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Prevalence of Anaemia among Pregnant Women at Booking at the Rivers State University Teaching Hospital (RSUTH): An Update

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ABSTRACT

Background: Anaemia in pregnancy is an indirect cause of maternal mortality. Furthermore, it is an important risk factor for perinatal mortality especially in the developing countries of the world. The global prevalence of anaemia in pregnancy is between 31.5% to 42.4%. The Nigerian demographic survey reports that 61.1% of pregnant women are anaemic.
Aim: To determine the prevalence anaemia among pregnant women at booking at the Rivers State University Teaching Hospital (RSUTH)
Methodology: This was a six-month cross-sectional retrospective study of pregnant women at booking at the RSUTH. Biodata and results of Packed Cell Volume (PCV) were obtained from patients' case notes. The cut-off level for anaemia used for the study was PCV <33%. Data was analysed using SPSS version 25.
Results: A total of 370 pregnant women were attended to for the period under review. The mean age was 31-years. The mean gestational age at booking was 19-weeks. The modal parity was 2. Two hundred and sixty-four (71.4%) had tertiary level of education, 95 (25.7%) secondary level of education while 7 (2%) of respondents had primary level of education. 3 (0.85%) did not provide their level of education. Two hundred and ninety (78.4%) of the pregnant women had PCV less than 33%.
Conclusion: The study revealed the prevalence of anaemia among pregnant women at booking at the Rivers State University Teaching Hospital as 78.3%. Pregnant women should be encouraged for ANC early, to be compliant with their routine antenatal drugs as well preventing anaemia.

INTRODUCTION:

Anaemia in pregnancy is an indirect cause of maternal mortality.[1] Researchers believe that anaemia is the driving force for lack of oxygen for mother and fetus; a reduction below acceptable levels both decrease the ability of blood to carry oxygen due to a decrease in the total number of erythrocytes and a diminished concentration of haemoglobin per erythrocyte or a combination of both. Generally, a haemoglobin concentration below 11.0 g/dc or parked cell volume (PCV) of less than 33.0% is regarded as Anaemia during pregnancy by the World Health Organization (WHO).[2]

Anaemia in pregnancy is believed to be one of the intractable public health challenges in the developing countries and the commonest complications in pregnancy in sub-Saharan Africa especially in the advent of HIV/AIDS pandemic.[3] Furthermore, the WHO estimates that anaemia affects over 50% of the pregnant women in developing countries, Nigeria inclusive.[4] In addition, the prevalence of Anaemia in pregnancy in Nigeria is 60.0% with approximately 7% of these gravid women said to be severely anaemic.[4] These factors contributing to anaemia in pregnancy are multi-factional and are different across the geographical regions of the countries.[4]

Scholars have demonstrated that anaemia in pregnancy can be relative or absolute- due to moral physiological phenomenon that occurs in pregnancy as a result of increase in plasma volume (approximately 45.0% in injection and 50-60% in true pregnancy) red cell mass accounts for the relative or physiological anaemia.[5] However, for the absolute anaemia, it is being explained from the point of view that true decrease in red cell mass, involving an increase in red cell destruction as in haemoglobin, nuclear and bacteria infection like urinary tract infection Increased red cell destruction as in bleeding or deceased red cell production as in nutritional deficiencies or chronic diseases.[3] Predisposing factor for anaemia in pregnancy are: young age, gradmultiparity, low socio-economic status, illiteracy, ignorance, and short inter-pregnancy intervals.[3]

Aim:

To determine the prevalence anaemia among pregnant women at booking at the Rivers State University Teaching Hospital (RSUTH)

METHODOLOGY:

This was a six-month cross-sectional retrospective study of pregnant women at booking at the RSUTH. Biodata and results of Packed Cell Volume (PCV) were obtained from patients' case notes. The cut-off level for anaemia used for the study was PCV <33%. Data was analysed using SPSS version 25.

Sample size:

The sample size is 370 was calculated using the Kish Leslie formula for cross-sectional studies calculated, based on 60% prevalence of pregnant women with anaeemia reported by the Nigerian Demographic health survey and a confidence level of 95%.

$n = Z^2Pq/d^2$
n is the desired sample size
Z is the standard normal deviate usually set at 1.96 which corresponds to the confidence
Interval
P is the proportion of patients with anaemia which is 60%
q is the complementary proportion equivalent to (1), that is 1 – 0.6 equal to 0.4
d is the degree of accuracy desired which is 5.0% (0.05)

$n = 1.96^2 \times 0.6 (1-0.6)/0.05^2$
= 368.8

This was rounded up to nearest whole number, the sample size
= 370

Participants:

Descriptive cross-sectional study'

Inclusion criteria:

Pregnant women who gave consent

Exclusion criteria:

Sickle cell disease
Hepatic impairment
Coagulation disorder
Pregnant women who did not give consent for the study

Ethics: Guidelines in line with Helsinki's declaration (revised 13th edition

RESULTS:

A total of 370 pregnant women were attended to for the period under review. The mean age was 31-years. The mean gestational age at booking was 19-weeks. The modal parity was 2. Two hundred and sixty-four (71.4%) had tertiary level of education, 95 (25.7%) secondary level of education while 7 (2%) of respondents had primary level of education. 3 (0.85%) did not provide their level of education. Two hundred and ninety (78.4%) of the pregnant women had PCV less than 33%.

