 (1.0 - 7.0)
≤ 3	180 (60.0%)
> 3	120 (40.0%)
Body mass index (kg/m^2)	28.8 ± 3.9
Underweight	0 (0.0%)
Normal weight	21 (7.0%)
Overweight	156 (52.0%)
Obese	123 (41.0%)
[1]Mean ± SD; n (%); Median (Range)	

Table 2 provides an overview of obstetric history and past medical history among the 300 pregnant women included in the study. The characteristics examined include gravida, para, history of abortion, number of children under 5, interpregnancy space, menstrual cycle duration and regularity, presence of heavy menstrual cycles, duration of pregnancy, antenatal visits, timing of first antenatal visit, bleeding during pregnancy, planned pregnancy, presence of chronic medical illness, and past history of anemia. Key findings reveal that the majority of women were primigravida or had 1-3 pregnancies, with a median number of pregnancies (gravida) at 2.0 and a median number of children (para) at 1.0. Most women had not experienced abortion, with a large proportion having no children under 5. Additionally, the median interpregnancy space was 3.0 years, and the majority of women had regular menstrual cycles lasting 5-7 days. Furthermore, a significant percentage of women had their first antenatal visit during the second trimester, and the majority reported planned pregnancies. Notably, a minority of women had a history of chronic medical illness or past anemia.

Table 2: description of obstetric history, and past-medical history of participants.

Characteristic	**N = 300[1]**
Gravida	2.0 (1.0 - 7.0)
1	105 (35.0%)
2	69 (23.0%)
3	72 (24.0%)
≥ 4	54 (18.0%)
Para	1.0 (0.0 - 4.0)
0	120 (40.0%)
1	75 (25.0%)
2	72 (24.0%)
≥ 3	33 (11.0%)
Abortion	0.0 (0.0 - 3.0)
0	228 (76.0%)
1	63 (21.0%)
≥ 2	9 (3.0%)
Number of children under 5	
0	168 (56.0%)
1	111 (37.0%)
2	21 (7.0%)
Interpregnancy space (years) (median, range)	3.0 (1.0 - 10.0)
Menstrual cycle duration (days)	5.0 (4.0 - 7.0)
< 5	138 (46.0%)
≥ 5	162 (54.0%)
Regular menstrual cycle	
Yes	249 (83.0%)
No	51 (17.0%)
Heavy menstrual cycled	
Yes	72 (24.0%)
No	228 (76.0%)
Duration of pregnancy	
1st trimester	24 (8.0%)
2nd trimester	180 (60.0%)
3rd trimester	96 (32.0%)
Antenatal visits	
< 2	261 (87.0%)
≥ 3	39 (13.0%)
First antenatal visit	
During 1st trimester	75 (25.0%)
During 2nd trimester	198 (66.0%)
During 3rd trimester	27 (9.0%)
Bleeding during pregnancy	
Yes	42 (14.0%)
No	258 (86.0%)
Planned pregnancy	
Yes	282 (94.0%)

No	18 (6.0%)
Presence of chronic medical illness	
Yes	33 (11.0%)
No	267 (89.0%)
Past history of Anaemia	
Yes	42 (14.0%)
No	258 (86.0%)
[1]Mean ± SD; n (%); Median (Range)	

Table 3 presents the descriptive statistics related to hemoglobin (Hb) levels and the prevalence of anemia among pregnant women. The mean Hb level was measured at 10.5 mg/dL (±0.9). Notably, 65.0% of participants were diagnosed with laboratory-defined anemia. Among those with anemia (N=195), the majority experienced mild anemia (73.8%), while a smaller proportion exhibited moderate severity (26.2%).

Table 3: description of hemoglobin level, and the presence of anemia.

