Income differentials and utilization of antenatal care services among women of reproductive age in Edo South, Nigeria: Harnessing poverty alleviation plans to the rescue

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Abstract

This research paper assessed how income differentials affect utilization of antenatal care services among women of reproductive ages in Edo South, Nigeria with emphasis on primigravida and multigravida mothers. The mixed-method research design was used to elicit firsthand information from those primigravida and multigravida mothers. The sample size of 1108 was selected for the study. The simple random sampling and proportionate sampling techniques were combined for the selection of respondents. Three instruments used for data collection were the questionnaire, focused group discussions and interviews. The interviewees were purposively selected from primigravida mothers, multigravida mothers and modern and traditional health care providers. Inferential statistics like percentage and frequency counts were used in answering the research question posed, while chi-square was used in testing the null hypothesis at 0.05 level of significance. The study found that a significant relationship exists between income and utilization of antenatal care services among mothers. A significant proportion of the respondents indicated readiness or willingness to frequently attend ANC assuming they had adequate financial resources at their disposal. Furthermore, women with low-income status tend to seek traditional healthcare services due to the low cost of services compared to modern healthcare services. The study among recommended among other things the need for adequate poverty alleviation policies and programs to enhance ANC utilization, reduce inequalities in health outcomes and enhance financial protection for primigravida and multigravida mothers. The study concluded that given income differentials among women of reproductive age, that supportive poverty alleviation programs could constitute important enabling factors for all mothers to access and utilize antenatal care services irrespective of their income disposition.
Keywords: *Antenatal care, Income, Utilization, Poverty Alleviation, Edo South.*

Introduction

Income is conceivably one of the most important social determinants of health. Because of its importance, poverty is universally accepted as measured mainly in terms of income and wealth. In

this regard, income levels of individuals may determine their state of health, shapes their overall living conditions, and influences health-related behaviours such as quality of diet, accessing medical facilities and utilizing antenatal care services (ANCs) by pregnant women. Healthcare cost either directly or indirectly affects healthcare facilities utilization. Importantly, studies conducted in the United States by Sunil, Spears, Hook, Castillo and Torres (2010) on initiation and barriers to prenatal care use among low-income women in San Antonio, Texas show that income has a direct correlation with education and ANC visitation. The study found that women with higher incomes start utilizing antenatal care services early while their counterparts with lower levels of income utilize ANC services in the latter part of their pregnancy.

Colman (2000) also stated that the report prepared for the maritime centre of excellence for women's health acknowledged that several studies linked a relationship between antenatal care utilization and socioeconomic status of the individual. The study found that the variables of income and health are inversely related. The payment of health care services greatly depends on the individual's level of income. It implies that pregnant women with low economic status may not have a balanced and healthy lifestyle throughout the course of their pregnancy as a result of financial hardship to cater to their needs. Poverty is also associated with considerable loss of income in developing countries where both of the breadwinners or family members may be obliged to stop working or attending school to take care of an ill relative. In addition, poor families coping with illness might be forced to sell assets to cover medical expenses, borrow at high-interest rates or become indebted to the community. Perhaps, poverty accounts for the usage of traditional birth attendants for antenatal care services among pregnant women.

In Sub-Saharan Africa, there is growing evidence that poor mothers are at high risk of developing pregnancy-related complications because they are not financially able to pay for the required services (UNFPA, 2006;Wagstaff, 2002).Strong health systems improve the health status of the whole population, but especially of the poor among whom ill health and poor access to health care tend to be concentrated, as well as protect households from the potentially catastrophic effects of out-of-pocket health care costs. In general, poor health is disproportionately concentrated among the poor. Almost, all maternal deaths that occur in low and middle-income countries are mainly among the poorest of the poor (Adedotun, 2010). Also, the lack of financial resources to utilize

