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Empirical studies on the factors influencing the utilisation of antenatal care services by pregnant women in Nigeria

Adeniji Mercy Oluwatosin[1] and **Owoyemi Julius Olugbenga**[2]

Department of Sociology, Kogi State University, Anyigba, Nigeria

[1,2]E-mail address: ojuolamercy@gmail.com , owoyemi.jo@ksu.edu.ng

ABSTRACT

In order to enjoy safe motherhood with improved maternal and neonatal outcomes, there isa need for appropriate antenatal care services utilisation. The World Health Organization (WHO) has recommended that pregnant women begin antenatal care in their first trimester. However, utilisation of ANC services, especially early utilisation, which greatly benefits pregnant women, is often delayed in developing countries for several reasons that various researchers have reported. In Nigeria, the utilisation of antenatal care services is still low compared to other developed countries.Here, we provided an overview of antenatal care services utilisation in Nigeria. We also highlighted antennal care services' componentsand the variables influencing prenatal care usage in Nigeria. Our review synthesis shows that factors such as media exposure, household income, and ease of access all had a significant role in whether or not a pregnant womanwould utilise prenatal care. We suggested a need for more studieson the factorsinfluencing women'sdecision to seek prenatal care at rural and community levels.

***Keywords*:** Antenatal care, pregnant women, maternity, utilisation, maternal and neonatal outcomes

1. INTRODUCTION

Antenatal Care refers to a woman's well-being before, during, and after delivery (WHO, 2014). Prenatal care is a woman's initial opportunity to engage with official health services and

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connects her to a referral system for pregnant women experiencing difficulties (Tadesse, 2020). According to Tadesse (2020), the privileges of a prenatal care visit usually include a physical examination, medical screening, health education and counselling, treatment of minor illnesses and immunisation services depending on the stage of the pregnancy.

The ideal time to schedule a prenatal care visit, as recommended by WHO (2023), is between 12 to 13 weeks of their last menstrual cycle, which is a period within the first three months of pregnancy known as the first trimester (Debassaail et al., 2016; Gulema and Berhane 2017). It is believed that early and maximum utilisation of prenatal care will provide pregnant women with easy identification of risk factors and prompt diagnosis of complications during pregnancy (Sari & Suhita, 2018).

Direct causes of maternal mortality arise directly during or after pregnancy, whereas indirect causes are not directly related to pregnancy or its care (Aghajani et al., 2022). Direct causes of maternal death include complications during pregnancy, although many other factors may also play a role (Tesfay et al., 2023). Badamasi (2021) notes regretfully that even with all the developments in technology and medicine, some women still face fatal complications during pregnancy. Maternal mortality reduction efforts previously successfulglobally during the MDG period have stalled in the first five years of the SDG era, from 2016 to 2020. Concerning SDG regional groups, sub-Saharan Africa had the highest MMR in 2020, with an estimated 545 maternal deaths per 100,000 live births (UI 477 to 654). Compared to Australia and New Zealand (4; UI 3 to 4), where the MMR was lowest, this is 136 times greater. These geographical variations in MMR are significantly correlated with variations in lifetime risk of dying from a maternal cause.

According to a report by Trends in Maternal Mortality (2000 to 2020), the probability of dying at age 15 is 400 times higher in sub-Saharan Africa (1 in 40) than it is in Australia and New Zealand (1 in 16 000) in 2020. In 2020, only three subregions of the globe (Western Africa, with an MMR of 754; Middle Africa, with an MMR of 539; and Eastern Africa, with an MMR of 351) had high or very high MMR (Aghajani et al., 2022). According to research by (Wodera et al., 2021), 71% of pregnant women in South-Eastern Ethiopia began attending ANC an average of 5 months into their pregnancies. Inadequate education, poverty, or cultural considerations have all been cited as reasons adolescent pregnant women are less likely to attend ANC or attend late. Thisstudy, as mentioned earlier, among other results by Debessai et al. (2016) and Adeniji and Owoyemi (2023), demonstrated the need for coordinated community and healthcare system initiatives driven by robust information about the utilisation of ANC services according to different regions.

