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EDITORIAL COMMENT

African Journal of Nursing and Health Issues publishes original research articles, case studies, case series, review of literature, systematic review of literature, position papers that are unique to Nursing and other healthcare specialties. The journal serves as a platform for dissemination of research discovery, innovative ideas capable of promoting individual, family and societal health. The 2019 edition contains 100% original research articles as shown below:

- I. Demographic Factors as Correlates of Family Wellbeing among Childless Couples in Ibadan North East Local Government Area of Oyo State.
- II. Perceived Influence of Chemotherapy on the Quality of Life of Patients Living with Cancer Undergoing Palliative care in the University College Hospital, Ibadan, Nigeria.
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- IV. Mental Health Education and Access to Mental HealthCare Utilization in Southwest Nigeria
- V. Compliance with Routine Antenatal Medications among Pregnant Women in A General Hospital in Lagos State, Nigeria: A Pilot Study
- VI. Determinants of Assisted Reproductive Technology (ART) Utilization among Women Attending a Tertiary Health Institution in Benin City, Edo State
- VII. Family Support as Correlate of Well-Being among People Living with HIV/AIDS in Ibadan Nigeria
- VIII. Experiences of Gender-Based Violence among Female Staff and Students of a University in Southwestern Nigeria.
- IX. Awareness and Practice Measures of Obstetric Fistula among Pregnant women Attending Antenatal Clinic at Adeoyo Maternity Teaching Hospital in Ibadan.
- X. Adolescents Sexual Behaviour in a Selected Secondary School in Ibadan.
- XI. Nurses' Awareness and Practice of Hospital Discharge Planning Process: A Feasibility Study.
- XII. Cultural and Clinical Implications of Cord Care Practices among Women of Saki West Local Government, Oyo State, Nigeria.

The percentage of research articles in the 2019 edition makes it informative, educative and persuasive. It is recommended for clinicians, health professionals and students. All contributors, reviewers, subscribers are sincerely acknowledged.

Prof. Prisca Adejumo,
RN, PhD, FWACN, IIWCC
(*Editor-in Chief*)

COMPLIANCE WITH ROUTINE ANTENATAL MEDICATIONS AMONG PREGNANT WOMEN IN A GENERAL HOSPITAL IN LAGOS STATE, NIGERIA: APILOT STUDY

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Abstract

Background: Anaemia and malaria in pregnancy are of concern in Africa and particularly in Nigeria because they predispose to increased maternal and infant mortality rate. However,adequate use of routine antenatal medications by pregnant women can reduce the burden of malaria and anaemia in pregnancy.

Aim: This study assessed level of knowledge of, and compliance with routine antenatal medications. It also identified factors associated with compliance among pregnant women in a General Hospital in Lagos, Nigeria.

Methods: A cross-sectional descriptive research design was used. One hundred and ninety- three pregnant women in the second or third trimesters at the antenatal clinic of Surulere General Hospital were recruited in March 2017, using purposive sampling technique. The instrument for data collection was a validated structured questionnaire, with reliability co-efficient of 0.70. Data were analyzed using both descriptive and inferential statistics. Associations between paired variables of interest were performed, while level of statistical significance was reported at a P-value of less than 0.05.

Result: Findings revealed that only 76 (39.4%) of the respondents had adequate knowledge of routine antenatal medications though a larger proportion 166(86.0%) had good level of compliance. The study concluded that respondents' level of compliance is not associated with their knowledge of routine antenatal medications but likely to be as a result of direct observed therapy practiced in the study setting.

