

ANTENATAL HEALTH CARE UTILIZATION AMONG WOMEN WITH INCIDENCE OF UNDER-FIVE MORTALITY IN ABIA, SOUTHEASTERN NIGERIA

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DOI: **10.29816/sjss.7.1.12**

ABSTRACT

Utilization of antenatal health care is an important public health issue in Nigeria. In spite of efforts towards improving under-five children health status, the incidence of under-five mortality is relatively higher in South-eastern Nigeria, especially in Abia State compared to other Southern regions. This study examined antenatal health care utilization amongst mothers with incidence of under-five mortality. Multistage and purposive sampling techniques were employed to select 301 mothers with incidence of under-five mortality. Descriptive statistics, Cross-tabulation and Chi-square tests at $p < 0.05$, and thematic content analysis were used for data analyses. The respondents' age was 32.6 ± 5.8 years and period of first Antenatal Care (ANC) was 3.5 ± 1.3 months. About 54% with under-five deaths sought ANC from private hospitals and 60.9% were attended to by nurses and midwives. Over 60% of the women did not receive information on complication signs. The use of health care centre for ANC was positively related to mother's age ($X^2=102.29$), residence ($X^2=21.04$), occupation ($X^2=112.10$), education ($X^2=119.57$) and monthly income ($X^2=62.90$). The qualitative data revealed that the additional ANC visits of rural than urban women after the fourth visit was as a result of increasing pressure from the work place, which probably might not give urban pregnant women adequate time to seek ANC. The incidence of under-five mortality was influenced by poor and non-utilization of antenatal health care facilities. Governments should embark on more enlightenment and advocacy campaigns to encourage pregnant women and nursing mothers to improve ANC health care service utilization, which is beyond obtaining ANC card.

Key words: Under-five mortality, Antenatal care and utilization in Abia, South-eastern Nigeria

Introduction

Maternal health status has become an important indicator for socio-economic development as well as health of the babies in a country (UNDP, 2007). A mother's health is inextricably linked to the health of her newborn. The level of assistance that a woman receives during pregnancy is a strong

determinant of the overall outcome for her and her newborn. If a woman is unable to access adequate antenatal care, she cannot benefit from essential preventive care. She may suffer from delays in detecting pregnancy-related complications, which places

her and her unborn at risk (Federal Ministry of Health, 2009).

Antenatal care from a trained provider is important in monitoring pregnancy and helping to reduce the risks for the mother and child during this period. This is more effective in preventing adverse pregnancy outcomes when it is sought early in the pregnancy and continues through to delivery (NPC and ICF Macro, 2014). The document also showed that 58% of women received antenatal care from skilled providers in 2008 which also corresponded with 58% of women in 2003. The WHO (2008) recommends at least four antenatal visits during pregnancy to ensure proper care. During this time, pregnant women are well aware of the utilization of existing health facilities and they can properly utilize such facilities when needed for their children. According to WHO's recommendation, the initial ANC should take place within the first 12 weeks of pregnancy (1 – 3 months), while the second, third and fourth visits by the 26th, 32nd and 36th weeks respectively, for a minimum of four antenatal visits in low risk pregnancies. The study, also, provided guidelines to regulate the content of care to be received during each visit to ensure effectiveness.

It has also been observed that under-five mortality is vital for evaluation and planning of the public health strategies in a particular country (Park, 2005). In a developing country, a child is highly vulnerable to two categories of acquired ailments: one is a heavy load of infectious diseases, and the other, those diseases that are caused by inadequate nutrition (Uddin *et al.*, 2009). A significant portion of deaths occur during childhood in poor resource settings like Nigeria where poverty, poor public health measures and lack of access to health care facilities, ignorance and social instability have provided a platform on which malnutrition and infection-related diseases take heavy toll on infants and

children (Lee, 2003). Sub-Saharan Africa and Southern Asia face the greatest challenges in child survival; and, currently, account for more than 80 per cent of global under-five deaths (UNICEF, 2012). Several factors had been identified as contributors to the increasing levels of child mortality in most developing countries. Studies have shown that there is a close relationship between educational attainment and lower mortality rates (Antai, 2011; Fayehun and Omololu, 2009; NPC and ICF Macro, 2009). Education has been identified as affecting all aspects of people's lives; and, it is intricately linked to the demographic process (Isiugo-Abanihe, 2003). Abor and Abekah-Nkrumah (2009) revealed that urban dwellers might be relatively closer to healthcare facilities than rural dwellers in most developing countries. The study also revealed that those in the poorer households are more likely to deliver in a health facility, with those in the middle wealth quintile being more likely to use antenatal services and deliver at a health facility. Accessing a service may be facilitated or hindered by the location and physical distance of the service from the client. Kaufmann (2002), in a study of the Zululand Health District, in South Africa, observed that distance may impede or enhance utilisation of a health service. Poor utilization of quality health service continues to contribute to maternal and child morbidity and mortality in developing countries (FMOH, 2003; Campbell, *et al.*, 2005). The health care that a mother receives during and after pregnancy, at the time of delivery, and soon after delivery is important for the survival and well-being of both the mother and her child. Proper care during pregnancy and delivery is important for the health of both the mother and the baby, and is an indicator of the status of maternal and child health in the society (WHO, 2009). The care and assistance that a woman receives during and after pregnancy affect maternal, infant and child morbidity and

mortality. If a woman is unable to access adequate antenatal care, she cannot benefit from essential preventive care. She may suffer from delays in detecting pregnancy-related complications, which place her and her newborn at risk (Federal Ministry of Health, 2009).

Early antenatal care initiation has been associated with heavier birth weights. It has also been identified as the central link between various socio-demographic factors and birth outcomes (Magadi *et al.*, 2004). Kabir *et al.* (2005), in northern Nigeria, have found that mother and father's education were the determining factors for the utilization of antenatal care. But Ibeh (2008) has shown that in a South-eastern State (Anambra) of Nigeria, even in the few cases where antenatal care services were available and utilized, the problem with pregnancy outcomes depended on the quality of care received. Although late and inadequate antenatal care may be explained by cost, Peltzer and Ajegbomogun (2005), in their study of the utilization of antenatal care in a Nigerian Teaching Hospital, found that the sampled women began antenatal care late (mostly in the third trimester) even when antenatal care was free. Poor women were 63% less likely to visit for professional antenatal care, 73% less likely to visit a doctor and 37% less likely to visit a nurse/midwife or any antenatal care giver. An antenatal care visit may be the first and only point of contact with the health care system to some women in Nigeria.