Although pregnant women's visits to prenatal clinics are optional, early attendance will increase as more women become educated about the advantages of antenatal care. It is essential to encourage healthy habits, reduce the risk of intrauterine fetal death (IUFD), and prevent some of the most common causes of infant disease throughout pregnancy. An essential part of the ANC package is the detection and treatment of sexually transmitted infections (STIs), the administration of intermittent preventative treatment (IPT) for malaria and the distribution of insecticide-treated nets (ITNs) to prevent malaria transmission to pregnant women and their newborns. To provide efficient antenatal care (ANC) a question was posed about how to structure ANC services to guarantee delivery of a whole package and how to evaluate its success in raising health standards.

The goals of prenatal care, as outlined by WHO (2023) as the standards for reproductive health services organisations, are to promote information about important health concerns

during pregnancy, prevent and manage problems by using strategies supported by research and health professionals, encourage medical assistance during labour and delivery,ensure pregnant women have plans for getting to the hospital in an emergency and receiving treatment, facilitate communication between women and medical professionals, create a bond of trust between pregnant women andcaregivers to facilitate informeddecisions, keep an eye on the mother and baby as the pregnancy progresses to guarantee their well-being, assist the mother in her decision to breastfeed or formula feed the baby, support breastfeeding moms and provide guidance on getting ready to start nursing and transitioning to formula if necessary.

In Nigeria, ANC use and other risk variables have been studied concerning maternal health. Ibeh (2008), who used the state of Anambra as a case study, investigated the correlation between the maternal mortality index in Nigeria and healthcare utilisation and found that many factors contributed to the country's high maternal mortality rate. According to his report, 92.3 percent of women who gave birth did not complete therecommended visit during their pregnancy period. In a similar study,using cross-sectional survey data and multiple logistic regression analysis, Aniebube and Aniebube (2010) investigated how pregnant women in Enugu, Nigeria, felt about a novel prenatal care model consisting of four antenatal visits (focused antenatal care).

They discoveredthat only 20.3% of pregnant women wanted to switch to the new design. People who do not want to switch citedother reasons (65.1%) and financial reasons (24.1%) for their decision.According to Tekelab et al. (2019), less than 80% of pregnant women in Sub-Saharan Africa get prenatal care despite the region's high maternal morbidity and death rates. Despite attempts from all three levels of government to increase ANC participation, many people still have trouble making it to their appointments on time (Aliyu and Dahiru, 2017). Despite the WHO's recently implemented minimum ANC contact requirements, 25% of pregnant women in Nigeria have no contact with ANC providers, according to Fagbamigbe et al. (2021). Only one-fifth of pregnant women reached the suggested minimum of eight interactions with ANC providers, compared to nearly three-fifths who met the previous recommendation on at least four encounters. Nigeria is still far from meeting the SDG's maternal and child health goals. The wealth bracket of the women's households, their age, religion, education, ethnicity, decision-making authority, health insurance, media exposure, acceptability of wife-beating, and the deprivation of the community where a woman lived were among the factors linked to the likelihood of meeting the guidelines. This gap is primarily due to some causes, including poverty and a lack of education. From the above, it is clear that Nigeria is still struggling with a severe maternal health crisis, which is spreading rapidly and severely impacting the country's overall level of development. The high incidence of maternal death is unacceptable globally since it is entirely avoidable. Hence, this study presentsempirical information about factors influencing the attendance of ANC by pregnant women in Nigeria. This information is necessary for policy formulation andgovernment or non-governmental interventions.

2. ANDERSEN AND NEWMAN'S HEALTH CARE SERVICES UTILISATION FRAMEWORK

McEachan et al., (2008) state that a theory offers a foundation for creating a research study and determining its techniques and direction. They claim that theTheory may help

researchers determine whether observed behavioural shifts result fromone or more theoretical frameworks and so direct efforts to influence positive behavioural change. Research designs in the field of public health are informed by the theoretical framework used. For this empirical review, we relied on the theoretical framework established by Andersen and Newman's model for evaluating healthcare services. It is generally agreed that the Andersen health behaviour model (Andersen, 1968) is a valid method for researching how people use medical care. The Andersen model states that the consumption of health services is a sequential and conditional function of three sets of elements: predisposing factors (demographic and social), enabling factors (economic), and need factors (health outcomes). Need factors, such as self-perceived health, chronic conditions, and limited activity, represent potential needs for health service use (SoleimanvandiAzar, et al2020) and are reflected by predisposing factors, which are the individual's propensity to use health services. The Andersen model has been updated to consider medical treatment and the patient.

