

Anaemia Prevention In Pregnancy Among Antenatal Clinic Attendees In A General Hospital In Lagos.

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ABSTRACT

Background: Anemia is the world's second leading cause of disability and thus one of the most serious global public health problems. The World Health Organization (WHO) estimates that an average of 56% of pregnant women in developing countries, are anaemic.

Objectives: This study was conducted to determine the knowledge, attitude and practices of prevention of anaemia in pregnancy amongst pregnant women attending the Antenatal Clinic at Ifako-Ijaiye General Hospital.

Methods: The design was cross-sectional descriptive study. Simple random sampling method was used to select two hundred and twenty respondents (220). A pretested, structured, interviewer administered questionnaires were used for data collection.

Results: Majority (95%) of the respondents was aware of anemia in pregnancy but the mean knowledge score was 56.5%. Less than half (46.3%) of the respondents thought that contraceptives could help prevent anemia in pregnancy by reducing closely spaced pregnancies. Only 31.8% were compliant with the use of iron supplements. About one third (33.2%) didn't combine drinking tea with meals while 47.3% of the respondents didn't use iron supplements with milk products.

Conclusion: The study showed that most of the respondents had a moderate level of knowledge, and positive attitude towards contraceptive use but a high proportion were not compliant with the daily use of iron supplements. It is recommended that health education of women as well as close family members should be reinforced to improve the compliance with supplements.

Key words: Knowledge, attitude, practices, anaemia, pregnancy, antenatal clinic, Lagos, Nigeria.

INTRODUCTION

Anemia is one of the most widespread nutritional deficiency diseases. It's the world's second leading cause of disability and thus one of the most serious global public health problems. It affects all age groups and both sexes. Micronutrient deficiency and especially iron deficiency is believed to be the main underlying cause for anaemia. The prevalence of anaemia is highest among pregnant women, infants, and young children due to the high iron demands of pregnancy and growth. The World Health Organisation (WHO) estimates that 52.0 % of pregnant women and 39.0 % of infants under four are anaemic in developing countries, compared with 22.7 % and 20.1 % in developed

countries. A study among eight developing countries also showed that 56.4% were anaemic.

At the beginning of a pregnancy, there is a normal reduction in haemoglobin level followed by a slight rise towards the end of pregnancy. The initial reduction has been explained to result from increased red cell mass and demands of the fetus which exceeds iron intake with consequent reduction in iron stores of the woman's body. Thus, the World Health Organization has defined anaemia in pregnancy as a haemoglobin value below 110g/dL.¹

In Nigeria, prevalence of anemia in pregnancy vary across the region with a prevalence of 76.5% in Abeokuta, South Western region and 40.4% in Enugu, South Eastern region. Moreover, the prevalence is higher among the primigravidas than multiparous women. It has been suggested that the prevalence of anemia may depend on the season, increasing in relation to malaria transmission in wet season and in relation to increased food shortage at the end of dry season.²

Animal and human studies have shown that iron deficiency anemia as well as high hemoglobin concentration during pregnancy is associated with adverse pregnancy outcomes. The consequences of anemia include: increased maternal and peri-natal mortality, increased numbers of preterm birth and/or low birth weight, surgically delivered babies, impaired cognitive development in children, reduced adult work productivity.³⁻⁵

Each year more than 500,000 women die from pregnancy-related causes, 99% of these in developing countries. Estimates of maternal mortality resulting from anemia ranges from 34/100,000 live births in Nigeria to as high as 194/100,000 in Pakistan. In a separate analysis, iron deficiency anemia (IDA) was an underlying risk factor for maternal and peri-natal mortality and morbidity, and was estimated to be associated with 115,000 of the 510,000 maternal deaths (22%) and 591,000 of the 2,464,000 perinatal deaths (24%) occurring annually around the world.

Anemia also results in reduced energy levels which affect productivity, earning power and even maternal caring practices. Economic losses due to Iron Deficiency Anemia alone are estimated at approximately \$0.32 per capita or 0.6% of GDP.⁶

Many methods have been adopted in controlling anaemia such as education and dietary diversification, iron fortification, iron supplementation and control of parasites such as malaria and hookworm as well as health education on preventive measures. iron supplementation is an

important intervention for those who are at high risk of Iron Deficiency Anemia such as pregnant women but it has been shown that education and supplementation is more effective than either approach alone. A certain bivariate analysis revealed that knowledge, attitude and preventive practices against anaemia were significantly inversely associated with anaemia."

