Clients’ satisfaction with malaria in pregnancy preventive services in Anambra State, Nigeria

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Abstract

Background: Burden of Malaria in pregnancy (MIP) is still high despite deployment of proven cost-effective interventions. Considerable progress has been made on improving antenatal attendance but MIP preventive services utilization remains low. Factors responsible for this include dissatisfaction with the services provided. We assessed clients’ satisfaction with malaria in pregnancy services delivered at antenatal clinics (ANC) in Anambra State Nigeria.

Method: We conducted a cross-sectional study among 284 pregnant women attending ANC using a three-stage sampling technique. Pre-tested semi-structured interviewer-administered questionnaire was used to collect information on socio-demographics, knowledge of malaria in pregnancy services and satisfaction with services. Responses to questions on satisfaction was on a 5-point Likert scale. A cut off of ≥75% of composite score was used to classify respondents as satisfied. For knowledge, every correct answer was scored 1 and incorrect 0; ≥75% of the composite score was graded as good knowledge. Chi square and logistic regression were used to test for association between client satisfaction and independent variables.

Results: The mean age of participants is 28 years±4.4 years. Overall 62.2% were satisfied with quality of MIP preventive services, but 64.8% and 57.8% were not satisfied with cost of healthcare and interpersonal relationship with the health workers (HWs). Majority of the of respondents (88.73%) had poor knowledge of MIP preventive services. Type of facility (Adjusted odds ratio [aOR] = 2.11; 95%CI: 1.20-3.71) and knowledge (aOR: 0.41; 95%CI: 0.18 - 0.90) were independently associated with satisfaction with interpersonal relationship respectively. Type of facility (aOR: 0.47; 95%CI: 0.27-0.80) and employment status (aOR: 3.07; 95%CI: 1.39 -6.74) were also independently associated with satisfaction with cost of healthcare domain.

Conclusion: A fair proportion of respondents were satisfied with the MIP services provided even though most were unsatisfied with the cost of assessing care and interpersonal relationship with health workers. To achieve satisfaction with services, the state government should subsidize the cost of services and encourage HWs to build good relationships with their clients especially at public secondary health facilities.
Background

Burden of Malaria in pregnancy (MIP) is still high despite deployment of proven cost-effective interventions. Globally approximately 25 million pregnant women are at risk of infection by P. falciparum annually.¹ “In Africa, 30 million women living in malaria-endemic areas become pregnant each year. For these women, malaria is a threat both to themselves and to their babies, with up to 200 000 new-born deaths each year as a result of malaria in pregnancy”. (World Health Organization, 2015) Nigeria accounted for 27% of global malaria cases, the highest in the world.³

Considerable progress has been made on improving antenatal attendance but MIP services utilization remains low. Factors responsible for this include dissatisfaction with the services provided.

Satisfaction of care, a patient based assessment, is one of the outcome measures in assessing quality of care. The recommended intervention strategies for preventing malaria during pregnancy in Nigeria are intermittent preventive treatment (IPT) with sulfadoxine-pyrimethamine under direct supervision of skilled health providers and insecticide-treated bed nets.⁴ Improving the quality of care has been shown to increase uptake of services and reduce the number of adverse maternal health outcomes.

WHO in its document has highlighted that preventing problems for mothers and babies depends on an operational continuum of care with accessible, high quality care during pregnancy.⁵ A study conducted by majrooh et al. on coverage and quality of antenatal care provided at Primary Health Care Facilities in the ‘Punjab’ Province of ‘Pakistan’ found a drop in antenatal attendance from 55.9% and 32.9% between first and subsequent attendance due to poor quality of services.⁶ In many African countries, the coverage of malaria in pregnancy preventive services is low and reports have mentioned utilisation of care as one of the major obstacles. AF Fagbamigbe and ES Idumudia in assessing barriers to antenatal care use in Nigeria with evidence from non-users highlighted issues that have to do with satisfaction with quality of care as the major barriers.⁷