Characteristic	**N = 300[1]**
Hb level (mg/dL)	10.5 ± 0.9
Presence of laboratory anemia	
Yes	195 (65.0%)
No	105 (35.0%)
Anaemia severity	
Normal	105 (35.0%)
Mild	144 (48.0%)
Moderate	51 (17.0%)
Severe	0 (0.0%)
[1]Mean ± SD; n (%)	

The majority reported consuming green leafy vegetables once a day (67.0%), while 29.0% reported consuming them 2-3 times daily, and 4.0% reported consumption 3-5 times daily. Regarding fresh fruit intake, 86.0% reported consuming fruits once a day, 10.0% consumed them more than four times daily, and 4.0% reported not consuming any fruits. In terms of meat consumption, 83.0% reported consuming one meat piece per day, 3.0% consumed 2-3 pieces daily, and 14.0% reported not consuming any meat. Additionally, the habit of drinking tea immediately after meals was prevalent among 63.0% of participants (Table 4).

Table 4: Description of dietary practice.

Characteristic	**N = 300[1]**
Green leafy vegetables intake per day	
One meal / day	201 (67.0%)
2-3 meals / day	87 (29.0%)
3-5 meals / day	12 (4.0%)
Fresh fruits intake per day	
One meal a day	258 (86.0%)
More than four meals a day	30 (10.0%)
Nothing	12 (4.0%)
Number of meat piece intake per day	
One meal a day	249 (83.0%)
2-3 meals / day	9 (3.0%)
Nothing	42 (14.0%)
Habit of drinking tea immediately after meal	
Yes	189 (63.0%)
No	111 (37.0%)
[1]n (%)	

A vast majority, 98.0%, reported taking both folic acid and iron supplements. In terms of iron supplementation, all participants received 30 iron pills during their first visit, and all reported taking one iron pill per day. The majority (73.5%) took their iron pills after breakfast, followed by 17.3% before meals, 6.1% with meals, and 3.1% in the evening. When taking iron pills, 89.8% of participants drank water, while 10.2% did not consume any other beverage. The storage of iron pills was primarily in the refrigerator (72.4%), followed by the

handbag (14.3%) and home pharmacy (13.3%). Regarding adherence, 32.7% experience side effects in the form of dyspepsia, A 28.9% reported forgetting to take iron pills. Additionally, 16.7% reported having difficult taking iron pills, and 26.5% reported discontinuing iron supplementation when feeling well. The median number of iron pills left at the end of the month was 7.5 (ranging from 0.0 to 27.0), as was shown in table 5.

Table 5: description of supplement intake.

Characteristic	**N = 300**[1]
Take folic acid supplement	
Yes	294 (98.0%)
No	6 (2.0%)
Take iron supplement	
Yes	294 (98.0%)
No	6 (2.0%)
How many iron pills have been given in your first visit?	
30	294 (100%)
Number of iron pills intake per day	
Once	294 (100%)
Time of iron pills intake (N=294)	
After breakfast	216 (73.5%)
Before meal	51 (17.3%)
With meal	18 (6.1%)
Evening	9 (3.1%)
What do you drink together with the iron pills?	
Water	264 (89.8%)
Others	36 (10.2%)
Iron pills place of storage	
Refrigerator	213 (72.4%)
Hand bag	42 (14.3%)
Home pharmacy	39 (13.3%)
Reason for not taking the iron pills?	
Experience side effects (dyspepsia)	
Yes	96 (32.7%)
No	198 (67.3%)
Forget to take the iron pills?	
Yes	85 (28.9%)
No	209 (71.1%)
Having difficulty taking the iron pills?	
Yes	49 (16.7%)
No	245 (83.3%)
Stop taking iron pills due to feeling good	
Yes	78 (26.5%)
No	216 (73.5%)
How many iron pills left in this month?	7.5 (0.0 - 27.0)
[1]n (%); Median (Range)	

Table 6 presents the association between the presence of anemia in pregnant women and various study demographics. The table compares characteristics such as age, education level, occupation, husband's education level, family size, and body mass index (BMI) between women with normal hemoglobin levels and those with anemia. Significant differences were found in several demographic factors. Firstly, women with anemia were younger on average compared to those without anemia, with a statistically significant difference ($p < 0.001$). Regarding age quartiles, there was a significant association between age and anemia prevalence ($p = 0.007$), with higher proportions of anemia observed in younger age groups. Education level for the husbands, showed significant associations with anemia prevalence ($p < 0.001$) with higher levels of anemia observed among women with husbands having lower education levels. Family size also demonstrated a significant association ($p = 0.008$), with larger family sizes associated with a higher prevalence of anemia. However, there was significant association found between BMI categories and anemia status ($p <0.001$).