According to the Andersen behavioural model, a high positive correlation between need variables and health service consumption is evidence of healthcare equality (Ricketts., 2009). However, access to health care may be unequally distributed due to enabling resources (such as health insurance or income) (Lin, 2022). Other socio-economic characteristics, such as ethnicity may also influence the need for health services (Glei et al, 2023). it was hypothesised that predisposing and enabling variables would have a greater impact on the use of preventative care, while need factors would have a greater impact on the use of curative treatment and hospitalisation.

This structure aims to identify factors that promote or hinder adoption. The objective is to create a behavioural model that can quantify factors like healthcare availability. Since its inception in the 1960s, the framework has undergone four distinct iterations. The following diagram depicts the fourth stage of the framework, which was developed in the 1990s. This approach aims to determine what factors influence healthcare use, measure inequalities in access to health services, and support the development of policies that expand healthcare coverage for all individuals (Andersen, 1995). Individual propensity to utilise acute healthcare services, enabling circumstances that allow usage, and perceived or influenced the need for treatment were the primary foci of the original model's attempt to predict or explain healthcare service use.

This framework allows for evaluating access metrics (e.g., equitable, inequitable, effective, efficient) and analysing external and internal factors influencing healthcare service consumption.Health outcomes and customer happiness are two other essential concepts in the strategy. Access to and use of health care are seen as a result of three factors; predisposing factors are a person's pre-disease sociocultural features, such as education, employment, race/ethnicity, friends/relatives/coworkers/students/culture, all makeup what sociologists call "social structure." People's convictions about and expectations for the medical system, including their health and the health of others.Age and Gender Breakdown and Allowing Circumstances. Access to care is facilitated by enabling factors, which may be institutional or personal. Resources (such as money) and amenities (such as housing) must be close to where people live and work. Some people may not be able to get the care they need and want due to barriers, including cost, lack of insurance, or prejudice. These variables may affect overall healthcare service consumption (Bradley et al., 2002).

The primary driver of health care use arises from function and health issues. One's perception of need can be affected positively or negatively by one's perceived severity of health,

access to health education programs, and availability of financial resources and insurance coverage. However, "evaluated need" is more closely related to the type and amount of treatment provided after a patient has presented to a medical care provider. This includes "how people experience symptoms of illness, pain, and worries about health and whether or not they judge their problems to be sufficiently important and magnitude to seek professional help" (Andersen, 1995) and "how people view their own general health and functional state." Expert opinion on the health of a population and their need for medical treatment; evaluated (Andersen, 1995).

3. THE COMPONENTS OF ANTENATAL CARE SERVICES

The following are the major components of antenatal care services;

3. 1. Evaluation and determination of abnormality

During the assessment period, especially the first visit assessment, the caregiver will get the mother's height, weight, blood pressure, abdominal examination, etc., all of which will help to lay a baseline data of the health statusof the mother's condition and be able to ascertain when itstarts to deviate from the norm during subsequent assessments. Early detection and treatment of any abnormality for better management and possible referral or follow-up for continuity of care until the end of the pregnancy is achieved by comparing baseline data with subsequent data collected during ANC (Benova et al., 2018). For example, a baseline record of blood pressure helps the healthcare provider to know when there is increased blood pressure, which aids in the early detection of pregnancy-induced hypertension and the initiation of treatment(Patience et al., 2016; Ngxongo, 2018 and Defar et al., 2020).

3. 2. Prenatal learning opportunities

The mother may acquire healthy habits that she can practice at home thanks to the education she receives during ANC. It is essential to maintain good habits and give up bad habits like smoking and drinking alcohol. According to Massey et al., (2015), babies born to mothers who smoke tend to be smaller than average. Antenatal care should also support healthy lifestyle choices, including good eating, regular exercise, and enough relaxation (Greenhill & Vollmer, 2019). Non-compliant mothers who have observed the advantages of utilising antenatal care may begin to use them in future pregnancies.

3. 3. Medical examination

During the prenatal period, unique diagnostic procedures are performed. These include an ultrasound, a haemoglobin and PCV calculation, a urinalysis, and other blood tests. Since anaemia is common during pregnancy, itcan be detected and treated immediately (Benova et al., 2018). Another crucial test that helps eliminate mother-to-child transmission of HIV is the HIV screening test. Also, since malaria significantly contributes to maternal morbidity and mortality, the examination of expectant mothers for the disease is a priority. Treatment includes diagnosis and preventative measures, such as insecticide-treated mosquito nets and intermittent treatment (IPT) with SulphadoxinPyrimethamine beginning at 16 weeks of pregnancy and repeated monthly (Theobald, 2020).

