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Abstract

Purpose: It is well known that anemia is one of the medical problems during pregnancy and it can be encountered through health education. However, the rate of iron deficiency anemia is increasing among pregnant women. This study sought to find the knowledge of pregnant women who were attending primary healthcare institutions in Oman regarding gestational anemia. Also to find out if there is an association between demographic data and women's knowledge about gestational anemia during pregnancy.

Methodology: This study used a quantitative study, descriptive cross-sectional design. The researchers selected five primary healthcare institutions (Antenatal Clinics) in Sohar Wilayate in North Batinah Governorate in Oman to reach pregnant women who had been diagnosed with anemia. The data was collected via a questionnaire including two sections: participants' sociodemographic characteristics and knowledge sections with 235 participants. The Cronbach's alpha coefficient of the scale was 0.72 and measured in different studies.

Findings: The results of this study showed that women in Oman had lack of knowledge regarding many aspects related to gestational anemia. For example, they did not know about the signs and symptoms, nutrition that prevent anemia, and the effect of anemia on pregnancy outcomes. Data also showed that knowledge was significantly associated among pregnant women who were above 40, highly educated, working, and multigravida.

Unique Contribution to Theory, Practice and Policy: Knowing pregnant women's knowledge regarding gestational anemia could help the policymakers in the Ministry of Health formulate the best approach to offer health education and services for pregnant women with gestational anemia in Oman. This study came with many recommendations regarding knowledge, practice, and policy. Programs related to gestational anemia should be implemented to inform healthcare professionals, women, and their families about Iron deficiency anemia. Also, gestational anemia policy and guidelines are needed in healthcare institutions, and all healthcare professionals should be informed of the policy regularly. Healthcare professionals should be trained to educate and support women with gestational anemia during the antenatal and postnatal periods.

Keywords: *Anemia, Iron Deficiency, Knowledge, Pregnancy, Oman*

INTRODUCTION

Anemia is a reduction of the oxygen-carrying capability of the blood and it can increase if the hemoglobin intensity of the red blood cells is below the lower limit of the reference interval for the individuals' gender, age, and physiological status [1]. According to the World Health Organization (WHO), a hemoglobin level of 11 g/dL or less is considered anemia in pregnant women [2]. Pregnant women with a hemoglobin level of 7 g/dL or less are considered to have severe anemia [2]. Iron deficiency anemia during pregnancy causes many health hazards for mothers and their infants. For example, it is associated with high morbidity and mortality rates among mothers and their infants. It causes poor pregnancy outcomes such as low birth weight, preterm birth, reduced learning skills, low cognitive growth, and low performance at school [9, 10]. Anemia is a health problem among pregnant women which can be encountered through health education. Health awareness plays an important role in improving the survival rates of pregnant women and their infants.

Gestational anemia leads to a high rate of mortality and morbidity among mothers and their babies [3]. Worldwide, gestation anemia causes 40% of maternal deaths [3]. Mothers and neonatal deaths in low-income countries are 2.5 and 3.4 million deaths respectively [5]. The threat of mothers' death can be reduced with every increase in hemoglobin level of 1g/dl [2, 5]. Globally, the WHO estimates 42% of the prevalence of anemia among pregnant women [6]. The highest prevalence rate of gestational anemia is noticed in Africa (61.5%), followed by South East Asia with 52.5% [6]. 31% of gestational anemia among women above 18 years is identified in the Middle East of Central Asia [7, 8]. Nearly 50% of anemia cases are considered to be due to iron deficiency [9].

In Oman, gestational anemia is one of the major health problems among women. According to the Ministry of Health (MOH), the prevalence of anemia among pregnant women has increased to 35% [4]. The MOH adopted many methods to reduce the prevalence of anemia among pregnant women. For example, the MOH introduced iron supplements within the antenatal services. They also encouraged healthcare professionals to inform women to take these supplements during pregnancy. In addition, the government of Oman supplied food with iron, such as flour [4]. However, gestational anemia is considered a challenge in Oman.

Educational programs about gestational anemia have changed women's knowledge and attitudes, which led to a reduction in the prevalence of gestation anemia [11, 12, 13]. In addition, a systematic review indicated that regular intake of iron supplements increases hemoglobin levels among pregnant women and reduces the prevalence of gestational anemia [10]. According to the MOH in Oman (2021), data regarding anemia among pregnant women is a worry [4]. Up to the knowledge of the researchers, many studies were conducted in Oman examining the prevalence of gestational anemia. However, limited research studies were conducted to investigate pregnant women's knowledge about gestational anemia. Thus, this study would provide detailed information about what pregnant women know about anemia in Oman. This quantitative study could help pave the way for providing educational services to Omani women with gestational anemia within primary healthcare institutions.