Table 6: association between the presence of anemia in pregnant women and study demographics.

Characteristic	Normal, N = 105[1]	Anaemia, N = 195[1]	P-value[2]
Age (years)	30.1 ± 6.9	26.6 ± 6.2	**<0.001**
Age quartiles			**0.007**
18-22	18 (17.1%)	63 (32.3%)	
23-27	21 (20.0%)	48 (24.6%)	
28-33	42 (40.0%)	57 (29.2%)	
34-44	24 (22.9%)	27 (13.8%)	
Women level of education			0.2
No formal education	6 (5.7%)	15 (7.7%)	
Primary / middle	30 (28.6%)	57 (29.2%)	
High school	30 (28.6%)	36 (18.5%)	
University / higher	39 (37.1%)	87 (44.6%)	
Women occupation			0.8
Housewife	66 (62.9%)	120 (61.5%)	
Employed	39 (37.1%)	75 (38.5%)	
Husband level education			**<0.001**
No formal education	3 (2.9%)	18 (9.2%)	
Primary / middle	39 (37.1%)	39 (20.0%)	
High school	36 (34.3%)	51 (26.2%)	
University / higher	27 (25.7%)	87 (44.6%)	
Family size	3.0 (2.0 - 6.0)	3.0 (1.0 - 7.0)	**0.008**
≤ 3	57 (54.3%)	123 (63.1%)	0.14
> 3	48 (45.7%)	72 (36.9%)	
Body mass index (kg/m^2)	28.8 ± 4.6	28.9 ± 3.4	0.8
Underweight	0 (0.0%)	0 (0.0%)	**<0.001**
Normal Weight	15 (14.3%)	6 (3.1%)	
Overweight	45 (42.9%)	111 (56.9%)	
Obese	45 (42.9%)	78 (40.0%)	

[1]Mean ± SD; n (%); Median (Range)
[2]Welch Two Sample t-test; Pearson's Chi-squared test; Wilcoxon rank sum test

Table 7 illustrates the association between the presence of anemia in pregnant women and various study parameters, including obstetric history and past medical history. The table compares characteristics such as gravidity, parity, history of abortion, number of children under 5, interpregnancy space, menstrual cycle duration and regularity, duration of pregnancy, antenatal visits, timing of the first antenatal visit, bleeding during pregnancy, planned pregnancy, presence of chronic medical illness, and past history of anemia between women with normal hemoglobin levels and those with anemia. Significant associations were found in several parameters. Gravidity and parity demonstrated significant associations with anemia prevalence ($p < 0.001$ and $p = 0.002$, respectively), with higher proportions of anemia observed in women with fewer pregnancies and births. Similarly, a significant association was observed between the history of abortion and anemia status ($p < 0.001$), with higher proportions of anemia among women with no history of abortion. Additionally, the number of children under 5 showed a significant association with anemia prevalence ($p < 0.001$), with higher proportions of anemia observed in women with no children under 5. Notably, a significant association was also found between regular menstrual cycles and anemia status ($p < 0.001$), with a higher prevalence of anemia observed among women with irregular menstrual cycles. Furthermore, a significant association was observed between past history of anemia and current anemia status ($p = 0.047$).

Table 7: association between the presence of anemia in pregnant women and the study parameters including obstetric history, and past-medical history.

