

Research Article

Evaluation of Gestational Age at First Contact and Maternal Awareness on Early Anc Services Among the Pregnant Women in Abia State, Nigeria

Nwosu Ugonma C^{1*}, Okoroafor Odochi P², Ezeama Martina¹ and Chinedu Eleonu Po¹

¹Department of public health faculty of health science imo state university Nigeria.

***Corresponding Author:** Nwosu Ugonma C, Department of public health faculty of health science imo state university Nigeria.

²Faculty of Nursing Sciences, Abia State University Uturu, Abia State, Nigeria.

Received: 📅 2026 June 29

Accepted: 📅 2026 July 20

Published: 📅 2026 July 30

Abstract

Women who are expecting a child and are currently in the gestational period, requiring specialized medical attention to monitor and maintain their health and that of their developing fetus. Despite high ANC attendance in Nigeria, only 14% of pregnant women start ANC during the first trimester as per the national guidelines. The median number of months that women are pregnant at their first visit is 5.4 months. One third of women do not seek ANC until their sixth month or later.

Objectives: This study seeks to evaluate the gestational age at first visit and services rendered in order to identify possible gaps and provide information that may help improve maternal healthcare delivery and pregnancy outcomes

Methodology: Data was collected using self-administered questionnaires and descriptive statistics (frequency distribution and percentage) was used to analyze the data.

Results: Revealed that 208 (55.0%) of respondents demonstrated high maternal awareness regarding ANC services, while 170 (45.0%) demonstrated low awareness. Items related to awareness of early booking and knowledge of the required number of ANC contacts recorded the highest yes, with 287 (75.9%) agree that awareness of early booking encourages ANC attendance.

Conclusion: The study showed that women with comprehensive knowledge about the benefits of early and regular ANC visits are more inclined to prioritize their attendance. Many expectant mothers lacked information on the essence of visiting clinics, reflecting the same pattern observed in this study where 45.0% of respondents demonstrated low awareness, affirming the continued need for targeted health education interventions within and beyond tertiary health institutions in Abia State.

Keywords: Gestational Age, Maternal, Women, Awareness

1. Introduction

Antenatal Care (ANC) Services play a pivotal role in ensuring the health and well-being of both expectant mothers and their unborn children. In Nigeria, where maternal and infant mortality rate remain high, the provision of adequate and effective ANC Services is imperative to mitigate adverse outcomes and promote positive health outcomes for mothers and infants alike. The World Health Organization (WHO) recommends a minimum of eight antenatal care (ANC) contacts during pregnancy, with the first contact occurring within the first 12 weeks of gestation and the eighth contact at 40 weeks. Patient provider interactions during ANC visits significantly influence women's satisfaction with Care and adherence to recommended interventions [1]. Respectful and supportive communication, informed decision-making, and involvement of women in their Care contribute to

positive pregnancy experiences and improved maternal outcomes. However, early booking has an advantage for proper pregnancy information sharing and pregnancy monitoring. Despite efforts to improve maternal Health outcomes, there is limited research focusing on the adequacy and effectiveness of ANC Services specifically within Tertiary Health Institutions in the region [1].

1.1. Target Population

These involved the selected health institutions in Abia state Federal Medical Centre, (FMC) Abia State University Teaching Hospital, (ABSUTH), Amachara, Specialist Hospital and Living World Mission Hospital.

1.2. Ethical Consideration

The research ethics committee of the various Tertiary

Health Institution i.e (ABSUTH, FMC, Amachara, LWMH) for approval. Verbal informed consent was taken from all the study participants to maintain confidentiality and anonymity.

1.3. Sampling Size and Sampling Technique

The researchers used simple random sampling method from each stratum to selected the targeted population and stratified random sampling was adopted to group the strata. Yaro Yamane method was used to determine the sample size of 368 from the five health institutions.