There is paucity of information on satisfaction of pregnant women regarding MIP services and satisfaction is directly related to utilization of health services. This study was therefore conducted to assess client satisfaction with the quality of malaria in pregnancy preventive services delivered at
Methods
Anambra State has 21 Local Government Areas (LGA) and 75% of them are classified as rural. There are public and private owned health facilities in the state. The State Ministry of Health manages the public health facilities. These public health facilities comprise of 560 primary healthcare centres, 36 secondary health facilities and 2 tertiary health facilities. There are 305 primary health facilities and 1394 secondary facilities owned and managed by individuals and private organizations. Most public health facilities are not functional leading to high dependence on the private facilities. No record was found on the staff strength of the private facilities but there are 85 doctors and 613 nurses in the public owned facilities. Most of the free commodities like RDT Kits, LLIN, anti-malaria drugs are distributed mostly to the public owned facilities through the state central medical store and the state malaria elimination programme.

A cross-sectional study conducted between May and August 2018. Mixed data collection method was used to collect data among ANC attendees in facilities offering ANC. These comprise quantitative study and three focused group discussions to explore and triangulate findings qualitatively.

We recruited 284 antenatal attendees, who have attended clinic more than once using a three-stage probability sampling technique. Only attendance who were 18 years and above were included. In stage one; we selected one LGA each from the three senatorial districts in the state by balloting. In stage two; health facilities in the selected LGAs were stratified into primary health care, public secondary and private secondary health facilities then one facility was selected from each stratum by simple random sampling by balloting. Number of participants per facility was proportionally allocated using average antenatal attendance per month from daily attendance register. In the third stage; systematic random sampling was used to select the participants. Sample size was estimated using formula for single proportion; p was estimated using satisfaction level of pregnant women towards
Three focused group discussions were conducted in three health facilities not participating in the survey. From the already selected LGAs, we randomly selected one health facility (three facilities in all). At the health facilities, pregnant women were selected purposively and they are homogenous in Age (25-35 years) and education (secondary level). Each group consisted of about 10 participants and the discussion lasted for approximately 60 minutes.

Quantitative data was collected using pre-tested semi-structured interviewer administered questionnaire. The questionnaire had three sections: socio-demographics, Knowledge and satisfaction questions which was divided into five domains: - process of care (7 items), interpersonal relationship/communication (7 items), hospital/clinic environment (8 items), accessibility (2 items), cost of healthcare (2 items) and overall satisfaction (1 item). The part on knowledge was designed after literature search while the section on satisfaction was adapted from a standardized questionnaire, patient experience questionnaire and modified it to suit our study. Translation to native languages was done in cases where the respondents may be uneducated. Back-translation was also done to avoid ambiguity and ensure uniformity of understanding. A guide was developed and used to facilitate the focused group discussions. Discussions were recorded using audio tapes and note taking.

The quantitative data was collected by three research assistants who are trained nurses working as disease surveillance and notification officers in the state. The research assistants were trained for 2 days. Interviews were conducted as exit interviews using open data kit software. Focused group discussion sessions were also facilitated by two trained data collectors. During the sessions, one person serves as the interviewer and the second person as the note taker. Each session lasted about 30 minutes on the average.

We exported the data to excel and analyzed using epi-info 7.2.1. We ensured that the data was complete during the collection stage by building in check codes into the electronic questionnaire and making all the questions required. Responses to knowledge questions were scored one every correct answer and zero for every wrong answer. Composite score of ≥75% was graded as good knowledge
otherwise knowledge was graded as poor. Satisfaction questions on satisfaction were on a 5-point Likert scale with score values ranging from 1 (strongly disagree) to 5 (strongly agree). Then a cut off of ≥75% of composite score was classified as satisfied, otherwise unsatisfied. Univariate analysis was done to generate frequencies and proportions. Chi square was used to test for association between client satisfaction and independent variables in the bivariate analysis at 5% level of significance.

Focused group discussion tapes recordings were transcribed. The text and field notes were analysed by content analysis that is by identifying, coding and identifying into teams. Content analysis was carried out. The analysis of the data was arranged according to the domains assessed in the qualitative study.