Progress in the reduction of infant and child mortality remains a problem facing Sub-Saharan Africa in particular. With reference to Nigeria, about one million children under-five die every year (DFID, 2009). The infant mortality rate was 69 per 1,000 live births for the five years preceding the 2013 survey, the child mortality rate was 64 per 1,000 children surviving to age 12 months, and the under-5

mortality rate was 128 per 1,000 live births. This implies that one in 15 Nigerian children die before their first birthday and that one in eight die before their fifth birthday (NPC and ICF, 2014).

UNICEF (2008) documented that 40 percent of women nationwide do not access antenatal care (ANC) from a skilled provider at any time during their pregnancy. More so, in the past five years, no measureable progress on ANC attendance has been recorded nationally. However, the number of under-five deaths per 1,000 live births in the South Eastern part of the country, (FMOH, 2009) reported 103 per 1,000 live births. Still on the zonal differences, Under-5 mortality rates range from a low of 90 deaths per 1,000 live births in the South-West to a high of 185 deaths per 1,000 live births in the North West. In spite of the level of utilization of antenatal health care services in the Southern part of Nigeria, Under-5 mortality is relatively higher in the South-East, which Abia State is part of compared to South-South and South-West (NPC and ICF, 2014).

The Mosley and Chen analytical framework (Mosley & Chen, 1984) and Socio-ecological model (Glanz *et al.*, 1997) were adopted for the purpose of this research. They illustrate the interplay and relationship that exist between the socioeconomic, demographic, environmental, and cultural conditions in which people (women) live in and their levels of health outcomes. These factors create disparities and inequalities in the health of women and their children, which in turn result to infant and child mortality.

In conclusion, maternal factors and behaviours with respect to maternal health care services such as antenatal care and delivery care play a vital role in child's health outcomes in Nigeria. In spite of the utilization of antenatal health care facilities by pregnant women in Abia State, adequate social research attention has not been given to women with

incidence of under-five mortality to ascertain the level of disparity that exists between urban and rural areas. It is against this background that this study attempts to examine the utilization of antenatal care services among childbearing mothers with incidence of under-five mortality in Abia State.

Materials and Methods

The study utilized survey and exploratory study design with multi-stage and purposive sampling techniques in selecting a sample size of 301 women with incidence of under-five mortality within the childbearing age range of

$$N = \frac{(Z\alpha)^2 \times pq}{d^2}$$

where

N = Minimum sample

Z α = Standard score: 1.96 (Assuming a level of error of 5%)

p = Prevalence of outcome measure: 0.128 (under-five mortality)

q = 1-p = 1-0.128 = 0.843

d = Absolute deviation: 5% = 0.05 (this mean that the estimate for under-five mortality is within 5% from the assumed true rate)

$$N = \frac{(1.96)^2 \times 0.128 \times 0.843}{(0.05)^2}$$

N = 166

However, the sample size for the study was increased to 301 in order to take care of cases of non-responses. The study adopted a methodological triangulation of both quantitative and qualitative techniques in collecting the data. This comprised the utilization of documentary sources, structured interviews (the Questionnaire), IDIs and FGDs. Through multi-stage and purposive sampling techniques, questionnaires were administered to the selected respondents for the study. There was a systematic selection of ten buildings each (that is one in every five buildings) from the eighteen selected roads/streets following the allotted building numbers by the state government, and a random selection of twenty buildings each from the nine rural communities. The Questionnaire Schedule was administered by face-to-face interview; this increased the

15-49 years. The respondents must have had given birth to at least one child with incidence of under-five mortality in the last five years were drawn from the three Senatorial Districts of Abia State (Abia North, Abia Central and Abia South). The sample size for the study was calculated using Cochran's statistical formula for calculating minimum sample proportion. The minimum sample size needed to estimate the prevalence of under-five mortality to within 5% of the estimate of 128 per 1,000 (NPC and ICF, 2014). At a 5% level of significance, using the formula below:

response rate and ensured that all the copies of the questionnaire were returned. Purposive selection of the participants was employed in conducting 20 In-depth Interviews (IDIs), that is, ten each for urban and rural areas, while six Focus Group Discussions (FGDs) were conducted with participants between 7 and 10 in each group.

Descriptive statistics, Cross-tabulation and Chi-square tests at p<0.05, and thematic content analysis were used for data analyses. The quantitative data were analyzed using SPSS version 21 at univariate and bivariate levels. The thematic manual content analysis was employed to analyze data collected from the IDIs and FGDs. Ethical approval was obtained from the Review Committee of the Federal Medical Centre (FMC), Umuahia, capital of Abia State. All study subjects participated voluntarily and gave informed

consent; no participant suffered physical or emotional harm as a result of the study; the study did not disclose participants' names or addresses.

Results and Discussions

Distribution of Respondents with Incidence of Under-five Mortality by some Selected Demographic Characteristics

The socio-demographic characteristics of the respondents are displayed in Table 1. The mean age of the respondents was 32.6 ± 5.8 years, with little difference between rural and urban areas. The table showed that incidence of under-five mortality was high among women aged 30 – 39 years in the area. It is worth mentioning that the result is expected considering the mean age (32.5 years) of respondents for the study. The Table further shows that respondents with secondary and less education had higher incidence of under-five mortality compared with those with tertiary education. Regarding the occupation of the respondents at present, the incidence of under-five mortality was slightly lower among women for unemployed category. For these women, the help received from their husbands and extended family members could be a function of the low experience of under-five mortality. Some respondents who were unemployed maintained that their family members sometimes shower them with gift items for their babies' upkeep. Some of the assertions are couched this way:

...my husband and extended family members were of immense help to me when I was nursing my baby. Since I do not have any job for now, my husband's family member, mother, siblings, etc make sure that I do not lack anything (Urban FDG, respondent aged 28, Umuahia North LGA).