Research Problem

According to the MOH (2021), statistics in Oman, gestational anemia among pregnant women is expanding. It accounts for 35% of the total cases of anemia [4]. Many quantitative studies were conducted in Oman to identify the prevalence of anemia among pregnant women. However, these studies did not show the reasons behind the low hemoglobin level among pregnant women. Also, very few research studies were conducted in Oman to assess women's

awareness regarding gestational anemia. Consequently, this study is essential to provide detailed information about what pregnant women know about anemia in Oman, especially in the North Batinah Governorate to add to the body of knowledge related to this phenomenon.

Aim of the Study

The main aim of the study was to find out the knowledge about gestational anemia among pregnant women.

Objectives of the Study

- To find out what pregnant women with gestational anemia know about anemia.
- To find out if there is association between sociodemographic data of participants and women's knowledge about anemia.

Research Questions

- What pregnant women know about gestational anemia?
- What is the association between sociodemographic data of participants and women's knowledge about anemia during pregnancy?

Research Hypothesis

There is an association between sociodemographic data of participants and women's knowledge about anemia during pregnancy.

Importance of the Study

Knowing what women know about anemia can help to pave the way for providing appropriate educational services to pregnant women during antenatal care within the healthcare institutions.

LITERATURE REVIEW

Lack of knowledge of pregnant women about gestational anemia has influenced the prevalence of anemia as most women have a lack of knowledge about iron deficiency anemia, its complications, and the way to prevent it [1]. A study investigating the knowledge of pregnant women on gestational showed that 60% of participants had a fair understanding of anemia during pregnancy according to their knowledge scores [22]. Knowledge score about gestational anemia was statistically significant with females' age, marital status, level of education, employment status, and parity [22]. The data showed that women with low socioeconomic status are four times more likely to have anemia than women with high socioeconomic status [22]. The results also showed that the proportion of gestational anemia among women with low educational level (35.1%), housewives (18.8%), and nulliparous (24.6%), and these women had substantially lower knowledge scores [22].

Another study showed that the prevalence of iron deficiency anemia during pregnancy was 46.2% [2]. The study results indicated that iron deficiency anemia was 51.4 % in 2020 among women 35 years old due to a lack of awareness about iron deficiency anemia and its preventive measures [5]. It was found through a literature review that there was a large group of pregnant women with iron deficiency anemia, and the leading factors were well known, such as lack of knowledge. There are limited studies in Oman investigating pregnant women's knowledge about gestational anemia and its preventive measures. Therefore, this study would help know if pregnant women know about iron deficiency anemia and its preventive measures in Oman. Also, it would help the Ministry of Health in Oman to develop ways to promote iron deficiency anemia levels among pregnant women. Knowing pregnant women's knowledge regarding gestational anemia could help the policymakers in the Ministry of Health formulate the best

approach to offer health education and services for pregnant women with gestational anemia in Oman.

METHODOLOGY

Study Design

This study used a non-experimental, descriptive cross-sectional design. The data was collected at a single point in time. A cross-sectional study design helps to find the prevalence of a phenomenon of the study, attitude, or problem by taking a picture of the population [14]. This study intended to find out pregnant women's knowledge about gestational anemia. Also, to find out if there was an association between gestational anemia and women's knowledge about anemia. Thus, cross-sectional design was used to observe, describe, and report the aspects that occur naturally without involving the manipulation of variables [14].

Context

The researchers selected five primary healthcare institutions (Antenatal Clinics) in Suhar Wilayate in North Batinah Governorate in Oman to reach pregnant women who were diagnosed with anemia. These primary healthcare institutions are deemed the most appropriate sites for gaining access to research participants and gaining an understanding of women's knowledge regarding gestational anemia. North Batinah Governorate was chosen because it is the second governorate by population size. Suhar wilayate was selected because the prevalence of gestational anemia is high.

Study Population

The participants for this study involved pregnant mothers >20 weeks of gestation, aged 18 and more, living in Suhar wilayate and who had been diagnosed with gestational anemia.

