



CROSS – NATIONAL REVIEW ON SOCIAL DETERMINANTS OF ACCESS AND UTILIZATION OF ANTENATAL CARE SERVICES AMONG WOMEN OF REPRODUCTIVE AGE: INSIGHTS FOR EDO STATE, NIGERIA

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Abstract

Antenatal care (ANC) is an essential care designed to ensure the best services and health outcomes for women and children. Pregnant women, ideally, should have at least eight contacts with a healthcare provider initiated within less than 12 weeks gestational age. This is in order to gain person-centered care and prevent child and maternal mortality. This paper reviewed the social determinants of access and utilization of ANC services among women of reproductive age across societies in purposively chosen five nation states of India, China, Ghana, Ethiopia and Nigeria. The purpose of the review was to draw lessons that will benefit Edo State in South-South Region of Nigeria which has recorded low ANC access and utilization, as well as high maternal deaths in recent times. Anchored on Andersen Ronald's (1968) Behavioral Model of Health Services Use (BMHSU), the review elicited information via secondary sources to serve as lessons and assist maternal and child healthcare providers in Edo State, Nigeria to achieve optimum levels of access and utilization of their service. Specifically, the review revealed that scholars identified elements like place of residence, education, culture, spatial disparity of health facilities among others as relevant to access and utilization of ANC in the five aforementioned countries. The reviewed works recommended improving women's educational achievement, and introduction of peer education programs to mobilize and support women. They also advocated for programs to change husbands' attitudes, and to enrich the quality of antenatal care through increasing health extension worker's home visits program, and increasing the awareness of pregnancy complications.

The need for strong advocacy and education of male partners on the importance of supporting their spouse and payment for facility-based maternal services without undermining their traditional decision-making roles was also strongly stressed. These measures if implemented in Edo State, Nigeria will contribute immensely to meeting the goals of ANC in the state.

Keywords: Antenatal care, reproductive age, reproductive health, social determinants, maternal and infant mortality

Introduction

Antenatal care is an essential care designed to ensure the best healthcare and health outcomes for women and children. To achieve expected antenatal care, World Health Organization (WHO, 2017) recommends that all pregnant women



should have eight contacts with a healthcare provider throughout pregnancy. This should be initiated with a first contact at less than 12 weeks gestational age. The antenatal care service is expected to provide pregnant women with respectful, individualized and person-centered care at every contact with implementation of effective clinical practices and provision of timely information. Quality antenatal care will encourage women to seek skilled care at childbirth, reduce stillbirths, childbirth complications and newborn deaths (WHO, 2017).

Globally, more than half of all women receive early antenatal care, but too many women are still left behind posing a challenge to their health and that of the baby. Furthermore, the greater percentage of women that receive antenatal care are mostly in developed nations, while most women in developing nations still lack access to antenatal care and do not utilize the services (WHO, 2017).

In a developing nation like Nigeria, many of the poorest women still do not have equal access to high-quality early antenatal care that can help ensure their health and wellbeing. Nigeria Demographic Health Survey (2013) revealed that only about 59% of women receive antenatal care from skilled healthcare professionals, and not all of them attend the antenatal clinic regularly. The period of pregnancy has become a dangerous time for women and girls who become pregnant. In Nigeria, each year; many pregnant women face a lifetime risk of maternal death of 1 in 13 compared to 1 in 31 for sub-Saharan Africa as a whole (Wekesah & Izugbara, 2017). The global report on maternal mortality ratio also revealed that Nigeria and India accounted for over one-third of the global maternal deaths in 2015; Nigeria had approximately 58,000 maternal deaths, accounting for 19% globally, this therefore suggests that 830 women die in every 100,000 live births (WHO, 2017).

Interventions like the safe motherhood care initiatives and health promotional messages are organized by the primary healthcare centers in Nigeria for child bearing women. This is to encourage access and utilization of ANC services and to avert the dire consequences of maternal deaths. Despite the various interventions initiated, limited access and utilization of antenatal care services with attendant consequences like maternal death, obstructed labour, excessive bleedings, eclampsia, and stillbirth of the fetus still persists. Indeed, the United Nations Population Fund (2006) observed that the lifetime risk of maternal mortality due to pregnancy complications is quite enormous in Nigeria.



Accordingly, maternal deaths in Nigeria are related to obstetric complications like haemorrhage, sepsis, eclampsia, prolonged or obstructed labour and complications of abortion. Indirect obstetric deaths result from previous existing disease(s) that developed during pregnancy which were not due to obstetric causes, but was aggravated by physiological effect of pregnancy, example anaemia, HIV/AIDS and cardiovascular diseases, malaria to mention but a few.

With specific reference to Edo State, in the South-South region of Nigeria, the overall maternal mortality ratio in Benin City stood at 700 per 100,000 live births which is almost close to the national figure of 830 deaths per 100,000 live births (Nigerian Urban Reproductive Health Initiative, 2013). John-Abede and Osirike (2015) stated that in parts of Edo State, ability to meet basic healthcare needs as well as antenatal care services has remained a major challenge, especially for those within rural areas. Over the years, Edo state healthcare facilities have not achieved most of its objectives like ensuring inclusive access to adequate health care services. Furthermore, regardless of the scientific evidences of ANC as a useful tool in improving maternal health, some pregnant women in the area do not utilize it. However, Ibor, Anjorin, Ita, Otu and Bassey (2011) have emphasized that utilization of antenatal care is determined by some socioeconomic factors.

It is against the above background that this review was undertaken to examine the determinants of access and utilization of ANC services among women of reproductive age as documented in literature arising from previous studies across societies in nation states like India, China, Ghana, Ethiopia and Nigeria. This review elicited information via secondary sources to serve as lessons and even assist maternal and child healthcare providers in Edo State, Nigeria in reaching targetted levels of access and utilization of their services. This is with a view to curtail attendant consequences of inaccessibility and underutilization of antenatal care especially death which depletes the family and national resources.

This review drew from both foreign and Nigerian studies related to the subject; hence it is cross – national. The works reviewed examined the role of social elements like residence, education, spatial disparity of health facilities and location among other, in antenatal care responsess. An integrative and holistic approach was adopted, focussing on socio-economic determinants of access and



utilization of both modern and traditional antenatal care services as documented by researchers across the two service options.