Another respondent posited that:

It is really good to have a husband and family members that have that understanding spirit. I got married immediately after my university education without working for money. My sweetheart (husband) and family members have always been there for me anytime (Rural FGD, respondent aged 35, Umuahia South LGA).

A larger proportion of the respondents (45.8%) in paid/civil service jobs had incidence of under-five mortality with substantial difference between urban and rural areas, as the majority of urban respondents (56.7%) compared with about 39% of their rural counterparts for the same category had incidence of under-five mortality.

The case of under-five mortality based on marital status was expected. The little difference amongst the women by place of residence could be a function of economic pressure faced by urban single parents to cater well for their children and other household needs which invariably affect the health statuses of family members. Table 1 further reveals that the majority of New Generation Churches' members (52.2%) had incidence of under-five mortality in the last five years compared with their counterparts in other religious groups in the study area. The high childhood mortality rates associated with members of New Generation Churches might be attributed to their level of fanaticism in the area. It validates the consensus submission made by rural and urban women during one of the FGDs that:

It is clear that without strong faith in God, individuals could not depend on their own thoughts for survival. In most cases, when my children are sick, I commit them into God's hands since they may not know the problems they are having' (Rural FGD, respondent aged 39, Umunnaochi LGA).

Another informant from the rural area stated that:

The bible has made us to understand that by His strip we are healed. The same bible told us that whatever we believe comes to us. To me, the first thing I do as a believer when my children are sick is to hand their sickness over to God and believe that they are strong (Urban FGD, respondent aged 35, Umuahia North LGA).

Under-five mortality experience was high amongst households into the lowest wealth quintile and reduces as households' income increases. Low level of income among poorer families with many children obviously leads to inadequate nutrition which perpetuates malnutrition. This, in turn, accelerates high levels of infant morbidity and mortality.

Table 1: Percentage Distribution of Selected Demographic Characteristics of Women with incidence of Under-Five Mortality

Variables/Categories	All Women (%)	Rural (%)	Urban (%)
Age			
< 29	88(29.2%)	52(28.7%)	36(30.0%)
30 - 39	173(57.5%)	97(53.6%)	76(63.3%)
40 +	40(13.3%)	32(17.7%)	8(6.7%)
Total	301(100%)	181(100%)	120(100%)
Mother's education			
Primary and Less	34(11.3%)	26(14.4%)	8(6.7%)
Secondary	161(53.5%)	101(55.8%)	60(50.0%)
Tertiary	78(25.9%)	42(23.2%)	36(30.0%)
Others	28(9.3%)	12(6.6%)	16(13.3%)
Total	301(100%)	181(100%)	120(100%)
Occupation			
Unemployed	51(16.9%)	43(23.8%)	8(6.6%)
Paid/ Civil Servant	138(45.8%)	70(38.7%)	68(56.7%)
Farming	20(6.6%)	16(8.8%)	4(3.3%)
Petty Trading	82(27.2%)	46(25.4%)	36(30.0%)
Others	10(3.3%)	6(3.3%)	4(3.3%)
Total	301(100%)	181(100%)	120(100%)
Marital Status			
Single	-	-	-
Married/Living together	267(88.7%)	167(92.3%)	106(88.3%)
Widowed/Separated/Divorced	34(11.3%)	14(7.7%)	14(11.7%)
Total	301(100%)	181(100%)	120(100%)
Religion			
Catholic	62(20.6%)	34(18.8%)	28(23.3%)
Protestant	82(27.2%)	50(27.6%)	32(26.7%)
New Generation Churches	157(52.2%)	73(53.6%)	60(50.0%)
Total	301(100%)	181(100%)	120(100%)

Income level (in #)			
< 15,000	229(76.2%)	140(77.2%)	90(75.0%)
15,001 – 30,000	40(13.3%)	25(14.0%)	15(12.5%)
30,001 +	32(10.5%)	16(8.8%)	15(12.5%)
Total	301(100%)	181(100%)	120(100%)

Source: Field Survey 2015

Respondents' previous under-five mortality experience

Table 2 shows previous experience of under-five mortality of the respondents. The result showed that rural women were 20.2% more likely than their urban counterparts to have under-five mortality experience in the study area. The majority (56.1%) of under-five mortality recorded were male children. A little above half of the respondents (51.5%) experienced infant mortality, with little differences between urban and rural areas. Data on the dead child's position is an indication that the complications and strange experiences related to first-two pregnancies could be contributory factor to childhood mortality. This is line with some respondents' opinions that first pregnancy experience was excruciatingly painful and uncomfortable. Some of the respondents put their opinions their way:

I resorted to personal remedies to strange development in my husband's absence during my first pregnancy. At a time, I was fed up with the pregnancy until I finally gave birth to the child, though he passed away after some months (urban FGD, respondent aged 27).

Another respondent posited that:

... it is not easy to be a woman. This was my comment the first time I was pregnant of my dead child. In fact, both my husband and I became confused at a point. I thank God for saving my life because it was totally as if I was in another realm during that period (rural IDI, respondent aged 26).

Table 2: Distribution of Respondents by Previous Childhood Mortality Experience

C h a r a c t e r i s t i c s	P l a c e o f R e s i d e n c e		R & U
	R u r a l	U r b a n	N (N=301)
Previous experience (U-5 death)			
Yes	181(60.1%)	120(39.9%)	301(100%)
Sex of the dead child			
Male	101(55.8%)	68(56.7%)	169(56.1%)
Female	80(44.2%)	52(43.3%)	132(43.9%)
Total	181(100%)	120(100%)	301(100%)
Age at which child died			
Mean → 2.0	2.2	2.1	
Less than 1 year	95(52.5%)	60(50.0%)	155(51.5%)
1 – 5 years	86(47.5%)	60(50.0%)	146(48.5%)
Total	181(100%)	120(100%)	301(100%)
The dead child's position			
Mean → 2.2	1.9	2.1	

1 – 2	125(69.1%)	100(83.3%)	225(74.8%)
3 – 4	46(25.4%)	16(13.3%)	62(20.6%)
5 +	10(5.5%)	4(3.3%)	14(4.7%)
Total	181(100%)	120(100%)	301(100%)

