ANALYSIS OF THE FACTORS AFFECTING THE UTILIZATION OF ANTENATAL HEALTHCARE IN HONG LOCAL GOVERNMENT AREA, ADAMAWA STATE, NIGERIA

By

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Abstract: Antenatal care (ANC) services are very important in the health and well-being of a pregnant woman and the unborn child. Irrespective of its significance, use of ANC services in various regions in Nigeria, is still not optimum. This paper discusses the variables influencing the utilization of ANC services in the Hong Local Government Area, Adamawa State, through determining the interaction of the factors as geographical, economic, socio-cultural and healthcare providers/healthcare facilities as impediments to ANC service utilization. This is a cross-sectional study in which the researcher, using instrument of data collection, adopted questionnaire and applied multistage sampling technique. The study sample was 400 when it was approximated according to Taro Yamane model. The results have pointed out that high cost of transportation, distance of travel, lack of adequate transportation infrastructure and challenging terrains are some of the factors that make the ANC services hard to reach. Moreover, the use of these necessary services is also curtailed by economic factors namely the low income by healthcare users and even the socio-cultural beliefs. The research also indicates that absence of drugs, the medical staff, extended waiting lines and substandard facilities are also other limiting factors to the use of the antennal care service. On the basis of such findings, the study suggests special interventions, among which are the improvements in the road infrastructure, and the introduction of mobile healthcare services and essential analysis of such factors of access within government healthcare. Through these barriers, policy makers and health care professionals have an opportunity to improve the delivery of ANC services and ultimately increase the maternal and child health outcomes in the Hong LGA and Nigeria in general.

Key Words; Antenatal, Factors Affecting, Healthcare, Utilisation, Hong, Nigeria

1.0. Introduction

Maternal healthcare is incomplete without antenatal care (ANC). It encompasses multiplicity of medical interventions that are designed to monitor and curative to pregnancy related problems, which include health tests, dietary information and prenatal education. ANC plays a very important role in reducing the mortality rate among mothers and newborns (WHO, 2016). There is also a strong correlation between ANC services use and Geographic (regional, locational, physical), sociocultural, economic and Health Providers/Health Facilities factors (Adewuyi et al., 2024, Onokerhoraye and Dudu, 2017; Wamanyi and Samuel, 2017), however, the difference between the use of these services between groups and regions is noticeable.

Since the factors affecting the application of ANC are important, it is vital to understand the causes of high mother and infant deaths in Nigeria. The proportion of pregnant women receiving the recommended four or more antenatal care visits in the period of pregnancy is only 67% in Nigeria and the disparities between the urban and rural regions are significant (Nigeria Demographic and Health Survey, 2019). Even rural territories are often under-provided, as research revealed that there were discrepancies between the distribution of medical facilities in cities and rural regions (Adewuyi et al., 2024; Akinyemi et al., 2021). The location of ANC clinics in the urban centers implies that pregnant women might be deterred to access the health services in regions where the majority of people are rural population. Furthermore, the inequality in the allocation of services contributes to the addition of issues related to access, in particular, the pregnant mothers who reside in remote and inaccessible locations (Adewuyi et al., 2024).

One of the factors that predict the use of antenatal healthcare is the access to ANC services, which is affected by such variables as geographic remoteness, cultural attitudes and practices related to pregnancy and birth affecting how women make decisions about ANC attendance and delivery by traditional birth attendants or healthcare specialists, the attitude of healthcare workers, travel distance, gender norms, and transportation infrastructure (Izugbara et al., 2018). Access of women to healthcare facilities to receive ANC is a problem especially in the rural and remote areas such as Hong LGA due to poor road networks and transit. The cost and time spent by the women, especially those families with low income levels to travel long distances to access ANC clinics, can be a hindrance especially to the women (Izugbara et al., 2018). Moreover, the geographical isolation increased because of the physical geography of roughland or frequent floods makes access problematic as expectant mothers do not find it easy to visit ANC regularly during checkups. Likewise, the same problem is still present in the Hong LGA of Adamawa State in northeastern Nigeria (Wamanyi and Samuel, 2017). Access to healthcare treatments is often limited by cultural beliefs, poverty and lack of good infrastructures (Hamman et al., 2023).