Sampling Strategy

Purposive sampling based on inclusion criteria was used to select the participants. The objective was to select women who had similar characteristics so that the results could be generalized. Variation was considered when recruiting women in this study, such as different age groups, educational, occupational, and residence places. Also, random sampling was used to increase the reliability of this survey estimates for gaining samples that were unbiased and representative of the target population. The total number of women who participated in this study was 235.

Inclusion Criteria

- Pregnant mothers diagnosed with Iron Deficiency Anemia.
- Pregnant mothers Aged 18 and more.
- Pregnant mothers >20 weeks of gestation.
- Pregnant mothers living in Suhar wilayate.
- Pregnant mothers who follow antenatal care in the selected primary healthcare institutions.

Exclusion Criteria

- Pregnant women diagnosed with Iron Deficiency Anemia and having other medical condition such as chronic diseases, bleeding.
- Pregnant women below 18 years.
- Pregnant women < 20 weeks of gestation.

- Pregnant women who do not live in Suhar wilayate.
- Pregnant women who follow in private health institutions.

Research Instrument

Data was collected via questionnaire including two sections: Participants' sociodemographic characteristics and knowledge sections. This questionnaire was adopted from a study conducted in one of the Arab countries. The Cronbach's alpha coefficient of the scale was 0.72 and measured in different studies. The permission to use this instrument was obtained from the original authors, and it was reviewed, revised, and approved by expert researchers from the MOH in Oman (department of nutrition and Oman College of Health Sciences). Section One (sociodemographic data) includes age, marital status, education level, occupation, parity, and number of children. Section two (assessing knowledge) included 19 questions assessing women's knowledge about anemia. The responses to questions were classified as true, false, and do not know. Each correct answer received 1 point, while questions that were incorrectly answered or stated as "do not know" received no point. The total score ranges between 0 and 19. Higher scores indicated a higher knowledge using the Likert scale. This scale is a type of ordinal scale and is used to quantify knowledge with the use of a quartile score of more than 75% considered good, 25-74% fair, and less than 25% poor.

Data Collection

Data collection started from September to December 2023 with different primary healthcare institutions in Suhar Wilayate. Permission was obtained from the heads of the selected institutions before the process of data collection. The researchers explained the research process to the heads of the institutions, and permission was obtained within two weeks before data collection. The researchers then distributed the participant information sheet to the interested participants. A week after distributing the participants' information sheet, the researchers distributed the questionnaire to the recruiting persons to distribute to all interested women within the selected institutions.

Data Analysis

Data was obtained through a questionnaire, then coded by numbers and tested statistically to draw the conclusion. The data was entered into Microsoft Excel and then transferred to the statistical page for social science (SPSS) program version 20.0 for analysis. Descriptive statistics such as the frequency and percentage were calculated for the demographic data and variables. Also, the inferential statistical test and chi-square test were used to determine whether the hypotheses were to be accepted.

Ethical Considerations

The ethical approval was obtained from the Research and Ethical Review and Approval Committee (RERAC) of the MOH. Cautious and thoughtfulness were considered to protect the participants during this study, especially during the production of the written information. The study was explained to the participants with insurance of confidentiality, voluntary participation, and the ability to withdraw at any time without any consequences. Participants who agreed to take part signed an informed consent. All data was kept in password password-protected PC with appropriate coding. Aggregate data was used for publication.

RESULTS

Participant Characteristics

The demographic data of the participants are shown in Table 1. Of the 235 pregnant women with iron deficiency anemia, the majority (n=99, 42.2%) were between the ages of 18 - 29 years. 35.6% of women (n=84) were between the ages of 30-39 years, 52 women 22.2% were 40 years and above, Mean age (31.97). 11.9% (n=28) of women were primipara and 88.1% (n=207) were multipara. Regarding the level of education, the data showed that 131 women had secondary education (55.7%), and n=104 obtained high education (44.3%). Concerning the occupational status of the sample, the data revealed more than half of the sample were not working women (n=130, 55.3%).

Table 1: Participants' Demographic Data (n=235)

Variables	Level	Number	%
Age	18 to 29 years	99	42.2%
	30-39 years	84	35.6%
	40 years and above	52	22.2%
Parity Status	Primipara	28	11.9%
	Multipara	207	88.1%
Education Status	Secondary Education	131	55.7%
	High Education	104	44.3%
Occupation Status	Working	105	44.7%
	Not Working	130	55.3%

Women's Knowledge Regarding Gestational Anemia

The data in Table 2 revealed that 99.1% of pregnant women had good knowledge about the normal range of hemoglobin levels within the blood, and low iron intake can cause gestational anemia. 91.1% had good knowledge that local food was not enough to prevent anemia during pregnancy. Moreover, 83.8% of pregnant women had good knowledge about the importance of taking iron supplements.