Key words: *Knowledge, Compliance, Antenatal, Medications, Pregnant Women*

BACKGROUND

Antenatal care (ANC) remains a key strategy to improved maternal and infant health. Its activities are directed at reducing maternal and infant mortality, thus it was recommended that maternal and new-born health care programmes should include specific interventions directed at achieving the goal of improved maternal and new-born health and survival and instituted the focused antenatal care, which is an antenatal care model, comprised of the essential routine care and situational care^{1,2,3}. Focused antenatal care activities are aimed at: confirmation of pregnancy, assessment of maternal and fetal well-being, monitoring of progress of pregnancy, detection of problems complicating pregnancy (e.g., anaemia, hypertensive disorders, bleeding, malpresentations, multiple pregnancy), and other reported complaints. Tetanus immunisation, anaemia prevention and control (iron and folic acid (IFA) supplementation), information and counselling on self-care at home, nutrition, safer sex, breastfeeding, family planning, healthy lifestyle, birth planning, advice on danger signs and emergency preparedness are all part of the essential routine care. The situational antenatal care include: Human immunodeficiency virus (HIV) testing and counselling, intermittent preventive treatment (IPT) of malaria, promotion of utilization of insecticide treated nets (ITN), deworming and assessment of female genital mutilation^{1,2,3}. Still within the context of routine antenatal care and integration of care, ⁴new series of recommendations were issued on quality of antenatal care for positive pregnancy experience among which

is that; pregnant women are expected to take daily oral iron and folic acid supplements with 30mg to 60mg elemental iron and 400µg(0.4mg) folic acid to prevent maternal anaemia, puerperal sepsis, low birth weight and preterm birth. The recommendation also maintains that in malaria-endemic areas in Africa, intermittent preventive treatment with sulfadoxine-pyrimethamine (IPTp-SP) be given to all pregnant women under direct observation therapy from the second trimester, and doses should be given at least one month apart, with the objective of ensuring that at least three doses are received⁴. According to a group of researchers^{5,6}, access to antenatal health visits and routine antenatal medications can prevent death from malaria, anaemia, and hypertensive disorders, while death due to sepsis can be averted by screening for prenatal maternal infection and sexually transmitted infections (STIs) during antenatal visits. Other direct causes of maternal deaths, including obstructed labour, complications of anaesthesia or caesarean section, and ectopic pregnancy, can be prevented with access to antenatal care, skilled birth attendant, and basic/comprehensive emergency obstetric care^{5,6}. However, factors that prevent women from receiving or seeking care during pregnancy and childbirth were identified as poverty, distance, lack of information, inadequate services and cultural practices⁵. Anaemia and malaria in pregnancy are common causes of concern in Africa and particularly in Nigeria because they predispose to increased maternal and infant mortality rate and the adequate use of routine antenatal medications by pregnant

women could reduce the burden of malaria and anaemia in pregnancy⁷. During pregnancy, a variety of physiological changes occur, such as changes in the blood circulatory system, permitting normal fetal growth, there is an increase in the circulating plasma volume, heart rate and iron requirements, and reduction in systemic vascular resistance, that brings about the increase in cardiac output, necessary to sustain pregnancy, if this is met with poor intake of iron (low compliance) it constitutes the principal causes of deficiency⁸.

Iron deficiency anaemia during pregnancy remain highly prevalent in Senegal because of low compliance with iron supplementation^{9,10}. In their study six prenatal centers in Dakar were randomly assigned to either a control group in which women received routine prenatal visits, including prescriptions to purchase iron/folic acid tablets, compliance was assessed 20 weeks after enrolment by pill count and interviews, and it was 48% and 86% in the control and intervention groups, they therefore concluded that improving access to iron/folic acid for pregnant women visiting health centers could dramatically increase their compliance, and improve iron status thus decrease the incidence of anaemia¹⁰. In a recent study¹¹, on factors associated with compliance with prenatal iron/folate supplementation among women in Mecha district, Western Amhara, from a total of 634 women were included in the study, the socio-demographic characteristics revealed that the mean age of women was 27 with standard deviation ± 5.27 years old. More than half of the women (57.2%) were aged 25-34 years. On knowledge of anaemia and

iron folate supplementation, their study reported that, only 27.4% of women had high level of knowledge for anaemia and only 24.8% of women had high knowledge about iron folate tablets. Research report in another study¹², on compliance rate and determinants of compliance to iron supplementation among pregnant women receiving antenatal care at the University of Nigeria Teaching Hospital (UNTH), Ituku/Ozalla, Enugu South-Eastern Nigeria, showed that the knowledge of iron supplementation was 76.3%, however, the compliance rate was 65.9% among these pregnant women¹². Another recent study conducted¹³ which investigated the prevalence of iron deficiency anaemia and its effects on foeto-maternal outcomes among parturients in Lagos, Nigeria, their study revealed that the prevalence of iron deficiency anaemia was 12.3%, it further revealed that routine antenatal iron supplementation and interpregnancy interval of at least 2 years have significant association with iron deficiency anaemia. They also concluded that iron deficiency anaemia is a fairly common condition among parturients in Lagos and it's mostly associated with maternal peripartum morbidities. They recommended adequate pregnancy spacing through the use of effective contraception and routine antenatal iron supplementations in pregnancy as a preventive measure.