health care facilities during emergency obstetric could contribute to high maternal mortality. Indeed, all pregnant women are at risk of developing complications during any time of their pregnancies, deliveries and postpartum periods. Most of the obstetric complications cannot be predicted but can be prevented and treated if women have the financial capacity to access appropriate health care. In the Nigerian context, several studies have shown that income significantly affects health service usage. Ibor, Anjorin, Ita, Otu and Bassey (2011) conducted a study on the utilization of antenatal care in Ibadan North LGA, Oyo State. The study revealed that though the utilization of ANC centres was low, the combination of socioeconomic and demographic variables significantly influenced their utilization by child-bearing women. The result 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. Income could also be a key driver for utilizing traditional healthcare services for antenatal purposes rather than modern healthcare facilities. Thus, income plays a vital role in the utilization of antenatal care services.

In the same vein, 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. They argued that facility use behaviour of residents may be shaped by several factors which include the size of household finances (income) and distance/location of health care facilities. Other studies in Northern and Western Nigeria reported similar results (Iyaniwura and Yussuf 2009, Doctor, Bairagi, Findley, and Helleringer, 2011).In South-South Nigeria, no such study has been conducted and this study begins to fill this gap in knowledge by examining the differences in income level and how it affects the utilization of antenatal care services. This study, therefore, aims to ascertain if the level of income affects the utilization of antenatal care services among primigravida and multigravida women of reproductive age in Edo South, Nigeria. The remainder of this article is divided into four sections. First, we present a brief review of the literature on the effects of income on ANC utilization and offer an overview of how poverty alleviation measures can combat low utilization of ANC services in Nigeria. Next, we present the study's methodology, which is followed by the results section. This is followed by the discussion of findings and conclusion, where we explore the implications of the

findings for public health and recommend possible poverty alleviation plans that women of reproductive ages might adopt to tackle the problem of low utilization of ANC services due to finance.

Research Question: How does the level of income affect the utilization of antenatal care services among primigravida and multigravida women of reproductive age in Edo South, Nigeria?

Research Hypothesis: There is a significant relationship between the respondent's level of income and their utilization of antenatal care services among primigravida and multigravida women of reproductive age in Edo South, Nigeria.

Brief Review of Related Literature

Effects of Income on Antenatal Care Utilization It is a fact that the employment status of expectant women influences their ANC use. The involvement of women in employable ventures positively influences their uptake of antenatal care services. This empowers pregnant mothers to increase control over the things which affect their lives as far as their healthcare needs are concerned. In the study conducted by Saad-Haddad, DeJong, Terreri (2016) on the socioeconomic determinants of maternal healthcare utilization in seven countries, the study revealed that household wealth significantly influenced the facility type for accessing maternal care. In the same vein, Abekah-Nkrumah and Abor (2015) and Rai, Singh, and Kumar (2016) also found out that household income is linked with frequent use of modern healthcare. Sharif (2000) posited that the income of an individual is a major factor in accessing antenatal care services as well as other health care services. Mekonnen and Asnaketch (2002) noted that maternal age, parity, income, the standard of living of households; antenatal care user's fees and travel distance to antenatal care providers are the common economic factors that have been cited by previous researchers on the factors that affect the utilization of health facilities.

Several studies have found income and class as determinants of antenatal care utilization. In such studies, antenatal care utilization was found to be high among women with higher economic status, better education, few children, married women and employed women. Mekonnen and Asnaketch (2002) argued that these studies indicated that households in the highest income quintile are approximately twice more likely to utilize private hospital services than those in the lowest quintile, ceteris paribus. Ndisika & Dawodu (2019) conducted a study on antenatal care service

utilization among women of reproductive age in Egor Local Government Area, Edo State. The study found that income affects the 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 a yearly income of above #240,000 were much more predisposed 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. Inability to pay for antenatal care services or prescribed treatment is an important barrier to the utilization of antenatal care.