However, 40% of pregnant women had fair knowledge about the signs and symptoms of anemia, while 60% had poor knowledge. Also, the data revealed that women had fair knowledge about the nutrition that prevents anemia. For example, 36.6% and 38.3% of women knew that green leafy vegetables and eating red meat, fish, and poultry are good sources of iron, whereas 63.4% and 61.7% had poor knowledge. Regarding the causes of anemia, 31.5% of pregnant women had fair knowledge about anemia and its relation to drinking tea, whereas 68.5% had poor knowledge. Also, 28.9% had fair knowledge about anemia and its relation to drinking excessive tea, while 71.1% had poor knowledge. 37.4% and 32.3% of the study participants had fair knowledge about anemia and its effects on pregnancy outcome and birth spacing contribution in the prevention of anemia whereas 62.6% and 67.7% had poor

knowledge of the above concepts. 34.9% of pregnant women had fair knowledge about the importance of taking iron supplements with orange juice to increase its absorption, whereas 65.1% had poor knowledge. Moreover, 33.2% of the women had fair knowledge about the best time to take iron supplements, while 66.8% had poor knowledge about the timing for taking iron supplements. Furthermore, the data showed that 78.8% of women had poor knowledge of iron supplement doses, and 82% of them stopped adherence to iron supplements once they had side effects such as constipation. 48.5% of participants had fair knowledge about compliance with iron supplements and their importance in anemia prevention, whereas 51.5% had poor knowledge. They also had fair knowledge (40.4%, 33.2%) about routine visits and anemia screening within healthcare institutions, whereas 59.6% and 66.8% had poor knowledge.

Table 2: Participants' Responses to the Questionnaire (n=235)

Questions		Ture	False	Don't know
1. Anemia is the hemoglobin level in the blood below normal.	f	233	0	2
	%	99.1	0	.9
2. Decreased iron intake in diet causes anemia.	f	214	4	17
	%	91.1	1.7	7.2
3. General weakness and palpitation are not symptoms of anemia.	f	75	94	66
	%	31.9	40.0	28.1
4. Green leafy vegetables are not a source of iron.	f	121	86	28
	%	51.5	36.6	11.9
5. Not eating red meats, fish, and poultry for long periods does not cause anemia.	f	107	90	38
	%	45.5	38.3	16.2
6. Drinking tea immediately after meal can cause anemia.	f	74	159	2
	%	31.5	67.7	.9
7. Excessive tea consumption can cause anemia.	f	68	165	2
	%	28.9	70.2	.9
8. Anemia does affect pregnancy outcome.	f	44	88	103
	%	18.7	37.4	43.8
9. Birth spacing cannot contribute in prevention of anemia during pregnancies.	f	19	76	140
	%	8.1	32.3	59.6
10. Ordinary local food is enough to prevent anemia in pregnancy.	f	8	214	13
	%	3.4	91.1	5.5
11. Pregnant women should not take iron supplements if she is on healthy diet.	f	29	197	9
	%	12.3	83.8	3.8
12. Iron supplement should be based on doctor prescription.	f	214	19	2
	%	91.1	8.1	.9
13. Missing routine visits to PHC centers does not affect pregnancy outcome.	f	62	95	78
	%	26.4	40.4	33.2
14. Routine screening for anemia should be done at least 3 times during pregnancy.	f	13	78	144
	%	5.5	33.2	61.3
15. It is better to take iron supplement with orange juice to increase its absorption.	f	82	121	32
	%	34.9	51.5	13.6
16. Best time to take iron supplement is before meal.	f	78	116	41
	%	33.2	49.4	17.4
17. It is enough to consume iron rich food once a week to prevent anemia.	f	185	26	24
	%	78.7	11.1	10.2
18. Iron supplement should be stopped without doctor's consultation if you experienced side effects as nausea.	f	193	40	2
	%	82.11	17.0	.9
19. Compliance to medication intake of iron supplement is not essential in anemia prevention.	f	101	114	20
	%	43.0	48.5	8.5

Table 3 and 4 show that knowledge of pregnant women 40 and above group is significant more than that of pregnant women aged 30 to 39 years and 18 to 29 years.