A study conducted to examine factors influencing compliance to intermittent preventive treatment of malaria during pregnancy in Malawi revealed that: unclear messages about IPT with sulfadoxine–pyrimethamine (SP) from nurses, timing of

SP first dose, periodic shortages of SP, women's limited understanding of IPT-SP, tendency for late enrolment, and nurses' underperformance were factors affecting uptake of sulfadoxine-pyrimethamine¹⁴. Poor knowledge and poor compliance to the use of sulfadoxine-pyrimethamine (SP) during pregnancy was reported¹⁵, despite the evidence of the effectiveness of IPTp strategy with SP¹⁵. On prevention of malaria in pregnancy, a study¹⁶ was conducted to investigate the characteristics of women in Nigeria who are likely to take sulfadoxine/pyrimethamine (SP) as recommended for the prevention of malaria in pregnancy to reduce maternal and child mortality rates. The women were drawn from six (6) local government areas in Nigeria. Their results revealed that several demographic factors such as older age bracket, formal education, currently living with a partner, and being married were significantly associated with compliance. Knowledge of malaria, which included prevention of malaria in pregnancy through use of IPTp with 2 doses of SP, showed a positive association with compliance. Compliance with 2 doses of SP among those with good knowledge was higher (63.9%) than among those with poor knowledge (46.9%). A study¹⁷ on missed opportunities for Intermittent Preventive Treatment among pregnant women, in Cross River, Nigeria, found that the prevalence of missed opportunity among pregnant women was 59.1% for IPTp1 and 56.0% for IPTp2, also showing a low compliance rate.

The maternal mortality rates in Nigeria differs and are higher in the rural areas than the urban areas, Lagos State has an estimated maternal mortality ratio of 450

maternal deaths per 100,000 maternal births¹⁸.¹⁹ Data from a report shows that, nearly 20% of all global maternal deaths happen in Nigeria. It was estimated that between 2005 and 2015, over 600,000 maternal deaths and no less than 900,000 maternal near-miss cases occurred in the country. In 2015, Nigeria's estimated maternal mortality ratio was over 800 maternal deaths per 100,000 live births, with approximately 58,000 maternal deaths during that year, some of which deaths are preventable if adequate healthcare measures were taken into consideration. By comparison, the total number of maternal deaths in 2015 in the 46 most developed countries was 1,700 resulting in a maternal mortality ratio of 12 maternal deaths per 100,000 live births.

A Nigerian woman has a 1 in 22 lifetime risk of dying during pregnancy, childbirth or postpartum/post-abortion; whereas in the most developed countries, the lifetime risk is 1 in 4,900 lifetime risk¹⁹. With these numerous complications associated with anaemia and malaria infections, some of which are preventable, and a dearth of research on the level of compliance to routine antenatal medication in Lagos state, it became imperative to conduct this research work. Consequently, this pilot study describes the level of knowledge and level of compliance with routine antenatal care medications among pregnant women in Surulere General Hospital, Lagos, Nigeria. **The specific objectives of the study were to:**

- i. Determine pregnant women's level of knowledge of routine antenatal medications

- ii. Identify pregnant women's level of compliance with uptake of routine antenatal medications.
- iii. Identify factors associated with compliance with uptake of routine antenatal medications.
- iv. Identify the perceived benefits to use of routine antenatal medications among pregnant women.

