



Anemia Awareness, Causes, and Prevention among Pregnant Women at Asogbon Phc, Bariga, Lagos State, Nigeria

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Received: 09 June 2022

Accepted: 24 August 2022

Published: 29 September 2022

Abstract: Anemia has been identified as a serious public health problem in both developed and developing countries, affecting around 2 billion people and accounting for three-quarters of a million fatalities per year in Africa and Southeast Asia. Anemia in pregnancy is common, according to research from around the world. The purpose of this study was to determine the level of awareness, causes, and prevention of anemia in pregnancy among pregnant mothers attending Asogbon PHC Bariga in Lagos State, Nigeria. A well-structured questionnaire was used for data collection. The respondents were given a questionnaire. One hundred and nine (109) questionnaires were distributed, collected, and analyzed by respondents. The study's data was examined and processed with the Statistical Package for Social Science (SPSS) V21. To assess participant characteristics and offer responses to the study's research questions, descriptive analysis, frequency, average, and percentage were employed. The study discovered that knowledge about anemia signs, vulnerability, food, and prenatal visits was good, but information about causes and perceived effects of anemia was inadequate. According to the findings, the most common known cause of the condition is a poor diet, followed by malaria, worm infestations, and other factors. Despite widespread recognition that poor diet is the leading cause of anemia in pregnancy, there is little information about food sources that can assist in combating the disease. Also, less than half of those who profess knowledge of anemia-fighting foods eat them throughout pregnancy. The study found that the pregnant women were of reproductive age and had completed secondary and higher secondary school. The study revealed that while there was good awareness and prevention of anemia in pregnancy, To obtain a better feto-maternal outcome in pregnancy, there is a need to raise awareness about anemia in pregnancy and implement effective health education programs on anemia prevention.



Keywords: *Anaemia, Awareness, Causes, Prevention, Pregnant Mothers.*

1. INTRODUCTION

Anemia is recognized as a sign of both inadequate nutrition and poor health. It is harmful to women's health and well-being and increases the chance of adverse maternal and neonatal impacts (Teshome *et al.*, 2020). Anemia is responsible for a variety of complications in pregnant women. Anemia is a global public health issue that affects people of all ages, with pregnant women bearing the brunt of the burden (Zekarias *et al.*, 2017). It covers up to 20% of all maternal deaths. Pregnancy anemia also causes low birth weight, fetal damage, premature deliveries, and infant losses (Zekarias *et al.*, 2017). Anemia is the leading cause of maternal death (Ayano and Amentie, 2017).

Iron deficiency anaemia (IDA) is the most frequent nutritional deficit in pregnancy. The World Health Organization (WHO) defines anaemia as "haemoglobin less than 11 gm/dl and a haematocrit less than 0.33." Most women begin their pregnancy with partially or completely reduced iron levels. Thus, the severity of anaemia is inversely related to the amount of iron stores (Nimbalkar *et al.*, 2017). Anaemia is a global public health issue that affects both poor and developed countries, with serious ramifications for human health. Anaemia during pregnancy and lactation has a negative impact on maternal and child health. According to the WHO, the prevalence of anaemia among pregnant women is 14% in industrialized nations and 51% in underdeveloped countries (Nimbalkar *et al.*, 2020).

Anemia during pregnancy is defined as a hemoglobin concentration of less than 11 g/dL. It is the most prevalent hematologic condition that impairs the normal functioning of the organ system by reducing the amount of oxygen that reaches different tissues and organs via blood circulation (Liyew *et al.*, 2021). Although anemia can develop in any human population, pregnant women and small children are the most common victims of this hematologic disorder. Anemia during pregnancy causes major maternal and fetal problems and can even result in maternal death. Anemia is responsible for 20% of all maternal mortality, according to research (Deficiencies, 2017). Anemia during pregnancy is caused mostly by nutritional deficiencies (iron, vitamin B12, folate), parasitic diseases (hookworm, malaria, and so on) and acute blood loss (Getahun *et al.*, 2017).

Anaemia in pregnancy is a major public health concern all over the world, especially in underdeveloped nations where it contributes significantly to maternal morbidity and mortality (Wemakor, 2020). It's also linked to a higher chance of miscarriage, preterm, stillbirth, low birth weight, and, as a result, perinatal mortality. Iron deficiency, caused by a sustained negative iron balance, is the leading cause of anemia in women of reproductive age worldwide, accounting for 50% of anemia in women (Wemakor, 2020).

