COMMUNITY CHARACTERISTICS AND CHILD MATERNAL MORTALITY IN OVIA NORTH EAST LOCAL GOVERNMENT AREA OF EDO STATE

BY

MUOGBO ROSELINE UZOAMAKA
MATRIC. NO.SSC1205578

DEPARTMENT OF GEOGRAPHY AND REGIONAL PLANNING
FACULTY OF SOCIAL SCIENCES
UNIVERSITY OF BENIN,
BENIN CITY

AUGUST, 2016.

COMMUNITY CHARACTERISTICS AND CHILD MATERNAL MORTALITY IN OVIA NORTH EAST LOCAL GOVERNMENT AREA OF EDO STATE

BY

MUOGBO ROSELINE UZOAMAKA
MATRIC .NO.SSC1205578

A PROJECT WORK SUBMITTED TO THE DEPARTMENT OF GEOGRAPHY AND REGIONAL PLANNING FACULTY OF SOCIAL SCIENCESUNIVERSITY OF BENIN, BENIN CITY.IN PARTIAL FULFILMENT OF THE REQUIREMENTS FOR THE AWARD OF BACHELOR OF SCIENCE (B.SC) HONOURS DEGREE IN GEOGRAPHY AND REGIONAL PLANNING.

AUGUST, 2016

CERTIFICATION

This is to certify that this project was carried out by **MUOGBO ROSELINE UZOAMAKA** with matriculation number **SSC1205578** in the Department of Geography and Regional Planning, Faculty of Social Sciences, University of Benin, Benin City in partial fulfillment of the requirements for the award of Bachelor of Science (B.Sc.) Honors Degree in Geography and Regional Planning.

_____ _____

Mrs. R.O. John-Abebe **Dr. J.E. Agheyisi**

Project* Supervisor** ***Project coordinator

Date: _____ **Date: _____**

_____

Dr. (Mrs.) M. N. Ezemonye

Head of Department

Date: _____

DEDICATION

This work is dedicated to the almighty God for his love, guidance and protection all through my stay in the University of Benin. And to parent Mr J.N Muogbo and Mrs. Vivian Adebisi who with their prayers and endearing support saw me through my years in school and also to my younger brother Muogbo Jeremiah.

ACKNOWLEDGEMENT

My profound gratitude goes to God Almighty for his unfailing grace and favor upon my life throughout my program in the University of Benin.

My appreciation goes to my supervisor Mrs. R.O. John-Abebe for her guidance, advice, corrections and readiness to read my work which contributed immensely to the success and completion of this project. I also want to appreciate all my lecturers and staff in the department of Geography and Regional Planning that have in one way or the other blessed me with spatial knowledge. Special thanks goes to the (H.O.D) Dr. Mrs. M.N Ezemonye for her motherly advice and guidance all through my stay in the University of Benin, special thanks goes to Professor M.O Asikhia, Professor P.A.O Odjugo, Dr. T. F .Balogun, Dr. J.E Agheyisi, Dr. D.N Onaiwu (TPL), Mr. F.A Atewe for their efforts and advice in my academics. I am also appreciating my course adviser Mr. E O. Erimona (TPL) for his continual advice.

My heartfelt gratitude goes to my parents, Mr. J.N Muogbo and Mrs. Vivian Adebisi for their relentless effort in sponsoring me all through my academics, and my sibling; Muogbo Jeremiah for his love and support. I wish to thank Mrs. Theresa (Ovia North East immunization officer) and Dr. Peter (the primary health center coordinator of Ovia North East Local Government Area) of Edo State for their assistance during the course of this research project. To my great family of love, Foursquare Student Fellowship UNIBEN/UBTH. I want to say a big thank you for being a blessing to my life .I also want to sincerely appreciate Juliet Nimmon and Obinna Emegbue for their resourcefulness during the project work God bless you .To all my course mates ,I want to immensely appreciate you all as you all have made my stay and study in the University of Benin memorable, I cannot begin to mention you all individually but God bless you Balikis, Hauwa, Rachel, Wunmi, Amanda, Johnson,

Bonkieni, Okikiola, Christian, Osas, Roy, Donald ,Regina, Gabriel, Mrs. Claudia, a million thanks to you all.

TABLE OF CONTENT

LIST OF TABLES

LIST OF FIGURES

ABSTRACT

Child maternal mortality is a global concern to many countries of the world as various approaches are being adapted to understand the trends in mortality rates and finding a lasting solution. This study examines community characteristics and child maternal mortality in Ovia North East Local Government Area of Edo State. It was carried out using both primary and secondary data. In all 400 questionnaires were administered in the 13 wards of the Local Government Area. Respondents were selected using multi staged random sampling, using the statistical package for social science (SPSS). Logistic regression was used to test the first and second hypothesis of the study. The result showed that certain community characteristics has significant relationship with child mortality and community characteristics has a considerable impact on maternal mortality. The study therefore views that this characteristics can be addressed and improved upon by both the government and individuals residents in this region.

CHAPTER ONE

INTRODUCTION

1.0 BACKGROUND TO THE STUDY

Child maternal mortality is a global concern particularly in developing countries. It exemplifies one of the largest health disparities between the rich and the poor (Save the Children, 2010). Nearly 9 million children die annually before reaching the age of 5 and 40 percent of these deaths occur during the first month of life. The impact on mothers is equally devastating with about 350,000 maternal deaths each year (WHO, 2007). Maternal and infant deaths are directly correlated with poverty and insufficient health care services. Globally, 210 maternal deaths per 100,000 live births occur due to pregnancy related complications (WHO, 2014). An estimated 293,000 women died globally in 2013 as a result of pregnancy-related conditions.

Although, maternal mortality ratio has declined in developed countries, the rate remains high in developing countries however with appropriate medical facilities an estimated 74 percent of mothers and 63 percent of children lives could be saved (Lymn, *et. al*, 2010). Sub-Saharan Africa accounts for 62 percent of world's maternal deaths (WHO, 2014). According to the World Health Organization (WHO) maternal mortality is the death of a woman while pregnant or within 42 days of termination of pregnancy, irrespective of the duration and site of the pregnancy

from any cause related to or aggravated by the pregnancy or its management but not from accidental or incidental causes.

Over half of all child maternal deaths happen in Sub Saharan Africa and one third in South Asia together these two regions account for 86 percent of child maternal deaths worldwide (WHO 2007) . According to the Global Health Observatory data (GHO, 2015) every day in 2015 about 830 women dies due to complications of pregnancy and child birth. Almost all of these deaths occur in low resource settings and most could have been prevented. Of the 830 daily maternal deaths, 550 occurred in Sub- Saharan Africa and 180 in Southern Asia, compared to 5 in developed countries (WHO 2015). Within Africa, middle Africa has the highest average ratio at 1,150 followed by Western Africa at 1050 women in Southern Africa have a maternal mortality ratio of 410, the lowest in Sub- Saharan Africa, however this is still high by world standard (PRB 2008) .With as estimated maternal mortality ratio of 560 per 100,000 live births (World Bank, 2014),

Nigeria accounts for 10 percent of the world total maternal death in 2010. Nigeria maternal mortality rate exceeds 1000 deaths per 100,000 live births and is much higher than the African continent average of 800 deaths per 100,000 live births (Zozulya, 2012). According to the Nigerian Health Demography Survey (NHDS, 2013) infant and under five mortality rates in the past five years are 69 and 128 deaths per 1000 live births respectively. At these mortality levels one in every 15

Nigerian children dies before reaching the age of five and one in every eight do not survive to their fifth birthday (NDHS, 2013)

The findings of NDHS, 2013 reveals that infant mortality has declined by 26 percent over the last fifteen years and under five mortality declined by 31 percent over the same period. The maternal mortality rate for seven years preceding the survey was about 1.05 maternal deaths per 1000 women years of exposure. As expected mother's education is inversely related to a child's risk of dying. Under-5 mortality among children born to mothers with no education (180 deaths per 1,000 live births) is almost twice as high as that among children born to mothers with a secondary education (91 deaths per 1,000 live births) and about three times as high as that among children of mothers with more than a secondary education (62deaths per 1,000 live births) (NDHS 2013).

