

Sociodemographic Characteristics and Birth Outcomes at Eku Baptist Hospital, Delta State, Nigeria

Mbee, Daniel Mbee¹, Aibangbee, Omorovbiye²

¹Ph.D Department of Geography and Environmental Management, Faculty of Social Sciences University of Port Harcourt, Port Harcourt, Nigeria

²MBBS, FWCP General Hospital Otu Jeremi, Ughelli South, Delta State, Nigeria

Corresponding Author: Mbee, Daniel Mbee

DOI: <https://doi.org/10.52403/ijhsr.20230331>

Date of Submission: 21.07.2022; Date of Acceptance: 20.12.2022; Date of Publication: 17.03.2023

ABSTRACT

Globally, over 9million babies die each year during the perinatal period and nearly all of these deaths occur in the developing countries including Nigeria. In this paper, attempt is made to examine the relationship between the socio demographic characteristics of pregnant women and low birth weight outcomes at Eku Baptist Hospital. The study adopted the cross-sectional and participant observation research designs. Primary and secondary data were utilized in this study. Pregnant women who registered in the antenatal ward constituted the study population and they were 161. A census of the entire sample frame was taken since the number of pregnant women who indicated interest in the study was not large. Accordingly, the study instrument (questionnaire) was administered to the 161 pregnant women. Data analysis was done using simple percentage and multiple regression with Fisher's exact test in the SPSS version 20.0 environment. The empirical finding suggests that age, income and level of education were significantly associated with low birth weight. The level of education of the participants was significantly associated with the birth weight of their babies ($p < 0.001$). More than half of the participants (66.7%) with primary level of education had low birth weight of <2.5kg while less than one-third (27.8%) of those with tertiary education delivered low birth weight babies. Also, 72.2% of women with income less than ₦20,000 had low birth weight while none (0.00%) of the women with family income greater than ₦100,000 had babies with low birth weight. The study established that there is statistically significant relationship between perinatal outcomes and socio demographic characteristics. Following the findings of the study, it is recommended that government at the local and sub national levels, corporate groups, health organizations and institutions should provide education and enlightenment to pregnant women to avoid infant mortality. Also, families should provide materially for pregnant women to avoid poor birth outcomes.

Key words: *Socio demographic, women, pregnant and perinatal outcomes*

BACKGROUND

Globally, over 9 million babies die each year during the perinatal period and nearly all of these deaths occur in developing countries (Hoque, Haaq and Isam,2011). According to the World Health Organization (WHO,2012), the perinatal period commences at 22 completed weeks

(154 days) and ends seven completed days after birth. Poor birth outcome like low birth weight remains significant contributors to under 5 mortality and morbidity worldwide (Allen, 2008). It is estimated that the worldwide perinatal mortality rate is 43 per 1000 births while the estimated rates in Africa, West Africa and in Nigeria are 56, 69 and

76 per 1000 births respectively (Ahman & Zupan, 2007). Birth weight is a powerful predictor of infant growth and survival. It is a leading indicator of neonatal health and welfare. Martin, Hamiton, Ventura, Osterman, Kirmeye, Mathews, et al., (2011), classified birth weight into extremely Low Birth Weight (ELBW), Very Low Birth Weight (VLBW), Low Birth Weight (LBW), Normal Birth Weight (NBW) and High Birth Weight (HBW) corresponding to infants weighing <1000g, <1500g, <2500g, <4000g and > 4000g respectively. Low birth weight is defined as birth weight less than 2500g -United Nations Cultural and Children Emergency Fund (UNICEF, 2006). Low birth weight is a global problem and represents a major burden on the neonatal services in developing countries such as Nigeria. It also constitutes a great strain on the meagre resources available for health care delivery and family financing. It contributes to 40-60% of all neonatal deaths, 98% of which occur in developing countries (Achebe, Ugochukwu, Adogupou & Ubajaka; UNICEF, 2014).