Iron deficiency anemia (IDA) is a condition that causes a large decrease in iron storage in the body as a result of both extrinsic and intrinsic factors (Samia Abd Elhakeem *et al.*, 2019). This anemia is hypochromic and microcytic in nature. Pallor, exhaustion, sadness, fainting, dyspnea, emotional instability, palpitation, headaches, and hair loss are all symptoms of iron deficiency anemia during pregnancy, which is caused by decreased oxygen delivery to the tissues. Furthermore, chronic IDA reduces quality of life, job tolerance, and productivity (Samia Abd Elhakeem *et al.*, 2019).



To eliminate iron deficiency anemia during pregnancy, individuals and communities should make efforts such as educating women about anemia, its causes, and the health implications (Samia Abd Elhakeem *et al.*, 2019). Instructing nutritional education, with a special emphasis on locally available foods to increase dietary intake of proteins and iron, providing appropriate iron supplements and maximum compliance, deworming, treatment of chronic and parasitic diseases like malaria, and providing antenatal care to pregnant women will help in eradicating this serious problem (Samia Abd Elhakeem *et al.*, 2019).

Anemia in pregnant women must be addressed seriously by health care workers, particularly at the primary care level, due to the potential health consequences for mothers and babies, despite the fact that appropriate iron treatment is freely available at all levels of health care facilities (Margwe, 2017). Pregnant women are more vulnerable, and healthcare providers must emphasize teaching pregnant women appropriate long-term eating habits as part of a health promotion strategy (Alswailem *et al.*, 2018). Anemia education and attitude in pregnant women are significantly lower, which can be a major cause of pregnancy-related issues. So, proper awareness and educational programs regarding diet and lifestyle pattern during pregnancy can reduce the prevalence rate of anemia.

In the previous studies, wealth index (Nankinga and Aguta, 2019) maternal education (Hailu *et al.*, 2019) maternal age, parity (Ali *et al.*, 2019), place of residence (Hailu *et al.*, 2019, Ali *et al.*, 2019), maternal occupation (Hailu *et al.*, 2019), history of terminated pregnancy (Berhe *et al.*, 2019), iron intake during pregnancy (Ali *et al.*, 2019), unimproved source of water and marital status (Hakizimana *et al.*, 2019) were factors associated with anemia during pregnancy. Despite the fact that anemia has been acknowledged as a global public health problem for numerous years, no rapid progress has been recorded, and the disease's incidence remains high globally (Ghislain and Manfred, 2012). Maternal knowledge of anemia is crucial because it has the ability to motivate women to take iron supplements during pregnancy and after childbirth, affecting both the mother's and the child's iron status. Furthermore, despite the national health strategy of frequent iron supplementation and intermittent preventive malaria therapy with anti-malarial medications, maternal anemia remains a common cause of morbidity and mortality.

Despite the fact that anemia has been recognised as a global public health problem for several years, no significant progress has been made, and the disease's prevalence remains high globally (Ghislain, 2012). Despite efforts to treat and prevent maternal anemia, many pregnant women continue to suffer from anemia-related health issues, and the contributing causes to the persistence of high occurrences remain unknown (Margwae, 2015). The reduction and control of anemia prevalence among women remains a public health priority (Margwae, 2015).

Despite the high incidence of anemia as a cause of maternal mortality in Nigeria, relatively few initiatives currently address anemia as a key safe motherhood concern in Nigeria. Currently, only around 58% of pregnant Nigerian women obtain iron supplements during pregnancy. The study thus attempted to investigate the level of awareness, as well as the cause and prevention of anemia in pregnancy, among expectant mothers attending a clinic in Asogbon PHC, Bariga, and Lagos State, Nigeria.

1.1 Objective of the study

Broad objective: To investigate the level of awareness, causes, and prevention of anemia in pregnancy among pregnant mothers attending a clinic in Asogbon PHC, Bariga, Lagos State, Nigeria.



Specific Objectives are to:

- i. Determine pregnant women's awareness of anemia in pregnancy in Asogbon PHC Bariga, Lagos State, Nigeria.
- ii. Determine the level of anemia knowledge among pregnant mothers attending a clinic in Asogbon PHC Bariga, Lagos State, Nigeria.
- iii. Investigate the causes of anemia in pregnancy among pregnant women attending Asogbon PHC Bariga in Lagos State, Nigeria.
- iv. Evaluate anemia prevention techniques among pregnant mothers attending a clinic in Asogbon PHC, Bariga, Lagos State, Nigeria.