Ensor and Cooper, (2004) found out in more than half of the cases decisions on care-seeking for women were made by the husband or other senior family member. Some women booked appointment with their physicians very late because they were unsure whether they were pregnant or not and some mothers are not conscious of their child's physical state of wellbeing until it reaches critical level. Similarly, lack of satisfaction with quality of care could be a major demotivating factor in the use of maternity care facilities. Biba Simkhada *et.al. (*2008) discovered that complaints about the services offered included shortage of drugs and essential supplies, lack of commitment by staff, poor quality of food and lack of cleanliness.

Greenaway *et .al,(* 2012) shows those mothers' years of formal education is one of the most frequently found determinants of use of maternal health services and similarly, health knowledge explains a portion of the association between maternal education and child nutrition in Bolivia. Extant studies in Nigeria have shown that maternal education and ethnic origin are strong determinants of maternal health care behavior (Wall, 1998; Doctor, 2011). Furthermore, other studies have established that many contextual or aggregate variables such as community education and poverty which have been hypothesized to influence health vary over geographic and social units (Vu, 2005; Boco, 2010).

Most communities in Sub-Saharan African countries have different characteristics and vary in terms of socio-economic development and child maternal health outcomes. Nigeria is ethnically and socially diverse, and there are variations in health outcomes across the different communities in the country. Two important factors influencing the effectiveness of the female voice in household decision making are the extent to which female members are educated and contribute to household income (Ensor and Cooper 2004). Comparison in the country shows that about 90% of women have at least primary education in the southern region, but only 25% to 30% of women in the North East and North West regions have the same level of education. Again, women's exposure to mass media is also lower in the northern region and in spite, of all that women bear about seven children, most of whom are

wanted, compared to only four children in the southern region of the country (Muazu and Buang, 2014)

Educated mother are more capable of manipulating the modern world because she is more likely to be listened to by doctors and nurses at any given health facility. Her level of exposure can prompt her to demand for health workers attention even when they are reluctant to provide essential services. Therefore education of women greatly changes the traditional balance of familial relationships, with profound effects on child maternal health care (Shamaki and Buang, 2014). It is apparent that community characteristics play important roles in determining child maternal mortality. For instance, individuals live in communities and their health care behavior could be influenced by the characteristics of other members of the communities in which they reside. Distance, isolation and dispersed populations have been seen to have major influence on child maternal mortality differentials between areas.

Eijk, *et.al,* (2006) survey revealed that factors significantly associated with accessing health care facility included: being aged over thirty, low socioeconomic status, having less than eight years of education, and being over an hour walking distance away. Efforts to improve the use of child maternal health care services have addressed individual-level characteristics such as maternal education, ethnic origin and household wealth status which have been identified as important

determinants of child maternal health care. As a result of the emphasis on the influence of individual factors, it is important to look beyond the individual characteristics as the analysis of community factor will illuminate the spatial pattern of child maternal mortality.

1.1 STATEMENT OF THE RESEARCH PROBLEM

Child maternal mortality rate is a huge problem, as it causes not only a reduction in population but also has a toll on families involved in such incidents. Characteristics such as the level of maternal education, autonomy and poverty in most communities reduce most women access to medical facilities. Apparently, most rural communities and remote locations are plagued with problematic health care services, which are widely dispersed and isolated, thus, leading to an increase in child maternal mortality rate (Adesiji, *et. al*, 2012)

Riddell (2006) reveals the persistent and deep problems in accessing health care, these include cost of care; distance from health centers and transportation; discrimination; and language, he added that factors that affect individuals and families decision to access health services include: confidence in the health service; traditional beliefs; the role of traditional birth attendants; transportation; and the referral system. It appears that cultural factors apparently affect the utilization of child maternity care services in developing country.

Azuh (2012) reports that in many parts of Africa women's decision making power is extremely limited, particularly in matters of reproduction and sexuality. He

further ascertains that issues such as low status of women and husband's domination all worsen the ugly and poor utilization of health care services in many traditional societies where men are more dominant; women's right/needs are often denied.

There are several sociocultural factors that explain why millions of women and children in the world lack access to adequate care during pregnancy. Social support from family members was significantly associated with the use of health care facilities. Stressing the role of mothers-in-law in decisions to seeking medical attention, Simkhada *et.al(*2010) noted that mothers-in-law sometimes have a positive influence, especially when encouraging women to seek medical attention pertaining to her child wellbeing, but more often it is negative. The main reasons why mother-in-law do not support/encourage check-ups include expectations regarding pregnant women fulfilling their household duties, perceptions that antenatal care was not suitable, as well as strained power relations between mothers-in-law and daughters-in-law.

Gage (2007), observed that Community poverty and community education were strong determinants of child maternal health care. For instance, communities with a high concentration of poor households and a low concentration of well-educated residents are not likely to have the resources necessary to develop, sustain and access high quality health care services. The social conditions such as the level of education in the community, poverty, proportion of health facility delivery and

mass media exposure in the community as well as, physical conditions including urban-rural residence and region of residence could influence the use of health care services.

According to Pathfinder International, (2013) norms such as traditional practices and use of herbs also discourage the use of more effective modern methods.

Different communities and families have different cultural beliefs which influence the decisions of women and affect their acceptance of advanced medical services. Most of these communities view foreign health-care as a taboo or break-away from their usual norm (traditional medicines), where they consult to know the birth of the child and what the future holds for the child and the mother. During these processes children who are viewed as having negative destinies are aborted using traditional medicine. This sometimes causes mothers to bleed a lot, leading to the deaths of both mother and child. Cultural beliefs and practices were important determinants of maternal health-seeking behavior (Griffiths and Stephenson, 2001; Shaikh *et. al.* 2008). This indicates that the use of maternal health care is not only related to the individual's choice, but also to a large extent depends on the socio-cultural arrangements of communities.

1.2 RESEARCH QUESTION

This research examined the following research question:

- What traditional beliefs of the people contribute to child maternal mortality?

- Does the level of female child education reduce child maternal mortality?
- What socio-demographic factors contribute to child maternal mortality?
- What are the physical and infrastructural conditions of the health facilities?

1.3 AIM AND OBJECTIVES

The aim of this research is to carry out a study on community characteristics and child maternal mortality. The objective of the research are to:

1. Identify the demographic characteristics of the community.
2. Study how maternal education reduces the risk of child maternal mortality.
3. Identify the level of maternal autonomy to child health care utilization.
4. Examine the traditional practice influencing the use of modern health care facilities.
5. Identify the physical and infrastructural characteristics of health facilities.

