

DETERMINATES OF UPTAKE OF INTERMITTENT ANTI-MALARIA DRUGS AMONG WOMEN ATTENDING ANTE-NATAL CLINIC AT CHUKWUEMEKA ODUMEGWU OJUKWU UNIVERSITY TEACHING HOSPITAL, AWKA, ANAMBRA STATE

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ABSTRACT

Malaria is a major public health that passes a huge threat to the world at large. The general public is at risk of malaria infection; however, pregnant women are at greater risk than others. This is because malaria in pregnancy is a threat to both mother and child. Malaria in pregnancy accounts for high rate of mortality of both mothers and neonates. As such, there is need to curb, if possible, eliminate malaria in pregnancy. To this effect, intermittent preventive treatment was introduced in the healthcare system. This treatment regime involves pregnant women being treated for malaria with sulphadoxine-pyrimethamine, not minding if they have the ailment or not.

The study's participants involved expectant mothers using the antenatal clinic at Chukwuemeka Odimegwu Ojukwu University Teaching Hospital, Amaku, Awka, Anambra state. A standard questionnaire was used to obtain information from the participants, who were mostly between the ages 20 and above. The variables were reported using descriptive statistics namely Chi-square test, mean and standard deviation with a significance of $p > 0.05$ and 95% confidence range.

From the result, it was shown that respondents who did not take IPTp drugs for malaria had greater prevalence of malaria in pregnancy than their colleagues who did. Out of the 523 women, 127 (24.3%) reported to have taken at least one dose of IPTp-SP, 209 (38.0%) all three doses and 53 (10.1%) double doses. Of the 171 (32.7%) who did not receive IPTp, reasons were due to medical complications and allergic reactions.

Uptake of IPTp is a means of achieving zero mortality in pregnancy from malaria. As such, expectant mothers are advised to take the doses, which can only be done during visits to the antenatal clinics. This can only be possible with increased number of visits to the antenatal clinics. Therefore, expectant mothers are advised to be faithful and regular in their visits to the antenatal clinics and also to make use of clinics with adequate facilities, so, they can have access to IPTp.

Keywords: Intermittent Anti-Malaria Drugs; Ante-Natal Clinic; Chukwuemeka Odimegwu Ojukwu University Teaching Hospital

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INTRODUCTION

Malaria is an intense febrile ailment caused by Plasmodium parasites, which are spread to individuals through the chomps of contaminated female Anopheles mosquitoes. There are 5 parasite species that cause malaria in people, and 2 of these species – *P. falciparum* and *P. vivax* – posture the most noteworthy danger. *P. falciparum* is the deadliest malaria parasite and the foremost predominant on the African landmass. *P. vivax* is the prevailing malaria parasite in most nations of sub-Saharan Africa. (1) Malaria could be a major open wellbeing challenge in a few low-middle wage nations. (3)

In 2020, about half of the world's populace was at chance of malaria. A few populace bunches are at significantly higher chance of contracting malaria and creating extreme illness: newborn children, children beneath the age of 5, expectant mothers and patients with HIV/AIDS (1). Expectant mothers are among the foremost powerless bunches affected by the malady. According to the WHO (2010), expectant mothers are four times more susceptible to asymptomatic malaria and twice likely to die from the disease. Within the year 2018, an assessed 11 million

expectant mothers dwelling within the sub-Saharan Africa were tainted with malaria. (5) Malaria in pregnancy [MiP] is one of the major causes of maternal mortality and antagonistic pregnancy results in Nigeria (6).

Malaria in pregnancy has results for mother, embryo, and infant child. (2) Subclinical infection due to the presence of parasites in the placenta poses great danger to both the mother and the fetus and can cause miscarriage, stillbirth, preterm birth, low birth weight and congenital malaria. (7) Twenty-five million expectant mothers are as of now at chance of malaria, it accounts for over 10,000 maternal and 200,000 neonatal deaths per year in sub-Saharan Africa. In Nigeria, around 11% of maternal passing was connected to malaria. (8) Expectant mothers are especially helpless to malaria disease, driving to negative results for the wellbeing of the mother and the descendant, primarily maternal frailty, and low birth weight, and expanding maternal and newborn child mortality and dismalness (9). Reports of dreariness and mortality among expectant mothers due to this malady are evaluated to be 70.5% and 11%, individually. Among neonates, the frequency of between 5-14% low birth weight (LBW) and approximately 30% preventable LBW is credited to MiP (6). Insufficient availability and usage of lifesaving malaria interventions which incorporates irregular preventive treatment in pregnancy (IPTp) has been detailed as a inclining calculate to maternal and newborn child dismalness and mortality (2).

