

EVALUATION OF PREVALENCE OF ANAEMIA IN PREGNANCY AMONG PREGNANT MOTHERS ATTENDING ANTENATAL CLINIC IN FOUR NURSING TRAINING HOSPITALS IN EBONYI STATE.

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ABSTRACT

The prevalence of Anaemia in four Nursing training hospitals in Ebonyi State was evaluated using survey research design. The four hospitals used are Federal Medical Centre, (FMC) Abakaliki, Ebonyi State, University Teaching Hospital (BSUTH), Mile 4 Hospital Izzi and Presbyterian Hospital Uburu. A total of 1348 women were randomly selected from the antenatal clinics of the hospitals from January – December 2015. A checklist was used to collect the data from their antenatal records. The results show that the prevalence of anaemia in pregnancy was 56% which is an indication that anaemia is still a serious pregnancy problem in the area. The results also show that anaemia is high among mothers below 25 years of age, primigravida and during the second trimester. It is recommended that Nurses and Midwives should emphasis the preventive measures for anaemia during their booking visits with follow-up programme to prevent death and disability that result from anaemia in pregnancy.

Keywords: prevalence Anaemia in pregnancy, maternal Age. Gestational age, parity.

Introduction

Anaemia in pregnancy is common problem in most developing countries and a cause of morbidity and mortality especially in malaria endemic area like Nigeria (Allen 2000). WHO stated that more than half of the pregnant women in the world had haemoglobin level, 11g/dl which is an indication of anaemia (Nagarji 2003). The ability to meet the demand of iron and vitamins in the body during pregnancy result to dietary deficiency. Infection and other disease conditions give rise to anaemia (WHO1994). Anaemia in pregnancy can be classified into low, moderate (7-9.9g/dl) and severd (</g/dl) (Lamina 2003).

During pregnancy, the maternal plasma volume gradually expands by 50% with total increase of red blood cells up to 25%. This relatively low haemoglobin reaches minimum in the second trimester and the haemoconcentration level starts to rise again in the third trimester. The haemodilution is not pathological but physiological changes needed for foetal development. Failure of the plasma volume to expand in the second trimester is associated with increased risk of pre-eclampsia and intra-uterine growth retardation (Brabin et al 2001).

It is estimated that iron deficiency anaemia affects as many as 200 million people in the world. The iron requirement during first trimester is low (0.8mg/day) but increase to 6.3mg/day in the second and third trimester (Idowu et al 2005).

In pregnant women, the consequences of anaemia include increased maternal death and disability. Anaemia could be prevented in pregnancy by eating adequate diet rich in iron. Folate and vitamin C as well as avoidance of drinks that decrease iron absorption like tea and coffee. Other methods of prevention include provision of micronutrient supplementations throughout pregnancy and up to 3 months after delivery. The supplement should contain 60mg of elemental iron and 400mg of folate daily. In malaria endemic area like Nigeria measures must be taken to prevent malaria and hookworm infestation in pregnancy (Allen 2000).

As the researchers teach and supervise pregnant mothers in the antenatal clinics in Ebonyi State they encountered serious cases of anaemia in pregnancy and then decided to evaluate the prevalence of this condition in the training hospitals. The study aimed at assessing the effect of maternal age, parity and gestational age on the prevalence of anaemia in pregnancy in the four nursing training hospitals in Ebonyi State of Nigeria. The results of the work provide base line information on the effect of these factors on the prevalence of anaemia in the area. It also forms basis for awareness campaign on the prevention of anaemia in pregnancy (Steer (2000).

The theoretical framework of this study is based on Mercer's theory of maternal role attainment. The theory assumed that the mother's role pertaining to her infant reflects the mother's

compliance in mothering role through growth and that the infant is considered active partner in the maternal role-taking process, affecting and being affected by the role attainment (Meighan 2002). This study based on Mercer's theory assumed that if mother's health is maintained during pregnancy there will be a better outcome in terms of the baby. In other words, prevention of anaemia in pregnancy is part of the mother's role and if it is met, becomes of benefit to her and that of the child.

Materials and Method

A survey research design was used for the study. The study was conducted at four hospitals used as Nurses training hospitals for Ebonyi State University Department of Nursing. The hospitals were Federal Medical Centre Abakaliki (FMC), Ebonyi State University Teaching Hospital Abakaliki (ESUTH), Mile Four Hospital (Mile 4 Hospital), Izzi and Presbyterian Joint Hospital (PJH), Uburu. A total of 1350 pregnant mothers were randomly selected for the study from the Antenatal Clinics of the hospitals from 1st January - 31 December 2015. The number of women selected per hospital are as follows; ESUTH=320, FMC=310, Mile 4 Hospital=280 and PJH=440. The data were collected using a checklist as the instrument. The checklist was constructed by the researchers and tested in a pilot study at Mater Hospital Afikpo, which is also a Nursing Training Institution in Ebonyi State. The validity of the instrument were determined by two lecturers of Ebonyi State University that were expert in test construction. The Reliability were determined by split-half

with co-relation co-efficient of 0.86. This indicated that the instrument was reliable. The data were collected from the hospital record of the selected mother by the researchers.