Source: Field Survey 2015

Utilization of Health Care (ANC)

Table 3 below displays data on utilization of health care facilities by the respondents. An overwhelming majority of the respondents (93.4%) reported to have had antenatal visits during the pregnancies of the dead children. Over one-half of them obtained ANC services from private hospitals, followed by 24.6% who obtained from government hospitals. About 12% obtained ANC at health centres relative to only 8.9% from traditional and religious homes. Respondents' place of residence could be associated with increased use of government hospitals for ANC services. A larger proportion (33.9%) of urban than of rural respondents (18.3%) sought ANC at government hospitals. About 13% of rural respondents obtained ANC at traditional and religious homes than urban dwellers. The interviews conducted during the course of this research buttressed the observed effect of location and physical distance of the hospital. In this regard some respondents claimed that:

Actually the private hospital where I sought ANC services during the birth of the said child is a stone throw from my house. I mostly walked to the clinic except on few occasions I saw free rides. In fact, I found it to be less stressful than travelling farther for ANC. Most times before mid day, one was back to attend to some other things at home (Rural IDI, respondent aged 25, Bende LGA).

Another respondent posited that;

I would not say that it is not stressful seeking health care from government

hospitals, but it becomes necessary that one utilizes such facilities. I went to government hospitals because of the knowledge I gained about pregnancy that was quite colossal...nurses start lectures at 10am on the days of ANC services at Federal Medical Centre (FMC). As a result, I try as much as possible to round off my house chores as early as possible in order to be there in time... (Urban FGD, respondent aged 36, Umuahia North LGA).

Another respondent posited that;

I had two ANC cards (from a government owned and private hospitals) when I was pregnant for this my baby (cuddling her baby). In most cases, I visit to the private hospital which was closer for ANC and that was eventually where I gave birth to my baby (Urban IDI, respondent aged 38, Aba North LGA).

Data on health care provider of ANC revealed that the majority of the respondents (60.9%) received ANC services from nurses and midwives followed by 21.7% that were attended to by doctors, while only 10.3% received ANC from auxiliary nurses and midwives. Also, the proportion of the women who were attended to by doctors varies by place of residence, from 33.9% of women in urban to 13.6% of rural women. The utilization of other health care providers like health workers, traditionalists and spiritualists was more predominant in rural areas with 11.8%. The majority of the respondents (52.6%) received ANC before the fourth month of their pregnancies, but slightly more in urban than

rural areas. During ANC visits, over two-thirds of the respondents reported to have received information on pregnancy complications and things to avoid. The majority (62.4%) of them reported to have adhered to the instructions regularly as directed, about 77% in urban areas and 57% in rural areas. The result is an indication that the provision of ANC which is a transition from the traditional to the Focused Antenatal Care (FANC) approach in Nigeria is adhered to by women in the study areas with the mean number of months of first ANC of 3.5 months.

About 39% of rural respondents did not adhere to the instructions given to them during ANC visits relative to 23.1% of urban respondents. The results above could be attributed to the difference that exists between urban and rural women, in terms of levels education and general awareness. About 59% of the respondents who reported not to have adhered to the instructions given to them during ANC attributed the reason to their behaviour to financial handicap, 17.1% attributed their reason to husbands not being in support, while 11.4% reported unqualified health practitioners' advice.

The reasons for not adhering to the instructions during ANC visit varies by place of residence. Almost three quarters of rural women reported financial constraints as their reasons for not adhering to instructions during ANC visits compared to 29.2% of their urban counterparts. The proportion of women who

attributed their reason for their non adherence to husbands not being in support of the instructions were higher among urban (33.3%) than rural (8.8%) respondents. Incompatibility with religious beliefs as a means for non adherence to instructions during ANC visits was mentioned only in urban area. Commenting in this respect, discussants largely remarked that financial constraints discouraged them from adhering to instructions given to them during ANC visits. Some of the respondents put their views thus:

There is nothing that does not involve money. One thing is giving you instructions on what to eat and not to eat; another is having the financial power to carry out the instruction. Without money, I must say that adhering to whatever instruction becomes a mirage (Rural FGD, respondent aged 40, Umuahia South LGA).

Another respondent posited that:

... and also my husband on few occasions considered some of the advice and instructions given to me during ANC not to be favourable. I do not know about other men but he (my husband) does not subscribe to some of the instructions. He considered some of them as waste of money knowing that the money is hard to get (Urban FGD, respondent aged 42, Aba South LGA).

Table 3: Distribution of Women with Under-Five Mortality Experience by Utilization of Health Care Facilities (ANC)

Characteristics	Rural N (%)	Urban N (%)	R & U (N=301)
ANC Visit			
Yes	169(93.4)	112(93.3%)	281(93.4%)
No	12(6.6%)	8(6.7%)	20(6.6%)
Total	179(100%)	116(100%)	301(100%)

Where did you receive ANC			
Government Hospital	31(18.3%)	38(33.9%)	69(24.6%)
C-Health Centre	22(13.0%)	12(10.7%)	34(12.1%)
Private Hospital	92(54.4%)	61(54.5%)	153(54.4%)
Others	24(14.2%)	1(0.9%)	25(8.9%)
Total	169(100%)	112(100%)	281(100%)
Whom did you see for ANC			
A Doctor	23(13.6%)	38(33.9%)	61(21.7%)
A Nurse/Midwife	108(63.9%)	63(56.3%)	171(60.9%)
Auxiliary Nurse /Midwife	18(10.7%)	11(9.8%)	29(10.3%)
C-Health Worker	8(4.7%)	-	8(2.8%)
Others	12(7.1%)	-	12(4.3%)
Total	169(100%)	112(100%)	281(100%)
Months of first ANC Mean →	3.5	3.5	3.5
1 – 3 months	79(51.6%)	52(54.2%)	131(52.6%)
4 – 6 months	72(47.1%)	40(41.7%)	112(45.0%)
7 +	2(1.3%)	4(4.2%)	6(2.4%)
Total	153(100%)	96(100%)	249(100%)
Information on pregnancy complications and what to avoid			
Yes	117(70.1%)	80(76.9%)	197(72.7%)
No	50(29.9%)	24(23.1%)	74(27.3%)
Total	167(100%)	104(100%)	271(100)
Adherence to information			
Regularly as directed	67(57.3%)	80(76.9%)	123(62.4%)
Not regularly as directed	46(39.3%)	24(23.1%)	70(35.5)
Don't Know	4(3.4%)	-	4(2.0%)
Total	117(100%)	80(100%)	197(100%)
Reasons for not regularly adhering			
Unqualified H/Practitioner's advice	4(8.7%)	4(16.7%)	8(11.4%)
Financial constraints	34(73.9%)	7(29.2%)	41(58.6%)
Long Distance	4(8.7%)	1(4.2%)	5(7.1%)
Against Religious Belief	-	4(16.7%)	4(5.7%)
Husband not in support	4(8.7%)	8(33.3%)	12(17.1%)
Total	46(100%)	24(100%)	70(100%)