ANC services in the Hong LGA remain suboptimal despite the efforts made by the Nigerian government and other stakeholders to improve maternal and child health (Adewuyi, 2018; Anjorin, 2021). The existing scientific literature has shown that in similar settings, the use of ANC is severely hindered by a variety of factors, among which the lack of knowledge, financial constraints, traditional attitudes, and distrust in healthcare professionals can be identified (Izugbara et al., 2018; Adewuyi et al., 2018; Hamman et al, 2023). This research seeks to explore the issues that contribute to the utilization of antenatal health care in Hong Local Government in Adamawa State, Nigeria, since there is paucity of the studies that concentrate specifically on the challenges that are met by the pregnant women in this region.

2.0. Materials and Methods

2.1. Study area

Hong LGA falls within the latitude of 10o 00 00 N and 10o 35 00 N and longitude of 12o 35 00 E and 13o 20 00 E. One of the 21 Local Government Areas of Adamawa State, it was formed in 1987 in the former Gongola State (Joseph et al., 2025). The ranges of hills at the foot of which the town is located are the prevailing relief feature in the area of Hong. The hills are high 150-200 meters above the adjacent plains and watershed creates many streams to two sides. The population

of Hong town is primarily farmers. The location of the Hong Local Government Area in Adamawa State is depicted in figure 1.

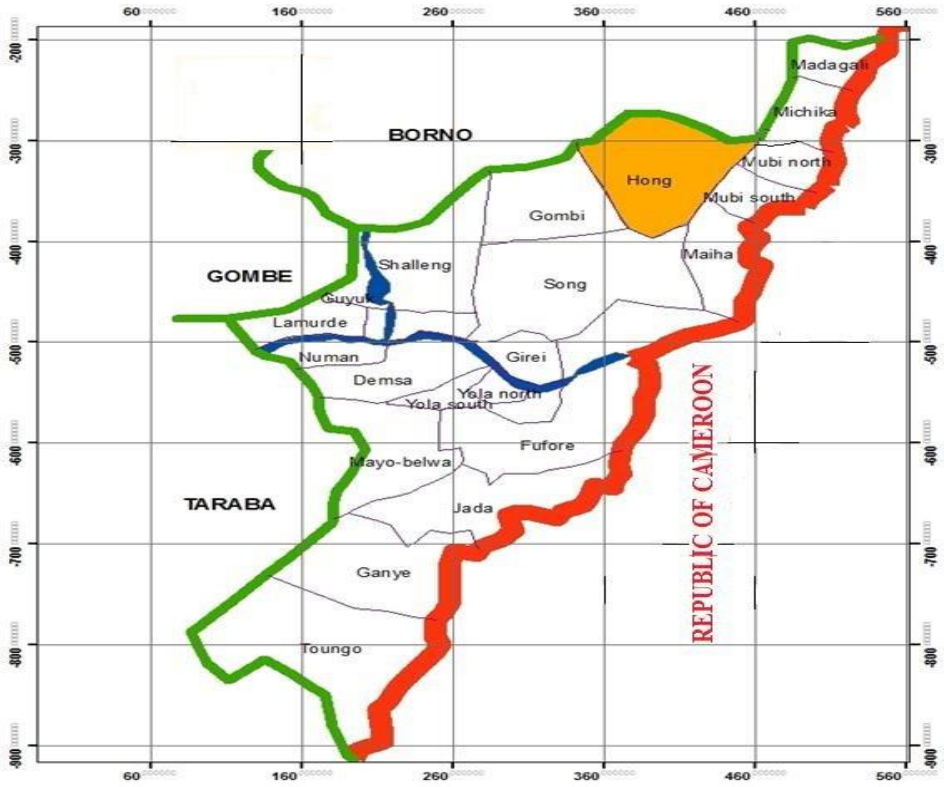

Figure 1: Map of Adamawa State showing Hong Local Government Area

Source: National Centre for Remote Sensing Adamawa State

2.2. Methods

The study design is a cross-sectional study method that requires gathering data at one moment of time, which serves to evaluate different factors that affect ANC use simultaneously. Two primary sources of data were used to come up with the data to use in this study. These were primary and secondary sources of data. Women of female childbearing age at the time of study were the subjects of the study. These women belonged to the Hong Local Government Area of Adamawa State and are mothers that are still giving birth - being that they are single or widow (inclusion criteria) despite the fact that they do not reside in the study LGA. The study was conducted in the sampled communities in April to May 2024. The sample size of the study was determined by using the Taro Yamane formula where sample size was calculated as 398.1 and took the value of 400.