Theoretical Framework

The theoretical underpinning that was used to explain the study is the Behavioral Model of Health Services Use (BMHSU) which was propounded by Andersen Ronald in 1968. It postulates that a number of intrapersonal and socio-contextual factors influence a patient's decision and ability to use health care services as well as antenatal care services. BMHSU attempts to explain "why" and "how" patients use health care services using three explanatory, intrapersonal (i.e., predisposing), and socio-contextual (i.e., enabling, reinforcing) factors. Andersen & Newman (1973) posited that in the BMHSU, "predisposing factors" are biological and contextual variables that prompt or prevent an individual to enrol and/or participate in health services. "Enabling factors" are financial and organizational variables that influence an individual's ability or decision to obtain health services. These factors include access to health insurance, geographic location, and family support. The final set of factors, "need factors", involves both a patient and provider's perception about the status and diagnosis of the patient's illness or health concern (e.g., patients' perceived symptoms and health-related quality of life) (Andersen, 1995). Ultimately, the BMHSU postulates that need factors are the most immediate causal factor influencing a patient's decision to enrol and use health services. The model has been criticized for not paying enough attention to culture and social interaction but Andersen argues that the social structure is included in the predisposing characteristics component (Guendelman, 1991).

The Andersen and Newman Behavioural Model (ANBM) for health service utilization provides a framework that permits systematic identification of factors that influence individual decisions to use (or not use) available health care services (Andersen & Newman, 1973). The model revealed that visitation to any health facility by pregnant women is determined by three major factors or conditions that facilitate or inhibit the utilization of antenatal care services. These factors include cost of antenatal services, insurance coverage/income, and distance to the health center. More so, health status variable may also hinder utilization of health services; these variables include perceived need, urgency, and level of distress the individual is faced with. The argument implies that when all the aforementioned factors are inadequate, it results to poor utilization



of health facilities. The diagram of Tesfaye *et.al* (2018) further illustrate the modifiable, predisposing and need factors associated with ANC utilization extracted from Andersen and Newman Behavioural Model of Health service use.

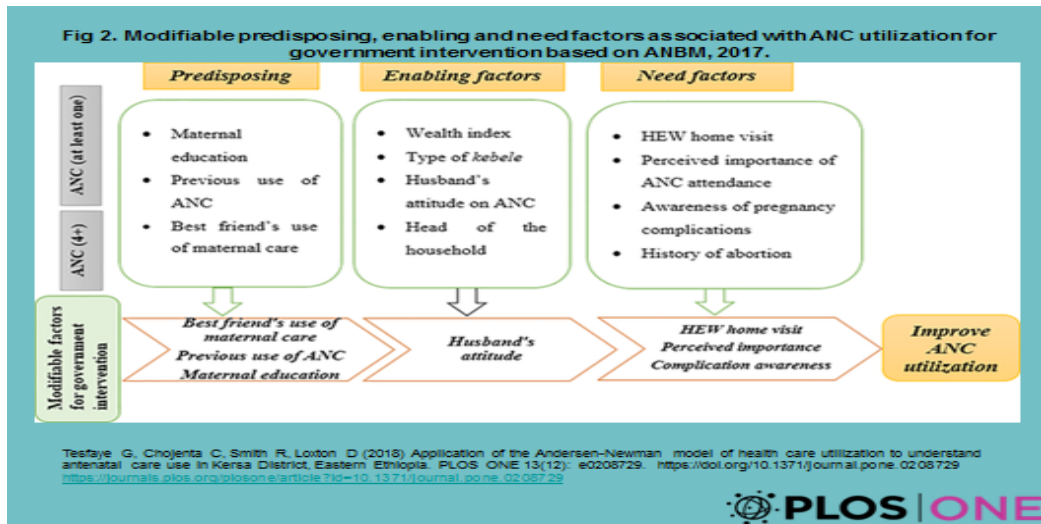


Fig 1: Behavioural Model of Health for Antenatal Care Utilization

Source: Tesfaye, Chojenta, Smith & Loxton (2018)

The predisposing factors that affect utilization of antenatal care services include maternal education, previous use of ANC, and best friend's use of maternal care. In addition, some socio-demographic characteristics affect utilization of healthcare services. They include maternal age at delivery, parental occupation and education and maternal final say on her health. On the other hand, the enabling factor that can either enhance or impede accessibility/ utilization of antenatal care services are level of income of the household, wealth index, and head of household decision. Enabling factors could also include knowledge of where to seek health services, permission from spouse to visit health services, money to pay for antenatal care services, distance to health facilities, transportation to health services, presence of their companion and the availability of care by female health workers. The identified need factor that enhances accessibility and utilization of antenatal services; they include perceived importance of ANC attendance, awareness of pregnancy



complication and risk factors associated with the non-utilization of antenatal services. These predisposing factors interact with the enabling factors which invariably lead to the decision of accessing and utilizing healthcare services throughout the course of pregnancy. Therefore, behavioural model of health service use is the most relevant, suitable and considered the appropriate framework for this kind of study in Nigeria

Issues of Interest to the Cross – National Review on Social Determinants of Access and Utilization of Antenatal Care in Five Nation States of India, China, Ghana, Ethiopia and Nigeria

Accessibility of Antenatal Care Services The role of health facilities and their accessibility in the provision of antenatal and postnatal care services cannot be over-emphasized. Bennink (2012) carried out a study in North-Indian City of Lucknow on the accessibility and utilization of maternal health care and antenatal services. Random sampling method was used to select fifty women from the urban slum Kashyap Nagar to share their experiences on accessing and utilizing maternal health care during their last pregnancy. The mixed method approach was employed and data collection focused on the demand side perspective which deals with the experience of women from Kashyab Nagar. Data were collected by the use of questionnaires and interviews. In order to get a good understanding of the demand and supply side barriers, interview questions on the women included the extent to which these factors influenced the accessibility of maternal health care, motivations for using maternal health care, how the location where they received this care was selected, their experiences with utilizing maternal health care and if they expect to utilize this type of care when pregnant again (Bennink, 2012). To present the supply side perspective of the study, doctors working in public and private medical facilities in Lucknow were interviewed. Subsequently, data was analyzed with SPSS and case studies were developed in order to present the context in which these findings can be interpreted. Findings showed that majority (94%) of the women had accessed one or more components of maternal health services. This study although empirical did not identify the other sources pregnant women receives antenatal care services such as traditional and religious birth attendants.