Source: Field Survey 2015

Place of Delivery by incidence of Under-Five Mortality

Table 4 shows the distribution of the respondents with incidence of under-five mortality by place of residence. A large proportion of the respondents (45.5%) who experienced under-five mortality gave birth to the said child at private hospitals, followed by (27.2%) that reported to have given birth at

government hospitals. There is disparity with respect to place of delivery and residence; 42.5% of urban respondents gave birth at government hospitals compared to 17.1% of their rural counterparts. A good number of rural (18.7%) relative to 10.0% of urban respondents gave births at 'other' category,

comprising community-based providers' places, homes and churches.

The majority of those that reported to have experienced under-five mortality (57.4%) gave their reasons for the choice of place of delivery to include attitude of health care workers and quality care. This is followed by 16.0% that reported closeness to home. Amongst urban and rural respondents, the majority (62.0% and 54.2% respectively) attributed their reasons for the choice of place of delivery to attitude of health care workers and quality care followed by 13.9% and 17.4% respectively that reported closeness to home. About 17% of urban and 10.3% of rural respondents gave other reasons which include personal decision, husband's permission, neighbours' advice, etc.

The interviews conducted during the course of this research buttressed the above assertion of attitude of health care workers and quality care. In this regard some respondents have this to say:

I would say it is as a result of the attitude of the community-based health care provider that makes me to always patronize her. Women around this area would attest to my assertion because she would make sure that you are pacified whenever one is in pains during labour. She has no time to start beating or tongue-lashing you when you go for even ANC. I must say that her sense of humour

attracts pregnant women to her clinic (Rural IDI, respondent aged 32).

Another respondent posited that:

The ideal place I will advise any pregnant woman to seek health care is a place where qualified medical practitioners operate. I have never visited any other place for ANC during my pregnancy apart from good hospitals where qualified doctors and nurse attended to me. It is true we (women) face some hurdles in some cases to see doctors but the most important thing is the quality of care one receives at the end of the day (Urban FGD, respondent age 34).

Data on assistance during delivery of the dead children revealed that a larger proportion of the respondents (39.2%) were assisted by nurses/midwives followed by 35.5% assisted by doctors. By the place of residence, the majority of urban respondents (55.0%) were assisted by doctors compared to 22.1% of their rural counterparts. A large proportion (44.8%) of rural respondents was assisted by nurses/midwives compared to 30.8% of urban respondents. The result corroborates 2008 NDHS finding that about 49% of pregnant women in Abia State were assisted by nurses/midwives followed by 13.5% who were assisted by doctors.

Table 4: Distribution of the Respondents with incidence of Under-Five Mortality by Place of Delivery

	Rural	Urban	R & U
Characteristics	N (%)	N (%)	N (%) (N=301)
Place of birth of the dead child			
Government hospital	31(17.1%)	51(42.5)	82(27.2%)
Private hospital	84(46.4%)	53(44.2%)	137(45.5%)
Health Centre	32(17.7%)	4(3.3%)	36(12.0%)
Others	34(18.7%)	12(10.0%)	46(15.3%)
Total	181(100%)	120(100%)	301(100%)

Reason for the choice place of delivery			
Closeness to home			
Attitude of health workers/Quality Care	27(17.4)	15(13.9%)	42(16.0%)
Low financial income	84(54.2%)	67(62.0%)	151(57.4)
Both partner's agreement	16(10.3)	8(7.4%)	24(9.1%)
Religious reason	4(2.6%)	-	4(1.5%)
Others	8(5.2%)	-	8(3.0%)
Total	16(10.3%)	18(16.7%)	34(12.9%)
	155(100%)	108(100%)	263(100%)
Who assisted during delivery			
A Doctor	41(22.7%)	66(55.0%)	107(35.5%)
A Nurse/Midwife	81(44.8%)	37(30.8%)	118(39.2%)
Auxiliary Nurse/Midwife	27(14.9%)	9(7.5%)	36(12.0%)
Community Health Worker	10(5.5%)	-	10(3.3%)
Others	22(12.1%)	8(6.6%)	30(10.0%)
Total	181(100%)	120(100%)	301(100%)

Source: Field Survey 2015

Health Care Centres and Duration of ANC for Women with Incidence of Under-Five Mortality

Table 5 revealed that a proportion of women with a high incidence of under-five mortality obtained ANC at private hospitals from doctors, nurses/midwives and auxiliary nurses/midwives. About 64% obtained ANC from doctors in private hospitals, 58.6% from auxiliary nurses/midwives, while 56.7% from nurses/midwives. The predominant use of private hospitals has one major consequence of not having qualified staff and genuine drugs, which might have adverse health consequences. A consideration of respondents' first ANC visit to health care centres, as shown in Table 5, revealed that more than one-half of the respondents who accessed their first ANC between 1-6 months of pregnancy went to private hospitals. Surprisingly, one-half (50.0%) of the women with the incidence of high under-five mortality sought first ANC after the sixth month of their pregnancy at government hospitals. Poor utilization of ANC from government hospitals by these women appeared to be as a result of their pregnancy experiences and their husbands' attitudes.

The qualitative data supported the above result in terms of their first pregnancy experience and husbands' attitudes. Below are some of the assertions by the respondents to support the result.

