Assessment of Pregnant Women Knowledge and Practices Concerning Iron Deficiency Anemia at Al-Amara City/Iraq

Ghazwan Abdulhussein AlAbedi [1], Aqeel Aziz Arar[2], Mustafa Salim Abdul Alridh[3]

[1] MSc. Academic Lecturer. Department of Community Health Nursing, College of Nursing/ University of Misan, Misan, Iraq, [2] MSc. Academic Lecturer, Department of Adult Nursing. College of Nursing/ University of Misan, Misan, lraq, [3] MSc. Academic Lecturer, Department of Pediatric Nursing, College of Nursing/ University of Misan, Misan, lraq

Abstract

Objectives: To assess knowledge and practices related to the prevention of iron deficiency anemia among pregnant women and to find an association between their knowledge; practices and socio-demographic variables. **Methodology:** This is an institutional descriptive study conducted on the random selection of six primary healthcare centers in Al-Amara city. A purposive sampling technique was used to select (280) pregnant mothers attending antenatal care service.

Results: Almost half of the sample belongs to the primary education level (50.3%) and most of them housewife (56.8%), with low monthly income (71.8%). Over three quarters of the sample had moderate knowledge (76.1%) and their unfavorable practices (75.5%) with regard to iron anemia. The results indicated a high relationship between the knowledge and practice of women with the variables under study (p= 0.000).

Conclusion: The study concluded that the majority of participants have insufficient knowledge with moderate practices towards preventing this type of anemia. Health education about foods with a high concentration of iron is an essential step towards reducing iron deficiency anemia in pregnant women.

Key words: *Knowledge, Practice, Iron Deficiency Anemia, Pregnant Women.*

Introduction

Iron deficiency anemia (IDA) is one of the most common problems between under-nutrition and public health problems worldwide with the highest prevalence in developing countries [(1)]. Anemia of iron means that without a sufficient amount in the blood, the body cannot produce enough red blood cell material to enable it to transport oxygen (Hemoglobin); as a result, the IDA may make women feel tired and restless [(2)]. Pregnant women are at increased risk for IDA due to increased blood volume during pregnancy resulting from increased support to the fetus and placenta. In general, women in childbearing stage suffer from the loss of large amounts of blood due to childbirth or menstruation, which are factors contributing to the development of iron anemia [(3)].

The World Health Organization (WHO) estimates showed in 2011, 32.4 million (38%) of pregnant women, while 496 million (29%) of those who are not pregnant between the ages of 15-49 years suffer from anemia. Moreover, previous studies on IDA have revealed a prevalence of 73.9% in Guyana, 22.1% in Egypt, 39.7% in Kuwait, 78.0% in Liberia, and 50.0% in Bahrain[(4)]. In Iraq, the Nutrition Research Institute showed, through a section of research and studies, the prevalence of iron deficiency among pregnant women 38% and non-pregnant 25%, respectively [(5)]. Iron deficiency in body leads to disorder in metabolism and reduced immunity in the pregnant women and become vulnerable to attack of infectious agents. Anemia is a major health problem but can be addressed through increased awareness and

Corresponding author:
Ghazwan Abdulhussein AlAbedi
ghazwanabdulhussein@uomisan.edu.iq

adherence to healthy eating practices [6]. The increased risk of developing IDA during pregnancy and lactation has prompted most ministries and governmental and non-governmental bodies in many countries to implement policies to provide iron supplementation for pregnant and lactating women [3].

Good knowledge and eating iron-rich foods when preparing food at home by women to prevent iron deficiency varies depending on the culture and awareness of women. While lower maternal education is associated with a higher incidence of low-birth weight, neonatal death in infants, and prematurity of women with severe iron deficiency [7].

Maintaining a woman's health through healthy behavior represented by eating healthy foods is among the most important protective factors in achieving optimal health [3].