An introductory letters from the researchers were sent through the Heads of the Nursing Units to the Chief Medical Directors of the hospitals to obtain permission to conduct the research. Ethical clearance were obtained from Ebonyi State University Ethical Committee. Confidentiality was assured and the data collected were used only for statistical analysis. The data collected were analysed using SPSS version 20.

Results

Effects of maternal age, parity and gestational age on the prevalence of Anaemia in the selected hospitals are shown on Table 1. The Results of the effect of maternal age, parity and gestational age on the prevalence of anaemia among mothers attending antenatal clinic of four nursing training Hospitals in Ebonyi State show that out 1348 mothers investigated 22% (296) were severely anaemic while 34% (470) were moderately anaemic. This shows that 56% of the pregnant mothers attending antenatal clinics in the four hospitals were either, mildly, moderately or severely anaemic. The results show that among the mothers between the ages of 16-25, 26-35 and 36-45 years those with severe anaemia ranged from 1.6% at FMC and PJH to-2.9% at mile 4 Hospital. The results also show that severe anaemia occurred more in the mothers of age 16-25 followed by those between 36 and 45.

Table 1: Effect of Age, Parity and Gestational Age on Anaemia in Pregnancy Among Mothers

		FMC = n 310								Mile 4 Hospital n=280							
		>11g/dl		9-10.9p/dl		7-8.9g/dl		<7g/dl		>11g/dl		9-10.9g/dl		7-8.9g/dl		<7g/dl	
		n	%	N	%	n	%	N	%	N	%	N	%	n	%	n	%
Age	16-25	41	13.2	30	10	18	5.8	7	2.3	48	14.3	45	16.1	16	5.7	8	2.9
	26-35	63	20.3	52	16.8	16	5.2	5	1.9	40	14.3	30	10.7	10	3.6	5	1.8
	36-45	42	13.5	19	6.1	10	3.2	7	1.6	30	13.5	30	10.7	11	3.9	7	2.5
	Total	146		101		44		19		118		105		37		20	
Parity	Nulliparous	39	12.6	37	10	23	7.4	19	6.1	30	10.7	49	17.5	14	5	10	3.6
	2-3	36	11.6	44	14.2	10	3.2	5	1.6	48	17.1	26	9.3	11	3.9	4	1.4
	4<	38	12.3	34	11	21	6.8	10	3.2	36	12.9	32	11.4	13	4.6	7	2.5
	Total	113		109		54		34		114		107		38		21	
Gestational age	1 st trimester	40	12.9	36	11.6	20	6.5	6	1.9	40	14.3	31	15.5	14	6.8	6	2.2
	2 nd trimester	30	9.7	40	12.9	35	11.3	10	3.2	35	12.5	37	11.5	14	7.1	8	2.4
	3 rd trimester	35	11.3	33	10.6	20	6.5	5	1.6	36	12.9	30	12.9	18	7.1	4	1.4
	Total	105		109		75		21		111		100		51		18	

Table I continued

		EBSUTH n= 320								PHU n=440							
		>11g/dl		9-10.9p/dl		7-8.9g/dl		<7g/dl		>11g/dl		9-10.9g/dl		7-8.9g/dl		<7g/dl	
		n	%	N	%	N	%	N	%	N	%	N	%	n	%	n	%
Age	16-25	51	15.9	41	12.8	19	5.9	8	2.5	52	13.7	45	11.8	49	5	11	2.9
	26-35	48	15	36	11.3	10	3.1	5	1.6	69	18.2	58	15.3	20	2.6	8	2.6
	36-45	42	3.1	40	12.5	14	4.4	6	1.9	48	12.6	36	9.5	36	4.2	10	1.6
	Total	141		117		43		19		169		137		105		29	
Parity	Nulliparous	55	17.2	36	11.3	19	5.9	10	3.1	54	14.2	39	13.2	15	3.9	8	3.2
	2-3	40	12.5	30	9.4	10	3.1	4	1.3	62	16.3	52	19.3	46	6.8	11	4.2
	4<	65	20.3	33	10.3	13	4.1	5	1.9	58	10	48	12.6	37	7.4	10	3.4
	Total	160		99		42		19		174		139		98		29	
Gestational age	1 st trimester	48	15	25	7.8	13	4.1	8	2.5	68	17.9	40	12.1	24	7.9	10	2.6
	2 nd trimester	56	17.5	40	12.5	19	5.9	12	3.8	50	13.2	56	14.7	36	9.5	14	3.6
	3 rd trimester	50	15.6	28	8.8	13	4.1	8	2.5	60	15.8	40	10.5	26	6.8	10	2.6
	Total	154		93		45		28		178		136		92		34	