Nigeria currently is ranked 14th worst country in terms of under-5 mortality (Okechukwu and Achonwa, 2009). In another study carried out in Ibadan, south west Nigeria, Ezechukwu, Ugochukwu, Egbuonu & Chukwuka (2004) reported that neonatal deaths accounted for 50% of all infant deaths and 25% of these deaths were due to low birth weight and preterm birth while birth asphyxia was the 3rd most common cause of death. This gloomy picture of infant mortality in Nigeria is disturbing and a hindrance to the achievement of the Sustainable Development Goals. The World Health Organization (2015) report that 40% of the 6.9 million under-5 deaths in 2011 occurred in the perinatal and neonatal periods and 80% of these deaths were due to low birth weight (Onayade, Sule and Elusiyan, 2006). Achievement of the Millennium Development Goal 4 (MDG-4), to reduce under-five mortality by two-thirds in the year 2015 will require substantial

reduction in perinatal mortality. Causes of adverse birth outcome such as low birth weight which represents one of the leading causes of perinatal morbidity and mortality worldwide (Olusanya & Ofovwe, 2010) need to be understood to be able to tackle the problem of under-5 mortality effectively. Researchers in medicine, demography and related fields maintained that biomedical and psychosocial factors are related to poor perinatal outcomes. They also added that those factors affecting LBW may relate to the infant, the mother or the physical environment. For the same gestational age, girls weigh less than boys, first born infants are lighter than subsequent infants and twins weigh less than singletons. Women of short stature or with a low body weight at conception, those who live at high altitude and young women have smaller babies. According to Awoleke, (2012), once pregnant, the mother's lifestyle (e.g., alcohol, tobacco or drug use) and other exposures (e.g. to malaria, Human Immune Virus (HIV) or Syphilis) or complications such as hypertension can affect intrauterine growth and development as well as the duration of pregnancy

In a study carried out in Jos, North Central of Nigeria in 2009, LBW was found to have a prevalence of 12.7% (Yilgwan, Abok, Yinnang & Vajime, 2009). The study showed that it had bivariate associations with mother's educational status, health problems during pregnancy and poor use of antenatal care facilities. Low birth weight can be a consequence of preterm birth (i.e. birth before 37 complete weeks of gestation) or due to small size for gestational age or both (Owa, AL-dabbous and Owoeye, 2004). In addition, depending on the birth weight reference used, a variable but small proportion of LBW infants are born at term and are not small for gestational (Gill, May – Benson, Teasdale and Munsell, 2013). However, Metgud, Naik and Mallapur (2012) argued that mothers in deprived socio-economic conditions frequently have low birth Infants. In those settings, the mother's poor nutrition and health, high

prevalence of specific and non-specific infections, inadequate antenatal care and physical work during pregnancy contribute to poor intrauterine growth. For example, a community-based study in India by Metgud et al, (2012) showed that no antenatal care or late antenatal registration (late third trimester) were associated with an eleven folds increase in the odds of having a child with LBW compared to women who had three or more antenatal visits. A study by Odendaal et al (2003), found that the primary Obstetric causes of LBW include: preterm labour, preterm prelabour rupture of membranes (PPROM), hypertensive diseases in pregnancy, intrauterine growth restriction, multiple gestations and maternal illness (Odendaal, Steyn & Odendaal, 2003). Further study by the same authors found that women who have multiple pregnancies generally have smaller babies even if the pregnancy is term compared to women who have single pregnancies.

Researchers have intensified efforts in studying effect of socio demographic factors on adverse pregnancy outcomes. For example, a study done in Tanzania, found that mothers without formal education were four times more likely to give birth to the LBW neonates than those who have gained higher education. Also, there was a linear decrease in LBW of new born as father's educational level increased (Siza, 2008). Similarly, in a study done in Benin City, South South Nigeria, there was an increased risk of LBW delivery among women in the

lower echelons of the socio-economic class (Mbazor and Umeora, 2007). According to Samuel and Benson (2004). the identified risk factors for neonatal death included birth weight of less than 1500g, place of birth, mode of delivery, certain maternal related factors such as ignorance, low socio-economic status and non-attendance of antenatal clinic. In a similar study done in southern Nigeria, low birth weight, severe neonatal asphyxia and high rates of unbooked pregnancies were associated with neonatal deaths (Ibekwe, Ugboma, Oniyere and Muoneke, 2011). Apparently, from the works reviewed, there is no study on the correlates of socio demographic variables and low birth weight in Delta State. It is against this background that this study examines the relationship between socio demographic variables and low birth weight in Eku Baptist Hospital, Delta State.