Previous research into maternal knowledge of anaemia showed that women recognized its symptoms but only half considered these a priority health concern. A study carried out to assess knowledge of anemia in pregnancy amongst rural women in Malawi, showed that 96.6% of the women were aware of anemia, but only about two thirds knew its causes, ways of prevention, and treatment. In a Palestine study, many of the women supported pregnancy in older age (84%) which reflects lack of knowledge regarding complications associated with pregnancy at this age. A certain study in eight developing countries discovered that women who visit prenatal health services are often familiar with iron supplements, but commonly do not know why they are prescribed. In developing countries, maternal anaemia is not perceived as a priority health problem by pregnant women. Knowledge of the signs and symptoms of anaemia is limited among rural pregnant women. The recognition of maternal complications associated with anaemia is also low among pregnant women. Sustaining the motivation to continue taking iron tablets and communicating the benefits of iron supplementation which could encourage compliance is lacking as well.

Studies have shown that lack of knowledge of anaemia prevention practices among pregnant women has contributed to the high level of the disorder among them. Increase knowledge of prevention practices and iron-folate supplementation, will improve maternal and peri-natal outcomes. A case-control study carried out in Enugu, Nigeria, showed that increased knowledge of anemia prevention practices by mothers led to a good peri-natal and maternal outcome.

This study was therefore conducted to determine the knowledge, attitude and practices of prevention of anemia in pregnancy amongst antenatal clinic attendees at the Ifako-Ijaiye General hospital, Lagos. The result will be useful for policy makers and other stakeholders in educating pregnant women to improve their knowledge, attitude and practices of prevention of anemia.

MATERIALS AND METHODS

The study was carried out at Ifako-Ijaiye General Hospital in Ifako-Ijaiye Local Government Area located west of Lagos State. The Local Government Area is bounded at the West by Ojokoro Local Council Development Area, east by Ikeja/Ojodu Local Council Development Area and at the North by Ifo Local Government Area (Ogun state).

The hospital was formerly a Primary Health Centre which was upgraded to a secondary health facility. The Obstetrics and Gynecology department was converted to the Maternal and Child Center which was inaugurated in March 2010. The hospital serves as a referral centre to the Primary Health Care Centers and private hospitals within its vicinity. The maternal and child centre has 53 bed spaces with an Operating Theater. The department is divided into five units namely Unit A, Unit B, Unit C, Unit D and Unit E; each unit is headed by a Consultant

Obstetrician and Gynecologist. Each unit runs a weekly clinic on specific days of the week, Monday- Friday. The weekly clinic of each unit records an average of fifty clients per clinic day. The estimated population of clients that attend the antenatal clinic per month was one thousand (1000).

The study design was a descriptive cross-sectional study and a minimum sample size of 220 women were obtained using the statistical formula for descriptive study ($n = z^2 pq / d^2$). A simple random sampling technique was used to select three units out of the five units in the department. All the pregnant women attending these clinics were interviewed until two hundred and twenty (220) participants were obtained.

Data were collected during the first two weeks of July 2010. A structured, pre-tested, interviewer administered questionnaires were used to collect information on socio-demographic characteristics, knowledge, attitude and practices of prevention of anaemia in pregnancy from the sampled population.

Each correct response to the questions on knowledge was scored one mark while each wrong or non response was scored zero. The total score for each respondent was converted to percentages and graded as; poor (<50%), fair (50-70%) and good (>70%). The mean knowledge score in percentage for all the respondents was also calculated. The proportion of participants with scores 70% and above had high level of knowledge, 50-70% moderate level of knowledge and less than 50% poor level of knowledge. The data were computer analyzed using Statistical Package for the Social Sciences (SPSS) version 17 for windows. Data were presented in frequencies, percentages and summary statistics.

Ethical approval was obtained from the Research and Ethics Committee of Lagos University Teaching Hospital and written informed consent was obtained from the participants.

RESULTS

All the questionnaires were properly completed giving a response rate of 100%.

Socio-demographic characteristics of the respondents

The modal age group was 29-33 (32.7%). Most of the respondents were married (95%), had tertiary education (60.9%), and engaged in some form of work (65%), spent between =N=10,000- =N=15,000 monthly on feeding (35.9%) and had household size comprising of <=3 people (51.4%).