1.4 RESEARCH HYPOTHESIS

Hi= There is a significant relationship between community characteristics and child mortality

Hi= There is a significant relationship between community characteristics and maternal mortality

1.5 SCOPE OF STUDY

This study is limited to Ovia North East Local Government Area of Edo State. The extent to which the research work is carried out includes the various health centers in Ovia north East Local Government Area of Edo State Ward and state

hospitals. There are a total of 40 health facilities across the Local Government Area. Of this number 37 are primary health care facilities and 1 tertiary health facility. Among the 40 health care facility2 are secondary health facility and 1 tertiary health facility,34 out of the 40 health facility are public owned the remaining 3 are private provider .At the secondary health care level 1 is public owned and 1 is private owned, while the only tertiary health facility is private owned. The only state owned health facility is District hospital Ekiadolor while the only private owned health facility is the Igbinedion Hospital and Research center. There 13 wards that makes up Ovia North East Local Government Area they are as follows:

Ward 1: By pass Oviobiogie, Ekiadolor, Isikhu, Utekon.

Ward 2: Channel 55, Obayantor, Ovbigua, Uhugua.

Ward 3: Azuwa, Field4, Gongo Rd, Uwan.

Ward 4: Gaja Camp, Iboro, Ikpako, Itela.

Ward5: Aigivbigie, Barrack, Ekenhuan, Igo.

Ward 6: Ekole, Iguero, Izaragbo, Ogua.

Ward 7: Azaka, Erediauwa Camp, Iyera Ogemudia Farm.

Ward 8: Ehizeweigie, Ovioma, Osenwola, Osazuwa Camp.

Ward 9: Ayekpanu, Ekasa, sOgoke, Oshodin.

Ward 10: Ekoma Rd. Evbonmore, Iguosa estate, Uniben.

Ward 11: Kolewe, Olumoye, Okagbe, Utese.

Ward12: Obazua, Oduna, Odighi, Owan.

Ward 13: Atite, Aguagu, Ita waterside, Iguosula

1.6 SIGNIFICANCE OF THE STUDY

This study is significant as well as beneficial to the government, health institutions families, communities and the ministry of health. In addition the study will try to provide adequate and enough information for planners of health policies and curriculum with a particular reference to rural development. The findings in this study will help communities and families to understand their roles and how their input influences the rate of child maternal mortality. Policy makers will be able to effect vital changes in rural areas and reduce child maternal mortality, the study will no doubt enrich the libraries with useful copies of its research in Ovia North East Local Government area of Edo state in particular and Nigeria at large.

1.7 STUDY AREA

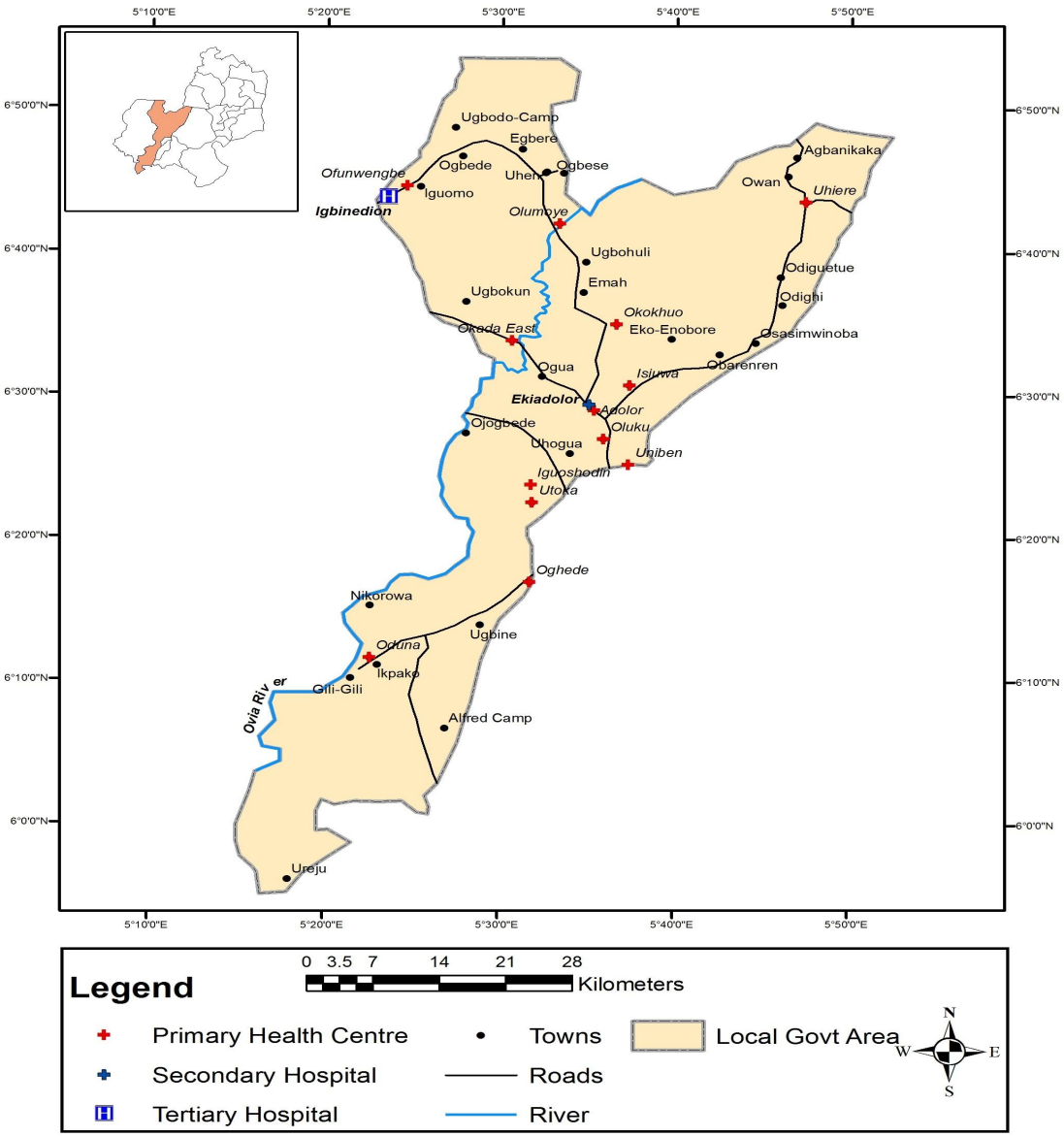


Figure 1.1: OVIA NORTH EAST SHOWING THE HEALTH CENTRES
Source: Ovia North East Council Office, 2016.