2. METHODOLOGY

2.1 Research Design

A cross-sectional descriptive survey design was used in this investigation. This involves difficulties or events that a huge population feels across a large area in order to determine what exists in their natural habitat.

2.2 Research Setting

The research was carried out among pregnant mothers attending clinic in Asogbon PHC Bariga, Shomolu Local Government, Lagos State, Nigeria. Shomolu is a local government in Lagos. It is located in Southwest Nigeria, North of Lagos City, and its administrative headquarters are located on Durosimi Street. The Shomolu local government is part of the Lagos Eas Senatorial Zone.

The population of the LGA according to the 2006 census was 402, 673 people. However, the Shomolu local government area was formerly known as Mushin East local government. The present Somolu local government comprises areas like Community Road, Akoka areas east of Ikorodu road up to Anthony Oke side interchange, including Spmolu, Bashua, Bariga, some parts of Akoka, Igari, Obanikoro, Pedro village, Abule Okuta, Seriki village, Apelehin, Ilaje. Shomolu Local Government is primarily populated by Yorubas, the most prominent of whom are the Ijebus', Egba', Aworis', and Ilajes'. Other Yoruba ethnic groupings present in the area include Oyo, Osun, and Ekiti. Other ethnic groups from the country's east and west are also represented in the Local Government Area. Shomolu is plagued by issues of insanity, excessive rent, overall poverty, and a juvenile criminal subculture. It is also recognized for its printing industry, which is the largest in Lagos and one of the most diversified in the world. Offset and digital print shops, in particular, may be located on the Bajulaiye Road.

2.3 Target Population

The pregnant mothers attending the clinic in Asogbon PHC Bariga, Lagos State, Nigeria, were conveniently chosen for the study.

2.4. Sample Size Determination

This study included 150 pregnant mothers attending a clinic at Asogbon PHC Bariga in Lagos State, Nigeria. The Taro Yamane formula was used to calculate sample size (1967).Taro Yamane method:

$$n = N / (1 + N (e)^2)$$



N= population under study which is 150

e = margin error

$n = 150 / (1 + 150 (0.05)^2)$

$n = 150 / (1 + 150(0.0025))$

$n = 150 / (1 + 0.375)$

$n = 150 / (1.375)$

n = 109.09

n = 109 as sample size

2.4.1 Sampling Technique

This study made use of a convenient sampling technique. These are pregnant women who attend Asogbon PHC Bariga in Lagos State, Nigeria. Pregnant mothers attending a clinic in Asogbon PHC Bariga, Lagos State, Nigeria, provide a simple sample.

Inclusion criteria or eligibility characteristics for this study include:

- Pregnant mothers attending clinic in Asogbon PHC

The exclusion criteria in this:

- Non -pregnant mothers attending clinic in Asogbon PHC Bariga
- Men attending attending clinic in Asogbon PHC Bariga

2.5. Instruments for Data Collection

Questionnaires were utilized in this study to collect the main data. Administering a questionnaire to pregnant mothers attending a clinic in Asogbon PHC Bariga, Lagos State, Nigeria, was a quick and practical way of collecting data and other necessary and relevant information about the level of awareness, causes, and prevention of anemia in pregnancy among pregnant mothers. It is also regarded as an objective method of gathering information. However, the use of questionnaires was prone to recall bias, especially when open-ended items were included.

The pilot study, or preliminary investigation, was conducted with 5 pregnant moms attending a clinic in Asogbon PHC Bariga, Lagos State, Nigeria, to check item clarity and clarify any confusing items in the tool. Following the pilot research or preliminary investigation, the tool was modified. The language employed in the amended version or final questionnaire was straightforward. The questionnaire included items that enabled the collection of information or data to be used to address the research challenge. The questionnaire was divided into sections with particular questions to investigate pregnant women's awareness, causes, and prevention of anemia in pregnancy. The questionnaire was divided into four sections

SECTION A: The Socio demographic data of the respondents (11 items)

SECTION B: Knowledge of anaemia among pregnant mothers; this consisted of 10 closed ended questions. Respondents were asked to select which is mostly applicable to them.