Study Area

Eku is located at latitude $5^{\circ}44'38.2''N$ (5.7439400°) and longitude $5^{\circ}59'25.8''E$ (5.9904900°) and lies on the western part of the river Ethiope as shown in figure 1. It is a town in Ethiope East Local Government of Delta state. It is located between Warri-Abraka road with a four-road junction at the center of the town. The occupation of the people of the community is basically farming and fishing. However, there is weekly market where they engage in informal trading.

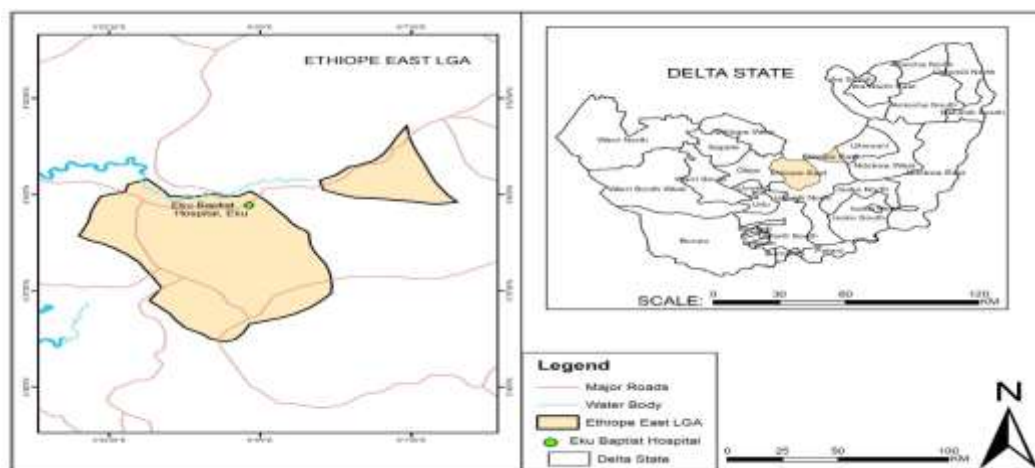


Figure 1: Map of the study Area (Eku)

METHODOLOGY

This study is hinged on the participant observation and cross-sectional research designs. In participant observation, the researchers are active participants in observing and taking records of the situation or group they are studying. The participant observation research design gave the researchers the opportunity to understand the viewpoints and experiences of the pregnant women before and after delivery and also to ascertain the weight of the neonates. On the other hand, cross sectional research was used because it allowed the researchers to ask a random sample of individuals questions about their backgrounds with a view to making generalizations about the sample.

Pregnant women who registered and delivered in Eku Baptist Hospital in 2019 constituted the study population. From the available record in the ante ward of the hospital, 243 pregnant women registered but only 186 of them delivered in the hospital. Hence the sample size of the study was 186. The researchers took a census of the entire sample frame since it was not too large for the researchers to handle. It should be noted that only 161 women out of the total number of women that delivered in the hospital filled the questionnaire accordingly. The data set for this study were derived from primary and secondary data sources. Secondary data in this study were sourced from textbooks, journals, Delta State Ministry of Health and Eku Baptist Hospital while the primary data were derived from the questionnaire administered on the study sampled population. The questionnaire consisted of information on the socio-demographic characteristics such as age, marital status, religion, level of education, and occupation. The content of the questionnaire was validated by three experts in population studies and family medicine. Copies of the questionnaire were administered by two research assistants who speak and understand the local language as well as English language.