Objective

1. To assess the pregnant woman's knowledge towards Iron deficiency anemia.

2. To assess the woman's practices concerning Iron pregnancy anemia.

3. To found out relationship between the participants knowledge and practices with their socio-demographic data.

Methodology

Quantitative design (A descriptive study) was applied in the study during the period 3rd November 2019 at 30th January 2020. A simple random sample is used to select (6) out of 16 primary health care centers PHCs at Al-Amara city. Convenient purposive sampling technique was adopted for (380) pregnant women visiting antenatal care units for preventive or therapeutic reasons, these women were collected from the six centers which include (63) women from Shaheed Al-Watan, (64) from AL-Askan, (63) pregnant women from Al-Quds, (62) Nahawnd center, (64) and (64) from Al-Aruba and AL-Ermuk PHCs respectively. The participants were selected according to predetermined criteria including which include pregnant women and more than one gravida. While the excluded criteria which include female non pregnant and non married. The interview technique was used to collect sample data through the use of constructive questionnaires by researchers to achieve the goals of this study through the use of the Arabic version, which contains three parts: The first part related to socio-demographic information which comprised of (6) items, and the second part to assess of knowledge for pregnant women toward Iron anemia it consists of (34) items. It comprises of (6) section which including (General information about IDA, the causes, symptoms of this type of anemia, the negative effects, the benefit of intake iron pills during pregnancy, and knowledge of pregnant women about food that contains a high concentration for iron. Finally, the section three it concerned with women's behaviors (practices) during the current pregnancy which contains (15) items related to IDA. The content validity of the tool was established by (8) experts. These items were rated according to the three likert scale: (Knowledge and practices) I know / or Always (3); Uncertain / or Sometime (2), and I do not known / or Never scored as (1). The measurement was scored by using cut-of-point intervals (1.00 - 1.66) low; moderate (1.67 – 2.33), and (2.34 – 3.00) high, as well as (L), (M), and (H) respectively. Data were analyzed using Statistical Package of social sciences (SPSS) version 20. Then the results were calculated using descriptive statistics such as percentage, frequency, and Mean of Score, standard deviation, and inferential statistics through ANOVA test to find out correlation between knowledge of the pregnant women and practices regarding IDA. The results were affirmed as significant at $P \leq 0.05$ and not significant at $P > 0.05$.

Results

There is a quarter of the participants 97(25.5%) of study sample within the age group (20 – 24 years), while 119(31.3%) of pregnant women had their first pregnancy. Concerning to the level of educational is showed half of pregnant women 191(50.3%) in the study sample were primary school graduate. Regarding the subject of occupational status represented the majority of pregnant were 216(56.8%) housewives. In relation to the monthly income the majority were 273(71.8%) have less than (< 700000 Iraqi Dinar). However sources of information concerning iron deficiency anemia the majority of pregnant women were 215(56.6%), they receive their information from health center / mother & child care.

Table (1): Assessment of Participant Level toward the Knowledge and Practices Concerning IDA

Participants' Level	Knowledge.		Practices	
	Frequency	Percent	Frequency	Percent
Low	73	19.2	54	14.2
Moderate	289	76.1	287	75.5
High	18	4.7	39	10.3
Total	380	100.0	380	100.0
$\bar{x} \mp S.D$	$1.77 \mp 0.276 \mp 0.276$		$1.95 \mp 0.278 \mp 0.278$	

$\bar{x} \mp S.D.\bar{x} \mp S.D.$=Arithmetic Mean ($\bar{x}$)$\bar{x}$) and Std. Dev. (S.D.), Participant Levels: (1.00 - 1.66) = Low ;(1.67 – 2.33) = Moderate; (2.34 – 3.00) = High.

This table reveals that the majority of women have a moderate level of knowledge and practices related to iron anemia (n=380; 289(76.1%), 287 (75.5%)) respectively.

Table (2): Assessment of Main Domains Related to Pregnant Women's Knowledge

No.	Overall Main Domains	N	M. S.	S. D.	Ass.
1	What do you know about iron deficiency anemia?	380	1.58	0.413	**L**
2	The causes of IDA.	380	1.61	0.367	**L**
3	The symptoms of anemia for Iron.	380	1.69	0.322	**M**
4	The negative effects of IDA.	380	1.73	0.438	**M**
5	The benefit of intake iron pills during pregnancy	380	1.69	0.322	**M**
6	Food that contains a high concentration of iron.	380	1.91	0.339	**M**

n= sample size, S.D= Standard Deviation, M.S= Mean of Score, Ass.= Assessment, Assessment Levels: (1.00 - 1.66) Low; Moderate =(1.67 – 2.33), and (2.34 – 3.00) = High.

The results of the above table show the major domains related to pregnant knowledge regarding iron deficiency anemia have mean of score were moderate level, based on the answers of pregnant women, except domains (1&2) demonstrated mean of score were low level.