4. SOME FACTORS INFLUENCING DELAYS IN ATTENDING ANTENATAL CARE SERVICES IN NIGERIA

Only 14% of women in Nigeria are booked before the end of the first trimester (Okunlola et al., 2006), and the average gestational age at booking is 23 weeks. Maternal age, education, marital status, work, media exposure, and history of obstetric problems are among the variables that influence the utilisation of ANC. The factors below aresome of the reasons why people attend ANC late in Nigeria

4. 1. The women's marital status and literacy/education

One's willingness to seek medical attention may differ depending on marital status. According to WHO (2016), single mothers are less likely to access ANC services than married mothers since they have limited resources. As a result of their marital status, married pregnant women may lack the autonomy and social support necessary to obtain ANC in Nigeria. Pregnant women may be forced to accept a choice made by their partner or other significant family members (Patience et al., 2016).

However, "literacy", defined as the "ability to read, write, and understand written language and the use of numbers," is crucial for comprehending various community members' health-related activities (Lam et al., 2013). Education would make a pregnant woman aware of the significance of self-care throughout pregnancy, allowing her to devote her time and energy to her family.

Therefore, investing in women's education can benefit individual households and entire nations (Anugwom, 2009). Babalola and Fatusi (2009) observed that the higher one's level of education, the more likely one was to seek maternal assistance. A greater degree of health awareness and familiarity with accessible health services and resources may result from a person's pursuit of education. A lack of knowledge negatively impacts health outcomes and information-seeking behaviour (Shieh & Halstead, 2009). The elderly or traditional birth attendants (TBAs) may convince a woman with a poor education level to forego ANC and have her baby at home (Brooks et al, 2017).

A lack of education may severely impact women's understanding of critical information, their capacity to make educated decisions and their knowledge of their rights. The results from Matua (2014) suggest that pregnant teenagers who have only had a basic education may not see the benefit of using ANC services. Individuals with lower levels of education may struggle to make the necessary decisions throughout pregnancy, childbirth, and parenting (Ferguson, 2008; Shieh & Halstead, 2009), while partners who both have advanced degreesprioritise health and wellness (Matua, 2014). Similarly, Levine et al., (2004) found a correlation between women's education, their ability to absorb health messages, and medical teaching. The observations mentioned above might be connected to a woman's education level directly affecting her capacity to access and use the plethora of information resources available today. Education, familiarity with potential maternal risks, and awareness of prenatal care were all shown to be significantly correlated by Okereke et al. (2013).

Safe maternity practices andeducation were affirmed as crucial to recognising maternal risk symptoms. To reduce the high rates of maternal death that have plagued Nigeria in the past, Mojekwu and Ibekwe (2012) suggested that maternal education must be enhanced. Women may be better able to advocate for themselves and their unborn children if they have access to

maternal education. Also, education about the possibility of infertility should be promoted so that people seek help as soon as possible if it becomes necessary.

4. 2. The presence of traditional birth attendants

Traditional healers were responsible for the safe delivery of pregnant women and provided obstetric care and divination even in pre-education and pre-civilisation in African societies (Oladeru, 2012). Traditionally trained women helped the expecting mother give birth at home; if there were issues, other traditional healers were consulted (Ambe, 2022). The TBAs have been vital to the community's efforts to improve the health of mothers and children when medical health centres were limited in Nigeria.

However, in rural areas, when there is a lack of trained medical personnel or modern medical facilities, women turn to TBAs to give birth at home. TBAs had more sway in the healthcare system because they were seen as culturally competent and respected professionals. Brown et al., (2018) found that antenatal care use was affected by cultural attitudes and views about pregnancy and past unfavourable experiences with health institutions. Access to skilled caregivers throughout labour, delivery, and the immediate postpartum period has been shown to reduce maternal mortality rates.