The sampling used in the study was a multi-stage sampling, purposive sampling was used to concentrate on the LGA of Hong, stratified sampling used to break down the LGA in four segments with the LGA Headquarter (Hong) chosen to represent urban area and two villages

further chosen, as rural study location. Sampling was conducted in the selected communities' systematic random sampling of houses which satisfy the inclusive criteria of women within reproductive age where questionnaires were given and selected according to interval which entailed exclusion of one household after selection of one household in different places depending on the streets or quarters within the chosen communities.

Making use of SPSS Version 25, data were examined in terms of descriptive statistics including percentage, crosstabulations and table to communicate demographic characteristics of the respondents. Chi-square test was used to analyze the association between factors of ANC utilization and location. Study subjects had provided verbal consents in their own language - describing the purpose of the study and the option to leave it. Confidentiality was also guaranteed to the respondents.

3.0 Results and Discussion

Table 1 shows the socio-demographic features of the respondents in the research. According to the table the respondents are well balanced in the rural and urban areas (50: 50) and the family has 5 and more persons (95%). The respondents drive a minimum of 1km and more to the closest health facilities (84.5%). As it is seen in Table 1, the respondents are also in the ranges of 32-38(35%), 25-31(30%), and 18-24 (24). This does not come as a surprise bearing in mind that these are the more reproductive years. As expected, 73.5% are married. A total of 50.5 and 31 percent of the respondents have their highest level of schooling in secondary and primary respectively and 11.5 percent of the members lacking any kind of schooling. As is expected, the population mainly consists of farmers (70.5%) and 85.5 were those who regarded themselves as employed and 50 of them were within the income bracket of N21,000 to N40,000. Only 17.5% of them earn N41, 000 and above.

Table 1. Demographic Characteristics of Respondents

Variable	No (400)	%
Location of houses		
Rural Community	200	50.0
Urban Community	200	50.0
Household Size		
2	2	.5
3	4	1.0
4	14	3.5
5	132	33.0
6 and above	248	62.0
Distance travel to health Centre		
Less than one Kilometer	62	15.5
1km-2km	182	45.5
3km-4km	134	33.5
5-6Km	22	5.5
Age (Years)		
18-24	96	24.0
25-31	120	30.0
32-38	140	35.0
39 -45	44	11.0
Marital Status		
Single	78	19.5
Married	294	73.5
Divorced	28	7.0
Highest Education Level		

No formal education	46	11.5
Primary	124	31.0
Secondary	202	50.5
Tertiary	28	7.0
Employment Status		
Yes	342	85.5
No	58	14.5
Occupation		
Civil Service	36	9.0
Farming	282	70.5
Trading	82	20.5
Income Level		
10,000 or less	4	1.0
11,000 – 20,000	4	1.0
21,000 – 30,000	80	20.0
31,000 – 40,000	120	30.0
41,000 and above	70	17.5
I don't know	122	30.5

Source: Field Survey 2024.

Table 2 indicates that, all the respondents (100) are familiar with the antenatal healthcare services with an equal number of them accessing the services within the cities and 95 percent of women accessing the services within the rural areas. In this way it can be seen that the women in the age reproductive years in the areas of study are more than aware and access the antenatal health care services in the study Area.

Table 2.Awareness and use of Healthcare Service/Antenatal Clinic Provision in the Community or nearby.