1.7.1 Location

Ovia North East Local Government Area is one of eighteen Local Government Area of Edo State as shown in figure 1.1The Local Government Area was created from the district council under the Local Government law in 1976. Ovia North East Local Government Area is one of the largest Local Government Area of Edo state in terms of landmass of about 2,301 km. The Local Government area is 70 percent rural and 30 percent urban with a population of 155,344 (2006 census). The various wards that make up Ovia North East Local Government Area are 13 in number they include; Okada West, Okada East, Uhen, Adolor Ofunmwegbe ,Oluku Uhiere , ,Okokhuo, Isiuwa , Oghede ,Oduna ,Iguoshodin, Utoka . Ovia North East Local Government is situated between longitude 5° 14′ 5° 21" East and latitude 5° 54' and 6° 53' North of the equator of the central province of Edo state. Okada is the administrative headquarters of Ovia North East Local Government Area .Ovia North East is bounded in the West by Ovia South West Local Government in the South by Delta State and in the North by Ondo State and Owan West Local Government, and by Uhunmwode and Egor Local Government Areas in the East.

1.7.2 Climate

Ovia North East is a Local Government Area located in the humid tropics, characterized by these distinct seasons-wet (rainy) and dry season. This area

experiences heavy and abundant rainfall. The storms are usually conventional in nature due to the regions proximity to the equatorial belt. The annual rainfall received in this region is very high usually above 2000mm. The Local Government Area experiences double maxima of rainfall characterized by two high rainfall peaks with a short dry season and a longer dry season falling between and after each peaks. The first peak raining season begins around March and last to the end of July with a peak in June. This raining season is followed by a short break lasting for two to three weeks in August. This break is broken by the short raining season starting around September and lasting to mid October with a peak period at the end of September.

1.7.3 Vegetation and Drainage

Ovia North East falls within the ever green forest zone of Southern Nigeria. Down South the area is characterized by fresh water swamp and mangrove forest. A forest reserve is located in the Southern part of the Local Government Area. Rubber and oil palm trees plantation are found in the area. Forest trees such as iroko, obeche, opepe are obtainable in the area and serve as raw material for Sawmills in Benin City and other parts of Edo State. Food crops such as plantain, yam, cassava and cocoa yam are produced in large quantities (Eidangbe, 1998).

1.7.4 Population and Ethnic group

The population of Ovia North East Local Government Area is estimated to be 155,344 (NPC, 2006). The inhabitants of the local government area are Edo speaking people, so they are said to be the same origin with the Bini's and the Yoruba's who

claimed to have migrated from Egypt in search of fertile land. The total population of women education attainment in Ovia North East Local Government estimated by the population census of 2006 is 131,792. Educated mothers and level of education of women age 15-49 in Ovia North East is about 33.89% compared to women not educated which is about 40% of the population while 26% account for the rest population. The population of children age 1-5years in school is estimated 9472 (NPC, 2006).

1.7.5 Economic Activities

The major occupation of the inhabitants of the area are farming and trading recently, the people have attached much importance to education with the siting of Iginedeon University Teaching Hospital in that locality,which will help them in securing better position in white collar jobs in order to develop the Local Government Area . Trading is another major occupation in the area. Secondary activities include cottage industries for conversion of rubber lubes to sheets, extraction of oil from palm fruits, making native soaps from cocoa pods .Okada being the Administrative Headquarters of Ovia North East Local Government Area is a rural community. The occupants are mainly farmers; however lecturers and civil servants are resident in this community. The community also has several establishments such as the Nigeria Institute for Oil Palm Reserve (NIFOR), Okomu Forest Reserve, Dubril Oil, Sawmills, Block and concrete making industries amongst others.

1.8 LIMITATION OF THE STUDY

In the course of the study, certain conditions were encountered. These include unwillingness of some respondents to give response to the questions asked .Some of the respondents requested for money before any information can be gotten .The problem of communication was also encountered as some individuals do not understand English language especially in the very rural and remote areas as a result other means were used to source for information.

CHAPTER TWO

THEORETICAL/CONCEPTUAL FRAMEWORK AND LITERATURE REVIEW

2.1 THEORETICAL FRAMEWORK

According to Mosley and Chen (1984) well known framework of the proximate causes of child mortality links the following variable namely maternal factor, environmental contamination, nutrient deficiency, injuries and personal illness to determinants at individual, household and community levels. Individual, household and community characteristics influence child health and survival through each of these sets of intervening variable. . Individual factors include variable such as maternal age, maternal education, birth interval, while household factors include variable such as income and family composition, institutional factors including community infrastructure and health programs and factors such as traditions, norms and value makes up cultural factors. Mothers' age is identified as an important socio-demographic factor in examining the level of infant mortality. Infant mortality is studied in relation to the mothers' age at first birth to identify the relationship between the women's age at childbearing and infant mortality.

Community factors such as education and literacy levels have been found to have a strong effect on children health outcomes (Kravdal 2004; Parashar 2005). For

each community factor that measures infrastructure, two types of variable will be used. The first is an indicator of quality, availability of the service. The second is an indicator of the quality of the community service. For example, the number of schools per person provides a measure of the availability of educational service in a community. Higher and better quality of local services and infrastructure is directly associated with lower mortality given that education supplies women with knowledge and skills necessary for raising healthy children(Caldwell, 1979 ; Rosenzweig and Schultz 1982) maternal education will be substitute for services that provide knowledge skills and a healthy environment for raising healthy children.

Household income complements community services and infrastructure which require investments in goods and services in order to produce improvements in child survival chances and substitute for community infrastructure and services that are directed to the poor or that are provided free or at low cost. Higher quality and more specialized services will complement income and education. Education may also provide women with financial means to take advantage of local services and infrastructure through higher earnings and selective mating change the value of time and alter preferences (Rosenzmeig and Schultz 1982).

Rosenzweig and Wolpin (1986) argued that, community characteristics especially the concentration of health facilities in a location may be determined internally by persons within that community. For instance, it may be government policy to locate facilities in areas with high mortality. Even if the distribution is not

systematic, individual may choose to migrate to communities based on their demand for a particular mix of community services and amenities. In particular, disadvantaged households may be attracted in large numbers to areas with good infrastructure and community services, since these areas may also provide the best employment opportunities.

2.2 CONCEPTUAL FRAMEWORK

Stokols, (1996) social ecological model, applied in his study of community health promotion in United States, and Andersen's (1995) behavioral model of health service use which has been widely applied in the study of utilization of maternal health care services in developing countries, were adapted . Stokols's social ecological perspective emphasized the influences of physical and socio-environmental conditions (community factors) on health and health behavior as well as multiple levels of influence at the individual and community levels (i.e. analysis at both individual and community level), while Andersen's model focused on predisposing (socio-demographic and structural factors), enabling (family and community resources) and need which influence women's decision to seek care.