Few women in many underdeveloped countries attend at least one ANC visit, and even fewer have access to qualified medical personnel during childbirth. Since TBA-based delivery is available at a low cost and women typically only go to the hospital or get referred to a primary health centre (PHC) if there are complications, Adamu and Salihu (2012) report that most women also deliver at home in Kausani, Kano State, Nigeria, and only a small number receive ANC. Shiferaw (2013) wanted to know why so many pregnant women still give birth at home.Women who have given birth using TBAs have reported feeling more at ease in their surroundings than in hospitals, which correlates with the abovementioned causes (Gurara et al., 2020). Therefore, TBAs are a threat to the utilisation of ANC, especially in rural areas where there are limited health facilities.

4. 3. The publicity/awareness of the benefits of ANC

Focus group discussions (FGDs) may be used as a means of bargaining with key decision-makers and leaders to persuade facility-based care. Therefore, women must join these groups to increase their understanding of the effects of using these services. It was found that most women did not utilise maternal health care despite having easy access to such services because they had an "after all, I am not sick" attitude about attending clinics. It demonstrates that many pregnant women pay less attention to medical care compared to when they are ill. Mallick and Bajpai (2019) stress the need to educate the public about maternal health services and encourage their use by bringing affordable, high-quality care closer to needy women.

The idea that most pregnant women are not appropriately exposed to health information from the media contributes to the under-utilisation of Antenatal Care services (ANC). Recent studies have linked increased media coverage of ANC services to lower maternal mortality rates (Chidinma, 2019). Media exposure may increase knowledge of health concerns, as proven by Chidinma (2019). However, most pregnant women in Kwara State do not appear to be exposed to the media for awareness of the importance of antenatal health services, even though media exposure leads to greater awareness of health-related issues. There does not seem to be enough health education programming in areas where women can access the media to encourage them

to attend ANC. According to Mallick and Bajpai (2019). There seems to be a significant percentage of illiteracy among pregnant women in northern Nigeria, particularly in the city of Kano, which restricts their exposure to and use of the media; moreover, those who are literate sometimes lack the financial resources to afford access to information and health services.

Access to media is hampered by poverty. Unfortunately, the electricity needed to power televisions and other informational technologies is often in short supply. Also, ANC's programming choices might not appeal to female viewers. As a result, they will be less likely to be aware of the importance of using prenatal healthcare services due to the cumulative effect of these variables and the restrictions placed on their access, exposure, and use of the media. Therefore, research that investigates media knowledge and use in the context of prenatal health care services may encourage more women to use ANC services and raise their awareness about the need to use hospitals, both of which contribute to reducing maternal mortality rates.

4. 4. The economic and social contexts of expectant mothers

In some parts of Nigeria, women's access to and engagement with the media is sometimes hampered by poverty because they have no other source of information besides radio programs broadcast in their native languages. Financial constraints were cited as one of the top three causes for underutilising ANC. Most pregnant women may be unable to pay the maternity costs levied, as Adamu and Salihu (2012) revealed in their study on socio-economic variables leading to low usage of ANC. Some pregnant women in Kano State, Nigeria, who could not afford to pay were directed to social assistance by the government. Women who are pregnant and unable to pay for their care sometimes shy away from social welfare because of the lengthy and stressful procedure involved in applying for state aid. It was discovered that low-income women seldom visit either rural hospitals or academic medical centres despite these facilities providing higher-quality treatment.

These results suggested that a mother's income be considered a "high-risk factor" for having a baby with low birth weight (WHO, 2019). Significant delays were in the initial ANC presentation among women living in rural and peri-urban areas. Women from rural areas, on the other hand, were more likely to arrive late. Both in rural and peri-urban areas, unintended pregnancies were shown to be a separate risk factor. However, the overall economic power of a nation might not improve the utilisation of ANC unilaterally. A study by Kuuire et al. (2017) examined when and how often expectant mothers visited hospitals in Nigeria and Malawi.

Women in Nigeria were 7% less likely to use ANC in the first trimester of pregnancy in 2008 compared to 2003, whereas women in Malawi were 32% more likely to use ANC in 2013 compared to 2000. In contrast to Malawi, Nigeria's good economy did not affect the date of the ANC's first visit there. Our case studies' results illustrate how different environmental variables may either boost or hinder a policy's effectiveness. Strategy development at the national level for achieving the SDGs on maternal and child health should consider the level of economic development and the percentage of the population living in urban areas.