... it was a sad experience during my first pregnancy because I was all alone with my husband. He (her husband) thought it was fever and was buying some anti-malaria drugs. In fact, the fever hooked me one day and I was rushed to one of the government hospitals where the doctor told me that I was 7 months pregnant (Urban IDI, respondent aged 46, Aba North LGA).

Another respondent posited that:

Some pregnant women may not know about some changes in their bodies during and after pregnancy until the complications start deteriorating. That is when they will be running from pillar to pole for help. Some husbands do not seem to be helping matters at all (Urban FGD, respondent aged 37, Umuahia North LGA).

With regard to information on signs of pregnancy complications, the results revealed that 62.2% of the women who did not receive information on signs of pregnancy complications sought ANC from private hospitals. It is surprising also to note that about one-half of the women whose children died before age 5 years received tetanus

injections during ANC visits from private hospitals, on the other hand, all the respondents who were not given the tetanus injections at the same hospitals lost their children. It is obviously revealed that there was predominant utilization of private health care facilities among women with high incidence of under-five mortality.

Table 5: Percentage Distribution of Women with Incidence of Under-Five Mortality by Place of ANC Visits

Variables/Categories	Government Hospital	Private Hospital	C-Health Centre	Others	Total	P-value (χ^2)
Health Care Provider						
A Doctor						
A Nurse/Midwife	36.1	63.9	-	-	100	0.000
Auxiliary Nurse	27.5	56.7	8.2	7.6	100	(20.0)
C-Health Worker	-	58.6	41.4	-	100	
Others	-	-	100	-	100	
	-	-	-	-	100	
First ANC visits						
1 – 3 months	31.3	51.9	7.6	3.1	100	0.001
4 – 6 months	18.8	57.1	19.6	4.5	100	(29.3)
7 months +	50.0	33.3	16.7	-	100	
Complication signs						
Yes	30.5	51.3	11.7	6.6	100	0.000
No	8.1	62.2	13.5	16.2	100	(35.6)
No of ANC visits						
2 times	27.2	56.5	6.5	9.8	100	0.000
3 times	26.2	46.2	15.4	12.3	100	(54.4)
4 times and above	25.0	54.6	13.0	7.4	100	
Don't Know	-	75.0	25.0	-	100	
Tetanus injection						
Yes	26.8	50.2	13.2	-	100	0.015
No	-	100	-	-	100	(22.0)
Don't Know	-	100	-	-	100	
No of Tetanus injection						
1 – 3 times						
4 +	25.0	48.1	15.1	17.8	100	0.000
	37.5	62.5	-	-	100	(62.6)
Don't Know	34.5	58.6	6.9	-	100	

Source: Field Survey 2015

Distribution of Respondents by Health Care Centres of Mothers' ANC Visits, according to some Background Characteristics

Table 6 shows that above half (56.3% and 52.9%) of the women within the age brackets of less than 20 and 20 – 29 years, respectively, sought ANC from private hospitals. The majority of both urban and rural respondents (54.5% and 54.4% respectively) sought ANC from private hospitals. The highest proportion of women with primary and less education sought ANC from community health centres, followed by 23.3% from government hospitals. The majority of women (62.4%) with secondary education had utilized private hospitals for their ANC. Number of these women who sought ANC from private hospitals reduced as their education level increased. About 49% of women with tertiary education sought ANC from private hospitals followed by 36.5% from government hospitals. Mother's occupation has significant association with health care centres for ANC. Almost half of the respondents (48.9%) who were unemployed sought ANC from private followed by 25.5% from community health centres. It is evident that utilization of private hospitals is high in the area. The majority of women (56.2%) who were in paid/civil service jobs sought ANC from private hospitals. However, the proportion of women that sought ANC from government increased with paid/civil service jobs compared with women that reported to be farmers, petty traders and unemployed. This is supported by the submission made by respondents in paid/civil service jobs.

It is from the money that is paid to me at the end of the month that I seek help when necessary.... I believe government hospitals have what a pregnant woman would need and that is the reason I always visited government hospitals (Urban FGD, respondent aged 32, Umuhia North LGA).

Another respondent posited that;

...it was quite unfortunate that I lost my baby at the end of every effort made to keep him live. Although, all my ANC care visits were not from government hospital, but I visited a private hospital where I also registered for ANC. But I concentrated on the government hospital because I thought of what people would say considering where I work (paid job) and my position (Urban IDI, respondent aged 38, Aba North LGA).

All the craftswomen and artisans reported seeking ANC from private hospitals. This probably could be a function of the perceived attention received and time spent at the health care centre. However, more respondents who reported to be unemployed, farmers and petty traders (30.8%) compared to 3.1% of those in paid/civil service jobs, sought ANC from traditional attendants. The perceptions of some craftswomen or artisans and farmers who sought ANC from private hospitals and traditional birth attendant respectively are given below:

My occupation (fashion designing) requires me to be in my shop always even when my girls (apprentices) are there. That was why I sought ANC from a nearby private hospital coupled with little time you will spend with the health care provider in that hospital (Urban IDI, respondent aged 36, Aba South LGA).

Another respondent posited that;

... it is the attention the health care providers at private hospitals give to their patients that encouraged/encourages me to seek ANC and medication care from those hospitals. I do not have any help in my shop, so I try to manage my time (Rural FGD, respondent aged 29, Bende LGA).

Another respondent posited that;

We have some birth attendants who could examine pregnant women to ascertain their pregnancy conditions. At least I visited one of them who resides in a community close to ours three times, and she gave me some mixed substances to enable me urinate effectively to avoid swollen legs (Rural IDI, respondent aged 27, Umunnaochi LGA).

Looking at the monthly income of the respondents, one-half of the women who earned less than N5,000 per month, sought ANC from private hospitals, 27.3% from community health centres, while 22.7% from government hospitals. It is glaring from the result that as monthly income of the women increased, they tend to avoid seeking ANC from community health centres and those in other category which include community-based health providers, traditional and religious homes.