METHODS

This pilot study utilized a descriptive cross-sectional research design, and was carried out in Surulere General Hospital, Lagos State. Lagos is located in the South-Western part of Nigeria. This hospital offers "directly observed therapy" in the administration of Sulfadoxine-pyrimethamine and has a specialized centre referred to as mother and childcare center. A total of 200 pregnant women in their second or third trimester who attended antenatal clinic at the hospital in March 2017 were recruited into the study using a purposive sampling technique. The structured questionnaire used for data collection elicited information on: socio-demographic variables, knowledge of routine antenatal medications, perceived severity and perceived susceptibility to malaria and anaemia, compliance with routine antenatal medications, factors associated with compliance to routine antenatal medications, and perceived benefits and barriers to the use of routine antenatal medications. The reliability coefficient(r) was calculated using Cronbach Alpha, and it gave a value of 0.70. Data entry was done using SPSS version 21.0. Descriptive analysis was carried out and

presented on tables. Hypotheses were tested using Chi-Square test with a p-value of 0.05.

Ethical consideration

Ethical approval was obtained from Lagos University Teaching Hospital Health Research and Ethics Committee. Besides, administrative permission was granted by the Lagos State Ministry of Health and the Chief Medical Director of Surulere General Hospital. Verbal consent was obtained from each participant after due explanation.

RESULTS

One hundred and ninety-three questionnaires were retrieved, giving a 96.5% response rate. The socio-demographic characteristics of the respondents revealed that the mean age (SD) was 30 ± 4.52 years. The minimum age was 19 years while the maximum age of respondents was 45 years. Majority (74.6%) of the respondents had tertiary level of education, Table 1 showed the other socio-demographic characteristics of respondents.

Respondents level of knowledge of routine antenatal medications

This study revealed that only 76 (39.4%) of the respondents had adequate knowledge of routine antenatal medications as shown in Table 2. The mean score for knowledge was 7.30.

Respondents' level of compliance with routine antenatal medications

The mean score for compliance was 13.84. Results from this study revealed that 166(86.0%) of the respondents had good level of compliance with routine antenatal medications as shown in Table 2. An analysis of the association between level of knowledge and level of compliance of

pregnant women to routine antenatal medications, (Table 2) revealed that there was no significant association between level of knowledge and level of compliance of pregnant women to routine antenatal medications (p-value > 0.05)

Factors associated with compliance with routine antenatal medications among respondents

Majority of the respondents 163 (84.5%) identified that the presence of adequate information on the medications increased uptake of routine antenatal medications, 173(89.6%) identified awareness about prevention and treatment of malaria in pregnancy and 131 (67.9%) indicated they were given anti-malaria tablets free in the hospital, other factors associated with compliance are as shown in Table 3.

Table 1: Socio-demographic characteristics of respondents (n=193)

Socio-demographic characteristics	Frequency	Percent
Age group		
Below 30 years	86	44.6
30 years and above	107	55.4
Religion		
Christianity	144	74.6
Islam	49	25.4
Marital status		
Married	192	99.5
Never married	1	0.5
Occupation		
Business women	77	39.9
Entrepreneur	39	20.2
Civil servant	55	28.5
House wife	3	1.6
Student	15	7.8
Youth Corper	4	2.1
Level of education		
No formal education	1	0.5
Primary	4	2.1
Secondary	44	22.8
Tertiary	144	74.6

n: no of respondents

Table 2: Association between level of knowledge and level of compliance with routine antenatal medication regimen (n=193)

Knowledge on routine antenatal medications	Level of compliance		Total F (%)	Chi-Squared Calculated	df	*p-value
	Poor	Good				
	F (%)	F (%)				
Inadequate knowledge	18 (66.7%)	99 (59.6%)	117 (60.6%)	0.005	1	0.481
Adequate knowledge	9 (33.3%)	67 (40.4%)	76 (39.4%)			
Total	27 (14.0%)	166 (86.0%)	193 (100%)			

df – degree of freedom

Table 3: Factors associated with respondents' compliance with routine antenatal medications (n=193)