Table 3: Comparison of Knowledge on the Basis of Age

	N	Mean	Std. Deviation	Minimum	Maximum	F value	P value
18 to 29 years	99	6.6465	2.66616	2.00	14.00	8.1	p<0.001
30-39 years	84	7.2738	2.07307	2.00	14.00		
40 and above	52	8.3725	2.74926	3.00	14.00		

Table 4: Multiple Comparisons of Knowledge Based on Age

		Mean Difference (I-J)	Std. Error	P value	95% Confidence Interval	
					Lower Bound	Upper Bound
18 to 29 years	30-39 years	-.62734	.36925	.272	-1.5178	.2631
	40 and above	-1.72608*	.42904	.000	-2.7607	-.6914
30-39 years	40 and above	-1.09874*	.44187	.041	-2.1643	-.0332

Table 5 shows fair knowledge (92.9%) is significantly associated among pregnant women aged 30 to 39 years.

Table 5: Association between Knowledge and Age

	Knowledge		Total	Chi Sqaure	P value
	Poor	Fair			
18 to 29 years	24	75	99	10.86	0.004 (p<0.05)
	24.2%	75.8%	100.0%		
30-39 years	6	78	84		
	7.1%	92.9%	100.0%		
40 and above	6	46	52		
	11.8%	88.2%	100.0%		
Total	36	198	235		
	15.4%	84.6%	100.0%		

Table 6 shows fair knowledge (91.3%) is significantly associated among pregnant women with high education.

Table 6: Association between Knowledge and Education

	Knowledge		Total	Chi Sqaure	P value
	Poor	Fair			
Secondary Education	28	95	131	6.515	0.011 (p<0.05)
	20.8%	79.2%	100.0%		
High Education	9	103	104		
	8.7%	91.3%	100.0%		
Total	36	198	235		
	15.4%	84.6%	100.0%		

Table 7 shows fair knowledge (92.3%) is significantly associated among pregnant women who were working.

Table 7: Association between Knowledge and Occupation

	Knowledge		Total	Chi Sqaure	P value
	Poor	Fair			
Working	8	102	105	8.509	0.004 (p<0.05)
	7.7%	92.3%	100.0%		
Not Working	28	97	130		
	21.5%	78.5%	100.0%		
Total	36	198	235		
	15.4%	84.6%	100.0%		

Table 8 shows fair knowledge (87%) is significantly associated among multi gravida pregnant women.

Table 8: Association between Knowledge and Gravida

	Knowledge		Total	Chi Sqaure	P value
	Poor	Fair			
Primi Gravida	9	18	28	7.553	0.006 (p<0.05)
	33.3%	66.7%	100.0%		
Multi Gravida	27	180	207		
	13.0%	87.0%	100.0%		
Total	36	198	235		
	15.4%	84.6%	100.0%		

In sum, data showed that knowledge was significantly associated among pregnant women who were above 40, highly educated, working, and multigravida.

Discussion

Anemia is a decrease in the oxygen-carrying capability of the blood [1]. According to the World Health Organization (WHO), a hemoglobin level of 11 g/dL or less is considered anemia in pregnant women [2]. Iron deficiency anemia during pregnancy induces many health risks for mothers and their infants. Declining anemia is an important element of the health of women and their infants [1]. The global nutrition target is to reduce anemia by 50% among women of reproductive age by the year 2025 [2]. The Sustainable Development Goals (SDG) concentrate on lowering the global maternal mortality ratio to less than 70 per 100000 live births, decreasing neonatal deaths to 12 per 1000 live births, and children under-five deaths to less than 25 per 1000 live births via eliminating preventable maternal, neonatal and child deaths by the year 2030 [2]. Anemia is a health issue among pregnant women which encountered through health education. This study aimed to assess the knowledge of pregnant women who were following up at primary healthcare institutions in Oman regarding gestational anemia. Also, to find out if there is an association between demographic data of women and their knowledge about gestational anemia.