Ethical approval with ref number COOUTH/CMAC/RP/Vol.1/0029 was obtained from ethical committee of Chief Odumegwu Ojukwu University Teaching Hospital. A written informed consent form was obtained from each respondents. Participants were only included in the study if they agree to participate and interview was conducted in a room with audio-visual privacy and confidentiality was ensured. All the participants were 18 years and above so no parental / guardian consent was required.

Results

The socio-demographic characteristics of 284 participants are presented in Table 1. The mean age of participants is 28 ± 4.4 years. Majority 259 (98.9%) were Igbos and 259 (98.9%) were married. Two hundred and fifty-two (88.7%) of respondents had poor knowledge of malaria in pregnancy preventive services with a mean knowledge score of 7.24 ± 1.15.

Table 2 show the satisfaction level of respondents with various domains of satisfaction. Most respondents were not satisfied with the interpersonal relationship/communication and cost of healthcare. This finding collaborated with findings from focused group discussion. The participants were satisfied overall with the services they receive from the facilities. Participant number 9 in group three said “I will recommend this hospital to others because of the doctor”. Participant number seven
in group one said “she was satisfied because the hospital is doing their best in handling pregnant women with malaria. Making sure child and mother is well taking care of”. In group two, participant number 5 said “I like coming to this hospital because when I had fever, the drugs I was given here made me get well, the fever did not continue to disturb me again. That is why I come here whenever I get pregnant”. Respondents noted that health workers especially nurses do not show patients respect. Some were quoted saying “nurses do not respect patients; they talk to somebody anyhow”. Some of them suggested “doctors should advice the nurses” [Participant number five in group one].

Table 3 shows factors associated with interpersonal relationship/communication domain of quality of care. Significant variables were entered into logistic regression model in Table 4, type of facility and knowledge remained significant as factors independently associated with satisfaction in interpersonal relationship/communication. (Adjusted odds ratio [aOR] = 0.41, 95%CI =0.18-0.90, p = 0.02 and aOR = 2.11, 95%CI = 1.20 – 3.71, p <0.01 respectively).

Table 5 shows factors that were associated with cost of healthcare domain. Type of facility and Knowledge remained significant as factors independently associated with satisfaction with cost of healthcare domain (Adjusted odds ratio [aOR] = 0.47, 95%CI =0.27-0.80, p < 0.01 and aOR = 3.07, 95%CI = 1.39 -6.74, p< 0.01 respectively) after logistic regression as shown in Table 6.

Discussion
The study found that high proportion of women had poor level of knowledge and high proportions of them were satisfied with the services they are receiving. However most of them were not satisfied with the interpersonal relationship and cost of healthcare domain. Type of facility attended and employment status remained as predictors of satisfaction in interpersonal and cost domains of satisfaction.

The low level of knowledge found in this study could be due to the poor interpersonal relationship between the patients and the health workers. This contrasts with the study conducted in Ebonyi State by Lois N. Omaka-Omari and Ignatius O. Nwimo where they found high level of knowledge among pregnant women. This was also inverse with the findings of a study conducted in the Federal Capital Territory, Northern Nigeria by Akaba et al. where they found a knowledge score of 71.5% though
the study was conducted in a tertiary institution in a different geopolitical zone. A dissimilar knowledge level was also found in Calabar, Cross River State in a study conducted by I.N. Ojong et al. The difference in the findings of this studies with our study could be because they assessed general knowledge on malaria but our study looked at only knowledge of preventive services, which could also be why our study had similar findings with the study conducted in Lagos, South western Nigeria, were they found knowledge of malaria prevention among pregnant women and care givers and care givers of under-five.