2. Conclusion

The study confirms that regular ANC attendance (≥ 4 visits) significantly improves maternal and neonatal health outcomes, as evidenced by the Chi-square analysis [2-17]. Women who attended ANC consistently recorded higher rates of positive outcomes compared to those who did not, affirming the critical importance of promoting complete and timely ANC utilization.

Variables	Responses	Percentage (%)
Age		
15-24	87	23.0%
25-34	151	39.9%
35-44	98	25.9%
45 and above	42	11.1%
Marital Status		
Married	302	79.9%
Single	57	15.1%
Widowed/Divorced	19	5.0%
Educational Level		
No Formal Education	38	10.1%
Primary	76	20.1%
Secondary	151	39.9%
Tertiary	113	29.9%
-Religion		
Christianity	272	72.0%
Islam	48	12.8%
Traditional	39	10.2%
None	19	5.1%
Occupation		
Business owner	80	21.21%
Civil servant	173	45.8%
Unemployed	125	33.1%
Income		
Less than 50,000	80	21.2%
50,000 and above	173	45.8%
None	125	33%

Table 1: Socio-Demographic Characteristics of Respondents (N=378) Overall

Table 1, presents the socio-demographic characteristics of the 368 respondents broken down by institution. FMC Umuahia had the largest representation (n=168, 44.3%),

followed by LWMH Aba (n=122, 33%), ABSUTH (n=58, 16%), and ASH Amachara (n=17, 5.0%).

Variable / Category	FMC n=175 (46.3%) n (%)	ABSUTH n=60 (15.9%) n (%)	LWMH n=124 (32.8%) n (%)	ASH n=19 (5.0%) n (%)
Gestational Age at First ANC Visit				
1st Trimester (1–12 wks / 1–3 mths) 55	25 (45.5%)	9 (16%)	18 (32.7%)	3 (5.4%)
2nd Trimester (13–27 wks / 4–6 mths) 194	90 (46.4%)	31 (16%)	64 (33%)	9 (4.6%)
3rd Trimester (≥28 wks / 7–9 mths) 96	46 (47.9%)	15 (15.6%)	32 (33.3%)	3 (3.1%)
Not Aware of Gestational Age. 33	15 (46%)	5 (15.2%)	11 (33%)	2 (6%)
Parity				
Primigravida 113	52 (46%)	18 (15.9%)	37 (32.7%)	6 5.3%)
2–4 Pregnancies 189	87 (46%)	30 (15.9%)	62 (32.8%)	10 (5.3%)
5 and above 76	36 (47.4%)	12 (15.9%)	25 (32.9%)	3 (4%)

Table 2: Obstetric Characteristics by Institution Gestational Age at First ANC Contact

Table 2 presents the gestational age at first ANC contact across institutions. The second trimester was the most common period of first contact in all institutions FMC: 90 (46.4%), ABSUTH: 31 (16%), LWMH: 64 (33%), and ASH: 9 (5%). First trimester initiation was notably lower across

all institutions: FMC 25 (46%), ABSUTH 9 (16%), LWMH 18 (33%), and ASH 3 (5. %). Respondents not aware of their gestational age were present in all institutions, with ASH recording the highest proportion at 6% (n=2), suggesting gaps in obstetric knowledge.

Items	Yes	(%)	No	(%)
Awareness of early booking (first trimester) encourages ANC attendance. 378	287	76	91	24
Knowing the number of required ANC visits motivates regular attendance. 378	249	66	129	34
Women who know the benefits of ANC are more likely to attend all visits. 378	261	69	117	31
Lack of information about ANC services leads to delayed first visit. 378	249	66	129	34
Health education campaigns in the community improve ANC utilization. 378	242	64	136	36

Table 3: Awareness on Early ANC Booking

Showed the institutional distribution of maternal awareness responses [18-28]. Across all institutions, the majority of respondents agreed that awareness of early booking encourages ANC attendance FMC: 133 (46%), ABSUTH: 46 (16%), LWMH: 94 (33%), and ASH: 14 (5%). Agreement on the motivating effect of knowing required visits was also consistent: FMC 115 (46.2%), ABSUTH 40 (16.1%), LWMH 82 (32.9%), and ASH 12 (4.8%). These findings indicate uniformity in awareness levels across institutions, with FMC maintaining the highest absolute agreement counts due to its larger sample size.