Knowledge of prevention of anemia in pregnancy Majority (95%) of the respondents were aware of anemia in pregnancy. The mean knowledge score was 56.5%. Majority (80%) of the respondents understood anemia as low blood level. The proportion of the participants who had knowledge of symptoms of anemia as shortness of breath, dizziness, general weakness, fatigue, headaches and paleness of the face, lips and nail beds were 43.6%, 70.5%, 77.7%, 48.2%, 47.7%, 34.1% respectively. (Table 1)

Concerning sources of information about anemia in pregnancy, respondents identified antenatal clinics (72.3%), leaflets/ books (9.1%), T.V (7.3%), radio (5.9%) and the internet (5.5%) as sources of information.

Most of the respondents correctly knew the causes of anemia in pregnancy could be poor nutrition (80.5%) and bleeding in pregnancy (60.9%) while others knew it could be due to closely spaced pregnancies (25.5%), poor hygiene (39.1%), malaria (36.4%) and worm infestation (22.3%). Concerning the effect of anaemia in pregnancy, majority of the women (72.7%) correctly knew that anaemia in pregnancy could lead to delivery complications such as maternal death (55%), low birth weight (49.1%), pre-term delivery (30.5%) and post partum anemia (29.5%). (Table 1) Respondents correctly knew what was used to treat anemia in pregnancy which included taking iron supplements (80.5%) blood transfusion (50.9%), eating healthful and iron rich diets (87.7%). Majority (90%) of the respondents knew the importance of iron supplements in pregnancy and identified the various reasons for using them which included the health of the mother (83.2%), the health of the baby (85.9%) and the prevention of anemia (80.55%). (Table 1)

Concerning the sources of iron rich foods, many respondents correctly identified red meat (40%), fish (55%) liver (58.2%), fruits (65.9%) and vegetables (76.4%) as sources of iron. (Table 1)

Attitude towards preventing anemia in pregnancy

Majority (74.5%) of the respondents know their hemoglobin status and amongst those who didn't know, only 2.8% didn't ask about the test, 0.9% had asked but had not done the test while 15.6% had done it but were not told their results

Majority (98.2%) of the respondents believed in the importance of regular visits to the antenatal clinics and (80.9%) also agreed that post natal care was important. Majority (90%) of the respondents will rather contact a doctor or a nurse first on noticing any sign of anemia. Most (93.2%) of them agreed that iron supplements improves the health of the mother and the fetus and majority (89.5%) of the respondents agreed that using iron supplements daily was necessary to prevent anemia in pregnancy. Most (42.3%) of the respondents didn't think early marriage could contribute to anemia in pregnancy and 19.6% of them were indifferent (Table 2)

Less than half (48.6%) of the respondents approved the use of contraceptives while 32.3% didn't think contraceptives should be used to prevent closely spaced pregnancies and 19.1% were indifferent about the use of contraceptives (Table 2).

Anemia prevention practices in pregnancy

Majority (89.1%) of the respondents ate at least one source of iron-rich foods in pregnancy. Most (66.9%) of the respondents' admitted that they usually drank tea (tea bags or coffee) with their meals and most (52.7%) of the respondents use iron supplements with milk products. Majority (68.2%) of the respondents were not compliant with their iron supplement. Of these, 49.1%, 5.5% and 13.6% ascribed forgetfulness, non-affordability and side effects as reasons for non-compliant. (Table 3)

Table 1: Respondents knowledge about prevention of anemia in pregnancy

Knowledge about Anaemia	Freq (%), N=220
Meaning of anemia	
Low blood level	176 (80)
Symptoms of anemia	
Shortness of breath	96 (43.6)
Dizziness	155 (70.5)
General weakness	171 (77.7)
Fatigue	106 (48.2)
Headaches	105 (47.7)
Paleness of the face, lips and nail beds	75 (34.1)
Causes of anemia in pregnancy	
Poor nutrition	177(80.5)
Bleeding in pregnancy	134(60.9)
Closely spaced	56(25.5)
Pregnancies	86(39.1)
Poor hygiene	80(36.4)
Malaria	49 (22.3)
Worm infestation	65(29.5)
Effect of anemia in pregnancy	
Post partum anemia	67(30.5)
Pre term delivery	97(44.1)
Low birth weight	160(72.7)
Delivery complications	108(49.1)
Fetal death	121(55.0)
Maternal deaths	177(80.5)
Treatment of anemia in pregnancy	
Taking iron supplements	112 (50.9)
Blood transfusion	193 (87.7)
Healthy diet (Diet rich in iron)	198 (90)
Importance of using iron supplements daily	
Reasons for using iron supplements	
Mother's health	183 (83.2)
Baby's health	189 (85.9)
Prevention of anemia	177 (80.5)
Sources of iron (Iron rich foods)	
Red meat	88 (40.0)
Fruits	145 (65.9)
Vegetables	168 (76.4)
Fish	121 (55.0)
Liver	128 (58.2)