SECTION C: Awareness of anaemia among pregnant mothers; this consisted of 11 closed ended questions inform of “**Yes and No**”. Respondents were asked to select which is mostly applicable to them

SECTION D: Prevention of anaemia among pregnant mothers; It consisted of 7 questions structured in a likert scale. Respondents were asked to select which is mostly applicable to them



SECTION D: causes of anaemia among pregnant mothers; It consisted of 7 questions structured in form of questions in form of “**Yes and No**”

2.5.1 Validity of Instrument

To ensure the instrument's validity, the instrument (questionnaire) was given to supervisors, coworkers, and other professionals in research (nursing) to be reviewed for content and validity. This helps to establish how well the instrument gathered the required information regarding the level of awareness, causes, and prevention of anemia in pregnancy among expectant mothers attending a clinic in Asogbon PHC, Bariga, Lagos State, Nigeria. Feedback from supervisors, colleagues, and other researchers and scholars was used to make essential changes to the instrument, such as deleting unclear and unrelated items, spelling problems, and other typographical errors that could have occurred.

2.5.2 Reliability of Instrument

This refers to the degree to which the questionnaire responses about the level of awareness, causes, and prevention of anemia in pregnancy among expecting mothers attending clinic in Asogbon PHC Bariga, Lagos State, Nigeria are consistent and so yield consistent and productive results. The investigation proved the trustworthiness of the data gathering instruments, allowing the instruments to solve the research challenges.

2.6. Method of Data Collection

Participants were given questionnaires using the drop and choose methodology. For the questionnaire to be returned on time, appointments were established with participants in the departments, followed by a follow-up with respondents to determine whether they encountered any difficulties in answering the questions. During the interviews, the results will be documented.

2.7 Methods of Data Analysis

This was accomplished by quantitative data analysis, which included data editing and coding, and the altered data was evaluated using the Statistical Package for Social Science (SPSS). To meet the study's stated aims, one sort of analytical approach, univariate analysis, was utilized in the examination of quantitative data. The univariate analysis used descriptive statistics to investigate the respondents' background characteristics and the distribution of their present perspective on anemia in pregnancy among expecting women, such as their degree of knowledge, causes, and prevention. These were explained using frequency distribution tables and percentages.

2.8 Ethical Considerations

The authorities of Osun State's Bariga Local Government Area provided ethical clearance. The Lagos State Ministry of Health also approved the study. Most crucially, those who agreed to take part in the study signed consent. Respondents were informed of their right to withdraw at any time during the study. In order to protect study participants, the principles of beneficence, respect for human dignity, fairness, and informed consent were followed. Throughout the study, respondents' dignity, privacy, anonymity, and information confidentiality were maintained and preserved. On the questionnaires, respondents were assigned numbered codes.



To identify respondents, only the numeric identification code was used during data entry for analysis.

3. RESULTS AND DISCUSSION

3.1 Respondent Sociodemographics

The socio-demographic characteristics of respondents are shown in Table 1. From Table 1, 32 (29.36%) of respondents are in age bracket of 18-22 years, 35(32.11%) of respondents were in age range of 23-27 years, 27(24.77 %) of respondents were in age bracket of 28-32 years, 15(13.76%) of respondents were in age group of >33 years. The marital status of respondent shows that shows that 19 (17.43%) of respondents are single while 90 (82.57%) of respondents are married. The level of education of respondent shows that 19 (17.43%) of respondents had primary education, 43(39.45%) of the respondents had secondary education while 47(43.12%) of respondents are with diploma and others certificates. The employment of respondents reveals that 10(9.17%) are farmer, 48(44.04%) are government worker, 25(22.94%) are private workers while 26 (23.85%) of respondents are housewife. The number of family of the respondents shows that 61(55.96%) respondents had 2 families while 27 (24.77%) of respondents are 3 while 21 (19.27%) of respondents are greater than 3. The family income of respondents shows that 20 (18.35%) of respondents earn between 1000 and 1500, 32 (29.36%) earn between 1500-2500 while 57(52.29%) of the respondents earn more than 2500 as income. The Residence status of respondents showed that 94 (86.24%) of respondents reside in urban area while 15(13.76%) of respondents are living in rural areas. The age of respondents at first marriage reveals that 53 (48.62%) of respondents are in age bracket of 16-20, 25(22.94%) are within 21-25 of age, 20 (18.35%) of respondents are within 26-30 while 11(10.09%) of respondents are within age bracket of greater than 30. The age of respondents at 1st pregnancy shows that 53(48.63%) of respondents are within 18-22years, 32(29.36%) of respondents are in age bracket of 23-27, while 24(22.01%) of respondents are more than 27 years of age at 1st pregnancy. The number of pregnancy of respondents reveals that 52 (47.71%) of respondents are at 1st pregnancy, 37 (33.94%) of respondents are at 2nd pregnancy, 11(10.09%) of respondents are at 3rd pregnancy while 9 (8.26%) of respondents are at 4th pregnancy. The years of child spacing of respondents shows that 38(34.86%) of respondents space their child at <3 years of age, 9(8.26%) of respondents space their child between 3 and 4 years while 62 (56.88%) of respondents did not have child before (Table 1).