The ANOVA results show that age has significant effect (on the prevalence ($P \leq 0.05$) of anaemia among pregnant women (Table 2). The results also show that there is significant difference ($P \geq 0.05$) in the prevalence of anaemia among pregnant women attending the four hospitals (Table 3). The results also show that the prevalence of severe anaemia in primigravida, para 2-3 and para 4 and above ranged from 1.3% at EBSUTH to 6.1% at FMC. This shows that severe anaemia is highest among the primigravida followed by those with parity of 4 and above. The ANOVA results

show that parity has significant effect ($P \leq 0.05$) on the prevalence of anaemia among pregnant women (Table 2). The results also show that severe anaemia in the 1st trimester and 3rd trimester ranged from 1.9-2.6g/dl, 2.9-36g/dl and 1.6-26g/dl respectively. The ANOVA results show that gestational age has significant effect on the occurrence of anaemia in pregnancy. The results indicate that severe anaemia is highest during the second trimester.

Table 2: ANOVA: Effects of Maternal Age, Parity and Gestational Age of The Women Attending the ANC of the ANC of the Four Hospital

	Sum of squares	Df	Mean square	F-value	Sig
Between Groups	106.278+38592	3	355.759	1.291	.280
Within Groups	39660.000	140	275.662		
Total		143			

TABLE 3: Effects of Maternal Age, Parity and Gestational Age on the Severity of Anaemia in Pregnancy (Normal, Mild, Moderate and Severe)

		Sum of squares	Df	Mean square	F	Sig
FMC	Block 1 Between Groups	84,222	2	42,111	.158	+.846
	Age Within Group	8260.000	33	250.303		
	Parity Total	8344.222	35			
Mile 4	Block 2 Between Groups	241.722	2	120.861	.458	+.636
	Within Group	8707.250	33	263.856		
	Total	8948.972	35			
EBSUTH	Block 3 Between Groups	26.889	2	13.444	042	+.959
	Within Groups	10679.000	33	322.606		
	Total	10705.889	35			
Uburu	Block 4 Between Groups	22.9056	2	114.528	.365	+.697
	Within Groups	10364.583	33	314.078		
	Total	10593.639	35			

No Significant difference

Discussion

The results of this study show 56% prevalence of anaemia in the selected hospitals is an indication that anaemia in pregnancy is a serious problem in the State. This is in line with

WHO (1994) and also with Idowu et al (2005). This results also show that severe anaemia is more common among women who are primigravida and mothers whose age were below 25 years of age when compared with multigravida and mothers above age of 26

years. This is an indication that primigravida and pregnant mothers whose ages are below 26 are more at risk of maternal death and disability as a result of severe anaemia. The high prevalence of anaemia in primigravida and young mothers below the age of 26 may be attributed to the fact that these groups of women have not acquired enough knowledge about anaemia in pregnancy and method of its prevention. This may also be attributed to their biological developmental stage, as highlighted by WHO (2001) that women who become pregnant at early age share nutrient with their babies since they are also growing. This implied that during the antenatal booking nurses should pay special attention to diet rich in iron, folate and vitamin C as well as supplementation of these drugs during health education. They should also be educated on how to prevent malaria.

Severe anaemia was recorded during the 2nd trimester and this corresponded with the period of haemodilution. This shows that anaemia is aggravated by the physiological haemodilution. These results also show that there is no significant difference in the prevalence of anaemia in the four hospitals studied. This is surprising because one expects that Mile 4 hospital and Presbyterian Hospital Uburu that serve rural populace to have higher prevalence of anaemia when compared with F.M.C. and EBSUTH that serve mostly urban populace.

Conclusion and Recommendation

It could be concluded from the study that anaemia is still a major risk factor during pregnancy in Ebonyi State and the at-risk mothers include the primigravida, mothers with age below 26 years and those with gestational age at 2nd trimester. Considering the at-risk group, it is recommended that early booking

should be encouraged, and anaemia preventive measures should be taken seriously and must not be missed. There should also be a follow up programme for the at-risk mothers to prevent death and disabilities from anaemia in pregnancy.

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