Factors associated with compliance	Yes		No		I don't know	
	F	%	F	%	F	%
Medical personnel explanation on the importance of uptake of routine antenatal medications	150	77.7	40	20.70	3	1.60
Presence of adequate information on the medications increase uptake	163	84.5	24	12.40	6	3.10
Cost of routine antenatal medications affect usage	32	16.6	155	80.30	6	3.10
Medications given free	54	28.0	136	70.50	3	1.60
Forgetfulness to use routine antenatal medications	56	29.0	134	69.40	3	1.60
Taking iron/folic acid makes baby big	16	8.30	153	79.30	24	12.40
Reaction to any of the medications:	25	13.0	158	81.90	10	5.20
• Ferrous	16	8.3	161	83.40	16	8.30
• Sulfadoxine-pyrimethamine	31	16.1	148	76.70	14	7.30
Awareness about prevention and treatment of malaria in pregnancy	173	89.6	19	9.84	1	0.52
Given anti-malaria prescription	159	82.4	32	16.60	1	1.00
Given anti-malaria free in the hospital	131	67.9	61	31.60	1	0.52
Family's attitude influence usage of anti-malaria medication	45	23.30	145	75.10	3	1.60
Presence of positive attitude by husband towards the use of anti-malaria medications	95	49.20	92	47.70	6	3.10
Cultural background influence use of routine antenatal medications	26	13.50	163	84.40	4	2.10
Religious beliefs influence use routine antenatal medications	29	15.00	160	82.90	4	2.10

Perceived benefits to the use of routine antenatal medications among respondents

Findings revealed that the majority of the respondents identified the various benefit of uptake of routine antenatal medications such as increased appetite 144 (74.6%), prevents malaria and anaemia, 177 (91.70%) and prevents disorders in the new born 179 (92.7%), (Table 4), while only the following percent of the respondents identified cost (20.7%), accessibility to location of routine antenatal medications in the house (32.6%), culture, tradition, religious beliefs (11.4%) as barriers to the use of routine antenatal

medications. The study also showed that majority 150 (77.7%) had positive perception on the perceived benefits of routine antenatal medications as shown in table 5. An association between level of perceived benefits of routine antenatal medications and level of compliance of pregnant women to routine antenatal medications (Table 5), revealed that there was no significant association between level of perceived benefits of routine medication and level of compliance of pregnant women to routine antenatal medications (p-value > 0.05)

Table 4: Perceived benefits to the use of routine antenatal medications (n=193)

Perceived Benefits	Agree		Undecided		Disagree	
	F	%	F	%	F	%
Increases appetite	144	74.60	12	6.20	37	19.20
Prevents malaria and anaemia	177	91.70	3	1.60	12	6.20
Prevents disorders in baby	179	92.70	5	2.60	8	4.70
Increases maternal health	179	92.70	5	2.60	9	4.70
Perceived Barriers	Agree		Undecided		Disagree	
Cost	40	20.70	6	3.10	147	76.20
Availability of RAM	71	36.80	4	2.10	118	61.10
Accessibility of RAM in the house	63	32.60	4	2.10	126	65.30
Culture, tradition and religion	22	11.40	7	3.60	164	85.00
Personal opinion	41	21.20	9	4.70	143	74.10

RAM: Routine antenatal medications

Table 5: Association between level of perceived benefits and level of compliance with routine antenatal medication regimen (n=193)

Perceived benefits of routine antenatal medications	Level of compliance		Total F (%)	Chi-Square Calculated	df	*p-value
	Poor F (%)	High F (%)				
Negative Perception	6 (22.2%)	37 (22.3%)	43 (22.3%)	0.0001	1	0.99
Positive Perception	21 (77.8%)	129 (77.7%)	150 (77.7%)			
Total	27 (14.0%)	166 (86.0%)	193 (100%)			

df – degree of freedom

DISCUSSION

This study assessed the level of knowledge and level of compliance to uptake of routine antenatal care medications such as iron, folic acid and Intermittent Preventive therapy (IPT) with sulfadoxine–pyrimethamine (SP). The socio-demographic characteristics of the respondents has shown that the mean age of the respondents was 30 years, majority of them fell between the ages of 30 and 45years, thus more women 107 (55.4%) above 30 years of age utilized antenatal care services including the use of routine antenatal medications. This finding is consistent with that of a study²⁰, where it was found that mothers who are in the age group of 25–29 years were less likely to utilize ANC service compared with those older than 35 years. Majority 144(74.6%) of the respondents in this study had tertiary education as at the time this study was carried out while findings of a group of researchers²⁰, revealed that mothers with some level of education such as primary

education was more likely to attend ANC than women who were unable to read and write.