Table 1: Participants' socio-demographic and reproductive characteristics

S/N	ITEMS	RESPONSE	FREQUENCY	PERCENTAGE	TOTAL
1	Age (years)	18 - 22	32	29.36	100
		23 - 27	35	32.11	
		28 - 32	27	24.77	
		>33	15	13.76	
2	Marital status	Single	19	17.43	100
		Married	90	82.57	
3	Educational level	Primary school	19	17.43	100



		Secondary school	43	39.45	
		Diploma & above	47	43.12	
4	Employment status	Farmer	10	9.17	100
		Governmental worker	48	44.04	
		Private workers	25	22.94	
		House wife	26	23.85	
5	Number of family	2	61	55.96	100
		3	27	24.77	
		>3	21	19.27	
6	Family income	1000-1500	20	18.35	100
		1500-2500	32	29.36	
		>2500	57	52.29	
7	Residence status	Urban	94	86.24	
		Rural	15	13.76	
8	Age at first marriage	16-20	53	48.62	100
		21-25	25	22.94	
		26-30	20	18.35	
		>30	11	10.09	
9	Age of 1st pregnancy	18-22	53	48.63	100
		23-27	32	29.36	
		>27	24	22.01	
10	Number of pregnancy	1	52	47.71	100
		2	37	33.94	
		3	11	10.09	
		4	09	8.26	
11	Years of child spacing	<3 Years	38	34.86	100
		3-4 Years	9	8.26	
		No have child before	62	56.88	

Source: Field data, 2022

3.2 Knowledge of anemia in pregnancy

Out of the total 109 participants who were asked for their knowledge of iron deficiency anemia, the majority 93 (88.3%) reported that they had heard about iron deficiency anemia, and 16 (14.68%) claimed that they had not heard about iron deficiency anemia at all. On source of information about anemia, 58(53.21%) of respondents claimed they heard about it through health care worker, 11(10.09%) of respondents heard through radio, 10(9.18%) of respondents heard on

Printed materials, 7(6.42%) of respondents heard through others means while 7(6.42%) of respondents have not heard about it (Table 2).



For the definition of anemia, 35(32.12%), 38(34.86%), and 10 (9.17 %) defined anemia as poor nutrition, iron deficiency, low hemoglobin, respectively, and 26 (23.85%) did not know the definition appropriately. For sign and symptom of anemia, 10(9.175) of respondents agreed that shortness of breathing is sign and symptom of anemia, 9(8.26%) of respondent said exceptional fatigue, 14(12.84%) attributed the sign to general body weakness, 12(11.01%) agreed that poor appetite is symptom, 15 (13.76%) of respondents links the sign and symptom to dizziness or fainting, 5(13.76%) of respondents said all above sign and symptom while 44(40.37%) of respondents don't know the sign and symptom. As for the cause of anemia, the majority 36 (33.03%) cited poor nutrition as the cause for anemia, 21(19.27%) cited bleeding during pregnancy, 3(2.75%) said multiple pregnancy/spacing, 7(6.42%) said all listed causes but 42(38.53%) did not know the cause for anemia at all. As far as knowledge for the prevention of anemia is concerned, the majority 66(60.55%) knew how anemia could be prevented while 43(30.28%) did not know. 33(30.28%) of respondents agreed that good nutrition can prevent anemia, 22(20.18%) cited iron supplement, 5(4.59%) said drinking or eating fruits can prevent anemia, 2(1.83%) said all listed above while 47(43.12%) of respondents don't know (Table 2).