Data Analysis

The data obtained from the field were sorted, coded serially and analyzed using simple percentages, Chi-square and Fisher's exact test where appropriate. Simple percentages provided meaningful discussion and analytical description about the social economic characteristics of the respondents in the study. Raw scores collected from the field were presented in frequency distribution tables and then interpreted into simple percentages [%], which is defined as a part of a whole expressed in hundredths. It is expressed as:

$$\frac{F}{N} \times \frac{100}{1} \dots\dots\dots \text{(Equation 1)}$$

Where,

F =frequency (number of times of each response)

N= size (161)

Chi-square (χ^2) is a non-parametric statistical tool that measures the difference between the observed and expected frequencies of the outcomes of a set of events or variables. It's use in this study stems from the fact that it can measure how well the post-natal outcomes is explained by family functionality. It is written in the form:

$$\chi^2 = \sum \frac{(O_i - E_i)^2}{E_i} \dots\dots\dots \text{equation (2)}$$

Where:

χ^2 =Chi square

O_i = observed value

E_i = expected value

Fisher's exact test is a statistical significance test used in the analysis of contingency tables. It is also employed when sample sizes are small as with this study. This study used this analytical technique because of its ability to explain the value of each variable used in the study and difference from the other nominal variables. It is expressed in the form:

$$p = \frac{(a+b)!(c+d)!(a+c)!(b+d)!}{a!b!c!d!n!} \dots\dots\dots \text{equation (3)}$$

Where:

P= probability value

A, b, c, d = values in a contingency table

n = total frequency

The data set were serially sorted and coded on a spread sheet in the micro soft excel environment and thereafter exported into Statistical Package for Social Science (SPSS version 20.0) for easy and accurate computation. Results were presented in tables, and charts were used where necessary.

RESULTS AND DISCUSSION

The socio-economic characteristics of the sampled population is captured in table 1. The study showed that the age range of the participants was 15 to 44 years and the modal age group was 25-34 years (57.8%) although majority of the participants 120 (74.5%) were married. This is similar to a case control study in Lagos by Awoleke who found that majority of the pregnant women surveyed were aged between 25 and 34 years old (Awoleke, 2012). Amosu et al., in Ibadan however reported that majority of the pregnant women they surveyed were less than 20 years old (44.3%) and only 29% were between the ages of 25 to 34 years old (Amosu, Atulomah, Olanrewaju, Akintunde, Babalola, Akinnuga et al, 2011). The age range in this study corresponds to the age of pregnancy in South Western Nigeria seen in the report of Demographic and Health Survey of Nigeria (Demography

and Health Survey Nigeria, 2008 Report). Also Dairo et al, in their study in Ibadan on factors affecting the utilization of antenatal care, reported that women who were older than 25years were more than twice as likely to attend antenatal clinics compared to women younger than 25years (Dairo and Owoyokun, 2010). Also, the study found that majority of the respondents (74.5%) were married. Adewoye et al, however, reported a higher proportion (90.9%) in their study on antenatal care utilization in Ilorin (Adewoye, Musa, Atoyebi and Babatunde, 2013). This hypothesis is supported by Sedgh et al (2006) who reported in their community-based survey carried out in 8 states in Nigeria, that 43% of women who sought to have an abortion did so because they were unmarried. The widowed were in the minority as they constituted only 3.1% of the pregnant women that gave birth EBH respectively. Widows are saddled with responsibility of providing and caring for their family alone. In many African communities, women who give birth after the demise of their husbands are seen as not respecting their deceased; and sometimes are talked at derogatorily. These may account for the low level of participation by the windowed.

Table 1: Socio-Demographic Characteristics of Participants (N=161)

Age Group	Frequency	Percentage (%)
15-24	47	29.2
25-34	93	57.8
35-44	21	13.0
Marital Status		
Single/Never Married	29	18.0
Married/Cohabiting	120	74.5
Divorced/separated	7	4.3
Widowed	5	3.1
Religion		
Christianity	127	78.9
Islam	10	6.2
African traditional religion	15	9.3
Others	9	5.6
Level of Education		
Primary	35	21.7
Secondary	55	34.2
Tertiary	46	28.6
No Formal	25	15.5
Occupation		
Artisans/Farming	66	41.0
Trader	50	31.1
Civil-Servants	45	28.0

Table 1 To Be Continued...		
Living Style		
Live Alone	22	13.7
Not Alone	139	86.3
Not Living Alone		
Spouse and Children	76	54.7
with spouse	35	25.2
with parent	13	9.6
Extended family member	9	6.5
Brother/sister	6	4.2
Type of Housing		
Self-content	37	23.0
Bungalow	29	18.0
Tenement building	61	37.9
One bedroom flat	21	13.0
Duplex	5	3.1
Others	8	5.0
Total	161	100.0