Table 1: Summary of results

Number of subjects	350
Mean age (years)	31
Mean gestational at booking (weeks)	19
Modal parity	2
Prevalent of PCV (%)	78.4

Table 2: Educational level of subjects

Educational level	Number (n)	Percentage (%)
Tertiary	256	71.4
Secondary	90	25.7
Primary	7	2.0
Non specified	3	0.9

Table 3: Prevalence of Anaemia according to educational level of subjects

Educational Level	Number (n)	Percentage (%)
Primary	7	2.0
Secondary	80	22.9
Tertiary	187	53.5
Total	274	78.4

DISCUSSION

This study shows the prevalence of anaemia in pregnancy as 78.3% (table 1). When compared with the finding gotten by Eli et al where they investigated 380 antenatal clinic attendees in the study prevalence of anaemia at booking amongst antenatal clinic attendees was 84% in some health facilities in Ogoni, south-south Nigeria, this result was lower than that obtained in our study which was 78.4%. A lot of factors might have contributed to this such as compliant to their routine ante natal clinic medications, poverty, low economic status, their level of education and the overall low economic status of women in the rural community.[1] In another study by Usang were they evaluated prevalence of anaemia in urban and rural settings in Cross Rivers state, prevalence were higher in rural settings as high as 76% and as low as 40% in urban communities.[2]

In a research work conducted by Nonye-Enyidal et al in which they reviewed 9990 antenatal mothers in at booking the prevalence of anaemia was 86.4% at the Rivers State University Teaching Hospital which was higher than the findings gotten in our study which was 78.3%. In addition, the study showed a relationship with anaemia, the educational level of the woman and parity.[3] Higher prevalence of anaemia in pregnancy was linked with lower level of education and high parity.[3] These findings were similar with our research findings where all the patients with primary level of education were anaemic (table 3).

In a study by Babah OC et al were 11,582 pregnant women were evaluated for anaemia in public hospitals in Lagos and Kano, the prevalence of anaemia in pregnancy was 41.2%, this was lower than the figure gotten in our study.[6] The study further revealed that 4 in 10 women had moderate to severe anaemia during pregnancy.[6]

Scholars have revealed the prevalence of anaemia globally is 41.8%, in Africa 56% and Nigeria 55%; these figures are all lower than that gotten from our study.[2,4,5]

This study revealed that anaemia in pregnancy had a strong correlation with the educational level of the pregnant (tables 2 and 3). All the women with primary level of education had anaemia in pregnancy, over 70% of the pregnant with secondary level of education and approximately 50% of the pregnant women had anaemia in pregnancy. The findings was in agreement with the study by Ekundare et al and Ajepe et al.[4,5]

Irinyenikan TA et al in a study carried out among 400 ante natal clinic attendees at University of Medical Sciences Ondo State south west Nigeria the prevalence of anaemia was 40%.[7] This was not in agreement with our research findings of 78.4%.

The prevalence of anaemia among pregnant women at booking at the Rivers State University Teaching Hospital as 78.4%. Pregnant women should be encouraged for ANC early, to be compliant with their routine antenatal drugs as well preventing anaemia.

In Nigeria it is paramount that in clinical practice ante natal policies should emphasize on routine screening for those with risk factors for anaemia and individualize for pregnant women incorporating dietary intervention, iron supplementation and referral to specialized centres. Furthermore, those those involved in making policy should allocate resources to make provisions for adequate ante natal care services including routine screening for anaemia, especially among those vulnerable, training of health care professionals and making sure iron supplementation is available and affordable.

CONCLUSION:

The study revealed the prevalence of anaemia among pregnant women at booking at the Rivers State University Teaching Hospital as 78.3%. Pregnant women should be encouraged for ANC early, to be compliant with their routine antenatal drugs as well preventing anaemia.

There is need to emphasize on the importance for routine screening anaemia during antenatal visit especially for those with risk factors and individualized management, strategically targeting at risk pregnant women. This includes dietary intervention with iron

supplementation and referral to specialized clinic. In addition, policy makers should allocate resources to ensure access to adequate antenatal care services including routine screening anaemia, particularly among vulnerable population, Training for health care professionals and ebsuring availability and affordability and accessible iron supplementation.

Conflict of interest: Authors have declared that there was no conflict of interest.

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