These frameworks make important contributions to our understanding of a wide range of factors influencing maternal health care-seeking behavior and could be applied to research as well as health promotion and intervention programmes. However, the framework builds on the two frameworks to incorporate two levels of influence at the individual and community levels. This is occasioned by the fact that

individual behavior can also be influenced by the characteristics of the community in which people reside. According to Stokols (1996) focusing on only individual level analysis may constitute a conceptual and programmatic "blind spot". Thus, "the conceptual 'blind spots' resulting from an exclusive focus on either behavioral or environmental factors at single and analytical levels are avoided by giving explicit attention to dynamic interplay among personal and situational factors in health at both individual and community levels" (Stokols ,1996)

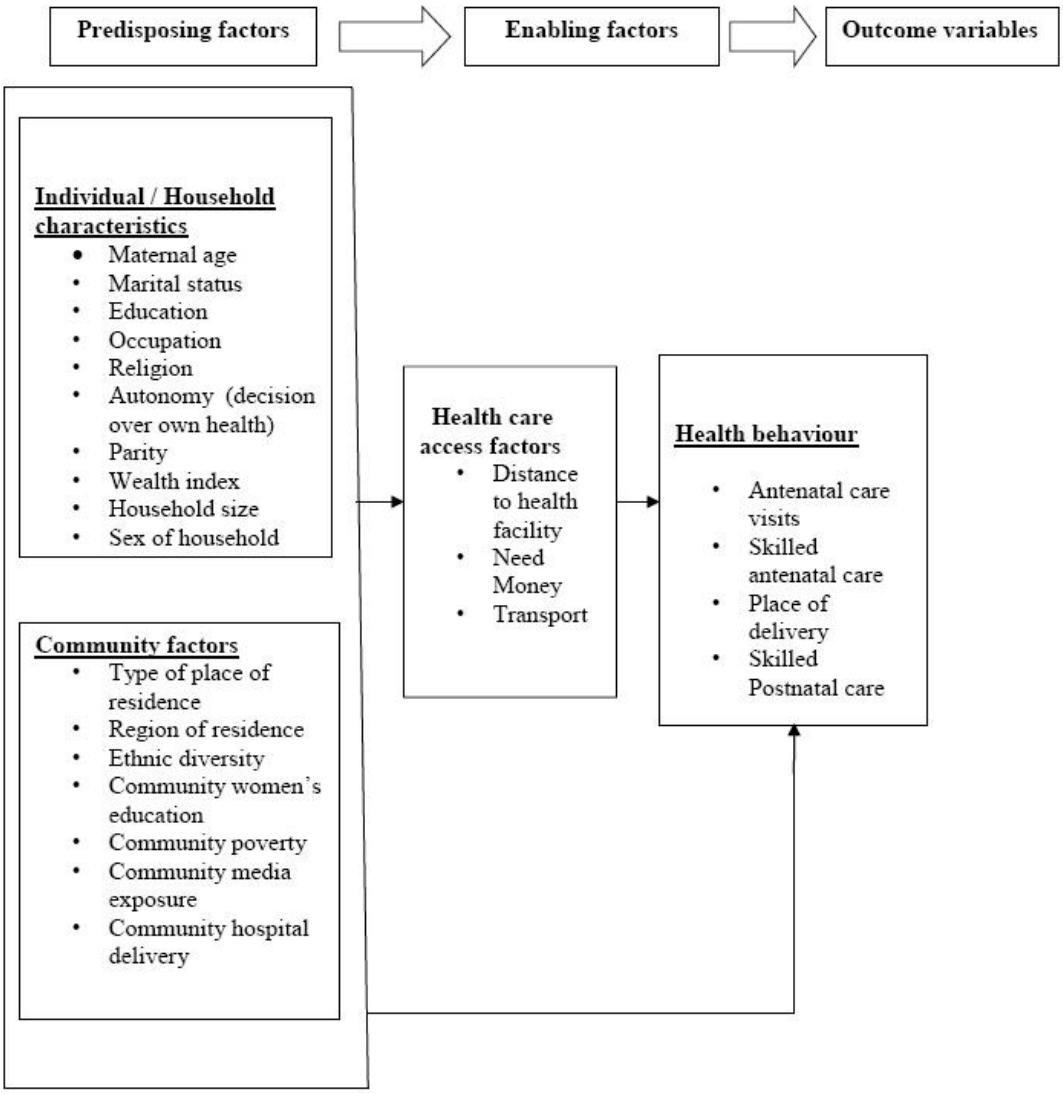
In view of this, the two frameworks were modified and the classification of the variables was made based on the focus of this study. Thus the predisposing factors are the independent variables operating at the individual/household and community levels. This classification was also based on the fact that some variables belong in one or more groups (i.e. predisposing and enabling factors). Distance to health facility, money and transport were also included to logically organize the enabling factors. The conceptual framework for this study provides a logical organization of maternal health-seeking behavior; it is also useful for the understanding of factors that are likely to influence maternal health care behavior at the individual and community levels.

2.2.1 Explanation on Conceptual Framework

From the conceptual framework in Figure 2.1 the predisposing factors include factors operating at the individual level (level-1) and community level (level-2) which can influence maternal health-seeking behavior. According to the

framework, the individual/household characteristics (individual level factors) such as maternal age, education, occupation, religion, marital status, women's autonomy, wealth index, household size, and sex of household head influence maternal health-seeking behavior (outcome variables). The individual/household characteristics are also expected to mediate the enabling factors to influence health care-seeking behavior outcomes. The framework recognized that community variables, including region of residence, type of place of residence (urban and rural), community mass media exposure, ethnic diversity, community women's education, community hospital delivery and community poverty, can have independent effects on maternal health care-seeking outcomes. The community characteristics will also influence the enabling factors (health care access factors) such as money, transport and distance to health facility and subsequently maternal health care-seeking outcomes/behavior. The conceptual framework also indicates that a combination of both individual and community factors will influence the outcome variables.

FIG 2.1 Conceptual Framework for the Determinants of Maternal Health-Seeking Behavior (Adapted and modified from Stokols, (1996); Andersen, (1995)



2.3 LITERATURE REVIEW

Several theoretical and practical considerations support the idea that the community where a child is born is important for the child's health and survival, particularly in Africa (Robert, 1999, Ellen *et. al 2001,* Huie, 2001, Entwisle, *et .al* 2007). In many areas of African countries, families cannot easily access routine health services, cite properly and health outcomes depend on community-based services and norms (WHO 2005). It follows that "place and health are intimately linked, given that goods and services, exposure to hazards, and the availability of opportunities are all spatially distributed" (Do and Finch 2008).

Generally, community is considered to be spatially-referenced and bounded, and its role in determining the health of individuals who live in a community becomes evident, as most government and non government activities are spatially organized (Arguillas 2008). Provision of health care and other public services, such as water supply, electricity, and sanitation are implemented at the level of a geographically defined community. The availability of a health infrastructure in the community has the potential to improve the survival chances of young children, because it provides more opportunities for health care and reduces the costs of obtaining health-related goods and services (The Cebu Study Team, 1991).

The prevailing norms and attitudes about health behaviors could also influence the health care decisions made by individuals (Rutenberg and Watkins 1997). Similarly, the quality of the physical environment in the community where children live has important consequences for their health. The effect of community

context, where children are born or raised, on their survival chances has been widely recognized (Sastry, 1997; Omariba *et al.*, 2007; Antai, 2009). Evidence suggests that living in an economically and socially deprived community or neighborhood is associated with an increased risk of under-five mortality (Aremu *et. al.*, 2011). For instance, children born or raised in a community that lacks electricity, good drinking water and health facilities are likely to suffer from the same deprivation that can directly or indirectly influence their health outcomes. A distinction is drawn between children living in a relatively better-off neighborhood and those living in a relatively worse-off neighborhood (Macintyre *et al.*, 2002).

Children living in two different households with similar socioeconomic characteristics can suffer different mortality risks if they are from two contrasting communities. Sastry (1996) contended that community characteristics can exacerbate or mitigate mortality risks of individuals depending on the environmental context the individuals find themselves. Griffiths (2004) also argued that community services and levels of infrastructural development of a community are capable of amplifying or reducing mortality risks among the children. This is because an individual child resident in a household unit, which in turn is located within a community, is exposed to various levels (within the societal hierarchy) that either directly or indirectly influence his or her survival chances.