Table 6: Percentage Distribution of Health Care Centres of Mothers' ANC Visits by Selected Background Characteristics

Variables/Categories	Government Hospital	Private Hospital	C-Health Centre	Others	Total	P-value (χ^2)
Mother's age at birth						
< 20 years	21.8	56.3	6.3	15.6	100	0.000 (78.0)
20 – 29 years	23.8	52.9	14.3	9.0	100	
30 years and above	33.3	66.6	-	-	100	
Residence						
Urban	33.9	54.5	10.7	0.9	100	0.001 (21.0)
Rural	18.3	54.4	13.0	14.2	100	
Mother's education						
Primary and Less	23.3	20.0	40.0	16.7	100	0.000 (19.6)
Secondary	18.1	62.4	11.4	8.1	100	
Tertiary	36.5	48.6	4.1	10.8	100	
Others	35.7	64.3	-	-	100	
Occupation						
Unemployed	8.5	48.9	25.5	17.0	100	0.000 (12.1)
Paid/Civil Servant	33.1	56.2	7.0	3.1	100	
Farming/Petty Trading	23.4	50.0	12.8	13.8	100	
Artisan/Craft	-	100	-	-	100	
Monthly Income (N)						
Less than 5,000	22.7	50.0	27.3	-	100	(0.000) 62.9
5,000 – 15,000	33.1	44.6	12.3	10.0	100	
15,001 – 25,000	33.3	66.6	-	-	100	
25,001 +	40.0	60.0	-	-	100	

Source: Field Survey 2015

Respondents' Reasons for Seeking ANC by some Selected Demographic Characteristics

Table 7 shows that the majority of urban respondents (about 57%), relative to 49.1% of

their rural counterparts with incidence of under-five mortality admitted ascertaining if both mother and baby were fine as their main motivation for seeking ANC services. The

result also indicates that rural women who had experienced under-five mortality were 26% more likely than their urban counterparts to seek ANC services to obtain ANC card. It is, therefore, revealed that mothers' place of residence have a significant ($p < 0.000$) influence on motivations/reasons for ANC visits. Regarding the respondents' age and reasons for seeking ANC service, the chi-square test revealed a significant association with $p < 0.000$. The results show that about 62% and 53% of women aged less than 29 years and 30 – 39 years respectively were motivated to seek ANC service by ascertaining if both mother and baby were fine. The majority of the respondents (56.3%) reported obtaining ANC card as their motivation.

Nearly two-thirds of the respondents who had tertiary education sought ANC services to ascertain if mother and baby were fine. The majority of the respondents (53.3%) with primary and less education were motivated by obtaining ANC cards. The above result is an indication that a woman's level of education determines the meaning ascribed to ANC service. While some respondents believe that obtaining ANC card is the main reason for seeking ANC service, others attributed their reasons to ascertaining if both mother and baby are fine. Some respondents put their reasons for seeking ANC services in the study area as follows:

The best thing a pregnant woman should do for herself is to make sure she gets ANC card and visit the hospital with the card. It is the card that determines where she delivers her baby. I believe that having ANC card makes the health care provider sees you (pregnant woman) as his/her dedicated patient (Rural FGD, respondent aged 46, Umuahia South LGA).

Another respondent posited that;

... I always visit my health care provider anytime there are changes in my body. That should be the fundamental reason for seeking ANC service, that is always making sure that the position of the foetus and mother's health are ascertain (Urban FGD, respondent aged 37, Aba North LGA).

Reasons for seeking ANC services among respondents with incidence of under-five mortality differ substantially by occupation as about 65% of the respondents in paid/ civil service jobs reported ascertaining the position of both mother and the baby as their motivation for seeking ANC service. On the other hand, the majority of respondents (60.0%) who were farmers admitted obtaining ANC cards. It is pertinent to note from the result that respondents who are more economically secured are more likely to have better reasons for seeking ANC service than those who are less economically. With regard to marital status, over three-quarters of the respondents were widowed, separated and divorced and 48.2% of those who were married and living together reported ascertaining if both mother and baby are fine as their motivation for seeking ANC services. This variation could be a function of the roles members by providing assistance for the expectant mother. The experience of one respondent is given below:

The Almighty God has been there to see me true. My family members have always been there for me anytime I need their assistance. In fact, in most cases, they disturb me to visit the hospital for medical check-ups for me and the unborn baby even now that I have finally delivered (Urban IDI, respondent aged 35, Umuahia North LGA).

In relation to respondents' religion, the majority of Roman Catholics (69.0%) and Protestants (about 65%) admitted that what motivated them to seek ANC was to ascertain if both mother and baby are fine. The majority of Igbo respondents (55.4%) sought ANC service to ascertain the position of their health and that of their babies. All the Hausa respondents reported obtaining ANC card as their reasons, while the Yoruba stated that ascertaining pregnancy position and knowing the expected date of delivery (EDD) as their

motivations for seeking ANC services. The Table 7 further showed that higher monthly income amongst respondents is associated with attributing the reasons for ANC services to ascertaining if both mother and baby are fine. The chi-square test shows that there is significant relationship ($p < 0.000$) between mothers' monthly income and motivation for seeking ANC services. It is obvious from the above result that women with less monthly income may see obtaining ANC cards as the only motivation in seeking ANC services.

Table 7: Percentage Distribution of Women with Incidence of Under-Five Mortality by Reasons for Seeking ANC, according to some Selected Demographic Characteristics

Variables/ Categories	Obtain ANC card	Pregnancy position	If mother & baby are fine	Expected date of delivery	Total	P-value (χ^2)
Residence						
Rural	36.7	10.7	49.1	3.6	100	(0.000)
Urban	10.7	21.4	57.1	10.7	100	28.7
Age						
< 29	24.8	9.5	61.9	4.8	100	(0.000)
30 - 39	21.8	17.0	52.7	8.5	100	94.5
40 +	56.3	18.8	25.0	-	100	
Mother's education						
Primary and Less	53.3	13.3	33.4	-	100	(0.000)
Secondary	33.6	17.4	40.9	8.1	100	64.6
Tertiary	10.8	16.2	64.9	8.1	100	
Occupation						
Unemployed	46.8	4.3	48.9	-	100	(0.000)
Paid/ Civil Servant	12.3	15.4	64.6	7.7	100	65.6
Farming	60.0	-	40.0	-	100	
Others	28.6	23.8	38.1	9.5	100	
Marital Status						
Married/Living together	27.5	17.0	48.2	7.3	100	(0.000)
Widowed/Separated/Divorced	17.6	-	82.4	-	100	16.8
Religion						
Catholic	20.7	10.3	69.0	-	100	(0.000)
Protestant	16.2	5.4	64.9	13.5	100	81.0
New Generation Churches	33.6	21.5	39.6	5.4	100	
Ethnic Group						
Igbo	26.9	13.5	55.4	4.8	100	(0.000)
Yoruba	-	50.0	-	50.0	100	51.2
Hausa	100	-	-	-	100	
Calabar/Akwa Ibom	22.2	22.2	44.4	22.2	100	
Income level (N)						
< 15,000	26.3	21.1	47.4	5.3	100	(0.000)