The study found just above half of the respondents to be satisfied with overall MIP preventive services but many respondents were not satisfied with the interpersonal relationship and cost of healthcare. The non-satisfaction with interpersonal relationship could be due to the small number of health workers in the state, leaving high volume of patients for available apersonnel. This can lead to not giving patient enough time. The non-satisfaction with cost of healthcare could be attributed to the current inflation in the country and non-availability of LLIN and IPTp at health facilities. There is an overall high satisfaction with the process of care, environment and accessibility. This could be due to the fact that patients attend ANC care where they are convinced is good for them. This was clear from the result of the FGD where patients stated clearly that they do not mind waiting for a long time to see their doctor nor travel a long distance to get to the hospital. The findings from study conducted in a cottage hospital in Port Harcourt that assessed satisfaction with care in relation to antenatal care contrasted with our study.'Ekott et al. 2013) In this study, they 94% of the respondents were satisfied. The lowest satisfaction score was in area of medical consultation which is comparable with findings from our study, even though this study was conducted in only one hospital. Oladapo et al. in assessing quality of antenatal care in primary health facilities in southwest Nigeria got high satisfaction of 81.1% which also contrasts with our study.'Nwaeze et al. at Ibadan got a satisfaction score of 81.1 % among pregnant women attending ANC at a public hospital. The different in our findings could be due to the fact that their study was conducted in only one hospital. In Ethiopia, “Ejigu et al (2013)”, in studying Quality of antenatal care services at public health facilities of Bahir-
Dar special zone, Northwest Ethiopia found that 47.7% of women were not satisfied. The findings from this study are comparable to the findings in our study. The similarity could be due to the combination of quantitative and qualitative data collection methods used in the two studies.\textsuperscript{14}

The positive association found between private health facility and satisfaction in interpersonal domain could be explained by the fact that doctors in private facilities take special care in order not to lose their clients but those in public facilities have a care free attitude because their salaries does not depend on the number of clients available. This association is the reverse when it comes to the relationship between private facilities and cost of healthcare. Possible explanation of this is that private hospitals are generally more expensive than the public hospitals and they also do not benefit most times from free commodities supplied to the public facilities. Poor knowledge was also positively associated with satisfaction in the cost of healthcare. Clients are possibly going to be satisfied with what they are being offered if they have poor idea of what they are supposed to get. This contrasts with the study conducted by Do et al. in Kenya and Namibia, where they assessed satisfaction with antenatal care. In the study most demographic characteristics were significantly associated with satisfaction.\textsuperscript{15} The difference could be due to geographical location and cultural differences. The difference could also be due to the fact that we are looking at malaria in pregnancy services which is just a part of what is offered in antenatal clinic. Our finding was similar to finding in a study on satisfaction among pregnant women towards antenatal care in public and private care clinics in Khartoum; attending private health facility was positively associated with satisfaction.\textsuperscript{16}

The main limitation in this study is that we are looking at quality of malaria in pregnancy preventive services only from the patients’ perspective. Information bias is also one of the limitations which is one of the major limitations associated with satisfaction surveys. Dunsch et al. in identifying pitfalls of client satisfaction found about 40% drop in satisfaction if questionnaire was administered at home rather than as client exit. They also found a difference in satisfaction level when questionnaires contain only positively framed questions in relation to positive and negative framed questions.\textsuperscript{17} In this study we tried to reduce this bias by framing positive and negative questions but we collected the
data as exit interview due to the cost of visiting each patients home to collect data. Another limitation was finding studies that have worked on malaria in pregnancy, so we compared our study with finding from studies conducted in quality of antenatal care in the same target population. The next step will be to carry out the assessment from the aspect of healthcare providers and hospital setting to have a complete evidence to inform policy decision.

Conclusions
High proportion of respondents had poor knowledge of malaria in pregnancy. This finding was collaborated by the findings on FGD. A fair proportion of respondents were satisfied with the MIP services provided even though most were unsatisfied with the cost of assessing care and interpersonal relationship with health workers. This finding was also collaborated by the findings on of FGD. Type of facility attended and employment status were associated with predictors of satisfaction with interpersonal relationship / communication and cost domain of satisfaction. We recommend that the state logistics and management information unit should ensure availability of LLIN and IPT at all health facilities, state government should subsidize the cost of commodities for malaria in pregnancy prevention, state Ministry of Health and Primary Health Care Development Agency should train and encourage health workers to build good relationships with their clients especially those working at public secondary health facilities and all healthcare providers working at antenatal clinics to be trained on guidelines for malaria in pregnancy prevention and communication strategies by the hospitals management board of the state

