Issues in Antenatal Care Services Utilization Among Unmarried Adolescents in Akwa Ibom State, Nigeria

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Abstract

This study describes the sociocultural factors that influence the utilization of antenatal care services among unmarried adolescents aged 16 and below in Akwa Ibom State, Nigeria. A cross-sectional survey design was utilized. A self-designed questionnaire was randomly administered to 621 ever-pregnant unmarried adolescents. Thirty-five in-depth interviews were purposively conducted among unmarried adolescents, skilled and unskilled healthcare providers, and caregivers. Twelve focus group discussions and four life histories were also conducted among unmarried adolescents. Quantitative data were analyzed using descriptive and multivariate logistic regression at $p \leq .05$; qualitative data were content analyzed. Poor health provider-patient relations, financial constraints, distant health facilities, and fear of the exchange of babies by health workers influenced antenatal care practices among unmarried adolescents. More than half of the respondents (68.3%) received pregnancy care from faith-based and traditional birth attendants. Antenatal care utilization from orthodox (certified medical) healthcare providers was associated with secondary school education (OR = 7.35, 95% CI [5.83-8.94]), wealthiest households (OR = 6.74, 95% CI [4.34-8.35]) and age at last pregnancy 14–16 (OR = 0.17, 95% CI [0.12-0.27]). There is a need for functional and accessible orthodox healthcare facilities and an increased awareness about antenatal care services among adolescents to reduce delays in antenatal visits and maternal-related health risks through effective policies that could lead to attitudinal change among the populace.

Keywords

Antenatal care; healthcare facilities; Nigeria; pregnancy risk; unmarried adolescents

Introduction

Antenatal care is healthcare services provided to pregnant women or girls up to delivery. This care includes regular examinations by healthcare providers to check for potential health challenges and encourage healthy lifestyles that will benefit the mother and their unborn baby (National Population Commission (NPC) & ICF, 2019). Recently, the increased involvement in premarital sex by adolescents aged 16 or below has become a global challenge (United Nations Population Fund (UNFPA), 2022; World Health Organization (WHO), 2022). This behavior exposes many young people to unplanned pregnancies and maternal risks. The United Nations (2017) reported that although the population of adolescent childbearing has declined worldwide, given the growing adolescent population, adolescent fertility is expected to increase globally by 2030. The report indicated that in 1990, 65 live births per 1,000 women were associated with adolescents. In 2015, the figure reduced to 47 births in every 1,000 women delivered. Moreover, the UNFPA (2013) projected that the highest increase in adolescent pregnancy will occur in West and Central Africa and Eastern and Southern Africa by 2030.

The UNFPA (2015) and Darroch et al. (2016) observed that each year in less developed countries, 2 million adolescents below the age of 15 and 21 million between the ages of 15 and 19 become pregnant. A report from the WHO (2022) revealed that more than 50% of births occurred among adolescents in sub-Saharan Africa, with Nigeria and six other countries accounting for most of this figure. In Nigeria, while some adolescent girls are mothers within marital unions, others become mothers out of wedlock (Alex-Ojei & Odimegwu, 2021). The WHO (2022) reported that many adolescents in Nigeria are mothers outside of marriage. The Nigerian Demographic and Health Survey indicated that the South-south geopolitical zone has the highest number of unmarried adolescent births in Nigeria, with Akwa Ibom State among the leading states (NPC & ICF International, 2014; NPC & ICF, 2019). The UNFPA (2013) also reported that childbearing among adolescent mothers in Akwa Ibom State was mainly accidental and occurred outside marital unions. Furthermore, unplanned pregnancies and outside wedlock are often associated with increased maternal and infant morbidity and mortality rates in an environment characterized by a lack of adequate healthcare facilities and limited access to antenatal care services (Michael & Alonge, 2021).

Previous studies on antenatal care among adolescent mothers had primarily focused on the biomedical aspects and high prevalence of ever-pregnant adolescents in Southern Nigeria (Kola et al., 2020; Moore et al., 2016; NPC & ICF, 2019). However, little attention has been given to the sociocultural issues influencing antenatal care practices among adolescents aged 16 years and below at greater risk of pregnancy-related complications. This study, therefore, examines the sociocultural factors that influence antenatal care practices among unmarried adolescents in Akwa Ibom State, Nigeria.

Theoretical background

The study hinged on the rational choice theory, which assumes that individuals do not act based on accident, but carefully weigh the benefits and costs of an intended action considering available resources (Charles, 2010; Ritzer, 2008). Considering that about 22% of the Nigerian population are adolescents (Federal Republic of Nigeria, 2009) with fertility rates of 106 births per 1,000 population (Bolarinwa et al., 2022; NPC & ICF, 2019), it is not surprising that early

unplanned pregnancy and non-utilization of antenatal care services are destructive to adolescent mothers and newborns (Bolarinwa et al., 2022; WHO, 2022). Nevertheless, adolescent girls in Nigeria are more likely to choose healthcare facilities for antenatal care services utilization after weighing the costs and benefits of such actions (Michael et al., 2021). A report from the United Nations Children's Fund (UNICEF) (2014) suggested that a girl must not be pregnant earlier than age 18 due to their physical immaturity, which is yet set for childbearing. A child born to a girl younger than 18 is more likely to be delivered prematurely with the concomitant effect of low body weight or death in the first year of age (Choi et al., 2022; Michael et al., 2021). Fittingly, the education and wealth index contributes mainly to the antenatal care utilization of adolescents in Nigeria (Alex-Ojei & Odimegwu, 2021; Banke-Thomas et al., 2017). In addition to Nigeria's rapid population increment, adolescent births have contributed to the high fertility rates in the country (Michael & Odeyemi, 2017; Makinwa-Adebusoye, 2006). The NPC and ICF (2019) reported that the fertility rate of adolescents aged 15–19 in Nigeria remains high while utilization of antenatal care remains low.