In addition, Whitworth and Stephenson (2002) maintained that two neonates with similar characteristics may suffer different neonatal mortality risks because of

the community contextual effects. Whitworth and Stephenson argued that these differentials in mortality risks may be as a result of differences in the provision of antenatal and obstetric health care or the effects of environmental conditions the children are exposed to. Also, individuals residing in the same community tend to share similar preferences, cultural practices, values and customs. The reason is that individuals with similar tastes and values tend to cluster and live together (Sastry, 1997) All this clustering and living together of people with common norms, values, identities and cultural practices, as well as spatial inequality in infrastructural development (Antai, 2011) has a direct or indirect effect on the health outcomes of under-five children and this often brings about differentials in health outcomes between communities, particularly communities with contrasting characteristics.

2.3.1 Maternal Education and Child Mortality

It has been observed that there is a close relationship between education attainment and lower mortality rates (Fayehun and Omolulu 2009; NPC and ICF Macro 2009; Antai 2011). This was revealed in the NDHS 2009 report were mothers with no education have the highest under five mortality as shown in the immunization result with 209 deaths per 1,000 live birth, while mothers with secondary education have 68 per 1,000 live deaths. Although, there are vagaries of statistics and estimations for child mortality for different countries and the world by different sources, the patterns and trends are the specifically similar. Also, a survey carried out in Bangladesh shows that child mortality rate was highest (1.64%) for the

children of illiterate mothers and lowest (0.54%) for the children whose mother's educational level is secondary and above (Uddin, Hossain and Ullah, 2009).

Educated mothers are more likely than non-literate mothers to ensure a healthy environment, nutritious food, and have better knowledge about reproductive health at conception and health care facilities for their children. Literate mothers will give birth to healthier babies because they themselves tend to be healthier and are likely to experience lower mortality among their children at all ages (Pandey, 2009). Other reports have shown that maternal education is a significant factor influencing child survival (Caldwell, 2009; Osonwa, Iyam, and Osonwa, 2012). Children from poorer or rural households are reported to be more vulnerable than their counterparts from other regions (UNCIEF, 2010). A child born to a financially deprived and less educated family is at risk of prenatal death or within the first month of life. A well educated society has the ability to identify and avoid situation that will pose further risk to their health.

According to Zakir *et.al,* (2011) a well informed mother has the ability to take precautions against factors that will pose greater risk to her infant. Among other issues, she will remember to keep appointments with her doctor, attend ante and post-natal clinics as at when schedule, and maintain good hygiene conditions necessary for the good health of her baby. They further added that a population with diseased and unhealthy infants has the danger of decreasing enrolment of children; particularly where mothers are illiterate. The position of Hao (1990) was not

different from these, as he agreed that the higher the educational level of the parents, particularly the mother, the lower the child mortality level. He concluded that of all the variables studied by him, mother's education had the greatest effect on reducing child mortality.

Sastry (2004) in his examination of child mortality in Sao Paulo, Brazil observe a decline in under five mortality rate even as the levels of education of mothers increased. Mother's and father's education are significant determinants of child mortality in poor countries (Boone and Zhan, 2006). Desai and Alva (1998) investigated the effect of maternal education in 22 developing countries. They argued that maternal education may be a proxy for the socio economic status of the household as well as for characteristics of the community of residence. Thus more educated women are more likely to have come from higher socio-economic strata and are likely to reside in areas with better health systems as well as water and sanitation systems.

Among the general patterns is that the global under-five mortality rate, which has declined by almost 47 percent between 1990 and 2012 (measuring 90 deaths per 1,000 live births in 1990 and 48 in 2012) while the trend in Sub-Saharan Africa is apt to increase (UNIGME,2013). Globally, several causes of under-five mortality were noted among which are: pneumonia which contribute up to 17 percent of the entire death, preterm birth complications that cause about 15 percent of child

death, intrapartum-related complications (10 percent), diarrhea (9 percent) and up to seven percent due to malaria (UNIGME, 2013).

2.3.2 Mother's age at childbirth

The patterns of mortality by maternal age just like birth order, is typically U-shaped. Children born to both relatively old and young women have higher mortality rates than others; the interpretation of the effect of maternal age at birth on infant mortality must be biological, i.e., it depends on reproductive maturity. Young mothers are usually inexperienced in looking after the infant (Kibet, 2010). Children born of young mothers also tend to be underweight, malnourished and perhaps anemic, a combination which increases the risk of diseases. Maternal age is considered a proxy for a host of factors including family size, educational level, modernity, knowledge and practice related to childcare and energy or capacity to care for a child (Mock et al. 1993).

2.3.3 Family Size

Family size has been found to influence infections in many studies. When many people live together, the chance of contact with pathogens increases, and hygiene may deteriorate (Manun'ebo et al, 1994; Woldemicael 2001). A large number of children in a household increase the likelihood of having disease like infections because of crowding and competition for mother's time and attention and other resources (Woldemicael, 2001). In Eritrea, the probability of having diarrhea is

about 60% higher if there are six or more children living in the house than if the number of children is less than three.

2.3.4 Environmental factors

The effect of the environment on health is complex and is conditioned by a wide range of characteristics and behaviors. For example, the effect of improved water and toilet facilities on child health may vary depending on parental education, child feeding practices or income (Timaeus and Lush, 1995). Environmental factors include water sources, availability of toilet facilities and method of excreta disposal. Most environmental factors are usually associated with socio-economic status and place of residence (Rustein 2000). Several of diseases causing child mortality have connections with hygiene condition and unclean environment these are not limited to dirty feeding bottles, utensils, inadequate disposal of household refuse, poor storage water, to mention but few (Jinadu, *et.al*, 1991; NBS, 2011).

The reasons for these are obvious since the mother may be poorly nourished during pregnancy, had little or no antenatal care and likely to deliver in ill-equipped health facility. Besides, the level of competition over resources when the family is large could enhance poor care among the family members including the very young ones. All these factors are further aggravated by limited access to health services due to poor income and low levels of maternal education, often leading to the non-immunization of the child (NDHS, 1999

2.3.5 Maternal Mortality Situation in Developed Countries

Maternal mortality, of all health indicators, exhibits the greatest disparity between the developed and developing world. The maternal death occurring in developed countries indicates that, it could be avoided if proper health resources and services were available to women in developing nations (PRC, 2006). The tragedy and opportunity is that most of these deaths can be prevented with cost-effective health care services. Health care programs to improve maternal health must be supported by strong policies, adequate training of health care providers and logistical services that facilitate the provision of those programs. Once maternal and neonatal programs and policies are in place, all women and girls must be ensured equal access to the full range of services (Policy Project, 2003).

The example of a country doing well in managing maternal deaths is that of Japan. In 1950, Japan had a maternal mortality ratio of around 180 deaths per 100, 000 live births and this was drastically reduced to 50 deaths per 100,000 live births in 1970, and by 2004/5 Japan was among the countries with the lowest maternal mortality in the world with its maternal mortality ratio of 6 deaths per 100,000 live births (Graham, 2008). This tremendous success was due to a host of factors such as; access to family planning, universal access to skilled care at delivery and timely access to emergency obstetric care for all women with complications.