Be that as it may, the great news is that malaria is preventable and repairable (3). Over the past two decades, almost 1.7 billion malaria cases and 10.6 million malaria-related deaths were avoided (10). Malaria mortality rates declined all inclusive. The World Wellbeing Organization (WHO) suggests for expectant mothers living in malaria endemic regions, the utilize of long-lasting insecticidal mosquito nets (LLINs) as well as provoke determination and treatment of clinical cases, nearby, the organization of discontinuous preventive treatment of malaria in pregnancy (IPTp) with sulphadoxine-pyrimethamine (SP). (9,11)

IPT-p utilizing SP involves the dispensation of a full treatment or preventive measures of SP to expectant mothers at specific intervals when they visit antenatal care (ANC) clinics not minding whether the pregnant lady has the disease or not (8,13). At first, it was managed by giving expectant mothers at least two measures of SP amid scheduled antenatal clinic appointment after fetal enlivening, both dosages given 1 month separated and not afterward than 4 weeks from birthing utilizing specifically monitored treatment (8). Be that as it may since 2012, IPTp has been suggested at each planned antenatal care clinic visit beginning within the moment trimester of development, with the objective of guaranteeing the take-up of at slightest three IPTp organizations of SP (IPTp3p) (8,9).

Nigeria, the foremost crowded SSA nation, contributed 25% of the assessed worldwide intestinal sickness passings in 2018 in spite of embracing the approach of free conveyance of ITNs (2001) and IPTp (2004) as MiP mediation techniques (11). The Nigerian Statistic and Wellbeing Study 2018 (NDHS) appears that 58% of pregnant ladies had rested beneath an ITN the going before night and whereas around 57% of ladies gone to four or more ANC visits, as it were 17% of ladies with a live birth within the final two a long time had gotten at slightest three IPTp measurements (11). The number of visits to antenatal care made by pregnant ladies is subsequently a major figure that can impact IPTp-SP take-up, and so WHO presently suggests at least eight antenatal visits amid pregnancy (10). Many researchers have appeared a few wellbeing framework and person components as key donors to the moo take-up of ITN and IPTp in Nigeria. (11)

IPTp-SP was received in numerous African nations due to its ease of organization. In any case, its usage and viability have been constrained by different components. This research is aimed at finding out the factors that determine the uptake of IPTp-SP among women attending ante-natal clinic at Chukwuemeka Odumegwu Ojukwu University, Awka.

Method and Materials

Study area

Chukwuemeka Odumegwu Ojukwu University teaching hospital Awka is located in Anambra State which functions as the major hospital for many publics within Anambra and its environments. The staffing levels are relatively below when compared to the staff ration recommended by the WHO.

Study population

The minimum sample size determination as obtained using the below formula

$$n = \frac{z^2 p(1 - p)}{e^2} * E(\text{Design Effect})$$

n= Sample size required

z = Confidence interval 1.96
 p = Level of uptake of intermittent anti-malaria obtained from pilot study, 60%.
 E = Design effect (factor) to remove bias (1.5)
 A = Attrition 10%

Hence,

$$n = \frac{(1.96)^2 * 0.6 * 0.4}{(0.05)^2} * (1.5) = 553.1$$

Which is approximately 554 plus attrition of 10% = 609.
The study participants are as below

Inclusion criteria:

- i. Expectant mothers seeking antenatal care at Chukwuemeka Odimegwu Ojukwu Teaching Hospital; and
- ii. Newly delivered mothers who were still in the maternity. They were sampled using a cross-sectional study method.

Exclusion criteria

- i. Refusal to participate in the study
- ii. Very sick mothers

Data collection

Questionnaire was done by carrying out a pilot study (pre-test) using people attending the clinic for modifications of the questions. Combination of simple random sampling and systematic sampling were employed using trained clinical students between 4th August and 15th August 2022. The study design was cross-sectional. In order to correct poorly structured questions, determine the typical time needed to complete the questionnaire, and ultimately validate its use in our setting, a total of 20 surveys were pretested among pregnant patients at the teaching hospital. Each questionnaire might be distributed for 10 to 15 minutes following the pretest, according to estimates.