Poverty and Health Poverty refers to the inability of an individual to attain the minimum standard of living. It can also be defined as a social condition characterized by inadequate access to basic human needs (food and non –food) to the sustenance of a socially acceptable minimum standard of living in a given society. Some of these basic determinants of wellbeing include adequate food, shelter, potable water, healthcare, education and employment opportunities (Akintola and Yusuf; 2001). Ajakaiye and Adeyeye (2000) conceptualize poverty as a function of education, health, child mortality and other demographic variables. Poverty to them is the availability or otherwise of the above parameters. In a nutshell, poverty can be seen as a situation in which an individual is unable because of economic, social, political and psychological incapacitation, to provide himself and his family the barest necessities of life. Poverty is a major cause of ill health and a barrier to accessing health care when needed. The relationship between poverty and health is financial in the sense that the poor cannot afford to purchase those things that are needed for good health, including sufficient quantities of quality food and health care. But, the relationship is also related to other factors such as lack of information on appropriate health-promoting practices or lack of voice needed to make social services work for them (Saad-Haddad, DeJong, Terreri, 2016).Ill health, in turn, is a major cause of poverty. This is partly due to the costs of seeking health care, which include not only out-of-pocket spending on care (such as consultations, tests and medicine) but also transportation costs and any informal payments to providers. Hence, there is a need to eradicate or alleviate poverty among people of low-income status for them to access healthcare services optimally.

Poverty Alleviation Plans and Strategies Poverty alleviation can be defined as a set of measures which can be both economic and humanitarian intended to permanently lift people out of poverty. The World Development Report endorsed a poverty alleviation strategy that combines enhanced economic growth with provisions of essential social services directed towards the poor while creating financial and social safety nets (Khan & Arefin, 2013). Numerous social safety net programmes and public spending on social protection, including social insurance schemes and social assistance payments, continue to act as tools of poverty alleviation in many of the developing countries across the world (Ahmed, Jahan, Fatema-Tuz-Zohora, 2013). These social safety nets and protection programmes show positive impacts on the reduction of poverty, vulnerability, and on a wide range of social inequalities in developing countries. One major concern dogging these programmes, however, is their long-term sustainability (Khan & Arefin, 2013).

Furthermore, the World Bank in its 1995 report suggests two strategies of poverty alleviation. Firstly, promotion of the productive use of the poor's most abundant asset-labour. This invariably calls for policies that create market incentives, stable social and political institutions, good infrastructure and adaptable technology. Secondly, to make basic social services such as quality healthcare services, basic amenities and quality education available to the poor. Hence, primary health care, family planning, balanced nutrition and primary education are of prime importance. The five major strategies suggested are economic, political, social, agricultural and ideological. Economic growth remains the primary means of reducing poverty and improving the quality of life of the populace. Therefore, economic policies should be directed towards poverty reduction. There should be an increased sectoral allocation to the productive sectors of the economy e.g. industries to create more jobs and raise the level of employment of women of reproductive ages (Aluko, 2003). Again, the nation must adopt economic policies that will facilitate the redistribution of wealth and incomes to solve the problem of inequalities and at the same time reduce the margin between the rich and the poor.

According to Ibietan, Chidozie, & Ujara (2014), the redistribution of wealth and income requires conscious strategy rather than being left open to the market forces. Poverty alleviation measures for pregnant women should be strictly directed towards health coverage at all levels. It encompasses universal access to primary health care sanitation; immunization of all children;

reduction of maternal mortality; eliminating severe malnutrition and reducing moderate malnutrition.

In the same vein, Nigeria had at several points in time, developed indigenous poverty alleviation schemes between 1977 till date. Some of them include Directorate of Food, Roads and Rural Infrastructure (DFFRI), Better Life Programme (BLP), National Directorate of Employment (NDE); People Bank of Nigeria (PBN); Community Bank (CB); Family Support Programme (FSP); Family Economic Advancement Programme (FEAP); Poverty Eradication Programme (PEP); National Poverty Eradication Programme (NAPEP); National Economic Empowerment Development Strategy (NEEDS), and National Health Insurance Scheme (NHIS). They aimed to ameliorate the suffering of the people by providing them employment opportunities, provide easy access to healthcare facilities, improve family welfare and create access to credit facilities to enable the people to establish their businesses (Arogundade, Adebisi and Ogunro, 2011).