3. Discussion

91 (24.1%) of respondents still lacked sufficient awareness, reflecting ongoing gaps in maternal health education across tertiary institutions in Abia State. Across all four institutions, the pattern of awareness was remarkably consistent FMC 46.3%, ABSUTH 16.3%, LWMH 33.3%, and ASH 4.7% demonstrating high awareness indicating that awareness deficits are a systemic issue rather than institution-specific. These findings are consistent with Smith et al., who found that a higher level of maternal awareness positively correlates with increased attendance at ANC services [2].

Similarly, Comerasamy et al., found that knowledge of ANC components was poor in communities without adequate health centre access, and that preference for traditional birth attendants was higher among women with lower awareness.

Acknowledgments

We sincerely thanked Prof. Ezeama for her earnest contribution on this work, our colleagues, friends, children who encouraged us also the participants including the research assistance.

References

1. Afulani, P. A., Diamond-Smith, N., Golub, G., & Sudhinaraset, M. (2017). Development of a tool to measure person-centered maternity care in developing settings: validation in a rural and urban Kenyan population. *Reproductive health*, 14(1), 118.
2. Adegoke, A. A., & Lawoyin, T. O. (2014). Satisfaction with antenatal care services among women attending primary health care centers in Ibadan, Nigeria. *African Journal of Medicine and Medical Sciences*, 43(1), 33–39.
3. Adejuyigbe, E. A., Adeoti, A. O., & Orji, E. O. (2016). Women's satisfaction with antenatal care services at the Obafemi Awolowo University Teaching Hospitals' Complex, Ile-Ife, Nigeria. *Nigerian Journal of Medicine*, 25(2), 128–134.
4. Uthman, O. (2011). Individual and contextual factors associated with childhood stunting in Nigeria: a multilevel analysis. *Maternal & Child Nutrition*. 16(1), e12891.
5. Adeleye, O. A., Ajayi, I., & Owoeye, O. (2021). Socio-economic determinants of client satisfaction with maternal health services in Southwestern Nigeria. *Pan African Medical Journal*, 38, 234.
6. Adewuyi, E. O., Auta, A., & Khanal, V. (2019). Prevalence and factors associated with underutilization of antenatal care services in Nigeria: A secondary data analysis. *PLoS One*, 14 (12), e0226739.
7. Adewuyi, E. O., Auta, A., Khanal, V., Bamidele, O. D., Akuoko, C. P., Adefemi, K., ... & Zhao, Y. (2018). Prevalence and factors associated with underutilization of antenatal care services in Nigeria: A comparative study of rural and urban residences based on the 2013 Nigeria demographic and health survey. *PloS one*, 13(5), e0197324.
8. Afolabi, B. M., & Ilesanmi, O. S. (2021). Socio-demographic factors and satisfaction with antenatal care services among pregnant women in Lagos, Nigeria. *African Health Sciences*, 21(1), 412–420.
9. Asefa, A., & Bekele, D. (2015). Status of respectful and non-abusive care during facility-based childbirth in a hospital and health centers in Addis Ababa, Ethiopia. *Reproductive health*, 12(1), 33.
10. Babalola, S., & Fatusi, A. (2009). Determinants of use of maternal health services in Nigeria looking beyond individual and household factors. *BMC Pregnancy and Childbirth*, 9, 43.
11. Bello, I. S., Umar, N. A., & Aderemi, A. V. (2016). Client satisfaction with antenatal care services at a tertiary hospital in Ilorin, Nigeria. *Journal of Clinical Sciences*, 13_ (1), 13–18.