Source: Researchers' fieldwork, 2019

The predominant occupation was farming (41.0%) and trading (31.1 %) while 28.0% were civil servants. One of the criteria for identifying a rural community is a predominance of agriculturally related livelihood. The study was carried out in a rural community hence farming and trading were their major occupation. Also, a little more than one third of the participants were artisans and farmers while 50(31.1%) of the participants were traders and the remaining 45(28.0%) were civil servants. The study area is largely rural with low socioeconomic activities. It is not surprising to have majority of the respondents as traders. Other criteria for identifying rural areas include: presence of low population density and poor infrastructural services (Yesuf and Ukojie,2010).

In terms of education, the study revealed that participants with secondary education are the highest while respondents with primary education were 35 (21.7%) while those without formal education 25 (15.5 %) respectively. This category of respondents with secondary educational attainment constitutes over one third, precisely 55 (34.2%) of the entire sampled population. The large size of respondents with secondary education can be traced to the fact that primary and secondary education in Delta state where the study is situated is almost free. It is therefore easier for parents to enrol their children. Curiously, only 28.6% of the respondents have tertiary

education. The cost implication of tertiary education is huge and given the socio-economic dynamics of the community it is not uncommon to find few residents who have tertiary education. The low proportion of pregnant women with tertiary educational qualification could also be linked to the study area which is essentially rural in nature. Rural areas are deficient in infrastructural development a situation that propels the young population to move to settlements with social and physical infrastructure that will promote their goals and aspirations. This finding agrees with Morhason-Bello et al. (2009).

The study further noted that vast majority of well over two thirds of the respondents were Christians. Out of the entire participants in the study,127 (78.9%) of them were of the Christian faith. It should be mentioned that that apart from the fact that the Eku, where the study area is located is predominantly a Christian community, the hospital was built by the Baptist missionaries hence the name Baptist Hospital. On the other hand, Islam adherents that participated in the study were only 6.2% of the entire study population. In southern Nigerian particularly the south geopolitical region, Islam is not widely practiced. There are few centres of Islamic worship in the entire south region. The paltry size of Muslims who participated in the study can therefore be traced the non-embrace of the religious faith in the area of study.

In the area of housing over one third of the participants (37.9%) live in tenement houses while only 3.1% of them lived in duplex. Housing is usually an index for measuring quality of life and socio-economic status. Although, housing is generally a problem in low income and middle-income economies but it can be argued that having majority of respondents living in tenement building is a reflection of the low social economic status of the respondents. On living style, majority of the respondents 139(86.3) did not live alone. They live with spouse and children, with a parent, a sibling or with an extended family member. Only 13.7% of the respondents live alone. It is also observed by the researchers that 62.7% of the respondents earned between twenty-thousand naira and one hundred

thousand naira monthly while 26.7% earned below twenty thousand naira monthly. The World Bank defines poverty as earning power of below two U.S. dollar per day (The World Bank, 2014) while the UN reports that more than one billion people live on less than one US dollar per day (United Nations,2005).With the current exchange rate, a Nigerian earning less than five thousand naira monthly could be said to be living below poverty line. Nigeria has been classified as an economically poor nation (Adeleke, 2012) with about seventy percent of its population living below the poverty line (World Fact Book, 2012). Even though the respondents appeared to earn much, the large household size commonly found in these rural setting may make this earning in-effectual.

Table 2: Association between Socio-Demographic Characteristics of Respondents and Birth Weight of their Baby