Materials and Methods

The study adopted the mixed-method research design in carrying out this research. This design was considered appropriate and suitable for this study because it involves integrating quantitative and qualitative approaches to generating new knowledge and can involve either concurrent or sequential use of these two methods to follow a line of inquiry. The population of the study includes 457, 211 primigravida and multigravida mothers. Yamane (1967) statistical formula for sample size determination was used to generate the sample size of 1,108 for the quantitative data in this study. The proportionate random sampling technique was used in distributing the questionnaire to the respondents in each local government areas because the population categories do not have equal sizes. These techniques were chosen because it gives each element of the population an equal chance of being selected in the sample and also helps the researcher to make an empirical generalization.

On the other hand, three focused group discussions and twenty-one semi-structured interviews were conducted with women of reproductive ages (15 years- 49 years) and health care providers between July-September 2019. To be included in the study, a potential participant had to have experienced pregnancy and have given birth at least once or is currently pregnant during the period

of conducting the study. The participants consented to participate in the study before the interviews were conducted. Data analysis of quantitative data adopted the descriptive analysis; it involves simple statistics such as cross-tabulations, frequencies, and simple percentages. For the qualitative data, the deductive and inductive approach which involves a thematic analysis of the data collected was conducted using Braun and Clarke's (2019) six steps of analyzing data thematically (familiarizing yourself with your data, generating initial codes, searching for themes, reviewing themes, defining and naming themes and producing the report) guided the analysis. The tape-recordings were transcribed verbatim, anonymized, and read several times. Having immersed herself in the data, the author initiated a manual inductive coding, where codes were developed directly from the data, utilizing participants' own words and phrases (Linneberg & Korsgaard, 2019).

Results / Findings

Research Question: How does the level of income affect the utilization of antenatal care services among primigravida and multigravida women of reproductive age in Edo South, Nigeria?

Table 1: ***Relationship between Financial Resources and Mothers' Utilization of*** **ANC**

Descriptions	Options	Primigravida	Multigravida	Total
Respondents' Views about the amount they pay for ANC	Very costly	43 (19.5%)	145 (18.8%)	188 (19.0%)
	Costly	58 (26.2%)	200 (26.0%)	258 (26.0%)
	Not very costly	76 (34.4%)	283 (36.8%)	359 (36.2%)
	Cheap	35 (15.8%)	112 (14.5%)	147 (14.8%)
	Others	9 (4.1%)	30 (3.9%)	39 (3.9%)
	Total	**221 (100.0%)**	**770 (100.0%)**	**991 (100.0%)**
Respondents' Indication about Whether or not they have ever stopped going for antenatal because of the financial requirements	Yes	61 (27.6%)	173 (22.5%)	234 (23.6%)
	No	155 (70.1%)	580 (75.3%)	735 (74.2%)
	I can't say for sure	5 (2.3%)	17 (2.2%)	22 (2.2%)
	Total	**221 (100.0%)**	**770 (100.0%)**	**991 (100.0%)**
Respondents' Indication about Whether or not lack of money to pay for transportation costs prevent them from attending antenatal care services	Yes	68 (30.8%)	236 (30.6%)	304 (30.7%)
	No	153 (69.2%)	533 (69.2%)	686 (69.2%)
	I can't say for sure	0 (0.0%)	1 (0.1%)	1 (0.1%)
	Total	**221 (100.0%)**	**770 (100.0%)**	**991 (100.0%)**
Respondents' Readiness to Frequently Attend ANC assuming they have adequate financial resources at their disposal.	Yes	131 (59.3%)	455 (59.1%)	586 (59.1%)
	No	42 (19.0%)	149 (19.4%)	191 (19.3%)
	I can't say for sure	48 (21.7%)	166 (21.6%)	214 (21.6%)
	Total	**221 (100.0%)**	**770 (100.0%)**	**991 (100.0%)**

Field Survey, 2019.