Table 2: Pregnant women's knowledge of iron deficiency anemia prevention

S/N	ITEMS	RESPONSE	FREQUENCY	PERCENTAGE	TOTAL
1	Have heard about iron deficiency anemia?	Yes	93	85.32	100
		No	16	14.68	
2	Source of information	Health care worker	58	53.21	100
		Radio	11	10.09	
		Printed materials	10	9.18	
		Others	7	6.42	
		Not heard	23	21.10	
3	What is anemia?	Poor nutrition	35	32.12	100
		Iron deficiency	38	34.86	
		Low hemoglobin	10	9.17	
		I don't know	26	23.85	
4	Sign & symptom of anemia	shortness of breathing	10	9.17	100
		Exceptional fatigue	9	8.26	
		General body weakness	14	12.84	
		Poor appetite	12	11.01	



		Dizziness or fainting	15	13.76	
		All can be observed	5	4.59	
		I don't know	44	40.37	
5	Cause of anemia	Poor nutrition	36	33.03	100
		Bleeding during pregnancy	21	19.27	
		Multiple pregnancy & spacing	3	2.75	
		All listed above	7	6.42	
		I don't know	42	38.53	
6	Do you know how to prevent anemia?	Yes	66	60.55	100
		No	43	39.45	
7	How can we prevent anemia?	By good nutrition	33	30.28	100
		Using Iron supplement	22	20.18	
		Drinking or Eating fruits	5	4.59	
		All listed above	2	1.83	
		I don't know	47	43.12	
8	Do you know drinking tea, coffee & milk can reduce iron Absorption in the body?	Yes	30	27.52	100
		No	79	72.48	
9	Do You know spacing child can prevent anemia?	Yes	69	63.30	100
		No	40	36.70	
10	Which one is best spacing of child to prevent anemia?	<2 years	9	8.26	100
		≤ 2 years	63	57.80	
		I don't know	37	33.94	

Source: Field data, 2022



3.3 Awareness of anemia in pregnancy

Table 3 shows that 84 (77.06%) respondents have heard of anemia, 45 (41.28%) of them could correctly define anemia, and 129 (71.7) of them could correctly identify different causes of anemia. Many 80 (44.4%) respondents correctly identified the signs and symptoms of anemia as (the skin appear pallor and paleness of the conjunctiva, palm, tongue, general body malaise, heart palpitation, and fatigue). A majority 81 (74.31%) of the respondents identified that anemia can be treated and 71 (66.14%) identified the right means of treatment using hospital treatment (Table 3)

Ninety five (87.16%) respondents identified the correct means of preventing anemia (eating meat, eggs, green vegetables, and fruit). A majority 103 (94.50%) of the respondents agreed that anemia can cause a serious problem for them and their expected baby. Ninety five (87.15%) of the respondents identified correctly, the complications of anemia for both mother and fetus. Majority of the respondents [70 (64.22 %)] identified reduced iron dietary intake as a cause of anemia. A majority 85 (77.98%) of the respondents put what they have learnt in the antenatal clinic to practice (Table 3).

Table 3: Prenatal anemia awareness

S/N	ITEMS	RESPONSE	FREQUENCY	PERCENTAGE	TOTAL
1	Have you heard of anemia in pregnancy	Yes	84	77.06	100
		No	25	22.94	
2	What anemia means is a decrease in the concentration of red blood cell or hemoglobin level in the blood?	Yes	45	41.28	100
		No	64	58.72	
3	How can one get anemia?	Poor dietary intake	60	55.05	100
		Parasitic infections	10	9.17	
		chronic infections	25	22.94	
		genetic blood disorders	14	12.84	
4	How can one know that she is suffering from anemia	the skin appear pallor	45	41.28	100
		paleness of the conjunctiva, palm, tongue	10	9.17	
		general body malaise	30	27.52	



		heart palpitation	20	18.35	
		Fatigue	4	3.67	
5	Can anemia be treated	Yes	81	74.31	100
		No	28	25.69	
6	If yes, how is anemia treated?	using hospital treatment	71	65.14	
		using traditional treatment	10	9.17	
		using self treatment	15	13.76	
		All of the above	13	11.93	
7	How can one protect herself from getting anemia	Eating meat	15	13.76	
		Eggs	25	22.94	
		Green vegetables	35	32.11	
		Fruits	20	18.35	
		I don't know	14	12.84	
8	Can anemia cause a serious problem in your health and for expected baby	Yes	103	94.50	
		No	6	5.50	100
9	What are the complications of anemia for both mothers and fetus?	low birth weight	45	41.28	
		Preterm delivery	50	45.87	
		still-birth	10	9.17	
		death may occur	4	3.68	
10	Which of the following can cause anemia during pregnancy	Reduced iron dietary intake	70	64.22	100
		I don't know	39	35.78	
11	In antenatal clinic, the health-care provider usually provides	Yes	85	77.98	100