Abbreviations
ANC Antenatal care
aOR Adjusted Odds Ratio
FGD Focus Group Discussion
IPT Intermittent Preventive Treatment
LGA Local Government Area
LLIN Long Lasting Insecticide Treated Net
MIP Malaria in Pregnancy

Declarations
Ethics approval and consent to participate

Ethical approval with ref number COOUTH/CMAC/RP/Vol.1/0029 was obtained from ethical committee of Chief Odumegwu Ojukwu University Teaching Hospital. A written informed consent form was obtained from each respondents. Participants were only included in the study if they agree to participate and interview was conducted in a room with audio-visual privacy and confidentiality was ensured. All the participants were 18 years and above so no parental / guardian consent was required.

Availability of data and material

The data generated and used for this research is available from the corresponding author on reasonable request.

Competing interest

The authors have no conflict of interest to declare.

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Author’s Contribution

ECO : Conceptualized the study, designed it, acquired the data, conducted statistical analysis and interpretation, drafted the initial manuscript.

IA, GAA participated in the conceptualization and design of the work.

ECO, IA. GAA and CDU conductor the data analysis and interpretation and made substantial revision to the draft manuscript.

All authors read and approved the final version of the manuscript.

Consent for publication

Not applicable

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Tables
| Variable                  | Frequency (%) |
|--------------------------|---------------|
| **Age group (years)**    |               |
| 15-24                    | 73 (25.70)    |
| 25-34                    | 192 (67.61)   |
| 35-44                    | 17 (5.99)     |
| 45-54                    | 2 (0.70)      |
| **Marital status**       |               |
| Single                   | 8 (2.82)      |
| Married                  | 276 (97.18)   |
| **Education**            |               |
| None                     | 4 (1.41)      |
| Primary                  | 15 (5.28)     |
| Secondary                | 185 (65.14)   |
| Tertiary                 | 80 (28.17)    |
| **Parity**               |               |
| Primipara                | 78 (27.46)    |
| Multipara                | 196 (69.01)   |
| Grand multipara          | 10 (3.52)     |
| **Type of facility**     |               |
| PHC                      | 32 (11.27)    |
| Private Secondary        | 88 (30.99)    |
| Public Secondary         | 164 (57.75)   |
| **Employment Status**    |               |
| Unemployed               | 22 (7.75)     |
| Employed                 | 262 (92.25)   |

Table 1: Sociodemographic characteristics of respondents

| Domain of satisfaction       | LEVEL | Mean |
|------------------------------|-------|------|
| Satisfied                    |      |      |
| Unsatisfied                  |      |      |
| Satisfied n (%)              |      |      |
| Unsatisfied n (%)            |      |      |

Table 2: Satisfaction level with domains of client satisfaction among pregnant women at antenatal clinics, Anambra state, 2018

| Domain of satisfaction         | Satisfied n (%) | Unsatisfied n (%) | Mean |
|--------------------------------|-----------------|-------------------|------|
| Process of care                | 267 (94.01)     | 17 (5.99)         | 19.4 |
| Interpersonal relationship/communication | 120 (42.25)  | 164 (57.75)       | 25.8 |
| Hospital environment           | 187 (65.85)     | 97 (34.15)        | 35.2 |
| Accessibility                  | 178 (62.68)     | 106 (37.32)       | 7.06 |
| Cost of Healthcare             | 100 (35.21)     | 184 (64.79)       | 6.41 |
| Overall % satisfied            | 188 (62.20%)    | 96 (33.80%)       |      |
Table 3: Factors associated with satisfaction in interpersonal relationship domain among pregnant women in Anambra State, 2018