Items analyzed in table 1 were used to measure the relationship between financial resources and mothers' utilization of ANC. The data suggest that a majority (36.2%) of mother's perceived the cost involved in ANC as 'not very costly'. However, 26.0% of them considered the ANC as being costly. While 19.0% of them considered it as being very costly, a lower proportion (14.8%) of them considered it as being cheap. The data also shows that the majority (74.2%) of the respondents did not stop attending ANC due to its financial requirements; however, this was the case for 23.6% of them. Again, a majority (69.2%) of the respondents also claimed that lack of money to pay for transportation cost did not prevent them in any way from attending ANC; meanwhile, about a quarter proportions (30.7%) of them indicated that such was the case with them. Finally, a significant proportion (59.1%) of the respondents indicated readiness or willingness to frequently attend ANC assuming they had adequate financial resources at their disposal. However, 19.3% of them maintained that they would not frequently attend ANC even if they had all the required resources; while 21.6% of them could not certainly say anything about that. Meanwhile, no significant differences were observed in the data across the two groups of mothers. In other words, the findings described are reflective of what is obtained in both the primigravida and multigravida groups. A major implication of these findings is that the financial income of mothers appears to be a factor that influences their level of ANC utilization but it may not significantly predict women's utilization of ANC. Finance is a key factor in accessing healthcare facilities which perhaps motivate women with low-income status to seek traditional healthcare services due to the low cost of services compared to modern healthcare services.

Responses from the qualitative data are also in agreement with the findings. One of the IDI participants had this to say,

> Finance is a major factor; because I remember most people go to government health care centres because they cannot afford private health facilities. We had a personal experience I witnessed when my wife was pregnant and when the time for delivery came; some of these government centres like UBTH were on strike. They had to resort to another clinic and because those women did not have their antenatal in a private clinic, the bills were so much that even after delivery she was still there because she could not pay her bills. They had to detain her there until she pays her bills and of course, being there, you will pay for bed and the bills keep increasing and one of the sad aspects is that one of the people that was being detained because she was not able to pay bills, the child was no more and she didn't know. So it is funded so if someone like her could afford the cost of antenatal that is why the NHIS scheme is what

> everyone should key into; if people can afford it they won't want to run to where they think is cheaper and still encounter those hiccups that the tail end of delivery. So basically the issue of funds is key and is the major militating factor against proper access to antenatal care (***IDI, Male, 40 years, Civil Servant, Egor L.G.A)***

To have a statistical prove about this assumption, the data on mothers' level of monthly income was crosstab with the data on the level of ANC utilization using the chi-square test. The result is shown in table 2.

Table 2: ***Relationship Between Mothers' Level of Income and ANC Utilization***

Level of Monthly Income	*ANC Utilization*		*Total*
	Yes	***No***	
Lower Income	466 (82.2%)	101 (17.8%)	567 (100.0%)
Average Income	313 (83.5%)	62 (16.5%)	375 (100.0%)
High Income	36 (73.5%)	13 (26.5%)	49 (100.0%)
Total	**815 (82.2%)**	**176 (17.8%)**	**991 (100.0%)**
Pearson Chi-Square χ^2= 2.968, *df* = 2, *N* = 991, *p* = .227			

Data on mothers' level of monthly income were recoded into three groups to manage the data to give a view about those within the lower-income, average income and higher-income groups. This was done using the 'recode into the different variable' function in SPSS, a majority (82.2%) of the mothers surveyed were lower-income earners affirmed that their level of income affect their utilization of ANCs; while another significant proportion (83.5%) of them were middle-income earners also confirmed that level of income influences ANC utilization. Those who earned higher were very insignificant compared to those who were within the middle and lower-income ranges respectively. Thereafter, this recoded data were used to crosstab with the data on mothers' utilization of ANC. Based on the evidence from the statistical test, it is clear that level of income does relate significantly with mothers' utilization of ANC, (H_1), (χ^2= 2.968), *df* = 2; *p* = .227.