Another study by Saizonou, Agueh, Aguemon, Ade, Assavedo and Makoutode (2014) on quality assessment of refocused antenatal care services at the district hospital of Suru-Lere in Benin; the study collected survey data from 80



pregnant women using systematic sampling method. The findings of the study showed that the overall performance of antenatal care services was satisfactory. However, it can be deduced that health care environment, patient reception and intercommunication with skilled health workers were elements which showed deficiencies. Based on the short comings identified in the study, there is need to study the factors that will enhance the quality of services received by pregnant women within a continuum of care. In Delta State, Nigeria, Alex, Olatunji and Akinlabi (undated) undertook a spatio-temporal analysis of patterns of antenatal, postnatal and maternal deaths from November 2007-December 2010. Dataset came from 54 officially designated government facilities participating in the free maternal health program cutting across the 25 Local Government Areas and the 3 senatorial political divisions in the state. The study found that levels of maternal mortality were high as a result of the inaccessibility to healthcare services; findings of the study also revealed interesting implications capable of providing framework to aid identification and revealing of clusters of disadvantaged areas that require direct attention of healthcare services.

A study conducted by Tenkorang (2016) on the type of health facility and utilization of antenatal care service among Ghanaian women. This study examined if differences exist in the number and timing of antenatal care (ANC) visits for users of public and private health care facilities in Ghana. Data were drawn from the Ghana Demographic and Health Survey and also from a representative sample of 2135 women who attended antenatal care in a health facility for 6 month preceding the survey. The study utilized random-effect poisson and logit model for analysis, the result showed that there a statistical significant difference in the number of women that accessed the private and public health facilities' for ANC visit but not for the timing of such visit. The study concludes that Ghanaian women attending private health facilities may not have improved access to ANCs compared to those attending public health facilities.

Zegeye, Bitew, & Koye, (2013) carried out a study on prevalence and determinants of early antenatal care visit among pregnant women attending antenatal care in Debre Berhan health institutions, Central Ethiopia. This study examined the prevalence of early ANC visit as well as the associated factors



among pregnant women attending ANC in Debre Berhan town. The study utilized the cross-sectional study design to collect data from women receiving ANCs using a face-to-face interview. A total of 446 pregnant women were selected for the study. The finding showed that only about one hundred and seventeen (26.2%) of the respondents started their ANC visit early and the multivariate analysis revealed that mothers that planned their pregnancy had a good knowledge of ANC and accessed the health facility early. The study adopted the bivariate and multivariate analysis to identify the associated factors. The pregnant women identified a responsible factor for their early ANC visit. The study concludes that the prevalence of early ANC by pregnant women was low; hence it is necessary to create awareness on the importance of early ANC visit at the time of service provision and also at the community level.

Utilization of Modern and Traditional Antenatal Care Services In a study conducted by Ibor, Anjorin, Ita, Otu and Bassey (2011) on utilization of antenatal care in Ibadan North LGA, Oyo State; data for the study were obtained through the administration of two hundred and thirty-one copies of questionnaire to child-bearing women. The study revealed that though the utilization of ANC centers was low, the combination of socioeconomic and demographic variables significantly influenced their utilization by child-bearing women. Results indicated that 6.3% of the utilization of ANC by childbearing women was explained by age, cultural preference, income, education, religion, marital status and occupation. In Anambra State, South East Nigeria, Emelumadu, Onyeonoro, Ukegbu, Ezeama, Ifeadike and Okezie (2014) assessed antenatal care service attendees' perception of quality of maternal health care (MHC) services. A total of 310 pregnant women utilizing antenatal care (ANC) services in three purposively selected primary health centers in rural communities in Anambra State were studied. Responses were elicited from the participants selected consecutively over a 4-month period, using a pre-tested semi-structured questionnaire; the findings of the study showed that utilization of facilities for both antenatal and postnatal services were quite high. Generally, most women are satisfied with MHC services and cost of services. Most of them were satisfied with the staff attitude, waiting time and cost of services. The study highlighted the need to strengthen interventions that can increase the uptake of formal MHC services but did not identify other factors that could be responsible for the patronage of orthodox MHC services by pregnant women.



Similarly, a study conducted by Bennink (2012) in North-Indian City of Lucknow on the accessibility and utilization of maternal health care and antenatal services; random sampling method was used to select fifty women from the urban slum Kashyap Nagar. The study found that antenatal care was the maternal healthcare component that was often utilized by the women as 88% indicated that they received this type of care. During delivery, most women received skilled assistance from a skilled birth attendant. Postnatal care had a lower uptake as only 66% of the sampled women received any postnatal care after their delivery. Of the sampled women, 66% utilized ANC services in a facility and 50% gave birth in a medical facility. Of the 33 women that received PNC the majority (63.6%) utilized this care in a medical facility. The majority of the women utilized the care in a public facility. Only eight out of the 50 sampled women utilized MHC from a private healthcare provider. The care was predominantly utilized in public healthcare facilities eg in government hospitals, PHC's and BMC's. When looking at the completeness of the utilized care, it was noticed that the vast majority of the women did not use the recommended maternal healthcare that was of key importance for the health of the mother and child. The average utilization ratio for ANC consists out of two checkups during pregnancy, one checkup less than the recommended three checkups, 17 women did not receive the recommended care during the months that they were pregnant. The assistance women received while giving birth had been incomplete in certain cases. Also, the quality were questionable as in 50% of the cases the women gave birth at home and some cases received insufficient care in health facilities. The postnatal care that was utilized often (42%) consisted out of one vaccination or drug such as painkiller. Only 12 of the researched women indicated that they received more than one post-natal checkup (Bennink, 2012).