Table (3): Assessment of Women's Practices Concerning IDA

No.	Items of Women's behaviors during the current pregnancy	Always		Sometime		Never		M. S.	S. D.	Ass.
		F	%	F	%	F	%			
1	You drink tea with meals	55	14.5	289	76.0	36	9.5	2.05	0.487	M
2	You take iron pills daily	115	30.3	265	69.7	—	—	2.30	0.460	M
3	You take iron pills with orange juice	52	13.7	212	55.8	116	30.5	1.83	0.644	M

Cont... **Table (3): Assessment of Women's Practices Concerning IDA**

4	You take iron pills with milk or with its derivatives	65	17.1	168	44.2	147	38.7	1.78	0.716	M
5	You eat breakfast daily	16	4.2	289	76.1	75	19.7	1.84	0.465	M
6	You eat lunch daily	113	29.7	243	63.9	24	6.3	2.23	0.554	M
7	You eat dinner every day	108	28.4	169	44.5	103	27.1	2.01	0.746	M
8	You take iron pills before eating	27	7.1	167	43.9	186	48.9	1.58	0.622	L
9	You take iron pills after eating	18	4.7	160	42.1	202	53.2	1.52	0.588	L
10	You eat fruits about half an hour before meals	34	8.9	214	56.3	132	34.7	1.74	0.609	M
11	You eat fish	24	6.3	215	56.6	141	37.1	1.69	0.583	M
12	You eat eggs daily	152	40.0	217	57.1	11	2.9	2.37	0.540	H
13	You eat red meat	70	18.4	159	41.8	151	39.7	1.79	0.733	M
14	You eat chicken	156	41.1	167	43.9	57	15.0	2.26	0.703	M
15	You eat legumes (chickpeas, lentils, and beans)	103	27.1	268	70.5	9	2.4	2.25	0.484	M

Table (3) shows that all items related to practices of iron deficiency anemia have mean of score were moderate level, depending on the responses of pregnant women, except items (8&9) presented low level.

Table (4): Association between Knowledge of the pregnant women with Their Demographic Characteristics

Knowledge Variables	**Sources of Variance.**	**Sum of Squares**	**df.**	**Mean Square**	**F.**	**Sig.**
Age (years)	Between Groups	26.395	4	6.599	43.684	0.000
	Within Groups	56.645	375	0.151		
Number of Pregnancies (multipara)	Between Groups	48.537	7	6.934	74.758	0.000
	Within Groups	34.503	372	0.093		
Level of Education	Between Groups	32.512	4	8.128	60.323	0.000
	Within Groups	50.528	375	0.135		
Occupational Status	Between Groups	19.796	2	9.898	59.005	0.000
	Within Groups	63.243	377	0.168		
Monthly Income	Between Groups	2.036	2	1.018	4.738	0.009
	Within Groups	81.003	377	0.215		
Sources of Information Concerning IDA	Between Groups	36.006	3	12.002	95.946	0.000
	Within Groups	47.034	376	0.125		
	Total	83.039	379			

Findings of the table -4- show that there is a very significant relationship between the knowledge of a pregnant woman about IDA with their demographic characteristics at (p value < 0.05).

Table (5): Association Between the pregnancy Practices with Their Demographic Characteristics

Practice Variables	Sources of Variance	Sum of Squares	df	Mean Square	F	Sig.
Age (years)	Between Groups	18.962	4	4.741	24.204	0.000
	Within Groups	73.446	375	0.196		
Number of Pregnancies (multipara)	Between Groups	28.376	7	4.054	23.551	0.000
	Within Groups	64.032	372	0.172		
Level of Education	Between Groups	36.869	4	9.217	62.234	0.000
	Within Groups	55.539	375	0.148		
Occupational Status	Between Groups	20.446	2	10.223	53.557	0.000
	Within Groups	71.962	377	0.191		
Monthly Income	Between Groups	15.983	2	7.991	39.421	0.000
	Within Groups	76.425	377	0.203		
Sources of Information	Between Groups	32.598	3	10.866	68.312	0.000
	Within Groups	59.809	376	0.159		
	Total	92.408	379			

Data analysis in this table indicates a high correlation between the practices of women towards iron anemia and its demographic data at (p value= 0.00).

Discussion

Our study is one of the few investigations that aim to collect special data related to the knowledge, and practices of pregnancy towards IDA in the city of Al-Amara / in southern of Iraq. Based on the results, the researchers concluded that the majority of pregnant mothers who visit pregnant care units have moderate or weak knowledge and behaviors in preventing iron deficiency anemia. Reports indicate that iron deficiency is the main cause of anemia that some pregnant women still suffer, and it is the most common nutritional disorder in many countries [(8)]. This reason may be the result of a high prevalence of anemia in developing countries, including the low socioeconomic situation that causes a lack of awareness of a diet containing high amounts of iron. AlAbedi et., al [(9)], who mentioned in their study that aimed To assess women's knowledge about pregnancy risks, the majority of participants does not have enough monthly income which is due to the poor financial situation in the country or most of the women are housewives with a low educational level.