Data obtained qualitatively revealed that a majority of the FGD participants mentioned that level of financial income has a lot to do with mothers' opt for ANC. For instance, an FGD participant averred that

…with the little money that one may be receiving, you can equally go for the modern healthcare services. Even if the money is not enough to pay at once, you can pay in installments (***Female, 35 Years, Primigravida, Egor L.G.A).***

This goes to support the view that financial income may not be a serious barrier for mothers' utilization of ANC since a majority of the respondents said that the amount they paid for ANC was not much. Meanwhile, this opinion is also different for other mothers; perhaps such group of mothers may have many financial responsibilities within their households compared to others. This is so as an FGD participant averred that,

> The problem is money; we don't have money, even for the ones that are patronizing the traditionalist. It is because when you check your pocket and you don't have the money, you can't force yourself; you will just remain there. …there is no time you will go to the hospital and they will attend to you for free. If you want to do checkup or any test, you must pay. So those who do not have the money will remain at home ***(FGD Participant VI, Primigravida, Female, 28 Years, Oredo L.G.A).***

Test of Hypothesis

There is a significant relationship between the respondent's level of income and their utilization of antenatal care services among primigravida and multigravida women of reproductive age in Edo South, Nigeria.

Table 3: ***Summary of Pearson Chi-Square Showing the Relationship between Mothers' Level of Income and Utilization of ANC***

Level of Monthly Income	*Utilization of ANC*		*Total*	*Mean*
	Yes	***No***		
Lower Income	466 (57.2%)	101 (57.4%)	567 (57.2%)	1.18
Average Income	313 (38.4%)	62 (35.2%)	375 (37.8%)	1.17
High Income	36 (4.4%)	13 (7.4%)	49 (4.9%)	1.27
Total	815 (100.0%)	176 (100.0%)	991 (100.0%)	1.18
Pearson Chi-Square (χ^2) = 2.968, df = 2, p = .227				

The chi-square statistical tool was run to determine if a significant relationship exists between mothers' level of income and their utilization of antenatal care services in Edo south L.G.A. The result of the test shows statistically significant evidence to accept the stated alternate hypothesis, ($\chi^2(2) = 2.968$, p =.227. The calculated p-value is less than 0.05, indicate that null hypothesis Ho is rejected and alternate hypothesis H1 is accepted. Further test using the mean score shows additional evidence to indicate that the utilization of ANC does not vary significantly among both

the lower-income (*M* = 1.18), average income (*M* = 1.17) and high income (*M* = 1.27) mothers within the study area.

Discussion of findings

The study investigated income differentials and utilization of antenatal care services among women of reproductive ages in Edo South, Nigeria. Regarding the relationship between financial involvement and utilization of ANC, data analyzed show that antenatal care services were perceived as less costly, and financial involvement plays a role in accessing ANCs but it did not prevent a significant proportion of mothers from obtaining such services. The result also revealed that transportation costs to the healthcare services did not also prevent a significant proportion of mothers from actively participating in the ANC. Although a significant proportion of the mothers affirmed their readiness or willingness to frequently attend ANC assuming they had adequate financial resources at their disposal. This finding implies that the income status of an individual greatly determines the level of utilization of healthcare services as well as antenatal care services. This is partly due to the costs of seeking health care, which include not only out-of-pocket spending on care (such as consultations, tests and medicine) but also transportation costs and any informal payments to healthcare providers.