In Nigeria, the rural fertility rate among adolescents remains higher than the urban fertility rate (National Population Commission & ICF, 2019). With about 270,000 adolescent girls aged below 15 giving birth yearly in the country (Neal & Hosegood, 2015), cultural and environmental factors have been found to play a significant role in early childbearing and antenatal care services utilization in Nigeria (Agbonjimi et al., 2022). Likewise, early marriage contributes to increased adolescent pregnancy nationwide (Wodon et al., 2017; World Vision, 2013). Studies revealed that in Nigeria, the desire for virginity among girls and cultural expectation of sex within marital union influence early marriage, pregnancy, and motherhood among adolescents (Makinwa-Adebusoye, 2006; Olamijuwon & Odimegwu, 2022). Babafemi and Adeleke (2012) found that although the stigmatization initially attributed to early premarital childbearing in Nigeria is gradually declining, the health consequences associated with early adolescent pregnancy and delay in accessing antenatal care services remain high (Agbonjimi et al., 2022; Ovikuomagbe, 2017).

Methods

This study adopted a mixed methods approach, combining methods of collecting and analyzing data from quantitative and qualitative approaches (Creswell & Creswell, 2018) to compensate for the disadvantage of using a single approach (Khoo-Lattimore et al., 2019).

Research method for Quantitative approach

The study employed a cross-sectional survey design with a multi-stage sampling technique (NPC & ICF, 2019). The first stage used purposive sampling to select Southern Iman of Akwa Ibom State because of its high prevalence of ever-pregnant unmarried adolescents (18.0%). The second stage used systematic sampling to select 20 of the 30 communities from which households with an ever-pregnant unmarried adolescent were purposively selected. After using Cochran's (1977) formula to determine the sample size, the third stage used a simple random sampling technique to choose adolescents who met the inclusion criteria for respondents and then administered a structured questionnaire to 621 respondents. The inclusion criteria included being an ever-pregnant unmarried adolescent, between 10 and 16 years old, and a resident in the study area for a minimum of five years before the fieldwork.

For households with more than one eligible person, a respondent selection method was used to randomly select a single respondent for questionnaire administration.

Cochran's (1977) formula was used to determine the study's sample size stating that: $n_o = Z^2P^*q/e^2$; where n_o is the desired sample size. Z^2 is the abscissa of the normal curve that cuts an area α at the tails (1 - α equals the required confidence level of 95% or 1.96). e is the expected level of precision (e = 0.04). p is the assumed population variance or variability. Because we did not know the actual population variability of unmarried adolescents, we assumed maximum variability (.5), and q is 1-p.

$$n_o = \frac{Z^2 p^* q}{e^2} = \frac{(1.96)^2 [.5 * (1-.5)]}{(.04)^2}$$

$$= \frac{3.842 * 0.25}{.0016} = 600.25$$

With the addition of 10% (60) of the questionnaires to account for attrition, the study sample size was theoretically put at 660. However, after questionnaire administration in the field, 621 copies of the questionnaire were returned and found valid for analysis.

The information gathered from respondents using a questionnaire instrument included individual, and household characteristics, care provider(s) visited for ANC of last pregnancy, place of visit for ANC, first person visited, number of ANC visits, month of first visit, decision maker on choice of ANC and characteristics of the males responsible for pregnancies of adolescents. The instrument was reviewed and approved by sociology, public health, and adolescent psychology experts. A pilot study was conducted to ensure that the instrument met its purpose. A minimum reliability coefficient of r = 0.80 was obtained (Nunnally, 1978). The purpose of the study was fully explained to all respondents before administering the questionnaire. Informed consent was sought and obtained from all respondents. Also, permission was obtained from the parents/guardians of every adolescent before administering the questionnaire to any adolescent.

The Akwa Ibom State Ministry of Health and the head of selected communities granted permission for this study. The duration for fieldwork was six months, beginning from January to June 2019. Ethical approval was obtained from the Social Sciences and Humanities Research Ethics Committee, University of Ibadan, Ibadan, Nigeria (No: UI/SSHEC/2018/0005). The authors strictly adhered to the ethical principles of voluntariness, beneficence, confidentiality, and non-malfeasance.

The questionnaire data were analyzed using descriptive and multivariate logistic regression at $p \leq .05$. Table 1 describes the study's variables, coding, and measurements as used in the analysis.

Table 1. Variable Descriptions, Coding, and Measurements

Variables	Description	Coding	Measurement
Dependent Variables			
Antenatal care provider visited	Healthcare provider for the antenatal care of the last/current pregnancy	Orthodox (certified skilled) care provider =1; Otherwise = 0	Dummy
Independent Variables			
Age	Current age of adolescents (the categorization was based on the WHO's classification of the age of adolescents into early (aged 10–13) and middle (aged 14–16) stages	Aged 10–13 = 1 Aged 14–16 = 2	Dichotomous
Parental alive status	Parent(s) of an adolescent alive	Both parent alive = 1, otherwise = 2	Dummy
Household's wealth index	Household wealth index of an adolescent (the items captured in measuring the household wealth index were adapted from the Nigeria Demographic and Health Survey (NDHS) questionnaire tool used for measuring household wealth index). Items in the measurement include the type of flooring, refrigerator, water supply, type of vehicle, sanitation facilities, persons per sleeping room, electricity, ownership of agricultural land, radio, domestic servant, television, and telephone.	Poor (0–4 items) = 1, Middle (5–8 items) = 2, Rich (9–12 items) = 3	Categorical
Education	Educational level of an adolescent	None = 0, Primary = 1, Secondary+ = 2	Categorical
Age of person responsible for adolescent's pregnancy	Age of the man/boy that is responsible for an adolescent's pregnancy	≤ 20 = 1, 21–25 = 2, 26 + = 3	Categorical
Educational level of the person responsible for adolescent's pregnancy	Educational level of the person that is the person responsible for an adolescent's pregnancy	None = 0, Primary = 1, Secondary = 2, Tertiary = 3	Categorical
Marital status of the person responsible for the adolescent's pregnancy	Marital status of the person that impregnated an adolescent	Married = 1, Cohabited = 2, Single = 3, Other = 4	Categorical
Decision maker	Person who decides on the choice of antenatal care services	Self = 1, Parent/guardian = 2, Male responsible for pregnancy = 3, Joint decision (self & male responsible for pregnancy/caregiver) = 4	Categorical

Research method for a qualitative approach

A non-probability purposive sampling technique was used in selecting respondents/participants for the qualitative interviews. To secure variations and uniqueness in responses, 35 in-depth interviews (IDI), 12 focus group discussions (FGD), and 4 life histories were conducted. Each sample size was determined at the point of saturation, where there was no more new information to gather from respondents/participants. The 35 in-depth interviews were conducted among ten unmarried adolescents, five skilled healthcare providers, ten unskilled healthcare providers, and ten caregivers. Although the data were extracted from a PhD thesis, only data collected from adolescents are presented in this paper.