	health education on anemia in pregnancy?				
		No	24	22.02	

Source: Field data, 2022

3.4 Preventing Anemia in Pregnancy among Pregnant Women

Majority of respondents reported positive preventive measures on anemia in pregnancy. 76 (69.73%) reported that use of insecticides treated net can prevents anemia in pregnancy, also majority 68 (62.39%) reported that iron supplements and folic acid can prevent anemia in pregnancy (Table 4). Many reported that avoidance of culturally forbidden foods during pregnancy prevents anemia in pregnancy. They also reported that personal, environmental and food hygiene is important in prevention of anemia 82 (75.23%). This same group indicated that it's God that protects women during pregnancy 76 (69.73%) (Table 4).

Table 4: Respondents' preventive measures on anaemia in pregnancy among pregnant women

S/N	ITEMS	RESPONSE	FREQUENCY	PERCENTAGE	TOTAL
1	I eat four times a day	Yes	70	64.22	100
		No	25	22.94	
		I don't Know	14	12.84	
2	I use insecticides treated net	Yes	76	69.73	
		No	21	19.27	
		I don't know	12	11.00	
3	I use herbs and concoction during pregnancy	Yes	85	77.98	100
		No	14	12.84	
		I don't Know	10	9.18	
4	I avoids some culturally forbidden foods like snail during pregnancy	Yes	87	79.82	100
		No	15	13.76	
		I don't know	7	6.42	
5	I prefer taking pica than eating food during pregnancy	Yes	78	71.56	100
		No	17	15.60	
		I don't know	14	12.84	



6	Taking of Iron supplements and folic acid can prevent anemia during pregnancy	Yes	68	62.39	100
		No	23	21.10	
		I don't know	18	16.51	
7	I prefer eating foods rich in carbohydrates during pregnancy in order to gain strength	Yes	73	66.97	
		No	27	24.77	
		I don't know	9	8.26	
8	I engage in Intermittent and early preventive treatment of malaria	Yes	74	67.89	100
		No	17	15.60	
		I don't know	18	16.51	
9	God only protects a women during pregnancy, I don't need to prevent anything	Yes	76	69.73	100
		No	23	21.10	
		I don't know	10	9.17	
10	Personal, environmental and food hygiene is important to prevent anemia during pregnancy	Yes	82	75.23	100
		No	11	10.09	
		I don't know	16	14.68	
11	I use over the counter drugs often to prevent anemia	Yes	82	75.23	
		No	13	11.93	
		I don't know	14	12.84	

Source: Field data, 2022

3.5 Discussion of Result

This study investigates the level of awareness, causes, and prevention of anemia in pregnancy among pregnant women attending a prenatal clinic in Asogbon PHC, Bariga, Lagos State,



Nigeria. The findings show that the majority of pregnant women in Asogbon PHC have adequate information regarding anemia throughout pregnancy. This adequate knowledge of anemia may influence their use of preventive treatments throughout pregnancy. According to the findings of this poll, 84 (77.06%) of respondents have heard of anemia. This is comparable to the work of Ademuyiwa et al. (2020), who found that the majority of women (68.89%) had a good level of awareness of anemia and good overall habits (73.89%) for preventing anemia in pregnancy. Appiah et al. (2020) discovered that approximately 13.5% of pregnant women had high anemia awareness, while 58.4% and 28.1% had intermediate and poor knowledge, respectively. Fewer than half (39.1%) of the women followed anemia preventive techniques.

Similarly, AlAbedi et al. (2020) discovered that nearly three-quarters of the sample (76.1%) had moderate understanding and poor practices about iron anemia. This study contrasts with the findings of Duko et al. (2017), who found that only 44.3% (102) of respondents were fully aware of anemia. In this study, we reported 35(32.12%), 38(34.86%), and 10 (9.17%) definitions of anemia as poor nutrition, iron deficiency, and low hemoglobin, respectively. Knowledge of IDA symptoms was also found to be high. This is clear from the fact that participants were aware of all IDA signs and symptoms. According to the findings of our study, the majority of participants recognized shortness of breath, weakness, low appetite, dizziness, and fainting as signs of anemia. According to the study's findings, the majority of respondents had a strong understanding of anemia.