Ndisika & Dawodu (2019) conducted a study on antenatal care service utilization among women of reproductive ages in Egor local government area of Edo state. The survey research design was used to elicit information from the respondents using a well-structured questionnaire. A sample of 390 women was randomly selected through the simple random sampling technique from two primary healthcare centres in Egor local government area of Edo State. The study found that the level of utilization of antenatal care service was on the average as the women that participated in the study affirmed that they had a positive experience during their period of accessing and utilizing ANCs. It was



observed that the women of child bearing age prefer to utilize modern antenatal care services from a public health care providers than private health institution. The reason for this may not be too far from the fact that government hospitals is adjudged to be more affordable to use health services than in private health facilities. However, the findings of this present study indicated that despite almost all the women utilized antenatal care many did not book for care early enough during their pregnancy.

A research by Matyukira (2014) on knowledge and utilization of antenatal care services by pregnant women at a clinic in Ekurhuleni. Data were collected with a self-administered questionnaire and analyzed with the Epi info computer program. The study found out that most women initiated ANC later than the recommendations by the World Health Organization (WHO). Over half of the respondents had overall good knowledge of ANC, but lacked knowledge of medication and screening tests done during pregnancy, some dangers signs during pregnancy and of exclusive breastfeeding. Similarly, another research conducted by Shafqat, Fawaz, Rahlm and Salma (2015) on the knowledge and awareness regarding antenatal care and delivery among pregnant women. The cross-sectional survey study was carried out in antenatal clinic of lady reading hospital Peshawar from January 2013 to march, 2013. Data was collected through face to face interview and questionnaire. The study found that 82.8 percent of women that participated in the study had the knowledge of antenatal care and thought it was important while 17 percent had knowledge of antenatal care services and thought it was not important. 80% had awareness regarding appropriate diet and iron and vitamin supplementation during pregnancy. Majority of them believed that getting antenatal care will improve the pregnancy outcome. The study concluded that knowledge about antenatal care and its importance was much higher among primigravida women, younger educated women, and educated couples with better socioeconomic status (Shafqat, Fawaz, Rahlm & Salma, 2015).

Factors Affecting Accessibility of Antenatal Care Services Yiran, Teye and Yiran (2014) investigated the accessibility of maternal healthcare by migrant female head porters in Greater Accra Region, Ghana. Mixed methods were employed in the study in order to validate the information on the questionnaire and in-depth interviews. The study found that factors affecting accessibility of maternal health services by the Kayayei are geographical accessibility, financial



accessibility, acceptability, constant shortage of medicines in the hospital amongst other. The results also indicated that though there is a general awareness, the above factors hindered the maternal Kayayei from accessing healthcare services. It was therefore suggested that government should increase the number of health facilities as well as strengthen the National Health Insurance Scheme so as to increase access to healthcare by this vulnerable and poor group of people. Onyeajam, Xirasagar, Khan, Hardin and Odutolu (2018) conducted a study on antenatal care satisfaction in a developing country: a cross-sectional study from Nigeria. The study collected survey data from 534 systematically selected facilities in four Northern Nigerian states. The study revealed that responsive services which include prompt, unrushed service, convenient clinic hours and privacy consultation are factors that affect availability of ANC in Northern Nigeria. In the same vein, inadequate infrastructures cost of services, state of upkeep of service environment, equipment availability, staff empathy, and non-discriminatory treatment regardless of patient socioeconomic status could also be factors that determine utilization of available ANC.

In a study conducted by Okonofua, Ogu, Agholor, Okike, Abdus-salam, Gana, Randawa, Abe, Durodola and Galadanci (2017) on the perception of women regarding their satisfaction with the accessibility and utilization of maternity services offered in secondary and tertiary hospitals in Nigeria. Five focus group discussions were held with women in eight secondary and tertiary hospitals in four of the six geo-political zones of the country. In all 40 FGDs were held with women attending antenatal and post-natal clinics in the hospitals. The questions assessed women level of satisfaction with the care they received in the hospitals, their views on what needed to be done to improve patients satisfaction and the overall quality of maternity services in the hospitals. The discussions were audio-taped, transcribed and analyzed by themes using Altas ti computer software. Results showed that that few of the participants expressed satisfaction with the quality of care they received during antenatal, intrapartum and postnatal care (Okonofua *et al*, 2017). Many of the respondents had areas of dissatisfaction or were not satisfied at all with the quality of care. The reason for the dissatisfaction of antenatal care services could be linked to factors like poor staff attitude, long waiting time, poor attention to women in labour, high cost of services and low standard facilities. These sources of dissatisfaction



were given as the reasons why some women often use traditional birth facility rather than modern facility for their maternity care.

Matyukira (2014) conducted a study on knowledge and utilization of antenatal care services by pregnant women at a clinic in Ekurhuleni. The research was a descriptive correlational study carried out on 90 eligible pregnant women. Data were collected with a self-administered questionnaire and analyzed with the Epi info computer program. The study found that factors that were identified as associated with late initiation of ANC were current employment status, number of children, transport costs to clinic and number of antenatal visits. Dairo & Owoyokun (2010) conducted a study on factors affecting the utilization of antenatal care services in Ibadan, Nigeria. The study adopted a cross-sectional survey design. The study found that 58.3% of the respondents gave the inability to afford cost of antenatal care as the reason for not obtaining antenatal care at all. The other reasons reported by the respondents for not accessing antenatal care services include the attitude of caregivers, long hours of waiting time, distance to the location of antenatal care centers and lack of chance to attend

Fagbamigbe & Idemudia (2015) conducted a study on barriers to antenatal care use in Nigeria: evidences from non-users and implications for maternal health programming. Survey method was adopted and the study used descriptive statistics to describe the distribution of the socio-demographic and behavioral characteristics of the respondents not using ANC. The analysis revealed that some respondents with higher educational attainment, and also in the wealthiest quintiles, did not use ANC services during their last pregnancy. This indicated that ANC access and utilization was not only influenced by poverty and lack of information but also by other factors, such as seeking permissions from spouses and partners, beliefs, dispositions and views on quality and attitudes towards the ANC providers, and distances to health facilities. The results found that three reasons were central to non-utilization and non-accessibility of ANC services in Nigeria: “Problems with getting money to go health facilities”, “Farness of ANC service providers” and “Unavailability of transport to reach the ANC providers”. These three problems concern finance and logistics, and they collectively constituted nearly half of all the reasons why pregnant women did not use the ANC services.