The inclusion criteria for the in-depth interview selection among adolescents were unmarried ever-pregnant adolescents aged 10–16 who had resided in the study area for a minimum of five consecutive years prior to the study. Efforts were made to include adolescents between 10–13 years and between 14–16 years; those who received antenatal care from skilled (orthodox), traditional, and/or faith-based healthcare providers, and those that did not receive any healthcare from a provider during pregnancy. The twelve focus group discussions and four life histories were purposively conducted among unmarried adolescents. The participants in the focus group discussions were young girls aged 10–16 who were: ever-pregnant and never-pregnant adolescents, school and out-of-school adolescents, wealthy and non-wealthy household adolescents, and adolescents with educated and non-educated parents/caregivers. Participants with similar characteristics were grouped in each session of the focus group discussions for homogeneity of information. Each of the focus groups had a minimum of 6 and a maximum of 10 participants. The four life histories were those with unique cases, physical challenges, and pregnancy complications.

The questions used for qualitative data collection elicited information from respondents/participants on individual and household characteristics, healthcare experiences during pregnancy, healthcare provider-patient relationship, place and timing of ANC visit, perception about ANC, complication experiences, family support/care, cultural prescriptions and proscriptions, and reasons for delay in accessing or not accessing ANC from skilled healthcare providers.

Ethical considerations of voluntariness, informed consent, confidentiality, and non-maleficence were equally observed at various stages of recruiting and interviewing respondents/participants and coding, analyzing, and reporting findings. The qualitative data were content-analyzed.

Results

Background characteristics of the unmarried adolescents

In line with the classification of the adolescent framework by the WHO, the respondents were categorized into the three stages of adolescence: early stage (aged 10–13), middle stage (aged 14–16), and both stages (aged 10–16) for some comparison that could further assist in policy intervention (Mangiaterra et al., 2008; WHO, 2006). The framework identifies the early and middle stages as the phase when adolescents are more vulnerable to reproductive health issues. This study excluded the late stage of adolescence because of its focus on the more

vulnerable and poorly under-studied adolescents on reproductive health and maternity issues (Michael et al., 2021; WHO, 2022).

Table 2 shows the percentage distribution of respondents' socio-demographic characteristics. The results revealed that more than half of the respondents (66.5%) were in the middle stage, 78% of those aged 10–16 were in secondary schools, about 61% of those aged 10–16 were students, nearly 64% of the middle stage were from poor households, and more than half of the respondents aged 10–16 (59.1%) had single parents or no parents.

Table 2: Number and Percentage Distribution of Unmarried Adolescents by Selected Socio-Demographic Characteristics

Characteristics	Unmarried Adolescents		
	Early stage Aged 10–13 Number (%)	Middle stage Aged 14–16 Number (%)	Both stages Aged 10–16 Number (%)
All	208* (33.5)	413* (66.5)	621* (100)
Educational level			
No formal education	7 (3.4)	30 (7.3)	37 (6.0)
Primary	13 (6.3)	87 (21.1)	100 (16.1)
Secondary	188 (90.4)	296 (71.6)	484 (77.9)
Current occupation			
Student	135 (64.9)	244 (59.0)	379 (61.0)
Employed	14 (6.7)	46 (11.1)	60 (9.6)
Apprentice	29 (13.9)	31 (7.5)	60 (9.6)
Other	30 (14.4)	92 (22.4)	122 (19.8)
Religion			
Catholic	19 (9.1)	30 (7.3)	49 (7.9)
Other Christians	189 (90.9)	383 (92.7)	572 (92.1)
Household's wealth index			
Poor	104 (50.0)	264 (63.9)	368 (59.3)
Middle	60 (28.8)	134 (32.4)	194 (31.2)
Rich	44 (21.2)	15 (3.6)	59 (9.5)
Pregnancy status			
Currently pregnant	29 (13.9)	30 (7.3)	59 (9.5)
Ever given birth	179 (86.1)	383 (92.7)	562 (90.5)
Parent living status			
Both parents alive	74 (35.6)	180 (43.6)	254 (40.9)
Otherwise	134 (64.4)	233 (56.4)	367 (59.1)

*Note: *No. of respondents outside parentheses*

Antenatal care practices among unmarried adolescents

Care providers visited for ANC of last pregnancy:

Table 3 presents information on unmarried adolescents by all healthcare providers visited for antenatal care (ANC) during last pregnancy. The results are based on multiple responses. Adolescents aged 10–16 who received ANC from faith-based birth attendants were 42.8%, about 25% received care from traditional birth attendants, and nearly 32% of respondents received care from skilled healthcare providers (nurses, midwives, and doctors). Table 3 also presents the percentage distribution of unmarried adolescents by place of visit for antenatal care. The WHO (2016) recommended modern healthcare facilities for antenatal check-ups to

ensure that pregnant women receive comprehensive care that would improve the state of their pregnancies and prepare the unborn babies for smooth deliveries. The results show that nearly 81% of the adolescents did not visit orthodox healthcare facilities for ANC, and just under 10% of the adolescents did not receive antenatal care from any source but remained at home until the time of delivery. The adolescents in the middle stage were more likely not to receive antenatal care visits (11.2%).