	Aware of Healthcare/Antenatal clinic		**Not aware of Healthcare/Antenatal clinic**	
	No	**%**	**No**	**%**
Rural	200	100.0	0	0.0
Urban	200	100.0	0	0.0
	Use Antenatal Care Services		**Do not use Antenatal Care Services**	
	No	**%**	**No**	**%**
Rural	190	95.0	10	5.0
Urban	200	100.0	0	0.0

Determining whether the proximity of healthcare facilities is an impediment to the antenatal care services in various areas within the Hong Local Government Area with respect to the perception of community respondents is one of the purposes of the study. Table 3 indicates that 54.5 percent of the respondents in this study had concurred that location is a barrier to the access and utilization of antenatal care services as a combination of strongly agreed and agreed results show. In rural, very large majority (90.0%) concur that location is a barrier with some strong agreed and agreed. This was different in urban area because a combination of strongly agreed and agreed is 19% agreed that location was a barrier to antenatal care services at preponderant (73) - a combination of strongly disagreed and disagreed in urban location. The fact that more members of the rural community perceive the healthcare locations as a barrier to the use of antenatal care services may not be independent of their proximity to the healthcare where they are free to the proximity of the healthcare facilities elsewhere where they find the opportunity to

access healthcare services. The results of this paper are consistent with the findings of Barankanira et al. (2023) in their analysis of the spatial distribution and predictive variables of antenatal care in Burundi: A spatial and multilevel baseline analysis of the third Burundi Demographic and Health Survey in which location was observed as a significant determinant of antenatal care. Therefore, significant differences in ANC use existed depending on the regions of urban or rural areas the participants belonged to. Therefore, location should be first in our quest to achieve improved ANC and are a means of ensuring maternal health and averting birth deaths of less than five children.

Table 3. Perception of Respondent If Locations of Healthcare Facilities is a Barrier to Antenatal Care Service in Their Community by Location

Type of Community	Agreed strongly		Agreed		undecided		Disagreed		Strongly Disagreed	
	No	%	No	%	No	%	No	%	No	%
Rural	4	2.0	176	88.0	8	4.0	10	5.0	2	1.0
Urban	6	3.0	32	16.0	16	8.0	140	70.0	6	3.0
Study Area	**10**	**2.5**	**208**	**52.0**	**24**	**6.0**	**150**	**37.5**	**8**	**2.0**

Source: Field Survey 2024.

According to Table 4, geographic and economic variables that influence use of antenatal care services are high transportation cost (80.8%), distance to antenatal facilities (78.0%), poor roads (75.5%,), remote antenatal facilities (67.3%), rugged land resulting to poor accessibility (67.5%), low income (66.3%), and high cost of treatment (63.3%). It is relevant to mention that, though these factors are listed separately here, they do work in concert to inhibit the access of the services provided by the antenatal care among the rural population or to the urban setting amongst the women. There appears to be, however, that there is a greater severity of factors in rural communities than in the urban situations (as Table 4 suggests). The findings represent the need to improve transportation systems, overcome accessing antenatal facilities and provide financial aid to pregnant women to expand access to antenatal care services to better usage, particularly in under-served rural regions. The geographic and economic factors present herein identified as the barriers to antenatal care have also been found to be present in other studies such as those by Angko et al. (2023) in Ghana, Nizum et al. (2023), Hailemariam et al. (2023), and Kusuma et al. (2024) across India.

Table 4. Ranking of Geographic and Economic Factors Affecting Pregnant Women's Utilization of Antenatal Care Services Hong LGA

Variables	Rural		Urban		**Study Area**	
	No	%	No	%	**No**	**%**
Transportation cost is too high	179	89.5	144	72.0	**323**	**80.8**
Distance to Antenatal facilities	160	80.0	152	78.0	**312**	**78.0**
Dilapidated roads	158	79.0	144	72.0	**302**	**75.5**
Rugged Terrain causing poor accessibility	152	76.0	118	59.0	**270**	**67.5**
Isolated /remote Antenatal facilities	149	74.5	120	60.0	**269**	**67.3**
Low income of pregnant women	160	80.0	105	52.5	**265**	**66.3**
Cost of treatment is not affordable	159	79.5	94	47.0	**253**	**63.3**
Flooded facilities causing poor accessibility	134	67.0	102	51.0	**236**	**59.0**

Source: Field Survey 2024.