4. 5. The challenges of long waiting times at health centres, poor attitudes of caregivers, and the proximity of expectant mothers tothe health centre

Ease of access to health care centres is the most influential factor in whether or not people use them. Abbass and Walker (2011) found that in low-income regions, patients are more likely to seek medical attention if it is conveniently located. Several expectant mothers find it

challenging to endure the long queues associated with overburdened ANC clinics, and they complain that there is no appointment system at most healthcare facilities, as reported in a study by Kaswa et al., (2018). Most pregnant women expressed concern that there were not enough nurses to care for everyone during prenatal care days when often just one nurse was on duty.

According to research by Cresswell et al. (2018), pregnant women have expressed low opinions of doctors and nurses. Some pregnant women avoid prenatal care because they have had bad experiences with doctors who were uncaring or even hostile. Pregnant women can act based on their views and memories of the quality of care they have received. This is a significant issue for caregivers since it affects the availability of ANC services. Additionally, women who have given birth with a skilled attendant may be more comfortable giving birth there again. Women are more likely to deliver with the same provider again if their last birth went well and to switch if they were unhappy with their care the first time (Cresswell et al., 2018).

4. 6. The cultural perspectives of expectant mothers

The social construction of gender continues to discourage male involvement in delivery; however, community health workers in Tanzania have been credited with helping increase male participation in maternal and child health initiatives (August et al., 2016). The time of ANC attendance is determined mainly by the hours at which men make decisions at home. Similarly, men's control over financial resour ces in the home impacts whether women can afford maternity and child health care.

According to a study by Melville (2021), most males in the community still feel pregnancy is the exclusive realm of women and do not believe they should be engaged. Also, certain cultural beliefs today still prevent women from attending ANC in some regions in Nigeria and Africa. According to research conducted in Zimbabwe, Mozambique, and Tanzania by Haws et al.(2010), women in the early stages of pregnancy postpone ANC attendance to shield their unborn children from witchcraft and magical assaults from greedy neighbours. Two significant sociocultural obstacles to ANC use were identified in the research by Wilunda et al. (2017): women's household tasks and the influence of male partners/husbands. Most healthcare providers require expectant mothers to bring their partners to their first ANC appointment.

This component of the ANC initiative aims to test couples for HIV before they have children. The change is also intended to give a window of opportunity for delivering Pregnancy-Related Danger Signs Education, Prenatal Care Preparation, and Complications Prevention Education (Solnes Miltenburg et al., 2015).

However, this policy's implementation discourages men from going to ANC because of the stigma associated with HIV testing. Because of their spouses' lack of encouragement, several women postponed or missed attending ANC (Peneza & Maluka, (2018); Mgata & Maluka, 2019). Also, certain cultures in Nigeria stigmatise women who became pregnant out of wedlock because of the social stigma surrounding unwanted pregnancies (Pafs et al., 2015).

Therefore, men accompanying pregnant women who are not culturally married to their first ANC visit may not even be their spouses or partners, reducing the efficacy of the service (Peneza and Maluka, 2018).

Therefore, there was a consensus that men were not encouraging or accommodating their wives' ANC participation. Some men may encourage their partners to go to ANC, but this has more to do with the baby's well-being than the mother's. Changes in social-cultural behaviours that discourage ANC uptakes are necessary for Nigeria to obtain timely and appropriate utilisation of ANC services.

5. CONCLUSION

This study concludes that the utilisation of ANC services in Nigeria is still very low and not equal to the standard recommendation of the WHO. Different authors' perspectives on factors influencing the utilisation of ANC services revealed that some of these factors include marital status, level of education, publicity and awareness, cultural perspective, long waiting time, poor attitude of health personnel, proximity to the health care centre, economic factor, and cultural norms.

We discovered a connection between a mother's educational level, maternal health literacy, and pregnancy outcomes. Also, there is a relationship between the financial capabilities of expectant mothers and access to ANC information and subsequent usage. Therefore, rural and community dwellers are more prone to not utilising ANC services or attending late.

6. RECOMMENDATION

Health care centres should be situated at the heart beat of each community or city, in order to make the ANC facility assecible to all. Also, there should be an increase in the number of health personnel to attend to pregnant women who come for antenatal care, reducing the period of time pregnant women must wait on appointment day. Finally, the cost of receiving ANC service should be reduced to the bearest minimum for everyone, rich or poor, to be able to afford the cost, thereby enhancing the level of utilisation of ANC facilities in Nigeria.

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