Table 3: Percentage Distribution of Respondents by All Care Providers and Places Visited for ANC of Last Birth/Pregnancy

ANC care provider	Unmarried Adolescents		
	Early stage Aged 10–13 (*N* = 208)	**Middle stage Aged 14–16 (*N* = 413)**	**Both stages Aged 10–16 *N* = 621**
Faith-based birth attendant	42.3	43.1	42.8
Traditional birth attendant	27.9	24.3	25.5
Nurse/midwife	12.5	13.1	12.9
Doctor	6.6	6.0	6.2
No antenatal care	6.7	11.2	9.7
Other	4.0	2.3	2.9
Place of ANC			
Faith-based maternity center	42.3	43.1	42.8
TBA facility	27.9	24.3	25.5
Govt. Hospital/Health Centre	16.2	17.9	17.3
Private Hospital/Clinic	2.9	1.2	1.8
No antenatal care	6.7	11.2	9.7
Other	4.0	2.3	2.9

*Note: *Percentages are computed from multiple responses; TBA = traditional birth attendant*

Reasons for not visiting a skilled healthcare provider for ANC

Poor health provider-patient relationship

The data for the qualitative aspect of the study generated through in-depth interviews shed light on why most adolescents visited faith-based and traditional birth attendants instead of orthodox health professionals. The findings also revealed the reason some adolescent mothers visited both providers for antenatal care and why others did not visit any care provider during pregnancy. An in-depth interview with an unmarried adolescent of age 15 shows that some adolescents did not visit any medical health facility for antenatal care because of poor health provider-patient relationships, along with the information spreading in the community that health workers usually maltreat unmarried adolescents at the hospital/clinic.

This respondent recounted their first experience of the maltreatment of their friend, whom they had accompanied to a healthcare center for antenatal care. In their words:

> *I didn't go to any medical healthcare provider to avoid insult and embarrassment. The health providers are good at insulting young girls of my age when they go for antenatal care. There was a time I followed my friend who was pregnant at age 14 years. At the health center, she received uncountable insults from the care providers. They said to her, so you could*

> *not keep your legs closed! So, it was itching you! And you could not control your sexual urge. Now that you are pregnant, you will enjoy how painful it is to bear a child. When you are done with this journey, you will stay away from boys.*

(IDI/Adolescent mother/15 years/Ikot Obio Eka)

The above statement reveals how poor patient-health worker relations in the hospitals/clinics in the study area discourage some pregnant adolescents from seeking antenatal care services from orthodox medical facilities. The interaction of this factor with other factors will show the reasons for the low patronage of skilled healthcare providers by pregnant adolescents, especially in the early phase of pregnancy, where complications are less visible.

Belief that ANC is a curative rather than a preventive measure for safe delivery

An unmarried adolescent aged 12 whose medical case was complicated explained in the life history conducted that they visited both traditional and medical care providers during pregnancy. They noted that they could not bear the agony of complications arising from their pregnancy and had to weep nearly every day and night until delivery. Their history revealed that they had pathological vaginal discharge and urinary tract infection. Their health challenges prompted them to move from a traditional midwife's apartment to a hospital:

> *My health during pregnancy made me to receive antenatal care from both traditional and medical care providers... About 5 months after my pregnancy, I developed serious health problems... Before then, I was receiving antenatal care from a traditional midwife. When the complications began, I had to live with the midwife for hope of quick recovery... While she was providing me with herbal medication, she kept telling me that the situation would be solved soon... After two months, the problems became so unbearable that I had to be taken to a hospital for medical check-up. After diagnosis, I was informed that I was suffering from vaginal discharge and urinary tract infection... All through that period until delivery was terrible for me.*

(Life history/Adolescent mother/12 years/Ikot Esen Oku)

The above information from an adolescent mother highlights the importance of receiving prompt antenatal care from a trained provider. The data also reveals that some pregnant adolescents do not go for an antenatal check-up until their second trimester. The delay exposes many of them to complications that could have been identified earlier during the antenatal care examination. Not receiving antenatal care from a skilled provider, especially in the first three months of pregnancy, exposes pregnant adolescents to preventable maternal morbidity and mortality.

An in-depth interview with an unmarried adolescent of age 16 who had given birth to two children revealed that some adolescents did not go for antenatal check-ups until the day of delivery, especially when they did not have serious complications. They explained that they saw no need for an antenatal check-up when they could use that time for other more productive things. According to them, health check-ups are for those who have health challenges, hence as long as they do not have any, there is no need for antenatal care:

> *Antenatal care is for people who are sick or have complications during pregnancy. During the pregnancy of my second child, I didn't have complications, so I had no reason to have visited a health facility for a check-up. I stayed at home until delivery. It was when I was in labor and about to deliver that I went to our pastor's wife -who was the church midwife-for delivery.*
>
> (IDI/Adolescent mother/16 years/Eso-Efa)

The above statement reveals the ignorance of many adolescents concerning the need to receive antenatal care services from a trained provider. They perceive antenatal care as a curative rather than a preventive measure for safe delivery. The data demonstrate the beliefs and attitudes of the people towards orthodox medicine. Generally, many people in the study area only patronize orthodox health services when they are very sick and when traditional or faith-based medicines have failed. Thus, the response from the adolescent mother was expected.

First person visited for ANC of last birth/pregnancy

Table 4 presents the distribution of unmarried adolescents by first person visited for ANC of last birth/pregnancy. The first person visited for ANC plays a vital role in determining subsequent visits for antenatal care. The results show that over half of the adolescents (53.1%) visited faith-based birth attendants as the first person of contact for the antenatal care of the last birth/pregnancy, followed by 25.2% who visited traditional birth attendants. Early adolescents were more likely to visit nurses/midwives for their first antenatal care than middle adolescents. This finding may have resulted from the fear of parents or guardians wanting to know the state of their daughters' health, given the age at which they got pregnant.