Ndisika & Dawodu (2019) conducted a study on antenatal care service utilization among women of reproductive ages in Egor local government area



of Edo state. The survey research design was used to elicit information from the respondents using a well-structured questionnaire. A sample of 390 women was randomly selected through the simple random sampling technique from two primary healthcare centres in Egor local government area of Edo State. The study collected both primary and secondary data; the primary data collected were analyzed using simple percentage, frequency and mean while the ANOVA and independent T- test was used to analyze the hypothesis of the study. The result revealed that the respondents' utilization of antenatal care was good. Majority of the respondents responded positively to attitudinal questions on antenatal care and their perception on antenatal care was generally considered positive. However, the study found that yearly income of women of reproductive was a determining factor in accessing antenatal care services during their periods of pregnancy.

Socioeconomic Determinants of Access and Utilization of ANC Services

Several factors predispose a woman to accessing and utilizing antenatal care services. A study conducted by McTavish, Moore, Harper and Lynch (2010) on national literacy, individual socioeconomic status and maternal healthcare use in Sub-saharan Africa revealed that a number of factors influence access and utilization of ANC services by women. The study found that a range of socioeconomic gradients such as income, patterns of residence, literacy level, cultural beliefs and practices, marital status, religion, employment status, location of health care facilities are determinants of access to healthcare. Similarly, studies have investigated the predictors of utilization of maternal health services covering antenatal, delivery care, and post-delivery (Andersen, 1995; John-Abebe & Osirike, 2015). John-Abebe and Orisike (2015) assessed the spatial disparity of health facilities and factors influencing antenatal, delivery and postnatal care utilization in Oredo LGA of Edo State, the study employed the use of 403 semi-structured questionnaires to extract valuable information from women of reproductive age selected through simple random sampling method. Secondary data also came from the 2008 National Demographic and Health Survey; the study found that factors affecting antenatal, delivery and postnatal care utilization varied from demographic, health related and socio-economic variables of which place of residence had 89.6% and type of delivery also had 87.2%; these factors affect utilization of health services. The study called for the need to beef up the status of health facilities in order to improve maternal health care utilization. The researcher



however recommended extended research into health related factors linked to proper maternal health care utilization in the state (John-Abebe & Osirike, 2015). The study did not use qualitative data to complement the quantitative data retrieved from primary and secondary sources: questionnaires and NDHS reports respectively. Okoronkwo, Odira, Nwaneri, Okpala, and Okafor (2016) investigated patterns of antenatal care seeking behavior in South East Nigeria. The study employed the descriptive survey design. The study found that there was a significant relationship between age, education, socioeconomic status and utilization of antenatal care services.

In Ghana, Tenkorang (2016) conducted a study on the type of health facility and utilization of antenatal care service among Ghanaian women. The study also explored if variations in the utilization of ANCs in public and private health facilities could be attributed to health-provider factors or the selective socioeconomic characteristics of the users. Data for the study were drawn from the Ghana Demographic and Health Survey and also from a representative sample of 2135 women who attended antenatal care in a health facility for 6 month preceding the survey. The study utilized random-effect poisson and logit model for analysis. Results showed statistically significant differences between users of private and public health facilities for number of ANC visits, but not for the timing of such visits. Although some health-provider factors were significantly associated with ANC visits, these factors did not explain why users of private health facilities had significantly higher number of ANC visits than users of public health facilities.

Summary on Factors that Influence ANC Access and Utilization in the Five Nation States

From the works reviewed above and other empirical works highlighted below, several socioeconomic and cultural factors were documented to influence access and utilization of ANC as well as maternal mortality across the five countries. They include the following issues:

Level of Education Educated women tend to have greater awareness of the existence of ANC services and advantage of utilizing such services. Lack of education and poor knowledge of maternal health care contributes to delays in seeking care especially during pregnancy and child birth. Education therefore plays a major role in the utilization of antenatal care services. A study by Ibor,



Anjorin, Ita, Otu and Bassey (2011) on utilization of antenatal care in Ibadan North LGA, Oyo State. Data for the study were obtained through the administration of two hundred and thirty-one copies of questionnaire to women of reproductive age in Ibadan North LGA, Oyo State. The study revealed that socioeconomic and demographic characteristics significantly influence the utilization of ANC by child-bearing women. The strength of contribution of each of these selected factors showed that mother's education had the greatest contribution (0.227) to the utilization of ANC, despite the low percent (6.3%) utilization of ANC, the ANOVA result indicates that education, age, culture, income, religion, marital status and occupation significantly influence the utilization of ANC by child-bearing women. Another study by Iyaniwura and Yussuf (2009) on utilization of antenatal care and delivery services in Sagamu, South Western Nigeria. Survey of 392 women who had carried at least one pregnancy to term was selected. The revealed that formal education has a positive effect on the use of ANC services which implies that educated women are more likely to receive ANC during pregnancy; they have more frequent visits and make use of health facilities for delivery than the uneducated as a result of perceived health risk of non-utilization of antenatal services.

A study on the type of health facility and utilization of antenatal care service among Ghanaian women by Tenkorang (2016) explored if variations in the utilization of ANCs in public and private health facilities could be attributed to health-provider factors or the selective socioeconomic characteristics of the users. Data for the study were drawn from the Ghana Demographic and Health Survey and also from a representative sample of 2135 women who attended antenatal care in a health facility for 6 month preceding the survey. Results showed statistically significant differences between users of private and public health facilities for number of ANC visits; Differences in ANC visits for both private and public health facilities were rather explained by the selective socioeconomic characteristics of the users, especially as wealthy and educated women patronized private health care than poorer and uneducated women.

A study on the social determinants of antenatal care service use in Ethiopia: changes over a 15-year span service use in Ethiopia: changes over a 15-year Span by Ousman, Mdala, Thorsen, Sundby, and Magnus (2019) used a negative binomial with random effects at cluster level to model the number of ANC visits while a multilevel binary logistic regression modeled binary responses relating



to whether a woman had at least 4 ANC visits or not. The study used data from the nation-wide surveys conducted by the Ethiopian Central Statistical Agency (CSA) and ORC Macro International, USA in 2005, 2011, and 2016. The study found that education had a significant effect on the utilization of ANC. It found that highly educated women (secondary education and above) had 71% more visits in 2005 and 42% more visits in 2011 than illiterate women. However, the effect of education on the number of ANC visits disappeared in 2016.