As for women's knowledge and practices about causes and symptoms, negative effects of anemia and methods of prevention by taking iron pills or iron food supplement during pregnancy, it appears at a low to moderate level in our study. This result may be due to a low level of education because the majority have primary schools or because of a lack of experience resulting from the fact that most of them are in the first or second pregnancy. This result was supported by Ghimire and Pandey [(1)], who showed that more than half of the sample (51.3%) and (66.0%) had inadequate knowledge and poor practice in prevention of IDA. Also, AlAbedi et., al (2019) [9] who found in study which conducted in Iraq the majority of participants (35.3%) and (42.0%) have low and moderate knowledge respectively on risk factors during pregnancy, including iron-containing nutrients.

Practices and knowledge of the women for IDA has high significant relationship with increase of age, educational qualification, No. of pregnancies, employment, income status and sources of information at (p value > 0.01). This result was agree with a study conducted in India/Pune by Sivapriya and Parida (2015) [10] Who found that there is a great relationship between information and practices of participants about IDA with socio-demographic data for study participants.

Conclusion

The results of our study concluded that pregnant women need to improve their knowledge, which in turn enhances their practices. Therefore, the bad and moderate practice towards the prevention of iron anemia is one of the main factors that contribute to an increased incidence of iron deficiency anemia in Al-Amara City.

Recommendation

Based on the results of the study, primary health care nurses play a vital role by providing health education to women in pregnant care units that focuses on increasing their knowledge of the causes and symptoms of anemia and preventing it by taking iron supplements and eating iron-rich foods during pregnancy. Hence, the researcher emphasizes the need for more research to improve the knowledge and practices of mothers on anemia during pregnancy.

Financial Disclosure: There is no financial disclosure.

Conflict of Interest: None to declare.

Ethical Clearance: All experimental protocols were approved under the Department of Community Health Nursing and all experiments were carried out in accordance with approved guidelines.

References

1. Ghimire N, Pandey N. Knowledge and Practice of Mothers Regarding the Prevention of Anemia During Pregnancy, in Teaching Hospital, Kathmandu, Journal of Chitwan Medical College. 2013; 3: 14-17.
2. Raut B K. Jha M K. Shrestha A. Sah A. Sapkota A. Byanju S. Malla S S. Prevalence of iron deficiency anemia among pregnant women before iron Supplementation in Kathmandu university Hospital/ Dhulikhel Hospital, Journal of Gynecology and Obstetrics.2014; 2: 54-58.
3. Souganidis E S, Sun K, Pee S, Kraemer K, Rah J, Pfanner R M. Sari M. Bloem M W. Semba R D. Relationship of maternal knowledge of anemia with maternal and child anemia and health-related behaviors targeted at anemia among families in Indonesia, Matern Child Health J. 2012; 16: 1913–1925.
4. World Health Organization (WHO): Global Nutrition Targets 2025 Anaemia Policy Brief, Geneva. 2014; 1-8.
5. Nutrition research institute Iraq, Wheat flour fortification, Iraq. 2014; 1-24.
6. Singh I. Singh H. and Kaur D. Evaluation and comparison of knowledge, attitude and practice about iron deficiency anemia amongst medical students of rural and urban background, International Journal of Research in Medical Sciences. 2015; 3: 1342-1344.
7. Tashara I F. Achen R K. Quadras R. D'Souza M V. Jyothi P J. Knowledge and self-reported practices on prevention of iron deficiency anemia among women of reproductive age in rural area, International Journal of Advances in Scientific Research. 2015; 1: 289-292.
8. Ali F, Al-Ani AS. Prevalence of iron deficiency anemia among adolescents intermediate school pupils in Ramadi District. Iraqi journal of community medicine 2000; 22: 158-162.
9. AlAbedi GA, Arar A, Radhi TA. Assessment of Knowledge for Pregnant Women toward Risk of Pregnancy in Al-Amara Primary Health Care Centers at Southern of Iraq. Indian Journal of Public Health. 2019; 10: 57.
10. Sivapriya S M. & Parida L A. study to assess the knowledge and practices regarding prevention of anemia among antenatal women attending a tertiary level hospital in Pune. Int J Sci Res NET. 2015; 4:1210-14.