Table 4: Percentage Distribution of Respondents by First Person Visited for ANC of Last Pregnancy

Variable/categories	**Adolescents**		
1st person visited	**Early stage Aged 10–13 (*N* = 208)**	**Middle stage Aged 14-–16 (*N* = 413)**	**Both stages Aged 10–16 *N* = 621**
Faith-based birth attendant	41.4	57.1	53.1
TBA	36.1	17.3	25.2
Nurse/midwife	20.5	13.1	14.6
Doctor	4.0	4.3	4.1
Other	2.0	4.2	3.0
Total	100.0	100.0	100.0

Note: TBA = traditional birth attendant

Most participants first visited faith-based birth attendants for antenatal care

Focus group discussions among unmarried adolescent mothers supported the quantitative findings of the study. Six out of eight participants in the focus group discussion first visited faith-based birth attendants for antenatal care. Most of the faith-based birth attendants were stationed on church premises. The adolescents explained that since they were familiar with the church midwives and believed God could do everything, including safe pregnancy and delivery, they visited the faith-based midwives first. In addition, they did not have to pay for

antenatal care for the first visit. They preferred faith-based birth attendants to trained orthodox medical healthcare providers as the very first person of contact. One of the participants captured the opinions of many in their words:

> *I prefer to first visit the church midwife for antenatal care, especially as first place of contact because, first, I don't have to pay for the service on the first day of visit for pregnancy examination. Second, I need to take the pregnancy to God to ask for forgiveness and protection until delivery. You know, the pregnancy was outside marriage.*
>
> (FGD/Adolescent mother/14 years/Ikot Ese)

The above scenario depicts the spiritual implication attached to pregnancy outside of wedlock. It illustrates the extent that a pregnant adolescent had to rely on a faith-based antenatal care provider at the expense of an orthodox care provider to obtain God's mercy on their premarital pregnancy. It also indicates that poverty is an essential factor preventing adolescents from assessing orthodox healthcare facilities for antenatal care. Perhaps adolescents consider their inability to afford hospital or clinic bills before taking the alternative of faith-based care services. This behavior depicts that some adolescents may prefer skilled healthcare providers to faith-based birth attendants, but poverty influences their choice of non-orthodox healthcare services.

On the contrary, another adolescent, 13 years old, explained that their mother took them to the clinic for a check-up immediately after they realized they were pregnant. Since then, they have visited the orthodox health facility for an antenatal check-up. They noted that although they usually felt timid whenever they had to visit the healthcare provider because of their early premarital pregnancy, they later learned to visit the clinic for antenatal care because of their mother's encouragement and insistence on regular antenatal care visits to remain healthy:

> *When I became pregnant, I was very shy and didn't want to go for any check-up because of shame... In the third month of pregnancy, my mother forced me to visit the clinic for check-up to know the state of my health... Although, it was not easy for me to walk along the way knowing that nearly everybody in the community knew that I was pregnant. However, with the help of my mother, who would give me her bicycle or ask my uncle to take me on his motorcycle to the clinic, I was able to follow up my antenatal care visits until delivery...*
>
> (FGD/Adolescent mother/13 years/ Ikot Ese)

The above discussant received support and encouragement from their mother, even though they were pregnant outside of wedlock. Their family support contributed significantly to overcoming the stigmatization and shame associated with early premarital pregnancy. The implication is that despite ridicule from outsiders, support from family plays a vital role in adolescents' decisions about antenatal care choices and adherence until delivery.

Number of ANC visits and timing of first visit

Table 5 presents the percentage distribution of unmarried adolescents by the number of ANC visits and the timing of the first visit. The antenatal care policy in Nigeria is aligned with

earlier antenatal care recommendations of at least four ANC visits for women without complications. The WHO (2018) now recommends eight ANC visits. The recommendations include that women with complications, special needs, or conditions beyond the normal scope of primary care may require additional visits. The analysis results in Table 4 indicate that the number of months at the time of the first ANC visits and the number of ANC visits significantly varied by the age of adolescents. The highest percentage of respondents (45.4%) went for their first ANC visit at 4–5 months of pregnancy. This finding contradicts the recommended period for the first ANC visit.

A pregnant adolescent is expected to go for an ANC visit at least once during the first three months of pregnancy or within the first trimester. The results show that 11.9% of the sample met this expectation. Others delayed their ANC visits, a dangerous situation for both mother and child. Early visit for ANC is crucial in the Nigerian context as it provides the opportunity for the early detection of complications. It also allows for early referral where necessary, considering the challenges of accessing health care in rural areas in Nigeria. Apart from the stage of the pregnancy at the first antenatal visit, the number of visits is equally essential. As explained earlier, a pregnant woman is expected to visit healthcare facilities at least four times (now eight times) for ANC services before delivery.

Table 5: Percentage Distribution of Respondents by Number of ANC Visits and Timing of First Visit During the Most Recent Pregnancy

Number and timing of ANC visits	Unmarried Adolescents					
	Early stage Aged 10–13	Middle stage Aged 14–16	%Total	χ^2	Df	*p* value
No. of months pregnant at the time of 1st ANC visits						
No antenatal care visits	7.1	0.1	2.4			
< 4	7.2	14.3	11.9	120.691	4	.000***
4–5	36.1	50.1	45.4			
6–7	28.8	3.6	12.1			
8+	20.7	32.0	28.2			
No. of ANC visits						
None	14.4	3.6	7.2	66.167	3	.000***
1	1.0	6.0	4.7			
2–3	36.1	17.9	24.0			
4+	49.5	71.4	64.1			

Note: Significant at p < .05, p <.01**, p < .001****

Table 5 shows that more than half of the respondents (64.1%), especially those in middle adolescence (71.4%), had four or more ANC visits before delivery. Regardless of the frequency of visits, the quality of the ANC is equally essential as this further determines the health of pregnant adolescents and their babies.