15,001 – 30,000	-	14.3	85.7	-	100	58.8
30,001 +	-	-	72.7	27.3	100	

Source: Field Survey 2015

Discussion of Findings

The study reveals that most women in the sample were in the prime child bearing age with 32.6 ± 5.8 years. There is a high level of educational attainment among the respondents and their partners and the largest proportion of the respondents were in paid/civil service jobs. The utilization of health care services for ANC was overwhelmingly high (93.4%) with over one-half of the women (rural - 54.4% and urban - 54.5%) with incidence of under-five mortality obtaining ANC from private hospitals. There is no doubt that the quality of care received during pregnancy affects the pregnancy outcome and health of child. The finding validates Ibeh's (2008) who revealed that, even in the few cases where antenatal care services were available and utilized, the problem with the pregnancy outcomes depended on the quality of care received. More than half of the women (60.9%) received ANC services from nurses and midwives. More urban women sought ANC from government hospitals compared to their rural counterparts. Also, about 13% of rural respondents obtained ANC at traditional and religious homes than urban dwellers. The finding indicated that the variation in the utilization of health care facilities accounted for the disparity in incidence of under-five mortality in the study area. Other reasons for the disparity in the utilization of health care facilities for ANC were adduced as ranging from the location and physical distance of the service from the client to attitudes of the health care providers in the study area. The above result may be explained by Kaufmann's (2002) observation that accessing a service may be facilitated or hindered by the location and physical distance of the service from the client.

The mean number of months of first ANC was 3.5 months. The overall mean number of ANC visits was 3.2, and 3.5 visits for urban areas compared to 3.0 visits for rural area. Many of the women did not know the actual time for subsequent ANC visits after their first visits. The findings negate WHO's (2008) schedule of visits for ANC which stipulated that the first ANC visit should occur within 12 weeks of pregnancy (1 – 3 months), and the second, third and fourth visits by 26th, 32nd and 36th weeks respectively, for a minimum of four antenatal visits in low risk pregnancies. As such, the study confirmed the documentation of FMOH (2003) and Campbell *et al's* (2005) observation that poor utilization of quality reproductive health service continues to contribute to maternal and child morbidity and mortality in developing countries, including Nigeria.

Information on pregnancy complications and things to avoid was high among the respondents. More rural than urban respondents had additional ANC visits after the fourth visit which the qualitative data revealed to be as a result of increasing pressure from the work place, which probably may not give pregnant women from urban area adequate time to seek ANC. Over two-thirds of the women adhered to the instructions regularly as directed with variation between urban and rural areas.

The results on mother's age, residence, occupation, education and monthly income are statistically significant at $p < 0.05$ with use of health care services for ANC. The above result could probably be explained by Isiugo-Abanihe's (2003) in observation that education has been identified as affecting all aspects of people's lives and it is intricately

linked with the demographic process. The qualitative finding revealed that high incidence of under-five mortality among New Generation Churches' members compared with their counterparts in other religious groups might be attributed to their level of fanaticism in the area.

In spite of an overwhelming utilization of private hospitals for ANC, a larger proportion of urban (33.9%) than rural (18.3%) women utilized ANC at government hospitals. This explains Abor and Abekah-Nkrumah's (2009) observation that urban dwellers are relatively closer to healthcare facilities than rural dwellers in most developing countries. The predominant use of private hospitals has at least two consequences. First, their services are expensive compared to government hospitals. Secondly, some private hospitals may not qualified staff and genuine drugs. These may have adverse health consequences.

Conclusion and Recommendations

The study addresses the nexus between antenatal health care utilization and incidence of under-five mortality. To a certain extent, the level of this relationship is established. There is ineffective utilization of ANC services, which could account for the incidence of under-five mortality among the women. This finding on the variation in the utilization of antenatal health care services in urban and rural areas is consistent with the expectation in a society where health care services are unequally distributed among the residents. For instance, urban women with incidence of under-five mortality patronized government hospitals for child delivery and were assisted by doctors compared to residents in rural areas. Furthermore, the variation in the utilization of government owned hospitals by residence was as a result of the attitude and qualification of the health care providers, as

well as high level of fanaticism in the study area. In spite of an overwhelming utilization of ANC services, there is evident variance of ANC visits with the WHO's (2008) recommendation on antenatal visits during pregnancy which could account for incidence of under-five mortality among the women. The increasing pressure from the work place could account for ineffective utilization of ANC services by urban residents. Moreover, it is noteworthy that the quality of care received during pregnancy affects the pregnancy outcome and health of child. Also, patronising doctors at government owned hospitals seems to be relatively high during pregnancy complications. Considering the effectiveness of early and continuous antenatal care in preventing adverse pregnancy outcomes and the targets of sustainable development goals, concerted efforts towards adequate ANC visits before delivery at various levels of maternal and child health centres should be intensified and coordinated. It is also recommended that information on the benefits of ANC, which is beyond obtaining ANC card should be relayed to women, especially those in the rural areas, through the sources of information available to them. In addition, government should embark on encouraging pregnant and nursing mothers by providing free or subsidising their ANC in government owned hospitals.

Acknowledgments

The author acknowledged the Ethical Review Committee of the Federal Medical Centre (FMC), Umuahia which reviewed the proposal, questionnaire, and consent form before providing the clearance to conduct the research. I thank my research assistants who assisted me in the collection of data. I also appreciate and thank all the women who participated in the study.

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