Data analysis

Out of 609 sample size 523 mothers participated in the study which is about 86.4%. Data was gathered on age (divided into the following three groups: =20–25 years, =26–30 years, and >30 years), level of education (divided into Secondary, Tertiary, and Non-Tertiary Education marital status (divided into married or single and divorced/widowed), and occupation (categorized into: student, housewife, working class). The first antenatal care trimester, which was divided into the first trimester (0-13 weeks), second trimester (14-25 weeks), and third trimester, was used to measure the length of the pregnancy (26-37 weeks). IPTp was either known to the expectant mother or it was unknown to her. If a woman knew why she was given the medication, how many doses there were, and what would happen if she didn't take the medication, that woman was considered educated about IPTp. Each correctly provided response received a score of one, or a score of zero if provided wrong. Women who scored two were regarded to be knowledgeable about IPTp, whereas those who scored one or zero were thought to be ignorant of the test.

The categorical variables were reported using descriptive statistics in tables. To compare the categorical variables, use the Chi-Square test. In the case of continuous variables with a normal distribution, means and standard deviation were utilized. Statistical significance was defined as a p-value 0.05 with a 95% confidence range. SPSS version 28.0 was used to analyze the data.

Table 1: Demographic Profile of the Respondents

Characteristics		N=523 (%)	Chi-Square (P-value)
Marital Status	Single	78 (14.9%)	3.109 (0.321)
	Married	397 (75.9%)	
	Widowed/Divorced	48 (9.2%)	
Occupation	Student	72 (13.8%)	27.865 (0.014)
	Housewife	346 (66.2%)	
	Working Class	105 (20%)	
Qualification	Tertiary Education Completed	381 (72.8%)	13.154 (0.037)
	Secondary Education Completed	86 (16.4%)	
	Primary Education Completed	24 (4.6%)	
	Not Educated	32 (6.1%)	
Trimester	Ist Trimester	142(27.2%)	2.873 (0.078)
	2nd Trimester	216 (41.3%)	
	3rd Trimester	165 (31.5%)	
ITN use	Yes	457 (87.4%)	1.04 (0.093)
	No	66 (12.6%)	
Age	20-25	273 (52.2%)	3.12 (0.211)
	26-30	187 (35.8%)	
	≥30	63 (12.0%)	
ANC Attended	1-2	203 (38.8%)	22.195 (0.0071)
	3-5	277 (52.9%)	
	>5	43 (8.2%)	

Table 2: The frequency of malaria in pregnancy among women who had IPTp and those who did not have IPTp

	Use of IPT (Yes)		Use of IPT (No)		X ² (P-value)
	n = 523	%	n = 523	%	
Treated for Malaria					
Yes	171	32.7	243	46.5	43.78 (0.000)*
No	352	67.3	280	53.5	

The prevalence of malaria during pregnancy was shown in Table 2 for both IPTp-positive and IPTp-negative women. Women who did not take intermittent preventive medication for malaria had a greater prevalence of malaria in pregnancy than women who did, and P = 0.0001.

Table 3: The frequency of malaria in pregnancy among women who had single dose of IPTp and those who had double dose of IPTp

	Single Dose of IPT		Double Dose of IPT		Triple Dose of IPT		X ² (P-value)
	n = 523	%	n = 523	%	n = 523	%	
Treated for Malaria							
Yes	209	40.0	127	24.3	53	10.1	33.61 (0.0008)
No	314	60.0	369	75.7	470	89.9	*

The frequency of malaria during pregnancy was shown in Table 3 for the groups of women who received a single dosage of IPTp, a double dose of IPTp, and those who received a double dose of IPTp. The prevalence of malaria was greater in the women who used IPTp and had malaria during pregnancy when compared to those who received two doses, with P = 0.0008.