Table 2: Respondents' attitude towards prevention of anemia in pregnancy.

Attitudes	Freq (%) N=220
Awareness of Haemoglobin status	
Aware	164(74.5)
Not aware	56 (25.5)
Reasons for not knowing their haemoglobin status	
Didn't ask about the test	2(0.9)
Hasn't done the test	2(0.9)
Yet to collect result	34(15.6)
Importance of regular visits to the ANC and PNC	
Important	216(98.2)
Not important	4(1.8)
First contacts on noticing signs of anemia	
Doctor/nurse	98(90.0)
Traditional birth attendant	10(4.5)
Herbalist	5(2.3)
Family/friends/neighbors	7(3.2)
Iron supplements improves the health of the mother and foetus	
Agree	205(93.2)
Disagree	4(1.8)
Indifferent	11(5.0)
Use of iron supplement daily	
Approve	197(89.5)
Disapprove	14(6.4)
Indifferent	9(4.1)
Early marriage	
Approve	84(38.2)
Disapprove	93(42.3)
Indifferent	43(19.5)
Contraceptive use	
Approve	107(48.6)
Disapprove	71(32.3)

Table 3: Respondents' practices of prevention of anemia in pregnancy

Practices	Freq (%) N=220
Eating at least one source of Iron-rich meal	
Yes	196(89.1)
No	24(10.9)
Drinking tea(tea bags or coffee) with meals	
Yes	147(66.9)
No	73(33.2)
Use of iron supplements	
Yes	116(52.7)
No	104(47.3)
Compliance with daily use of iron supplement	
Yes	70(31.8)
No	150(68.2)
Reasons given for non-compliance	
Forgetfulness-	108(72.0)
Couldn't afford it	12(5.5)
Side-effects	30(20.0)

DISCUSSION

In this study, the modal age group of the pregnant women was 29-33 (32.7%) and most of them (95%) were married. Majority of them (95%) were aware of anemia in pregnancy but the mean knowledge score was 56.5%. This is similar to a study carried out among rural women in Malawi, where 96.6% of the women were aware of anemia, but only two thirds had good knowledge. It's however not in agreement with the findings among Hill women in India where the mean score obtained by subjects on knowledge of anaemia was only 21.32 per cent.^{20,21}

High level of knowledge was reported by the participants with regards to the understanding of anemia as low blood level (80%). The proportion of respondents who had understanding of anemia in pregnancy was also similar to those who had understanding of anaemia in Pregnancy in Nablus district in Palestine.

In this study, most of the respondents knew dizziness (70%) and general weakness (77.7%) as symptoms of anaemia in pregnancy but less than half knew the other symptoms such as shortness of breath (43.6%), fatigue (48.2%) headaches (47.7%), pallor of the lips, face and nail beds (34.1%). This shows that mothers have heard about some symptoms of anaemia but their knowledge is not complete. The result is similar to reports among women in Malawi where most of them correctly indicated the signs of anaemia.²⁰ These proportions were lower than those who identified these symptoms in Palestine where most of the respondents knew fatigue (88.9%), general weakness (84.5%), dizziness (93.3%), headaches (75.6%) and pallor of the lips, face and nail beds (80%) as symptoms of anaemia. This shows that pregnant women in this Lagos study have lower level of knowledge compared to the Palestinian women.²² The proportion was however higher than that obtained in a study among Nicaraguan women where most of them did not know any symptoms of anemia. Most of the respondents knew the main causes of anaemia to be poor nutrition (80.5%), bleeding in pregnancy (60.9%) while only few of them knew other causes of anemia such as closely spaced pregnancy (25.5%), poor hygiene (39.1%), Malaria (36.4%) and worm infestation (22.3%). This could be a result of incomplete information given to the women during antenatal clinics. Their knowledge was similar to that of women in Malawi where most of them knew the causes of anemia but much higher than that of women in India where only 33.2% of the women knew the reasons of anemia.^{20,21}