The results of this study showed that women in Oman had a lack of knowledge regarding many aspects of gestational anemia. This finding is in line with studies done in Ghana 86.5% and Tanzania (65%), where the women in their studies had insufficient (low/fair) knowledge about

gestational anemia and preventive measures [15,18]. However, the findings of our research contradicted studies done in Ethiopia (44.3%) and Nepal (48.7%), where the results showed that the women in their studies had good knowledge about gestational anemia and its preventive measures [16,17]. The possible reason for the low knowledge of anemia in this study might be due to the decreasing number of pregnant women who used maternity services from time to time at primary healthcare institutions. Because of this, they may not obtain adequate information about anemia and its prevention in the form of health education. Also, the finding of this study is contradicted by many studies, such as in Ethiopia (57.3%), Nigeria (68.9%), India (76.5%), Iraq (84.5%), and Bangladesh (56%), where the participants in their studies had fair/good knowledge of anemia and its preventive measures [19, 20, 21, 22, 23]. The possible reason for this difference in the knowledge of anemia among pregnant women might be the study context and the socio-economic characteristics of the study participants. Also, the result of this study is much lower than a study done in Saudi Arabia, which reported that 94% of pregnant women had good knowledge of anemia [24]. The possible reason for this difference in the knowledge of gestational anemia might be due to the difference in the socio-economic status of the women.

Socio-demographic and obstetric-related factors were associated with knowledge and prevention methods of gestational anemia. The current study demonstrates that pregnant women 40 and older were more knowledgeable of gestational anemia than women who were in the age group of 39 and lees. This finding is consistent with a study conducted in Iraq that shows women who were found in the age group of 25 years have poor knowledge of anemia [22]. The possible difference for this discrepancy might be the difference in the socio-demographic characteristics of the participants. Further, in this study, more than half of the women had at least a secondary educational level (55.7%), and the data showed that poor/fair knowledge is more common among women with low educational levels. Education is known to have the benefit of enhancing the knowledge of people regarding their health. This may account for the fair knowledge (91.3%) of anemia in pregnant women with high education. This finding is consistent with studies in different countries, where adherence to anemia prevention measures was more likely to be with women with higher education [15,24].

Additionally, multigravida women were more knowledgeable about anemia and its prevention strategies. This may have been because they learned from the previous experience, and because of this, they may have good nutritional habits. They may also practice healthcare professionals' advice, like taking iron supplements regularly and avoiding using tea, or milk with their mealtimes. This finding is inconsistent with the results of many studies where multigravida women had anemia because they were not knowledgeable about anemia and the strategies to prevent it [25,26]. Also, a review reported the risk factors of anemia increase in nulliparous women [25], while two studies reported that multigravida and multiparous were risk factors for anemia [26,27]. The reason for this might be due to multiple pregnancies consuming a pregnant woman's iron reserves [15,28]. According to a study from Malaysia, grand multigravida women also had a high percentage of iron deficiency anemia (66.7%) [29]. In addition, the data revealed that working mothers were more knowledgeable about anemia and how to prevent anemia during pregnancy in comparison with non-working mothers. The reason might be because of the exchange of knowledge between working mothers and learning from their experiences. This result is contradicted by a study conducted in Bangladesh where the women had mild to moderate anemia and the reason was a lack of knowledge among working mothers [30].

CONCLUSION AND RECOMMENDATION

Conclusion

It is well known that anemia is one of the medical problems during pregnancy, and it can be encountered through health education. However, the rate of iron deficiency anemia is increasing among pregnant women. The results of this study showed that women in Oman had lack of knowledge regarding many aspects related to gestational anemia. For example, they did not know about the signs and symptoms, nutrition that prevent anemia, and the effect of anemia on pregnancy outcomes. Knowing pregnant women's knowledge regarding gestational anemia could help the Ministry of Health formulate the best approach to offering health education and services for pregnant women with gestational anemia in Oman.

Recommendation

Knowing pregnant women's knowledge regarding gestational anemia could help the policymakers in the Ministry of Health formulate the best approach to offer health education and services for pregnant women with gestational anemia in Oman. This study came with many recommendations regarding knowledge, practice, and policy. Programs related to gestational anemia should be implemented to inform healthcare professionals, women, and their families about Iron deficiency anemia. Also**,** gestational anemia policy and guidelines are needed in healthcare institutions, and all healthcare professionals should be informed of the policy regularly. Healthcare professionals should be trained to educate and support women with gestational anemia during the antenatal and postnatal periods.

Limitation

Despite a rigorous study method, this study still faced critical limitations. This study aimed to find out the knowledge about gestational anemia among pregnant women, so it may have the risk of "*reporting bias*."

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Conflicts of Interest

There are no conflicts of interest.

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