The findings revealed that, of the 109 participants in the study, 87 (79.82%) reported avoidance of culturally forbidden foods as a preventive measure against anemia in pregnancy; 85 (77.98%) participants use herbs and concoctions; 82 (75.23%) respondents reported personal environmental and food hygiene as important to preventing anemia during pregnancy; and 82 (75.23%) respondents use over-the-counter drugs frequently to prevent anemia in pregnancy. Our study found that around one-third of pregnant women had IDA, which is lower than the findings of other studies. This could be because most pregnant women were aware of the causes and prevention of anemia. They were also supportive of most IDA prevention approaches, such as family planning and iron supplementation. During their pregnancy, most pregnant women took folic acid supplements and ate iron-rich foods. Our findings suggest that more needs to be done to reduce the occurrence of IDA by enhancing the knowledge, attitude, and abilities required for IDA prevention. It is critical that all research areas around health facilities and offices work to raise understanding, perception, and utilization of IDA prevention strategies during pregnancy.

4. CONCLUSION

Pregnant women are of reproductive age, and they have three successful births with regular birth intervals on average. Respondents demonstrate a high level of anemia awareness by attempting to characterize the condition in layperson's terms, providing some symptoms, and identifying some causes and effects. Few people are aware of the causes and consequences of anemia. The most common recognized cause of the condition is poor food, which is followed by malaria, worm infestations, and other factors. Despite widespread recognition that poor diet is the leading cause of anemia in pregnancy, there is little information about food sources that can assist in combating the disease. Less than half of those who claim knowledge of anemia-fighting foods eat them during pregnancy.



Given the current practices, there are health risks (including anemia) among pregnant women because barriers to malnutrition (knowing and eating nutritious food); and parasitic infections like malaria and worms (especially hookworm) are compromised through the use of ITBNs, IPTs, deworming, improved drinking water sources, and effective hand washing are compromised. Though anemia awareness levels are high, women's understanding of the barriers that can be used to fight against the disease has to be deepened.

The study concluded that the pregnant women were of reproductive age and had completed secondary and higher secondary school. The study discovered that awareness of anemia signs, vulnerability, food, and antenatal visits was good, but understanding of anemia causes and perceived effects was inadequate. Pregnant women have an average attitude towards anemia and undertake effective preventative care. The study revealed that, whereas anemia in pregnancy awareness and prevention practices were good, To obtain a more favorable fetomaternal outcome in pregnancy, there is a need to increase knowledge about anemia in pregnancy and implement effective health education programs on anemia prevention.

Based on the findings of the current study, the following recommendations are suggested:

- i. It should explicitly focus on anaemia symptoms, causes, what puts pregnant women at risk, and how to prevent IDA among pregnant women. For long-term impact, these initiatives should include males or husbands. Health practitioners should emphasize the importance of iron supplement adherence counseling and follow-up.
- ii. Pregnant women should be given instructional booklets regarding anemia based on HBM to improve their understanding and health beliefs.
- iii. Awareness should be raised by adequate nutritional counseling during antenatal visits and through the media.
- iv. A continuous education and awareness program on anemia is required among pregnant women in order to minimize anemia risk factors and ameliorate the negative effects of anemia in pregnancy. Early detection and management strategies should be adopted to prevent anemia.
- v. Primordial prevention should be used, which entails preventing anemia and the transmission of risk factors, as well as lifestyle adjustment through health education programs conducted by nursing personnel both in the hospital and in the community.
- vi. The nurse and health personnel can provide the prenatal mother with iron and folic acid supplements.
- vii. Pregnant women should be given health promotion information on iron deficiency.
- viii. Anemia based on HBM to increase their health knowledge and beliefs More research should be done in various community settings to improve the health of pregnant women with iron deficiency anemia. Training programs are recommended for nurses working in MCH centers in order to improve their knowledge and skills, so they will be able to educate and counsel pregnant women regarding nutrition
- ix. The presence of inadequate awareness and adherence to anemia prevention highlights the need for increased education on anemia and its prevention measures by health professionals and collaborators at all levels of health delivery services to all women of reproductive age. This should involve increased education and sensitization on healthy nutritional practices in pregnant women's diets.



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