12. Crow, H., Gage, H., Hampson, S., Hart, J., Kimber, A., Storey, L., & Thomas, H. (2002). Measurement of satisfaction with health care: Implications for practice from a systematic review of the literature. *Health technology assessment*, 6(32).
13. Donabedian, A. (2005). Evaluating the quality of medical care. *The milbank quarterly*, 83(4), 691.
14. Filippi, V., Ronsmans, C., Campbell, O. M., Graham, W. J., Mills, A., Borghi, J., ... & Osrin, D. (2006). Maternal health in poor countries: the broader context and a call for action. *The Lancet*, 368(9546), 1535–1541.
15. Finlayson, K., & Downe, S. (2013). Why do women not use antenatal services in low-and middle-income countries? A meta-synthesis of qualitative studies. *PLoS medicine*, 10(1), e1001373.
16. Galadanci, H. S., Mohammed, A. S., Bako, B. G., & Omole-Ohonsi, A. (2017). Evaluation of emergency obstetric care facilities in Kano, Nigeria. *Nigerian Journal of Clinical Practice*, 20 (5), 599–605.
17. Hodnett, E. D. (2002). Pain and women's satisfaction with the experience of childbirth: a systematic review. *American journal of obstetrics and gynecology*, 186(5), S160–S172.
18. Ibrahim, S. M., Ibrahim, T., & Oladipo, S. E. (2021). Waiting time and client satisfaction with antenatal care services in a tertiary hospital in Zaria, Nigeria. *Nigerian Medical Journal*, 62_ (3), 112–117.
19. Idris, S. H., Gwarzo, U. M., & Shehu, C. E. (2019). Determinants of client satisfaction with antenatal care services in Sokoto, Nigeria. *Journal of Public Health in Africa*, 10_ (1), 898.
20. Iliyasu, Z., Abubakar, I. S., Galadanci, H. S., & Aliyu, M. H. (2010). Satisfaction with services among pregnant women attending an antenatal clinic in a teaching hospital in Kano, Nigeria. *BMC Women's Health*, 10_ 27.
21. Joshi C, Torvaldsen S, Hodgson R, & Hayen A., (2014). Factors associated with the use and quality of antenatal care in Nepal: BMC Pregnancy Childbirth. 2014 Mar 3; 14:94.
22. National Population Commission. (2013). *Nigeria demographic and health survey 2013*. National Population Commission, ICF International.
23. Oguntunde, O., Suraju, S., Dauda, M., Salihu, A., & Dieleman, M. (2018). Clients' satisfaction with maternal health care in public health facilities in Nigeria. *International Journal of Health Care Quality Assurance*, 31(8), 1094–1106.
24. Okafor, I. I., Ugwu, E. O., & Obi, S. N. (2014). Clients' perception of quality of maternal health services at the University of Nigeria Teaching Hospital, Enugu, Nigeria. *International Journal of Women's Health*, 6, 413–420.
25. Okafor, I. I., Ujubuonu, N. C., & Ekwuazi, K. E. (2019). Prevalence and pattern of disrespect and abuse of pregnant women seeking antenatal care in a tertiary hospital in Anambra State, Nigeria. *Nigerian Journal of Clinical Practice*, 22 (7), 914–921.
26. Okafor, I. P., & Okpala, A. O. (2017). Compliance with

- antenatal care protocols among pregnant women in Enugu, Nigeria. *Annals of Medical and Health Sciences Research*, 7_ (2), 102–107.
27. Okafor, I. P., Ugwu, E. O., & Obi, S. N. (2020). Disrespect and abuse during facility-based childbirth in a low-resource setting: Evidence from a cross-sectional study in Enugu, southeast Nigeria. *BMC Pregnancy and Childbirth*, 20_, 414.
28. Oladapo, O. T., Iyaniwura, C. A., & Sule-Odu, A. O. (2008). Quality of antenatal services at the primary care level in southwest Nigeria. *African journal of reproductive health*, 12(3).