Participants visit skilled healthcare providers for ANC when complications arise

The focus group discussions among unmarried adolescents showed that most attend antenatal care from the fourth month of pregnancy or beyond. The participants revealed that they were more likely to visit healthcare providers for antenatal care when complications had

arisen. They believed that healthcare providers should only be visited when one is sick. The discussion indicates that most adolescents were interested more in curative rather than preventive healthcare practice. According to the discussants, they were more likely to attend check-ups as often as possible if they encountered complications. Since they were more likely to receive antenatal care in the second or third trimesters, they were also more likely to experience pregnancy complications at these stages of their pregnancies. One of the participants who had an intrapartum fever and prolonged labor had this to say:

> *It is only the sick that visit hospital. If we were not sick during pregnancy, then there was no need to see a doctor. Although I later had a serious fever during labor (intrapartum fever), which was with a prolonged labor, I did not visit any doctor or health worker for care until my six months of pregnancy when my legs were too heavy, and I was very 'very' sick... After being taken to the hospital, I visited the hospital four times before delivery.*
>
> (FGD/Adolescent mother/15 years/Oniong)

The discussant was fortunate to have survived the severe illness that attended their pregnancy without assessing professional health care. This finding shows the delays in seeking professional care among pregnant girls in Akwa Ibom State. It is common to find pregnant girls in the study area with heavy or swollen legs, which they write of as 'normal.' Some are told that such legs do not require medical attention. The implication is that cultural beliefs and practices influence the antenatal healthcare activities of adolescents in the study area.

Another discussant, diagnosed with anemia (low iron levels) and pregnancy-induced hypertension, shared their experience. They explained that they did not visit any health care provider for antenatal care until the fifth month of their pregnancy. They noted that they visited the hospital after bouts of dizziness, skin pallor, fatigue, and shortness of breath. According to them, when they started experiencing increased heartbeat, they were rushed to the hospital. They disclosed that when they first observed these symptoms, their mother and neighbors only encouraged them not to worry since they were the normal signs that accompanied pregnancy:

> *I first visited a hospital on my fifth month of pregnancy; I was very sick. I constantly experienced bouts of fatigue, dizziness, skin pallor, and shortness of breath. It was when I started having fast heartbeats that everyone said that it was out of hand and I should be rushed to a hospital before I died. Meanwhile, when I experienced these sicknesses, I was told by my mother and our neighbors that they were normal symptoms that accompanied pregnancy... Although I didn't deliver in the hospital, I was in the hospital for three days receiving medications.*
>
> (FGD/Adolescent mother/14 years/Oniong)

The above statement depicts that some pregnant adolescents visit professional healthcare facilities to receive treatment only when complications arise. However, they only go to these facilities to deliver during labor. This finding shows that some adolescents and caregivers are aware of the importance of delivery in orthodox healthcare facilities but do not go there because of some factors which were not included in the statement. These factors were identified and explained in the context of this study. They include financial constraints, distant

health facilities, sudden delivery, anxiety, and fear of the exchange of babies by health workers, among others. We hope to support these factors with more evidence as we proceed.

Multivariate logistic regression analysis

The results of logistic regression for the effects of selected characteristics on the utilization of ANC services for the last pregnancy of adolescents are shown in Table 6. The results are presented in three models. This procedure was adopted to determine the net effect of each explanatory factor on the likelihood of choice of ANC services after controlling for the influence of other factors. To ensure that the models were best fit for this exercise, adolescents at both early and middle stages were combined into a single group. This manner was to allow the models to be relied upon and to draw conclusions and predictive outcomes. This step was critical as it allowed for the attainment of an accepted analytical Hosmer-Lemeshow goodness of best fit test for each observation in samples (Bartlett, 2015; Fagerland & Hosmer, 2012).

The option for integration was chosen because the disintegration of the samples into early and middle adolescence subgroups gave redundancy of variables. The integration process permits Models 2 and 3 to receive additional explanatory variables of males responsible for pregnancies of adolescents' characteristics and decision-making factors. For a reliable outcome, the model was further subjected to a collinearity test to check for correlation between predictive variables to exclude variables that were not independent predictors of the value of the dependent variable. That helped to solve the multicollinearity problem in the analysis.

Table 6 shows that with other variables under control, age at last pregnancy exerts a significant influence on the choice of ANC services for the previous birth after including males responsible for pregnancies of adolescents and decision-making factors. Adolescents aged 14 to 16 were 84% less likely to choose orthodox healthcare facilities for ANC services than adolescents aged 13 and below (Model 1). Education also significantly influences the choice of ANC provider for adolescents across the three models. For instance, adolescents with secondary education were four or more times more likely to access modern healthcare facilities for antenatal care than those with lower education (Models 1–3). The number of parents alive also significantly influences the choice of ANC services. Adolescents whose parents were alive were four times more like to receive ANC from trained providers than those whose parent(s) were dead. The inclusion of characteristics of males responsible for the pregnancy of adolescents in Model 2 weakened the probability of receiving ANC from orthodox trained professionals; however still significant.

Table 6: Coefficients From Binary Logistic Regression Analyzing the Effects of Selected Characteristics on Choice of ANC Services for the Last Pregnancy

Characteristics	Model 1 (*N* = 621) Odds ratio (95% CI)	Model 2 (*N* = 621) Odds ratio (95% CI)	Model 3 (*N* = 621) Odds ratio (95% CI)
Individual:			
Age at last pregnancy			
≤ 13 (RC)	1.00	1.00	1.00
14–16	0.979 (0.52-1.78)	0.714 (0.49-1.08)	0.165*** (0.12-0.27)
Education			
< Secondary (RC)	1.00	1.00	1.00
Secondary	4.066*** (2.57-6.25)	6.651*** (4.26-8.33)	7.345*** (5.83-8.94)
Parental alive status			