A study by Tiruaynet & Muchie (2019) on the determinants of utilization of antenatal care services in Benishangul Gumuz Region, Western Ethiopia. The study was based on demographic and health survey. Data analyzed were taken from 674 mothers in Benishangul Gumuz Region who had at least one child in the 5 years before the survey was undertaken. Binary logistic regression model was used to analyze the data. Women's educational level was one of the strong predictor of the utilization of ANC services in the study area. The study also revealed that odds of receiving ANC services from skilled health personnel for un-educated women was less than educated women [AOR = 0.074, 95% CI = 0.009–0.628]. The studies found that educational level, place of residence, ethnicity, and household's wealth were determinants of ANC utilization in the region at 5% level of significance.

Another study by Hossain, & Hoque (2015) titled women empowerment and antenatal care utilization in Bangladesh attempt to examine the role of women empowerment in the utilization of antenatal care in Bangladesh. Four dimensions of women empowerment were used. They include the highest level of education, power in the household decision making process and involvement in economic activities and freedom of choice/movement. The study employed the probit and zero-inflated negative binomial regression models and estimated the 2011 Bangladesh demographic and health survey data. The result showed that highest level of education, power in the household decision making process contributed positively and significantly to the decision and intensity of utilization of antenatal care services in Bangladesh. Findings of this study have a number of policy implications on this issue for a developing country like Bangladesh.



Income Nnoyelu and Nwankwo (2014) in their survey study on social determinants of differential access to health services across five states of Southeast Nigeria argued that the usage of health care facilities is more prevalent among high income groups than among their low and medium income counterparts in Southeastern, Nigeria. Indeed, facility use behavior of residents may be shaped by a number of factors which include the size of household finances (income) and distance/location of health care facilities. Iyaniwura and Yussuf (2009) conducted a study on utilization of antenatal care and delivery services in Sagamu, South Western Nigeria. The survey selected 392 women who had carried at least one pregnancy to term. The study revealed that higher level of income positively affected the pattern of use of antenatal care services. It can also be observed that the socioeconomic status of both men and women is a key factor to improving utilization of maternity care services.

In the same vein, John-Abebe and Osirike (2015) conducted a study on the spatial disparity of health facilities and factors influencing antenatal, delivery and postnatal care utilization in Oredo LGA of Edo State, the study employed the use of 403 semi-structured questionnaires to extract valuable information from women of reproductive age selected through simple random sampling method. Secondary data also came from the 2008 National Demographic and Health Survey. The study found that household income also influences utilization of healthcare facilities and also influence maternal mortality. Healthcare cost either directly or indirectly prohibitive health facilities utilization. Sunil, Spears, Hook, Castillo and Torres (2010) conducted a study on initiation and barriers to prenatal care use among low-income women in San Antonio, Texas. The study found that income has a direct correlation with education and ANC visitation. Women with higher incomes start utilizing antenatal care services early while their counterparts with lower levels of income utilize ANC services at the latter part of their pregnancy.

Fagbamigbe & Idemudia (2015) conducted a study on barriers to antenatal care use in Nigeria: evidences from non-users and implications for maternal health programming. A mixed research method was used for the study. The study found that of all the identified barriers to ANC utilization, inability to pay for the services was the most common problem preventing pregnant women from accessing the ANC in Nigeria. In the same vein, a study of Adekanle and Isawumi (2008) also discovered that women who had lower income booked late for ANC compared with women with higher income. A study conducted in



Japan by Ye, Yoshida, Or-Rashid and Sakamoto (2010) on factors affecting the utilization of antenatal care services among women in Kham District found that family income is one of the most significant predictors of utilization of antenatal care services. Women with high income were 2.6 times more likely to have received ANC than women with low income.

Ousman, et al (2019) conducted a study on the social determinants of antenatal care service use in Ethiopia: changes over a 15-year Span. The study used data from the nation-wide surveys conducted by the Ethiopian Central Statistical Agency (CSA) and ORC Macro International, USA in 2005, 2011, and 2016. A negative binomial with random effects at cluster level was used to model the number of ANC visits while a multilevel binary logistic regression modeled binary responses relating to whether a woman had at least 4 ANC visits or not. The study revealed that household wealth index was significantly associated with the number of ANC visits in all three-survey years. Women from households with middle wealth indices had 39% in 2005, 23% in 2011 and 27% in 2016 more visits than women from low wealth indexed households. Women from high indexed households had 84% in 2005, 51% in 2011, and 16% in 2016 more ANC visits than women from households with low wealth index.

Ndisika & Dawodu (2019) conducted a study on antenatal care service utilization among women of reproductive age in Egor Local Government Area, Edo state. It employed survey research design. A sample of 390 women was randomly selected through the simple random sampling technique from two primary healthcare centers. The primary data collected were analyzed using simple percentage, frequency and mean while the ANOVA and independent T-test was used to analyze the hypothesis of the study. The study found that income affect utilization of antenatal care services. There was a significant difference in the utilization of antenatal care by women of various yearly incomes in Egor LGA. It was realized that women with yearly income of above #240,000 were much more predispose to using antenatal care than their counterpart with lower yearly income. It is assumed that a relationship might exist between income and the utilization of antenatal care. In Linchetto et al. (2010)'s submission, inability to pay for antenatal care services or prescribed treatment is an important barrier to utilization of antenatal care.



Religion In a study conducted by Mugarura, Kaberuka, Atuhaire, and Abaho (2017) on antenatal care service utilization among women in Uganda: a multilevel analysis. Primary data from questionnaires and secondary data from the Uganda Demographic and Health Survey were employed. A sample of 10,086 households was selected from 404 enumeration areas; a two-stage sampling was also employed. The study found that mothers of Islamic (muslim) religion, pentecostals, Sda's, are less likely to complete the recommended antenatal care visits compared to a catholic mother. On the other hand, protestant women were 1.4 times likely to complete the recommended antenatal care visits compared to Catholics. It can therefore be implied from the study that religious beliefs also play a role in the utilization of antenatal services. Religious differences that capture traditions and beliefs of mothers are found to be significant in influencing both the timing and frequency of utilizing the antenatal care services. Survey studies by Adekanle and Isowumi (2008) on the late antenatal care booking and its predictors among pregnant women in Southern Nigeria. The study employed the survey design to select 68 women recruited for the study. The findings revealed that there was a relationship between religious affiliation and the use of antenatal care services. Religion could influence the decision of women in taking up antenatal care services. The study did not employ the qualitative data to elicit information from respondents on the religious conventions that hamper utilization of ANC services.