Socio-Demographic Characteristics of Respondents	Birth Weight			Statistics
	<2.5	2.5 – 3.9	≥4.0	
Age Group				
15-24	9(50.0%)	36(26.9%)	2(22.2%)	df = 4 Fisher = 4.999 p = .287
25-34	7(38.9%)	81(60.4%)	5(55.6%)	
35-44	2(11.1%)	17(12.7%)	2(22.2%)	
Total	18(100.0%)	134(100.0%)	9(100.0%)	
Marital Status				
Single/Never Married	4(22.2%)	23(17.2%)	2(22.2%)	df = 6 Fisher = 11.994 p = .062
Married/Cohabiting	10(55.6%)	105(78.4%)	5(55.6%)	
Divorced/separated	2(11.1%)	4(3.0%)	1(11.1%)	
Widowed	2(11.1%)	2(1.5%)	1(11.1%)	
Total	18(100.0%)	134(100.0%)	9(100.0%)	
Religion				
Christianity	18(100.0%)	101(75.4%)	8(88.9%)	df = 6 Fisher = 7.698 p = .261
Islam	0(0.0%)	9(6.7%)	1(11.1%)	
ATR	0(0.0%)	15(11.2%)	0(0.0%)	
Others	0(0.0%)	9(6.7%)	0(0.0%)	
Total	18(100.0%)	134(100.0%)	9(100.0%)	
Level of Education				
Primary	12(66.7%)	22(16.4%)	1(11.1%)	df = 6 Fisher = 29.788 p <0.001*
Secondary	0(0.0%)	50(37.3%)	5(55.6%)	
Tertiary	5(27.8%)	38(28.4%)	3(33.3%)	
No Formal	1(5.6%)	24(17.9%)	0(0.0%)	
Total	18(100.0%)	134(100.0%)	9(100.0%)	
Occupation				
Artisans/Farming	7(38.9%)	53(39.6%)	6(66.7%)	df = 4 Fisher = 2.877 p = .579
Trader	6(33.3%)	43(32.1%)	1(11.1%)	
Civil-Servants	5(27.8%)	38(28.4%)	2(22.2%)	
Total	18(100.0%)	134(100.0%)	9(100.0%)	
Living Style				
Live Alone	1(5.6%)	20(14.9%)	1(11.1%)	df = 2 Fisher= 1.123 p = .540
Not Alone	17(94.4%)	114(85.1%)	8(88.9%)	
Total	18(100.0%)	134(100.0%)	9(100.0%)	
Income				
<20,000	13(72.2%)	27(20.1%)	3(33.3%)	df = 4 Fisher = 22.565* p <0.001
20,000 - 100,000	5(27.8%)	91(67.9%)	5(55.6%)	
>100,000	0(0.0%)	16(11.9%)	1(11.1%)	
Total	18(100.0%)	134(100.0%)	9(100.0%)	

Source: Researchers' fieldwork, 2019

All were tested for fisher's exact test because they counts less than 5

*Fisher exact test is significant ATR (African Traditional Religion)

The empirical finding suggests that three of the socio-demographic characteristics studied were significantly associated with low-birth-weight outcomes. They are the age, the income and the level of education. The level of education of the participants was significantly associated with the birth weight of their babies ($p < 0.001$). More than half of the participants (66.7%) with primary level of education had low birth weight of $<2.5\text{kg}$ while less than one-third (27.8%) of those with tertiary education delivered low birth weight babies. Also, 72.2% of women with income less than ₦20,000 had low birth weight while none (0.00%) of the women with family income greater than ₦100,000 had babies with low birth weight. See table 2. This is similar to a Nairobi study where mothers with unfavorable socio-demographic factors like less formal education and being unemployed had low birth weight babies (Wasunna and Mohammed,2002). However, the multiple correlation coefficient 'R' which can be considered to be one measure of the quality of the prediction of the dependent variable was 0.2695. This indicates a low prediction of confounding factors. As shown in table 2, women with primary level of education 12(66.7) had a higher proportion of low-birth-weight babies compared to women who had a secondary or tertiary level of education. This relationship was statistically significant probability (P) value of $P < 0.001$. The respondent who earned between ₦20,000 and ₦100,000 had a higher number of babies born with normal birth weight. (67.1 %) this was also statistically significant ($p < 0.001$).

CONCLUSION AND RECOMMENDATIONS

This study focused on the association between socio-demographic factors and low birth weight. This study has shown that three social demographic variables namely age, income and level of education significantly impacted on birth outcomes. It was found that respondents with strong

social demographic characteristics had good perinatal outcomes. In contrast, respondents with weak social demographic characteristics had poor perinatal outcomes. Following the research findings, it is recommended that that government at the local and sub national levels, corporate groups, health organizations and institutions should provide education and enlightenment to pregnant women to avoid infant mortality. Also, families should provide materially for pregnant women to enable them care for their social and physiological needs which ultimately can avoid poor birth outcomes. Families should support women during pregnancy.