Majority of the respondents indicated that taking iron supplements (80.5%) and eating iron rich food (87.7%) are treatments for anemia, whereas only 50.9% reported blood transfusion as a form of treatment. This result is similar to the study in Malawi where 78.5% of respondents indicated that eating adequate amounts of food is a means of preventing anaemia, and iron supplementation and blood transfusion were spelt out as the main ways of treating anaemia.²⁰

Most of the respondents were able to identify fruits (65.9%), vegetables (76.4%), fish (55%), liver (58.2%) as sources of iron. Only 40% could identify meat as a source of iron. This result is similar to the findings in Armenia where 37% of the study group correctly selected red meat, 26% - vegetables, 73% - fruits. This proportion is low in view of the fact that meat is a source of heme-iron which is better absorbed compared to the non-heme iron. Iron absorption is influenced by the type of dietary iron consumed. Absorption of heme iron from meat proteins is very efficient, it ranges from 15% to 35% and it is not significantly affected by diet.

In contrast, 2% to 20% of non heme iron in plant foods such as rice, beans, and vegetables is absorbed. Non heme iron absorption is significantly influenced by various food components.

Majority of the respondents approved of the daily use of iron supplements (89.5%) and agreed that iron supplements improve the health of the mother and the fetus (93.2%). This result is similar to the findings among Palestinian women where 96.3% of the respondents approved the use of iron supplements daily and 82.2% recognized the importance of iron supplements on the mother and the fetus.²³

Only 48.6% of the respondents approved of the use of contraceptives. This is not surprising since the current prevalent rate for contraceptive use in Nigeria is 11%-13%. A recent study in Zaria reported that contraceptive prevalence was 12.5%. The situation is quite different in other countries where at least 73.3% support the use and use them.²⁴

Most of the respondents (66.9%) drank tea with their meals while 52.7% drank milk and its products with iron supplement. This is a poor practice and it shows lack of knowledge regarding the use of tea and its inhibition role in iron absorption. Inhibitors of iron absorption include polyphenols (in certain vegetables), tannins (in tea), phytates (in bran) and calcium (in dairy products). The results are similar to the ones obtained in another study where 53.7% drank tea with meals and 52.7% of the respondents use iron supplements with milk and its products.²⁵

Routine supplementation is warranted in populations in which iron deficiency is common. The study reported that most of the respondents (68.2%) did not comply with the daily use of the iron supplement, only 31.8% used it correctly. This is similar to the result obtained from Iran where only 43.3% used the tablet correctly. The result is however in contrast with the findings in Malawi, where out of those who reported to have taken the supplements, 92.3% had taken them on a daily basis,²⁰ in China where 92.7% of women consumed 80% to 100% of supplements as instructed and in Bicol, Philippines where 85% (0.85 +/- 0.23) reported taking the drugs daily.

Most of those who skip the drug said it was due to forgetfulness (72%) while 20% of them attributed it to side effects and only 5.5% of them could not afford the supplement. This suggests that there is potential for pregnant women to comply with the iron supplementation regimen if issues pertaining to side effects and forgetfulness are overcome.

CONCLUSION

Awareness of anaemia was high (95%) but the level of knowledge of prevention of anemia in pregnancy was fair (56.5%) among the antenatal clinic attendees. Majority (74.5%) of the respondents knew their hemoglobin status. Less than half (46.3%) of the respondents thought contraceptives could help prevent anemia in pregnancy by reducing closely spaced pregnancies.

Most the respondents had poor practices concerning prevention of anaemia as most of them (66.9%) drank tea with their meals while 52.7% drank milk and its products with iron supplement. Non-compliance with the use of iron supplement was reported among 68.2% of the respondents.

It is therefore important to give up to date and complete

information to improve the knowledge of pregnant women towards preventing anemia in pregnancy. Close family members of pregnant women should also be educated on the importance of compliance with iron supplements. Physicians and other health professionals should pay more attention to teach pregnant women good and long term dietary habits as a part of an overall approach to health promotion. However, once anemia is established, a period of iron supplementation is almost certainly necessary in order to improve the iron status of the mother and prevent further consequences of anemia. There should be proper counseling of pregnant women on the importance of knowing their hemoglobin status by physicians.

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