The Table 5 analysis of health providers and facility related factors on the utilization of antenatal care services reveals that there are a number of critical issues, including; the absence of drugs(87.0%), lack of medical personnel (79.0%), non-conducive health facilities (59.8%,), long waiting times during visits (55.0%), not wanting male attendants (43.8%), preference of home births (42.0%), overcrowded health facilities (36.0) among others. These issues can be addressed by resourcing health centers by enhancing personnel training and cultural sensitivity which can greatly increase the uptake of antenatal care. We, however, need to realize that there are certain significant differences of these factors in rural and urban areas. To illustrate, although the deficits of drug were near identical in rural (86.5) and urban localities (87.5) - showing that the issue was universal in the study area, the long waiting time appear to be a lived-in problem in urban area as much as 75% of the respondents pose this problem as a challenge. This witnesses the fact that certain of the mentioned determinants that preclude the use of antenatal services are more common in certain locations. Those challenges are present in the whole study area, but the level of their appearance in urban and rural areas varies. The awareness of these differences will be a major consideration as the state attempts to offer these services to its consumers. Thus, as proposed by Gebremariam et al, (2023), the availability of drugs in the healthcare facilities as women present with ANC will facilitate their future attendance. According to the study by Onokerhoraye and Dudu (2017), the situation when medical personnel are lacking or have a negative attitude towards patients would either prevent access to health or attract more people to the utilization of services.

Table 5. Ranking of Health Providers/Health Facilities Factors Affecting Pregnant Women's Utilization of Antenatal Care Services (Study Area)

Variables	Rural		Urban		**Study Area**	
	No	%	No	%	**No**	**%**
No drugs in health centre for treatments	173	86.5	175	87.5	**348**	**87.0**
No medical personnel available	140	70.0	176	88.0	**316**	**79.0**
Health facilities not conducive	94	47.0	145	72.5	**239**	**59.8**
Long waiting times during visits	70	35.0	150	75.0	**220**	**55.0**
I don't want men to attend to me	99	49.5	76	38.0	**175**	**43.8**
Preference for home births	111	55.5	58	29.0	**169**	**42.0**
Health facility is too overcrowded.	46	23.0	98	49.0	**144**	**36.0**
Inadequate information on ANC	30	15.0	15	7.5	**45**	**11.3**
My family do not want me to go for ANC	12	6.0	8	4.0	**20**	**5.0**
I don't understand personnel language	9	4.5	7	3.5	**16**	**4.0**

Source: Field Survey 2024.

As Table 6 shows, the chi-square test results ($X^2 = 10.256$, P-value = 0.001 and $X^2 = 9.916$, P-value=.019) indicate a statistically significant relationship between location and distance travel to healthcare facilities and the use of antenatal care services. This suggests that geographic factors play a crucial role in antenatal care utilization, necessitating targeted interventions to address the specific needs of rural and urban populations. The implication of this is that it is pertinent to consider location and distances in the provision of antenatal services.

Table 6. Relationships between Location, KM to Health Centre and use of Antenatal Care Services in Hong Local Government Area.

Knowledge of EBF	**Use of ANC**	**Do not use of ANC**	**X^2**	**P-value**

	No	%	No	%		
Location						
Urban	190	95.0	10	5.0	10.256	.001
Rural	200	100.0	**0**	0.0		
Relationship between KM to Health Centre and use of Antenatal Care Services					9.916	.019

Source: Field Survey 2024.

4.0. Conclusion

The research comes up with the conclusion that despite the high awareness of the antenatal care services by pregnant women in the study areas, there are a number of barriers that prevent them to effectively utilize the services. They have a low access to antenatal care service due to a series of geographic and economic challenges such as the expensive cost of transportation, distance of hospital, poor condition of roads and topography. More so, the high cost of medicine, long waiting lines, family pressures and a wish to have the baby at home (such as in their communities, either within rural regions or in metropolitan regions) make women unavailable to want to receive prenatal care services in their communities. To achieve the desired accessibility and utilization of prenatal care services, especially in the rural setting, there is a need to ensure that Government at any tier makes deliberate efforts to overcome some of these barriers.

5.0. References

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