Declaration by Authors

Acknowledgement: None

Source of Funding: None

Conflict of Interest: The authors declare no conflict of interest.

REFERENCES

1. Achebe, C., Ugochukwu, E. F., Adogu, P., & Ubajaka, C. (2014). Prediction of low birth weight from other anthropometric parameters in Nnewi, South Eastern Nigeria. *Nigerian Journal of Paediatrics*. 14(1), 59-63.
2. Adeleke, A. (2012). Improving poverty alleviation programme in Nigeria through small and medium scale agricultural development projects. *European Journal of Business Management*. 4(11), 109-119.
3. Adewoye, K. R., Musa, I. O., Atoyebi, O. A. & Babatunde, O. A. (2013). Knowledge and utilization of antenatal care services by women of child bearing age in Ilorin-East local government area, north central Nigeria. *International Journal of Science and Technology*. 3(3), 188-193.
4. Åhman, E., Zupan, J., (ed.) (2007). Neonatal and perinatal mortality: Country, regional and global estimates 2004. Geneva. World Health Organization. Available at www.who.int/publications/2007/9789241596145_eng.pdf (Accessed 22/5/2015)
5. Allen, M. C. (2008). Neurodevelopmental outcomes of preterm infants. *Current Opinion in Neurology*. 21:123-128.

6. Amosu, A. M. et al. (2011). Retrospective study of some factors influencing delivery of low birth weight babies in Ibadan, Oyo State, Nigeria. *Scientific Research and Essays*. 6(2): 236-240.
7. Apgar, V. A. (1953). Proposal for a new method of evaluation of the newborn infant. *Current Researches in Anesthesia and Analgesia*. 32(4):260-267.
8. Apgar V. A. (1966). The Newborn (Apgar) Scoring System. Reflections and advice. *Pediatric Clinics of North America*. 13, 645-650.
9. Araoye, M. O. (2004). Subject selection and sample size determination in research methodology with statistics for health and social sciences. ILorin, Nathadex. 118-119.
10. Awoleke, J. O. (2012). "Maternal risk factors for low birth weight babies in Lagos, Nigeria". *Archives of Gynecology and Obstetrics*. 285(1), 1-6.
11. Dairo, M.D. & Owoyokun, K. E. (2010). Factors affecting the utilization of antenatal care services in Ibadan, Nigeria. *Benin Journal of Postgraduate Medicine*. 12(1), 3-13.
12. Demography and Health Survey Nigeria (2008). Report. Available at: <http://measuredhs.com/pubs/pdf/SR173/SR173.pdf>. (Accessed 15/03/14)
13. Gill, V. S., May – Benson, T. A., Teasdale, M. G. E. (2013). Birth and Developmental Correlates of Birth Weight in a Sample of Children with Potential Sensory Processing Disorder. *BMC Paediatrics*. 13:29.
14. Ibekwe, P. C, Ugboma, H. U., Oniyere, N. & Muoneke, U. (2011). Perinatal mortality in southern Nigeria, less than half a decade to the millennium development goals. *Annals of Medical and Health Sciences Resources*. 1, 215-222.
15. Martin, J. A, Hamilton, B. E., Ventura, S. J., Osterman, M. J., Kirmeyer, S., Mathews, T. J. & Wilson, E. C. (2011). Births: Final data for 2009. *National Vital Statistics Report*. 60(1), 1-70. PMID: 22670489.
16. Mbazor, O. J. (2007). Umeora O. Incidence and risk factors for low birth weight among term singletons at the University of Benin Teaching Hospital, Benin City Nigeria. *Nigerian Journal of Clinical Practice*. 10 (2):95-97.
17. Metgud, C. S., Naik, V. A., Mallapur, M. D. (2012). Factors affecting birth weight of a newborn – a community based study in rural Karnataka, India. *PLoS ONE* 7(7): e40040. doi:10.1371/journal.pone.0040040
18. Morhason-Bello, I. O. et al. (2009). "Assessment of the effect of psychosocial support during childbirth in Ibadan, southwest Nigeria: a randomised controlled trial". *Australian and New Zealand Journal of Obstetrics and Gynaecology*. 49(2):145-50.
19. Odendaal, E. S., Steyn, D. W. Odendaal, H. J. (2003). Obstetric causes for delivery of very-low birth weight babies at Tygerberg hospital. *South African Medical Journal*. 93(1), 61-63.
20. Okechukwu, A. A., Achonwa, A. (2009). "Morbidity and mortality patterns of admissions into the special care baby unit of university of Abuja teaching hospital, Gwagwalada, Nigeria". *Niger Journal of Clinical Practice*. 12(4): 389-94.
21. Olusanya, B. O. & Ofovwe, G. E. (2010). Predictors of preterm births and low birth weight in an inner city hospital in sub Saharan Africa. *Maternal Child Health Journal*. 14 (6) :987.
22. Olusanya, B. O., & Solanke, O. A. (2010). Correlates of birth asphyxia using two Apgar score classification methods. *Nigerian Quarterly Journal of Hospital Medicine*. 20(4): 153-61.
23. Onayade, A. A., Sule, S. S., Elusiyan, J. B. (2006). "Determinants of Neonatal Mortality at Wesley Guild Hospital, Ilesa, Nigeria". *Niger J Med*. 15(3): 271-6.
24. Owa, J. A., AL-dabbous, I. & Owoeye, A. A. (2004). Weight specific morbidity and mortality rates among LBW Infants in two developing countries. *Niger. Paediatric* 31 19-24.
25. Samuel, N. O., Benson, N.O. (2004). Pattern of Neonatal Admission and Outcome at a Nigeria Tertiary Health Institution. *Orient journal of Med*. 169(4):31-37.
26. Sedgh, G. (2006). Unwanted Pregnancy and Associated Factors Among Nigerian Women. *Internal Family Planning Perspectives*. 32(4), 175-84
27. Siza, J. E. (2008). Risk factors associated with low birth weight of neonates among pregnant women attending a referral hospital in Northern Tanzania. *Tanzania journals of health research*. 10(1):1-8.
28. The World Bank. 'entering the 21st century' World Development Report 1999/2000. Available from <http://documents.worldbank.org/curated/en/>