Characteristic	Normal, N = 105[1]	Anaemia, N = 195[1]	P-value[2]
Gravida	3.0 (1.0 - 7.0)	2.0 (1.0 - 5.0)	**<0.001**
1	24 (22.9%)	81 (41.5%)	
2	24 (22.9%)	45 (23.1%)	
3	27 (25.7%)	45 (23.1%)	
≥ 4	30 (28.6%)	24 (12.3%)	
Para	1.0 (0.0 - 4.0)	1.0 (0.0 - 4.0)	**0.002**

0	30 (28.6%)	90 (46.2%)	
1	33 (31.4%)	42 (21.5%)	
2	18 (17.1%)	54 (27.7%)	
≥ 3	24 (22.9%)	9 (4.6%)	
Abortion	0.0 (0.0 - 3.0)	0.0 (0.0 - 2.0)	**<0.001**
0	66 (62.9%)	162 (83.1%)	
1	36 (34.3%)	27 (13.8%)	
≥ 2	3 (2.9%)	6 (3.1%)	
Number of children under 5			**<0.001**
0	45 (42.9%)	123 (63.1%)	
1	45 (42.9%)	66 (33.8%)	
2	15 (14.3%)	6 (3.1%)	
Interpregnancy space (years)	2.5 (1.0 - 10.0)	3.0 (1.0 - 8.0)	**0.017**
Menstrual cycle duration (days)	5.0 (3.0 - 7.0)	5.0 (0.0 - 7.0)	0.5
< 5	45 (42.9%)	93 (47.7%)	0.4
≥ 5	60 (57.1%)	102 (52.3%)	
Regular menstrual cycle			**<0.001**
Yes	102 (97.1%)	147 (75.4%)	
No	3 (2.9%)	48 (24.6%)	
Heavy menstrual cycle			0.6
Yes	27 (25.7%)	45 (23.1%)	
No	78 (74.3%)	150 (76.9%)	
Duration of pregnancy			0.5
1st trimester	6 (5.7%)	18 (9.2%)	
2nd trimester	63 (60.0%)	117 (60.0%)	
3rd trimester	36 (34.3%)	60 (30.8%)	
Antenatal visits			0.6
< 2	90 (85.7%)	171 (87.7%)	
≥ 3	15 (14.3%)	24 (12.3%)	
First antenatal visit			0.3
During 1st trimester	27 (25.7%)	48 (24.6%)	
During 2nd trimester	72 (68.6%)	126 (64.6%)	
During 3rd trimester	6 (5.7%)	21 (10.8%)	
Bleeding during pregnancy			>0.9
Yes	15 (14.3%)	27 (13.8%)	
No	90 (85.7%)	168 (86.2%)	
Planned pregnancy			0.2
Yes	96 (91.4%)	186 (95.4%)	
No	9 (8.6%)	9 (4.6%)	
Presence of chronic medical illness			0.9
Yes	12 (11.4%)	21 (10.8%)	
No	93 (88.6%)	174 (89.2%)	
Past history of Anaemia			**0.047**
Yes	9 (8.6%)	33 (16.9%)	
No	96 (91.4%)	162 (83.1%)	

[1]Mean ± SD; n (%); Median (Range)
[2]Welch Two Sample t-test; Pearson's Chi-squared test; Wilcoxon rank sum test

Table 8 presents the reasons for not taking iron pills among pregnant women, categorized by those with and without anemia. Significant differences were observed between the two groups regarding reasons for not taking iron pills. Firstly, there was no significant difference in experiencing side effects between the two groups ($p = 0.3$). However, a significant difference was found in forgetting to take the iron pills, with a higher proportion of women with anemia reporting forgetfulness compared to those without anemia ($p = 0.045$). Additionally, a substantial difference was noted in having difficulty taking the iron pills, with a significantly higher proportion of women with anemia reporting difficulty compared to those without anemia ($p < 0.001$). Furthermore, a significant difference was observed in stopping iron pill intake due to feeling good, with a considerably higher proportion of women with anemia reporting this reason compared to those without anemia ($p < 0.001$).

Table 8: reason for not taking iron pills in both those with and without anemia.