Respondents level of knowledge of routine antenatal medications indicated that lesser than half 76(39.4%) of the respondents had adequate knowledge on routine antenatal medications, while a larger proportion 117(60.6%) had inadequate knowledge, though using single item question the study revealed that majority of the respondents claim to have information on routine antenatal medications and majority also identified that they have heard about the prevention and treatment of malaria in pregnancy. This is similar to result of a cross-sectional study conducted¹⁵ on knowledge and utilization of intermittent preventive treatment for malaria among pregnant women attending antenatal clinics in primary healthcare centers in rural southwest Nigeria, which revealed that about half of their respondents, said they have heard about IPTp meanwhile only a

few who have heard about IPTp were able to give a good definition of IPTp. In the same vein which is also consistent with the respondents' inadequate level of knowledge in this study is the report of a study on factors associated with compliance of prenatal iron folate supplementation among women in Mecha district, Western Amhar, a low number of women in their study also had high level of knowledge for anaemia and iron folate tablets indicating inadequate knowledge¹¹.

On the level of compliance of pregnant women to the use of routine antenatal medications, results showed that good level of compliance was observed in a larger proportion of the respondents 166(86.0%), this is consistent with the opinion of researchers that typical compliance rates for prescribed medications are about 50% with a range of 0% to more than 100%. The good level of compliance reported in this study is also likely to be related to the practice of directly observed therapy utilized in the study setting. The Health Belief model²², proposes that an individual is likely to comply with recommended preventive health action if perceived benefits of preventive action outweigh the perceived barriers to preventive action, findings from this study revealed that majority 150(77.7%) of the respondents had positive perception of the perceived benefits of routine antenatal medications which might have contributed to the good level of compliance.

Findings further identified the following as factors largely associated to compliance with use of routine antenatal medications: presence of information on use of routine

antenatal medications (84.5%), explanation from medical personnel (77.7%), being given anti-malarial drug free in the hospital (67.9%) and support from spouse (49.2%), however, a few of the respondents also indicated that; family attitude (23.3%), religious belief (15.0%), and cultural background (13.5%), affect compliance with the use of routine antenatal medications. Other factors such as forgetfulness were seen in only 29.0% and presence of side effects of ferrous usage was reported in only 8.3% of the study respondents. This is comparable to the study conducted to determine the compliance of pregnant women and factors related to iron tablet consumption among pregnant women, the reasons for non-compliance were presence of side effects 29.03%, long-term taking of iron tablets 19.35%, not liking pharmaceutical preparations 16.94%, and forgetfulness 9.68%²¹.

Majority 150(77.7%) of the respondents in the study had positive perception on the benefits of routine antenatal medications, specifically the perceived benefits to use of routine antenatal medications among pregnant women identified in this study were as follows: increased appetite (74.6%), prevents malaria and anaemia (91.7%), prevents disorders in baby (92.7%), and increases maternal health (92.7%) while a proportion of the respondents identified that the following served as barriers to the use of routine antenatal medications: cost (20.7%), availability (36.8%), accessibility of the medications in the house (32.6%), culture, tradition and religious beliefs (11.4%), and personal opinion (21.2%). This is consistent

with the study on perceptions of antenatal iron-folic acid supplements in urban and rural Pakistan, they identified that women in their study were aware of antenatal IFA supplementation and the benefits of the use of the supplements during pregnancy for maternal health and growth of the fetus/baby²³.

CONCLUSION

This study has provided insight into the level of compliance with the use of routine antenatal medications such as iron, folic acid and sulfadoxine-pyrimethamine. The findings indicated that less than 40% of the respondents had adequate knowledge of routine antenatal medications, while 86% demonstrated good level of compliance with routine antenatal medications, which is likely to be as a result of directly observed therapy practiced in the study setting. In addition, this study shows that more than three-quarters of the respondents perceived the benefits inherent in taking routine antenatal medications during pregnancy positively. Therefore, it is recommended that an intervention programme aimed at improving the knowledge of routine antenatal medications among pregnant women should be implemented by nurses and other stakeholders of the health care system.

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Conflict of Interest

We declare that there is no conflict of interest

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