Another study conducted by Ousman, et al (2019) on the social determinants of antenatal care service use in Ethiopia: changes over a 15-year Span. The study used data from the nation-wide surveys conducted by the Ethiopian Central Statistical Agency (CSA) and ORC Macro International, USA in 2005, 2011, and 2016. A negative binomial with random effects at cluster level was used to model the number of ANC visits whereas a multilevel binary logistic regression modeled binary responses relating to whether a woman had at least 4 ANC visits or not. The result found that Islamic women had across the surveys fewer ANC visits than Christian women. The use of ANC visits is driven mostly by the social determinants of health rather than individual health risk.

Residence Igboke (2012) carried out a study on knowledge and attitude of pregnant women towards antenatal services in Nsukka Local Government Area of Enugu State, Nigeria. The multistage sampling technique of balloting without replacement was used to select 259 pregnant women in Nsukka LGA



of Enugu State. The study indicated that urban pregnant women had high level of knowledge 73.9% of concept of antenatal services while the rural pregnant mothers had moderate level of knowledge 46.4% of antenatal services. The implication of this finding is that urban pregnant women were knowledgeable of antenatal services to compare with their rural counterparts. This finding revealed that location has great impact on the utilization of antenatal services. Pregnant women in the urban areas are knowledgeable of the concept of antenatal services and therefore utilize the services more than their counterparts in the rural settings.

Ousman, et al (2019) conducted a study on the social determinants of antenatal care service use in Ethiopia: changes over a 15-year Span. The study used data from the nation-wide surveys conducted by the Ethiopian Central Statistical Agency (CSA) and ORC Macro International, USA in 2005, 2011, and 2016. A negative binomial with random effects at cluster level was used to model the number of ANC visits whereas a multilevel binary logistic regression modeled binary responses relating to whether a woman had at least 4 ANC visits or not. It can be observed from the data that throughout the survey periods, women in the rural areas had fewer ANC visits than women in the urban areas. Although the attendance improved, women in rural areas had 55% in 2011 and 21% in 2016 fewer ANC visits. Changes in having at least four ANC visits during any pregnancy in each key social determinant over time were observed after controlling for potential confounding effects of age while giving last birth, order of the last birth, place of residence, and husband's education. Between 2011 and 2016, the odds of ANC use among pregnant women increased significantly by 2-fold: 1.13 (95% CI: 0.96 - 1.32, $p = 0.13$) to 2.14 (95% CI: 1.84 - 2.49, $p < 0.01$). Furthermore, the results for the covariates included in the multilevel logistic regression model as controls (not shown) conformed that mother's age, birth order of the child, religion, place of residence, women's education, wealth index, media exposure, sex of household head, and women empowerment were significant determinants for completing four or more ANC visits.

Babalola (2014) conducted a study on determinants of urban-rural differentials of antenatal care utilization in Nigeria. The cross-sectional research design was employed for the study. The study found that another factor that affects utilization of ANC in the region was place of residence. The study showed that women who lived in rural areas were less likely to receive services from skilled



health personnel than urban resident women (AOR = 0.459, 95% CI = 0.222–0.951).

Distance to health facilities According to a paper presented at the 6th African Population Conference in Burkina Faso, access and utilization of maternal health facilities decrease as the distance increase. This could translate to the fact that distance from health facilities are linked with utilization of maternal health services (Omotor 2011; Ukpabi & Okpan, 2017) hence, the extent to which modern maternal healthcare has been to the door step of rural people in Nigeria is low (Ayowumi 'nd'). The non-availability of health centers in rural areas has exposed pregnant women to adverse outcomes such as miscarriages; some pregnant women in the rural area cannot gain quick or easy access to health facilities. Some women have miscarriages during long distance journey to antenatal care centers while in some cases; the women even die (Igbokwe, 2009)

Culture, Rurality or urban character of residence In addition, the rural nature of the people is also a challenge to access and utilization of modern antenatal care as most of the people culturally prefer to use traditional birth attendants (TBAs). The dire situation arises because modern maternal healthcare mostly provided seem not to be in tune with the culture of the people. Modern maternal healthcare are often at variance with socio-cultural reality of pregnant women in Nigeria. This may be why traditional birth attendants (TBAs) remain key part of health services especially in rural areas of Nigeria (Itina 1997; Imogie, 2000). Over a long period of time, Nigerian women had relied on TBAs for assistance and advice during pregnancy because their services are seen to be culturally acceptable (Babalola & Fatusi, 2009; Ebuehi & Akintujoye, 2012).

Inadequate integration of PHCs into Nigeria's healthcare system The poor use of the primary healthcare centers (PHCs) for maternity and child care is a consequence of the inadequate integration of the PHCs into Nigeria's healthcare system due to the lack of available data to drive the implementation of PHCs in the country (Women Health and Action Research Centre, 2016)

Level of Resources Possessed by Women. This is dependent on the ability of the woman to command resources and make independent decision about her fertility (Ukpabi & Okpan, 2017). Castello and Azad (2006) argued that women



are accorded a low status in the society which translates to the fact that their health needs are neglected and existing health facilities not accessed when in need. Dairo and Owoyokun (2010) also attest that maternal death are prevalent in developing countries, due to debilitating current socioeconomic conditions (especially among women) leading to inaccessibility of health facilities. Also, Alder and Estrove (2006) posited that the more socio-economically advantaged individuals are, the better their health. Perhaps, pregnant women with low financial capability have limited access to antenatal care services.