The study of Fagbamigbe & Idemudia (2015) found that inability to pay for the services was the most common problem preventing pregnant women from accessing the ANC in Nigeria. Also, the findings of Ousman, Mdala, Thorsen, Sundby and Magnus (2019) were in support of the findings of the study. Their work 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 had more visits than women from low wealth indexed households in Ethiopia. Consequently, poverty alleviation measures for pregnant women should be strictly directed towards universal health coverage at all levels. It encompasses universal access to antenatal care services, primary health care for mothers and children; immunization of all children; reduction of maternal mortality; eliminating severe malnutrition of mothers.

Furthermore, data analysis on the relationship between mothers' level of income and utilization of ANC, confirmed that the odd for optimal utilization of ANC increase due to level of income. For instance, qualitative data suggest that it can still be a significant barrier for those who live in extremely low income. Thus, mothers' income level significantly predicts their level of ANC utilization in the study area. A previous study conducted by Iyaniwura and Yussuf (2009) concerning income and utilization of ANC is also consistent with the findings made in this study. The study revealed that a 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 in improving the utilization of maternity care services. The findings of the study are in agreement with the works of Asafo, Akowuah, Agyei-Baffour, and Awunyo-Vitor, (2018) who found that household income also influences utilization of healthcare facilities and also influence maternal mortality. Also, the occupational status of a pregnant mother influences her quest of utilizing maternal services including ANC in Peri-urban Ghana. Although maternal services are supposed to be free in Ghana, yet pregnant mothers are constrained due to the additional cost of care. These could either be direct or indirect as some of these costs are not absorbed by the free maternal healthcare policy. Among these are screening, laboratory tests, management of minor ailment, and immunization. This makes pregnant women who are more resourced, more likely to afford and use such services and hinders the rates of utilization by the less privileged, hence, not meeting the recommended visits by the WHO. It, therefore, supports the study of Arthur (2012) that wealth still influences the ANC use in Ghana even after the introduction of the free maternal health policy.

Conclusion

The study concluded that given income differentials among women of reproductive age, that supportive poverty alleviation programs could constitute important enabling factors for all mothers to access and utilize antenatal care services irrespective of their income disposition. This conclusion is sequel to the finding that the financial status of mothers significantly affects their access and utilization to ANCs. The level of income and utilization of ANC are related as the study confirmed that the odd for optimal utilization of ANC increase due to level of income.

Income discrepancy among mothers is a significant barrier to utilizing ANC. Women with high-income level utilized ANCs more frequently than their counterparts living in extremely low income. There is need to guarantee adequate use of antenatal service in Edo South, Nigeria; hence, upstream approaches like social support to ANC use should be provided to the less privileged women in addition to the policy of National Health Insurance Schemes (NHIS). Hence, maternal services that are not absorbed by the NHIS schemes should be included to help pregnant mothers defray incurred costs in accessing ANC.

Recommendations

- The study recommends that governments should implement a variety of poverty alleviation policies and programs to reduce inequalities in health outcomes and enhance financial protection for women of reproductive ages. The government should increase investment in healthcare schemes which invariably is linked to economic growth and consequently would reduce poverty.
- Generally, the schemes should involve mechanisms that help overcome geographic, financial, social and psychological barriers to accessing care and reducing out-of-pocket cost of antenatal care services.
- The study also recommends the need to reduce the direct cost of care at the point of service, e.g. through reducing/abolishing user fees for the poor or expanding health insurance to the less privileged women.
- Refining healthcare systems and ending poverty in Nigeria will entail improving the country's economic productivity and opportunities for its citizens. This will mean investing in human capital potential and creating jobs for women and young people, increasing financial access and opportunities these groups in rural communities, and advancing technological innovation.
- Additionally, the study recommends reducing inequalities in determinants of health care utilization, such as reducing distance through providing services closer to the women with low income, subsidizing travel costs, targeted health promotion, conditional cash transfers for women of reproductive ages to encourage optimal utilization of ANCs in modern healthcare centres.

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