Table 4: Demographic profile and awareness of IPT Uptake

Marital Status	ITP Uptake		P-Value
	Yes (%)	No (%)	
Single	47 (60.3%)	31 (39.7%)	0.762
Married	311 (78.3%)	86 (21.7%)	
Widowed/Divorced	32 (66.7%)	16 (33.3%)	
Occupation			0.002
Student	51 (70.8%)	21 (29.2%)	
Housewife	288 (83.2%)	58 (16.8%)	
Working Class	83 (79.0%)	22 (20.1%)	
Qualification			0.0812
Tertiary Completed	301 (57.6%)	80 (30.6%)	
Secondary School Completed	56 (65.1%)	30 (34.9%)	
Primary School Completed	23 (96%)	01(4%)	
Not Educated	21 (4.0%)	11(2.1%)	
Trimester			0.312
Ist Trimester	127 (89.4%)	15 (10.6%)	
2nd Trimester	199 (92.1%)	17 (7.9%)	
3rd Trimester	119 (72.1%)	46 (27.9%)	
Age			0.053
20-25	203 (74.4%)	70 (25.6%)	
26-30	172 (91.9%)	15 (8.1%)	
≥39	53 (84.1%)	10 (15.9%)	

Discussions of findings

A cross-sectional survey was conducted out among antenatal and postnatal mothers to investigate the determinants of uptake of intermittent anti-malaria drugs among women attending ante-natal clinic at Chukwuemeka Odimegwu Ojukwu University Teaching Hospital, Akwa, Anambra State.

Only 523 women who had signed up for the study as a whole completed the surveys. The respondents' ages ranged from 20 to over 30 years. At the time of booking, they were between three and 38 weeks along. The women were between 28 and 43 weeks pregnant at the time of data collection, with a mean gestational age of 28.34 2.03 weeks. For **IPTp uptake** Out of the 523 women, 127 (24.3%) reported to have taken at least one dose of IPTp-SP, 209 (38.0%) all three doses and 53 (10.1%) double doses. Of the 171 (32.7%) who did not receive IPTp, reasons were due to medical complications and allergic reactions.

The different age groups and IPTp uptake, as well as the various levels of education, as shown on, did not significantly correlate with one another. Additionally, as indicated here, there was no discernible difference in the uptake rates between married and unmarried women or between divorced or widowed individuals. There is significant difference on the uptake rate between students, housewife and working-class pregnant women with IPTp uptake. Majority of the pregnant women (52%) attended antenatal care between 3-5 times during their pregnancy period while 39% attended between 1-2 times and lastly 8% went for antenatal care more than 5 consecutive times.

Beginning the ante-natal care was correlated with respondents' marital status and educational level, both of which affect whether or not the pregnancy was initially desired. Antenatal care should be started as early as possible because it will affect the type or number of visits. In our study, roughly 27% of respondents began their anti-natal treatment during the first trimester, followed by 41% of pregnant women who began their ante-natal care during the second trimester and finally, roughly 32% of respondents who began their ante-natal care during the third trimester. As anticipated, the majority of respondents (76%) who gave birth were able to get antenatal care more than five times.

Pregnant women's knowledge of IPT uptake

The adoption of IPT is strongly correlated with the awareness of pregnant mothers. Only 390 of the women who took IPT knew why they were given the medication, and the remaining 133 had no notion.

The study described most respondents who are pregnant women which is approximately (73%) to have completed their tertiary education; approximately (31%) as to have completed their secondary education; approximately 5% have completed their primary education while (6%) are not educated. Therefore, since most of the respondents are well educated with 73% response rate; their response is definitely assumed not to be influenced.

Conclusion

Uptake of ITPp is a solution by WHO towards reducing or better still eliminating malaria in pregnancy which is a major cause of high mortality among expectant mothers and also low birth weights and mortality in neonates. So, it is important that expectant mothers pay great attention to ITPp uptake. However, very few of them take up to 3 doses of ITPp before childbirth. And as such, the aim is being defeated. But it has been observed that most expectant mothers, especially the first timers, who frequent antenatal clinics more do complete their doses of ITPp.

Whereas, the more experienced expectant mothers do not visit the antenatal clinics often, do not complete their doses before childbirth. Also, some expectant mothers complain of having reactions to the treatment regime and as such, had to stop the treatment along the line. Another factor that affects the uptake of ITPp is inadequacy of medical facilities. This means that the facilities do not have the ability to administer ITPp as at when due.

However, expectant mothers are advised to visit adequate antenatal clinics more often for close monitoring and for the complete dose of ITPp.

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