Illiteracy Low level of education hinders pregnant women access to health related information as some of this information is not delivered in their local languages. According to the Digest of Education Statistics (2018) the adult literacy rate in Nigeria was at the level of 59.6% in 2015; hence, the high level of illiteracy especially in rural areas contributes to low life expectancy because the pregnant woman usually don't recognize early symptoms of pregnancy related illness nor seek prompt medical advice. Illiteracy therefore leads to low appreciation of the benefits of use of health care services.

Social cultural barriers, inability to seek care at the time of emergency, acceptance of death as wish of God and concern that only female healthcare providers should attend to women's reproductive health had been linked to maternal death. Other social factors are marital status and age at marriage

Interventions that can Improve Accessibility and Utilization of Quality Antenatal Services: Clues from Relevant Studies

Tesfaye, Chojenta, Smith and Loxton (2018) conducted a study on the application of the Andersen-Newman model of health care utilization to understand antenatal care use in Kersa District, Eastern Ethiopia. A community-based cross-sectional study was conducted. A total of 1294 eligible women participated in the study. Data were collected using face to face interviews with a pre-tested structured questionnaire administered with a digital survey tool. The findings of the study revealed some intervention efforts that can improve antenatal care utilization. They involve the following; improving women's educational achievement, peer education programs to mobilize and support women, programs to change husbands' attitudes, enrich the quality of antenatal care, increasing the health extension worker's home visits program, and increasing the awareness of pregnancy complications.



In a study conducted by Al-mujtaba, Cornelius, Galadanci, Ereka, Okundaye, Adeyemi and Sam-Agudu (2016) on religious influences on the utilization of maternal health services among Muslim and Christian women in North central, Nigeria. The survey design employed 68 women recruited for the study. The study proffered some socioeconomic interventions that could help improve utilization of antenatal care services in North Central Nigeria. They suggested that important strategies to consider in order to encourage utilization of available maternal health services include advocating and educating male partners on the importance of supporting their spouse and payment for facility-based maternal services without undermining their traditional decision-making roles.

A study by Okonofua, Ogu, Agholor, Okike, Abdus-salam, Gana, Randawa, Abe, Durodola and Galadanci (2017) on the perception of women regarding their satisfaction with the accessibility and utilization of maternity services offered in secondary and tertiary hospitals in Nigeria. Five focus group discussions were held with women in eight secondary and tertiary hospitals. The recommendations they made for improving maternity care were also consistent with their perceptions of the gaps and inadequacies. These include the improvement of hospital facilities, reorganization of hospital facilities, and reorganization of services to eliminate delays, the training and re-training of health workers, and feedback/counseling and education of women. The researchers also suggested that a woman-friendly approach to delivery of maternal healthcare will be critical to curbing women dissatisfaction with modern facility based health care, improving access to maternal health and reducing maternal morbidity and mortality in Nigeria (Okonofua, *et al*, 2017).

A study conducted by Ndisika & Dawodu (2019) on antenatal care service utilization among women of reproductive age in Egor Local Government Area, Edo state employed survey research design. A sample of 390 women was randomly selected through the simple random sampling technique from two primary healthcare centers. The study recommend that since antenatal care provides women and their families with appropriate information and advice for a healthy pregnancy, safe childbirth, and postnatal recovery, including care of the newborn, promotion of early, exclusive breastfeeding, and assistance with deciding on future pregnancies in order to improve pregnancy outcomes, all pregnant women should endeavour to utilize antenatal care and also book early



for it specifically in the first trimester of their pregnancy ideally before 12 weeks but no later than 16 weeks as recommended by the World Health Organization for better pregnancy outcomes.

Fagbamigbe & Idemudia (2015) conducted a study on barriers to antenatal care use in Nigeria: evidences from non-users and implications for maternal health programming. Survey method was adopted and the study used descriptive statistics to describe the distribution of the socio-demographic and behavioral characteristics of the respondents not using ANC. Bivariate analyses of relationships between the characteristics and reasons given for not taking ANC services were conducted using Pearson Chi-square (X^2) test of association. The study recommends implementation of a free ANC policy; the establishment of more ANC public health facilities within a 15 km radius of every woman across Nigeria, and an emphasized focus on the WHO public health guidelines on ANC are the surest ways to overturn the low ANC coverage in Nigeria. The health facilities should be supplied with adequate drugs, manned by skilled health workers and the workers re-orientated to be professionals so as to win confidence and patronage of women and their partners. Priority must be given to recruitment and to efforts in retaining skilled health workers, and to their adequate supervision, training, knowledge and skills acquisition, and motivation in addition to establishment of health facilities, availability of drugs, equipment and other consumables

Summary/Conclusions

Some Interventions/ Efforts drawn from the review that could be adopted to improve ANC access and utilization in Edo State of Nigeria include:

- a. Improving women's educational achievement, introduction of peer education programs to mobilize and support women, programs to change husbands' attitudes, enrich the quality of antenatal care,
- b. Increasing the health extension worker's home visits program, and increasing the awareness of pregnancy complications.
- c. Advocacy and education of male partners on the importance of supporting their spouse and payment for facility-based maternal services without undermining their traditional decision-making roles.



- d. improvement of hospital facilities, reorganization of hospital facilities; it is worthy of note that reorganization of services to eliminate delays,
- e. The training and re-training of health workers, and feedback/counseling and education of women.
- f. Adoption of woman-friendly approach to delivery of maternal healthcare that are critical to curbing women dissatisfaction with modern facility based health care
- g. All pregnant women should endeavour to utilize antenatal care and also book early for it (specifically in the first trimester of their pregnancy, ideally before 12 weeks but no later than 16weeks as recommended by the World Health Organization for better pregnancy outcomes).
- h. Implementation of a free ANC policy; the establishment of more ANC public health facilities within a 15 km radius of every woman across Nigeria, and an emphasized focus on the WHO public health guidelines on ANC are the surest ways to overturn the low ANC coverage in Nigeria.
- i. The health facilities should be supplied with adequate drugs, manned by skilled health workers and the workers re-orientated to be professionals so as to win confidence and patronage of women and their partners.
- j. Priority must be given to recruitment and to efforts in retaining skilled health workers, and to their adequate supervision, training, knowledge and skills acquisition, and motivation in addition to establishment of health facilities, availability of drugs, equipment and other consumables.

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