With 99% of maternal deaths occurring in developing countries, it is too often assumed that maternal mortality is not a problem in wealthier countries. Yet,

statistics released in September of 2010 by the United Nations place the United States 50th in the world for maternal mortality, with maternal mortality ratios higher than almost all European countries, as well as several countries in Asia and the Middle East, estimated at 21 deaths per 100,000 live births in 2010(WHO, 2010).While developed countries have made enormous progress in bringing down the huge death rates associated with pregnancy, women in developing countries continue to face very high risks of death and disability as a result of pregnancy.

Writing on barriers to the utilization of prenatal care in Turkey, Erci, (2003) noted that unwanted pregnancy and negative attitudes toward pregnancy, and attitudes toward prenatal care, were major barriers to the use of prenatal care. In addition, social support from family members significantly affected the use of health care services. Stressing the role of mothers-in-law in decisions to seek health care, Simkhada *et.al.* (2010) noted that mothers-in-law sometimes have a positive influence, especially when encouraging women to seek medical help, but more often it is negative. The main reasons why mothers-in-law do not support/encourage antenatal check-ups include expectations regarding pregnant women fulfilling their household duties, perceptions that antenatal care was not suitable, as well as strained power relations between mothers-in-law and daughters-in-law. Furthermore, women who felt that their friends and family members were unsupportive were twice as unlikely to attend antenatal care as other women (McCaw-Binns *et.al*, 1995).

Distance to the health facility acts as a disincentive to seeking care and an obstacle to reaching care. Most pregnant women do not even attempt to reach health facility for delivery, since it is difficult to walk long distances during labor. Worse still, transport was often not available. Further, unfriendly attitudes, the unavailability of staff at a health facility and long waiting hours were reasons for a lack of utilization of health facility for delivery. Global maternal mortality statistics reflect the widening gap between the developed and developing countries. This depicts that, maternal mortality is a universal problem, thus no country is spared by it, but the variation between developing and developed countries is an indication that maternal mortality can be prevented/ controlled if its causes and risk factors are known and addressed.

2.3.6 Maternal Mortality Situation in Africa

Maternal health is still a serious concern for most African countries. The continent's average maternal mortality ratio was 590 deaths per 100,000 live births in 2008 (UN, 2012). Of the 529000 deaths due to pregnancy or childbirth complications that occur each year worldwide, 95% are in Africa and Asia alone. In the Sub-Sahara Africa where fertility is quite high, estimated at 5.1 births per woman in 2005–10 (UN, 2011), which is more than double the replacement level, the lifetime risk of dying from maternal causes is about 1 in 16 which contrasts sharply with a risk of 1 in 2,800 for women from the developed world (APRC, 2002).

In Niger ,women have a 1 in 7 life time risk of dying from pregnancy related complication, significantly higher, for example, in comparison to Ireland where it is 1 in 48,000 (WHO, 2008).Maternal mortality figures vary widely by source and are highly contentious, estimates for Ghana suggest that roughly between 1,400 and 3,900 women and girls die each year due to pregnancy-related complications, with an additional 28,000 to 117,000 women and girls suffers from disabilities caused by complications during pregnancy and childbirth. Even though it is a matter of concern, some African countries have recorded a large decline in maternal mortality during 1990-2008, but none of the African countries has achieved MDG5 yet .According to the MDG report of 2012, most of these countries greatly improved the proportion of women giving birth with skilled attendant.

Among the middle income and least poor groups in the slums of Nairobi, women's autonomy was observed to be an enhancer of the use of maternal health services; and the poorest women in the lower autonomy group tend to exhibit a higher use of maternal health services (Fotso *et.al*, 2009). The study also found that education is a major determinant of health-seeking behavior, but its effect is not mediated by women's autonomy. Similarly, women's autonomy was thought to be associated with maternal health care-seeking behavior in Ethiopia (Woldemicael and Tenkorang, 2009). Women with higher autonomy were more likely to seek antenatal and delivery care than those with lower autonomy.

In most African countries women's decisions to seek care during pregnancy and delivery were influenced by individual and community knowledge and the acceptance of maternal health services, partners' support, previous health care experiences and the degree of communication with other women and health workers (Lubbock and Stephenson, 2008). Further, women often rely on the advice and shared past experiences of older women within their network to direct their health-seeking behavior. Thus their perception of prenatal and delivery care is greatly shaped by "positive personal experiences, an established sense of security in health facility, shared positive experiences and direct comprehensive communication with health workers" (Lubbock and Stephenson, 2008). Although the use of professional delivery was low and 1 out of 5 women delivered unassisted, giving birth outside a health facility and attending antenatal care visits was significantly associated with a low socio-economic status, one hour's walking distance from the health facility and parity (Eijk *et.al*, 2006; Brown *et .al*, 2008).

According to Lubbock and Stephenson(2008), the shared cultural belief and women's acceptance that a woman's role is to care for children heightens the perceived opportunity costs of seeking care; hence prenatal and delivery care is considered important primarily to ensure the health of a child rather than that of the mother. Stephenson and Tsui (2002) observed that the number of doctors in the community and the presence of a health facility in the community increased the use

of antenatal and delivery care, suggesting that women are more likely to use health care services if they are available in the community

Indicators of the presence of services in the community have been identified as important predictors of maternal health-seeking behavior. Das *et.al*. (2010) found that custom, lack of time to reach the health care facility, poverty, a poorer quality of housing, lack of water supply, population transience and hazardous location were associated with the choice of delivery location. Further, cultural norms and lack of institutional access were identified as the most important factors influencing home delivery. In spite of the awareness of the risks involved, women from the urban areas choose to go back to their villages and natal homes to deliver.

In developing countries women have "less freedom to act, less personal autonomy, and less access to information than their male partners or husbands" (Filippi, *et.al*, 2006), suggesting less access to maternal health care and consequent maternal mortality. Health-seeking behavior is not only related to the individual's choice, but also to a large extent depends on the socio-cultural arrangements of communities; hence cultural beliefs and practices, cost, gender and distance were found to be associated with health-seeking behavior (Griffiths & Stephenson 2001 ; Shaikh *et .al*,2008)).

Bloom *et.al*, (2001) found that women's autonomy and high economic status were positively associated with health care utilization. Further, Shaikh and Hatcher (2004) noted that men control all aspects of resources and decide when and where

women should seek health care. In addition, women were not allowed to visit a health facility or health care provider alone, or make personal decisions to spend money on health care. Shaikh and Hatcher (2004), observed that lack of freedom to seek care without the permission of her husband or head of the family may result in a lack of attention to one's health and the inability of the women to access health care even in emergency situations.

2.3.7 Overview of Nigerian Studies

Nigeria is a major contributor to global statistics on maternal mortality. Maternal health care-seeking behavior remains poor in the country. However, concerted efforts have been made to explain the drivers of this poor maternal health situation.Iyaniwura and Yussuf (2009) noted that the perceived quality of care, formal education, high income, age and religion were important factors associated with health care and delivery services. Educated women and those with a higher income were more likely to have received medical checkups, had more frequent visits and used a health facility for delivery, suggesting better exposure to information. Further, the authors found that traditional worshippers were more likely to deliver with traditional birth attendants; and younger women, 20 years of age or younger, were less likely to use antenatal care and delivery services than the older women, suggesting that younger women may be unmarried and lack social support.