Characteristics	Model 1 (*N* = 621) Odds ratio (95% CI)	Model 2 (*N* = 621) Odds ratio (95% CI)	Model 3 (*N* = 621) Odds ratio (95% CI)
Both parents alive	4.012*** (2.44-5.86)	3.991*** (2.05-5.27)	6.276*** (4.64-8.32)
Otherwise (RC)	1.00	1.00	1.00
Household's wealth index			
Poor (RC)	1.00	1.00	1.00
Middle	1.362** (1.16-1.55)	1.005 (0.43-1.12)	0.604 (0.42-0.81)
Rich	7.066*** (5.22-9.13)	2.745 (1.53-3.63)	6.744* (4.34-8.35)
Characteristics of males responsible for pregnancies of adolescents:			
Education			
< Secondary (RC)		1.00	1.00
Secondary +		1.051 (0.63-1.29)	0.965 (0.72-1.23)
Age			
≤ 20 (RC)		1.00	1.00
21–25		0.689 (0.44-1.22)	0.331* (0.142-0.56)
26 +		3.552** (2.24-4.61)	1.271 (0.89-1.07)
Marital status			
Married		0.069 (0.04-0.18)	0.766 (0.53-1.05)
Not married (RC)		1.00	1.00
Decision-making factor:			
Decision maker on choice of ANC			
Myself (RC)			1.00
Parent/guardian			0.686 (0.46-0.86)
Male responsible for the pregnancy			4.116** (2.61-6.37)
Self & male responsible for pregnancy/caregiver			6.774*** (4.74-9.53)
Model chi-square	145.212***	172.918***	276.723***
Nagelkerke R Squared	0.365	0.422	0.609
-2 Log Likelihood	479.193	451.487	347.682

Note: Significant at p < .05, p < .01**, p < .001***; RC - reference category; CI – confidence interval*

The addition of a decision-making factor in Model 3 increased the probability levels. It indicates that with the insertion of a decision-making factor, adolescents with both parents alive were six times more likely to access modern health care for ANC than others. Adolescents' household index significantly affects the choice of health care provider during pregnancy (Models 1 and 3). Adolescents with a rich wealth index were 14 times more likely to access modern healthcare facilities for ANC services than those with a poor wealth index. The addition of characteristics of males responsible for their pregnancy did not significantly influence wealth index interaction with adolescent choice of antenatal care (Model 2). The rich household wealth index significantly influences the choice of ANC services (Model 3). This finding demonstrated the relevance of the household wealth index in the health-seeking behavior of adolescents. It also indicated that the higher the household wealth index, the higher the chances of adolescents receiving ANC services from orthodox health professionals in such homes.

Although the educational level of males responsible for pregnancies of adolescents is essential to antenatal check-ups, it did not influence adolescents' choice of ANC services. This effect could result from the fact that some males responsible for pregnancies of adolescents did escape or travel away after impregnating adolescents, as revealed in a qualitative interview. In the qualitative interview, some males responsible for pregnancies of adolescents were noted for denying pregnancies. In addition to the circumstances surrounding adolescents' pregnancy, the perception of community members against such may have interplayed in the process. Adolescents whose males were responsible for their pregnancies made all decisions on the choice of ANC and were four times more likely to choose orthodox healthcare providers for antenatal care when compared to adolescents who solely made decisions (Model 3). The probability of seeking an orthodox care provider for ANC significantly increased to 7 times the likelihood of adolescents and males responsible for their pregnancies jointly deciding on the choice of ANC provider (Model 3).

Discussion

The study found that more than half of the adolescents received ANC from faith-based and traditional birth attendants. Qualitative findings indicated that some adolescents did not visit any medical health facility for antenatal care because of poor health provider-patient relationships, financial constraints, distant health facilities, sudden delivery, anxiety, fear of exchange of babies by health workers, and the information spreading in the community that health workers usually maltreat unmarried adolescents at the hospital or clinic. Previous studies noted that antenatal care utilization from skilled birth attendants is low among adolescents in Nigeria (Kola et al., 2021; Kola et al., 2020; Rai et al., 2012). AbouZahr and Wardlaw (2003) recommended orthodox healthcare facilities enhance antenatal check-ups and provide the comprehensive care needed to prepare the fetus for effective delivery. The study found that about two-thirds of the adolescents sampled did not visit modern healthcare facilities for ANC; instead, they visited faith-based and traditional maternity centers. This finding is consistent with the study by Ntoimo et al. (2022) that pregnant women in rural Nigeria prefer faith-based and traditional birth attendants to professional birth attendants.

About one-third of the adolescents did not receive antenatal care from any source but remained home until delivery. Those in middle adolescence were more likely to remain without antenatal care when compared to those in early adolescence. Qualitative findings showed that not receiving antenatal care from a skilled provider, especially in the first three months of pregnancy, exposed pregnant adolescents to preventable maternal morbidity and mortality. The Nigeria Demographic and Health Survey of 2018 showed that 33% of pregnant women in Nigeria do not receive antennal care from any skilled care provider (NPC & ICF, 2019). Moreover, the first ANC visit influences subsequent antenatal care visits (Atinge et al., 2020).

The study found that over half of the adolescents sampled contacted faith-based birth attendants first for the antenatal care of their last pregnancy. The qualitative finding disclosed that most faith-based birth attendants were stationed on church premises. The adolescents explained that since they were familiar with the church midwives and believed God could do everything, including safe pregnancy and delivery, they had to visit the faith-based midwives first. In addition, for the fact that they did not have to pay for antenatal care for the first time of visit. They preferred faith-based birth attendants to trained orthodox medical healthcare providers as the very first person of contact.

The antenatal care policy in Nigeria is aligned with the earlier antenatal care recommendations of at least four ANC visits for women without complications (now eight visits). The recommended schedule includes the first visit at the end of 16 weeks of pregnancy, the second between 24 and 28 weeks, the third at 32 weeks, and the fourth at 36 weeks. The recommendations include women with complications, special needs, or conditions beyond the normal scope of primary care (WHO, 2016).

The current study found that the number of months at the time of the first ANC visit and the number of ANC visits significantly varies by the age of adolescents. The highest percentage of the respondents went for their first ANC visit at 4–5 months of pregnancy (the second trimester), which contradicts the recommended period for the first ANC visit of not more than 16 weeks of pregnancy (the first trimester). The study found that only 11.9% of the sample met this expectation. Others had delayed ANC visits. The qualitative interview revealed that early adolescence was more likely to visit nurses/midwives for their first antenatal care when compared to middle adolescence. This resulted from the parents or guardians' fear for their daughters' health, given their tender ages. This finding also supports the theoretical assumption that individuals do not act based on accident but carefully weigh the benefits and costs of an intended action considering available resources (Charles, 2010; Ritzer, 2008). The finding corroborates Nwokocha (2012), who found that most pregnant women in Nigeria begin antenatal care visits in their second trimester.