Characteristic	Normal, N = 99[1]	Anaemia, N = 195[1]	P-value[2]
Experience side effects (dyspepsia)			0.3
Yes	36 (37.5%)	60 (62.5%)	
No	63 (31.8%)	135 (68.2%)	
Forget to take the iron pills?			**0.045**
Yes	36 (42.4%)	49 (57.6%)	
No	63 (30.1%)	146 (69.9%)	
Having difficulty taking the iron pills?			**<0.001**
Yes	6 (12.2%)	43 (87.8%)	
No	93 (38.0%)	152 (62.0%)	
Stop taking iron pills due to feeling good			**<0.001**
Yes	3 (3.8%)	75 (96.2%)	
No	96 (44.4%)	120 (55.6%)	

[1]n (%)
[2]Pearson's Chi-squared test

DISCUSSION

Anemia during pregnancy poses risks to maternal and fetal health, birth outcomes, and may increase chronic disease risk in offspring.[10] This study evaluated anemia prevalence and associated factors among pregnant women in Baghdad PHCs. The mean participant age was 27.8 ± 6.7 years, with 27% aged 16-22 years. Similar findings were reported by Hussain et al.[11] in Babylon (mean age: 26.88 ± 6.42) but differed from Al-Sattam et al.[12] in Baghdad, where the mean age was higher (30.54 ± 7.84). In this study, 42.0% had higher education, and 62.0% were housewives. Comparatively, Gebre et al.[13] in Ethiopia reported a higher illiteracy rate (37.3%) and fewer educated beyond secondary school (6.9%). Most participants (60.0%) belonged to families of ≤3 members, aligning with Gebre et al.[13], where 71.6% had <4 members. BMI analysis showed that 52.0% were overweight (mean BMI: 28.8 ± 3.9), contrasting Lin et al.[14] in China (mean pre-pregnancy BMI: 21.04 ± 4.36). Most participants were in the second trimester (60.0%) or third trimester (32.0%), similar to Mahmoud et al.[15] in Uganda. Median gravidity and parity were 2.0 and 1.0, respectively, comparable to Lin et al.[14], where mean parity was 0.64 ± 0.69. The mean hemoglobin level was 10.5 ± 0.9 g/dL, with 65.0% diagnosed with anemia, predominantly mild (73.8%). Khalaf et al.[16] in Kirkuk found a similar anemia prevalence (61.6%) and mild anemia proportion (75.3%). Hussein et al.[11] in Babylon reported 48.6% anemia prevalence, with mild cases at 21.8%. Dietary practices, including tea consumption post-meals and low intake of green vegetables, fruits, and meat, were common among participants. Despite this, 98% adhered to iron and folic acid supplementation, reflecting higher education levels. Non-compliance reasons for iron supplementation were unclear. Associations between maternal age and anemia were observed, with younger participants (mean age: 26.6 ± 6.2 years) more likely to be anemic ($p < 0.001$). Lin et al.[14] in China, however, linked anemia with older maternal age (≥35 years). Husband's education and family size significantly influenced anemia risk ($p < 0.001$ and $p = 0.008$). Higher education levels correlated with better socioeconomic conditions and healthcare access, reducing anemia risk. Larger families faced greater resource strain, increasing anemia risk. These findings align with Fan et al.[17], who reported education as a predictor of anemia, and AlReshidi et al.[18], who linked larger family size to higher anemia odds. Gravidity ($p < 0.001$) and parity ($p = 0.002$) were associated with anemia, highlighting the cumulative effect of pregnancies on maternal iron stores. Tan et al.[19] similarly reported higher anemia odds with multiple pregnancies. BMI showed no significant association with anemia ($p = 0.8$), despite other studies suggesting decreased anemia odds with obesity.[20,21] A history of anemia was significantly linked to current anemia ($p = 0.047$), consistent with AlReshidi et al.[18] and others.[22] These findings emphasize the importance of addressing educational, dietary, and reproductive factors to mitigate anemia among pregnant women. Targeted interventions, particularly for those with prior anemia, are essential to reduce its burden.

CONCLUSION

A significant proportion of the study participants, specifically 65%, encountered anaemia during their pregnancy, with moderate anaemia being the most prevalent manifestation. The age of the participant, the educational attainment of the spouse, family size, gravida status, parity, history of abortion, regularity of the menstrual cycle, and a history of anaemia were all substantially correlated with the incidence of anaemia during pregnancy. A significant proportion of the study participants exhibited inadequate dietary practices during their pregnancy.

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