- 1999/09/728541/world-development-report-19992000-entering-21st-century-summary. Accessed 22/2/ 2014
29. UNICEF: At a glance: Nigeria. Available at: http://www.unicef.org/infobycountry/nigeria_statistics.html (Accessed: 17/5/2014)
30. UNICEF: Progress for children. A report card for nutrition 2006; 4:10-11
31. United Nations. The millennium Development Goals Report. New York 2005.
32. Wasunna, A. & Mohammed, K. (2002). Low Birth Weight Babies: Sociodemographic and obstetric characteristics of adolescent mothers at Kenyatta National Hospital, Nairobi. *East African Medical Journal*. 2002; 79(10), 543-546.
33. World Fact Book (2012).
34. World Health Organization. Maternal and perinatal health. Maternal, new born child and adolescent health. Available at <http://www.who.int/maternal-child-adolescent/topics/maternal/maternal-perinatal/en>. (Accessed 20/5/ 2012)
35. World Health Organization. Born too soon. Global action report on preterm birth. Available from www.who.int/pmnch/media/news/2012/201204-borntoosoon-countryranking.pdf. (Accessed 23/05/2015)
36. Yusuf, R., & Ukoje, J.A. (2010). Recent Observations on Rural Geographic Research in Nigeria. *Semantic Scholar*. 2:76-81
37. Yilgwan, C. S., Abok, L. L., Yinnang, W.D. & Vajime, B. A. (2009). Prevalence and risk factors of low birth in Jos. *Jos Journal of Medicine*. 4 (1):13-15 22/2/ 2014)

How to cite this article: Mbee, Daniel Mbee, Aibangbee, Omorovbiye. Sociodemographic characteristics and birth outcomes at Eku Baptist Hospital, Delta State, Nigeria. *Int J Health Sci Res*. 2023; 13(3):275-284. DOI: <https://doi.org/10.52403/ijhsr.20230331>