Early visit for ANC is crucial in the Nigeria context as it provides the opportunity for the early detection of complications to prepare for early referral where necessary, considering the physical barriers rural dwellers encounter in accessing health care (Adewuyi et al., 2018; Seid & Ahmed, 2021). However, beyond the number of months of pregnancy at the first antenatal visit, the number of visits is equally essential (Ahinkorah et al., 2021; Alex-Ojei & Odimegwu, 2021). A pregnant woman is expected to visit a health facility at least four times (now eight times) for ANC services before delivery. The study found that more than half of the respondents had four or more ANC visits before delivery, especially those in the middle adolescence category. Notwithstanding the high number of ANC visits, the healthcare provider and the quality of ANC are also vital as they determine the health status of pregnant adolescents and their babies (Michael et al., 2021).

The logistic regression findings showed that adolescents aged 14–16 were less likely to choose modern healthcare facilities for ANC services than adolescents aged 13 and below. The study found that education significantly influences the choice of ANC provider across all models. For instance, adolescents with secondary education were more likely to access orthodox healthcare facilities than those with lower education for antenatal care. The study found that the living status of parents significantly influences the choice of ANC services. Adolescents whose parents were alive were more likely to receive ANC from orthodox healthcare providers than those whose parent(s) were dead.

The qualitative findings disclosed that the support and encouragement from parents and families, even though the adolescents were pregnant outside of wedlock, contributed significantly to adolescents overcoming the stigmatization and shame associated with early premarital pregnancy and antenatal care visits adolescents. The addition of males responsible for the pregnancy of adolescents' characteristics in the quantitative model weakened the probability of receiving ANC from trained professionals, although it was still significant. This finding corroborates the observation by previous studies that adolescent mothers are more likely to receive worst prenatal care than adult mothers (Dairo & Owoyokun, 2010; Idowu et al., 2017; Woldemicael, 2005).

As noted, and mainly as it relates to the inclusion of decision-making factors in the model, adolescents with both parents alive were more likely to access orthodox health care for ANC than those who lost one or more parent(s). The study found that adolescents' household index significantly affects the choice of healthcare provider during pregnancy. Adolescents from rich wealth index households were more likely to access modern health care facilities for ANC services than those with poor wealth index. The addition of males responsible for the pregnancy of adolescents characteristics to the model did not exert a significant influence on adolescent pregnancy. This finding demonstrates the relevance of the household wealth index in the health-seeking behavior of adolescents (Adewuyi et al., 2018; Seid & Ahmed, 2021). It also indicated that the higher the household wealth index, the higher the chances of adolescents receiving ANC services from health professionals. This result is consistent with previous studies that lower utilization of orthodox health care is associated with poor households because they rank health care low in priority over other basic needs (Ahinkorah et al., 2021; Rai et al., 2012).

The study found that although the educational level of the males responsible for the pregnancy of adolescents is essential for antenatal check-ups, it did not influence the adolescents' choice of ANC services. The reason for this was partly associated with the fact that some males responsible for pregnancies of adolescents escaped or traveled out of the community after impregnating their adolescent partners. More so, some males responsible for pregnancies of adolescents were noted for denying pregnancies in the qualitative aspect of the study. This finding partly explains why the education of males responsible for the pregnancy of adolescents was not significant. In addition to the circumstances surrounding adolescents' pregnancy, the community's negative stance on premarital and early pregnancy also interplayed in the process. The study found that whether or not a male responsible for the pregnancy of an adolescent was married did not influence the adolescent's choice of ANC provider.

As revealed, the decision-making factor significantly influences the unmarried adolescent's choice of ANC services. Adolescents whose males were responsible for their pregnancies made all the decisions on the choice of ANC and were more likely to choose professional healthcare providers for antenatal care than adolescents who made all the decisions concerning their lives. However, the study found that the probability of seeking an orthodox care provider for ANC significantly increased when adolescents and males responsible for their pregnancies jointly decided on an ANC provider. This result deviates from Ahinkorah et al. (2021) in Guinea that women who made the decisions alone have higher odds of antenatal care visits and utilization. However, Ghuman et al. (2006) corroborated the position that women's autonomy influences reproductive health matters.

Conclusion and policy options

This study has described the sociocultural issues influencing the utilization of antenatal care services among unmarried adolescents aged 16 and below in Akwa Ibom State, Nigeria. It identified education, household wealth index, age at pregnancy, poor health provider-patient relations, financial constraints, distant health facility, sudden delivery, anxiety, and fear of baby exchange by health workers as sociocultural factors influencing antenatal care services utilizations among unmarried adolescents. Some pregnant adolescents do not go for an antenatal check-up until their second trimester. The delay exposes many of them to complications that could have been identified earlier during the antenatal care examination.

Many pregnant adolescents perceive antenatal care as a curative rather than a preventive measure for safe delivery. This finding demonstrates the beliefs and attitudes of the people towards orthodox medicine.

Beyond the fact that adolescent premarital pregnancies contribute to high fertility rates, they equally expose adolescents and their babies to maternal health-related risks. Regardless of the ascribed role of faith-based and traditional birth attendants in providing antenatal care services in places characterized by a lack of access to functional facilities, their activities could be detrimental to users. This result is when referrals are not particularly timely due to a lack of skills by unorthodox practitioners to recognize maternal-related health complications and early warning signs. The study contends that there is a need for appropriate orientation, training, and definition of responsibilities and possible synergies between orthodox and non-orthodox antenatal healthcare providers.

Policy on compulsive antenatal healthcare services for all categories of women has become imperative considering the high annual maternal mortality statistics reported across Nigeria. The critical issue is whether any proposed policy will also not end the way others gathered dust on shelves. Therefore, understanding why most policies have not worked in Nigeria and addressing the underlying factors would go a long way to opening trajectories for new incursions toward achieving workable antenatal healthcare policies in Nigeria.

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