| Variable                | Satisfied (%) | Unsatisfied (%) | OR (95% CI)       | p-value |
|-------------------------|---------------|-----------------|-------------------|---------|
| **Age**                 |               |                 |                   |         |
| < 25                    | 42 (57.53)    | 31 (42.47)      | 0.99 (0.58 -1.69) | 1.00    |
| ≥ 25                    | 122 (57.82)   | 89 (42.18)      |                   |         |
| **Employment Status**   |               |                 |                   |         |
| Employed                | 116 (34.57)   | 146 (65.43)     | 0.28 (0.09 – 0.85) | 0.02    |
| Unemployed              | 4 (18.18)     | 18 (81.82)      |                   |         |
| **Parity**              |               |                 |                   |         |
| Multi                   | 85 (41.26)    | 105 (58.74)     | 1.15 (0.69, 1.96) | 0.58    |
| Primi                   | 35 (44.87)    | 43 (55.13)      |                   |         |
| **Educational level**   |               |                 |                   |         |
| Secondary               | 82 (44.32)    | 103 (55.68)     | 0.63 ( 0.37-1.11) | 0.18    |
| Tertiary                | 27 (33.75)    | 53 (66.25)      |                   |         |
| **Type of facility attended** |         |                 |                   |         |
| Private secondary       | 26 (29.55)    | 62 (70.45)      | 2.0 (1.19, 3.57)  | <0.0    |
| Public secondary        | 76 (46.34)    | 88 (53.66)      |                   |         |
| **Knowledge level**     |               |                 |                   |         |
| Poor                    | 101 (40.08)   | 151 (59.92)     | 2.18 (1.03, 4.62) | 0.00    |
| Good                    | 19 (59.38)    | 13 (40.63)      |                   |         |

Table 4: Predictors of satisfaction in interpersonal/communication domain with malaria in pregnancy services among women attending ANC in Anambra State, 2018
| Factors                        | aOR (95% CI) | p-value |
|-------------------------------|--------------|---------|
| **Type of facility**          |              |         |
| Private secondary             | 1            | -       |
| Public secondary              | 2.11 (1.20 - 3.71) | <0.01 |
| **Employment Status**         |              |         |
| Unemployed                    | 1            |         |
| Employed                      | 0.35 (1.11 - 1.08) | 0.07   |
| **Knowledge**                 |              |         |
| Poor                          | 1            |         |
| Good                          | 0.41 (0.18 - 0.90) | 0.02   |

Table 5: Factors associated with satisfaction in cost of healthcare domain among pregnant women in Anambra State, 2018

| Variable                        | Satisfaction Level | OR (95% CI) |
|---------------------------------|--------------------|-------------|
| **Age**                         |                    |             |
| < 25                            | 24 (32.88)         | 49 (67.12)  | 1            |
| ≥ 25                            | 76 (36.02)         | 135 (63.98) | 1.15 (0.65 - 2.02) |
| **Employment Status**           |                    |             |
| Employed                        | 93 (35.50)         | 169 (65.50) | 1.18 (0.46 - 3.00) |
| Unemployed                      | 7 (31.82)          | 15 (68.18)  |             |
| **Parity**                      |                    |             |
| Multi                           | 71 (34.47)         | 135 (65.53) | 1            |
| Primi                           | 29 (37.18)         | 49 (62.82)  | 1.13 (0.65 - 1.93) |
| **Educational level**           |                    |             |
| Secondary                       | 72 (38.92)         | 113 (61.08) | 0.56 (0.31 - 2.20) |
| Tertiary                        | 21 (26.25)         | 59 (73.75)  | 1            |
| **Type of facility attended**   |                    |             |
| Private secondary               | 43 (48.86)         | 45 (51.14)  | 1            |
| Public secondary                | 50 (30.49)         | 114 (69.51) | 0.46 (0.27 - 0.78) |
| **Knowledge level**             |                    |             |
| Good                            | 19 (59.38)         | 13 (40.63)  | 3.09 (1.45 - 6.55) |
| Poor                            | 81 (32.14)         | 171 (67.86) | 1            |

Table 6: Predictors of satisfaction in cost of healthcare domain with malaria in pregnancy services among women attending ANC in Anambra State, 2018
| Factors          | aOR (95% CI)      | p-value |
|-----------------|-------------------|---------|
| Type of facility|                   |         |
| Private secondary| 1                 |         |
| Public secondary | 0.47 (0.27-0.80)  | <0.01   |
| Knowledge       |                   |         |
| Poor            | 1                 |         |
| Good            | 3.07 (1.39 - 6.74) | <0.01   |