Babalola and Fatusi (2009), stressed the importance of individual, household and state level factors, observed that education, socio-economic status (wealth

quintiles), urban residence, ethnicity and saturation of mass media were strong predictors of maternal health care utilization. Aremu *et.al*, (2011), in another study of the relationship between neighborhood socio-economic disadvantage, individual wealth status and delivery care utilization in Nigeria, noted that women's occupation, women's and their partner's high level of education attainment, and possession of health insurance were associated with the use of a health facility for childbirth. Meanwhile, a young maternal age and residence in a disadvantaged neighborhood are associated with home delivery.

Urban residence, mass media and women's employment were found to be important determinants of institutional delivery (Navaneetham and Dharma lingam, 2002). Navaneetham and Dharma lingam, (2002) revealed that non-working mothers and those who had greater exposure to mass media were more likely to deliver at health institutions than women who are working and those who have had little or no exposure to mass media. Other studies found that the husband's occupation and education, age, number of previous pregnancies, family size and access to a health care facility, as well as a knowledge of contraception, were associated with maternal health care utilization (Chakra borty *et.al*, 2003; Hazarika, 2009). Furthermore, the study found that older women were more likely to seek maternal health care services than younger women; maternal health care behavior decreased among women with a larger family size.

Adamu and Salihu (2002) identified economic and socio-cultural factors that were barriers to women's use of antenatal care services and hospital delivery in rural Kano, North west Nigeria. One of the most important reasons for not attending antenatal care and preference for home delivery is financial deprivation. According to Adamu and Salihu (2002), most women in the rural communities depend solely on their husbands' income, as well as farming and agricultural activities for their livelihood. The small savings therefore are not enough to obtain costly antenatal and hospital delivery services except in life-threatening situations.

Further, the husband's denial and preferences, and the perception of women that 'it is easier at home' were other barriers to women's use of antenatal and delivery care services, as it was difficult for a woman to go out without the husband's permission except in extreme emergencies. In addition, Adamu and Salihu (2002) observed that home delivery was associated with the perception that delivering at home affords the women privacy and the company of relatives who understand their situation better.

A community's beliefs concerning the cause of an ailment and how effective alternative treatment is have been identified as important determinants of health care-seeking behavior among rural women (Okojie, 1998). Okojie (1998) noted that some women register for antenatal care, but deliver at home or with traditional birth attendants (TBAs). The major reasons for this were high hospital costs and the distance to a hospital. In addition, the use of health facilities was found to be

influenced by the quality of care and attitudes of health personnel. The study also observed that health care-seeking behavior was greatly influenced by women's status and influence within the household.

Similarly, Okafor and Rizzuto (1994) confirmed that community perceptions, attitudes and beliefs were important constraints to accessing effective health care. For instance, traditional birth attendants (TBAs) were found to be significant sources of misinformation; at times they deliberately discourage women from seeking higher levels of maternal health care.

2.3.8 Causes of Maternal Deaths

Causes of maternal deaths are numerous and vary from one place to another depending on factors prevailing. The main direct causes of maternal death in developing countries include haemorrhage, sepsis, obstructed labour and hypertensive disorders (Khan *et. al*., 2006).The risk of death from haemorrhage is one (1) in 1,000 deliveries in developing countries, compared with one (1) in 100,000 in developed countries, and accounts for one third of the maternal deaths in Africa (Zimmerman *et .al*, 2012).

According to Kongnyuy *et.al*, (2009), the leading causes of maternal deaths in Malawi are postpartum hemorrhage, postpartum sepsis, and HIV/AIDS, accounting for direct and indirect maternal causes respectively .Teso district of Kenya, noted that obstacles to the utilization of maternal health services are manifold. Most of the childbirths take place at home due to the unavailability and

inaccessibility of health facilities, poverty, high user charges and poor maternal health services offered at local health facilities (Ikamari, 2004).

Factors at the village level —like access to health professionals, transportation availability, and infrastructure —can contribute to maternal death. Many of the obstetric causes of maternal mortality (e.g., eclampsia, hemorrhage, and ruptured uterus) can be prevented with maternal care and adequate obstetrical services (Schaffner, 1977). Since most surgery rooms and other obstetrical services often are available only in hospitals, distance to the hospital or to the health provider has been considered an important factor of maternal mortality (Figa'-Talamanca, 1996; Maine et. al., 1996).

Another relevant factor related to the distance to the hospital is transport and transportation infrastructure (e.g., vehicles in the community, road conditions, and ambulance service) to help women reach specialized health services. In the case of an obstetric emergency, minimizing the time to the health provider is considered one of the more important strategies to reduce maternal mortality (Figa'-Talamanca, 1996).Some studies have found that midwives decrease the maternal mortality in villages (Lamb *et.al*., 1984; Fauveau *et. al.,* 1991). Fauveau *et. al,* (1991) also found that midwives referral to hospitals decrease maternal mortality. Maine et al. (1996) suggested that the reduction in maternal mortality that Fauveau et al. (1991) identified where due to the health services (i.e., cesarean sections and blood transfusions) performed by the regional hospital and not the midwives.

A retrospective study undertaken at a tertiary hospital in Nigeria in 2007 found that the most common risk factors for maternal mortality were, haemorrhage, anemia, eclampsia and malaria (Yakasai and19Gaya, 2011). Risk factors for complications arising from infections include delivery under unhygienic conditions, poor nutrition, anemia, caesarean section, membrane rupture, prolonged labour, retained products and hemorrhage (van Eijk *et.al*. 2008). These causes of maternal deaths were different with respect to region, rural-urban and age. Other studies conducted in Senegal, Guinea Bissau and Nigeria showed that the leading causes of maternal deaths among women of reproductive age 21-23 were puerperal sepsis, hemorrhage, eclampsia and abortion complications.

Severe anemia is believed to be an important cause of maternal death in developing countries, although much of the evidence is circumstantial (Lindsay, 1997). Mild anemia in pregnancy may go unnoticed, but the potential adverse effects of pregnancy increase as hemoglobin levels fall. Very severe anemia with hemoglobin levels of less than 4 grams/decilitre can lead to heart failure and death from shock (Royston and Armstrong, 1989). It has also been suggested that anemic mothers are less able to tolerate blood loss during childbirth, although this has never been empirically verified (Rush, 2000). Severe anemia in pregnancy has been reported as the main cause of 8–23% of maternal deaths in some hospitals and 11–16% in community-based studies (Shulman et al., 1999; Macleod and Rhode, 1998; Boerma).

CHAPTER THREE

RESEARCH METHODOLOGY

3.1 INTRODUCTION

This chapter describes the methodology and procedures adopted while carrying out the research work. It provides information on the method of data collection, data sources, methods and research instrument. It also provides a detailed description of the sample design, the statistical method employed for data analysis.

3.2 METHOD OF DATA OF COLLECTION

The research employed both the primary and secondary method of data collection. The primary data was obtained from various sources which includes personal observation on field, structured questionnaire, and interviews with health officials in the various health centers and private hospitals (Igbinedion Hospital and Research centre and District Hospital Ekiadolor.

The secondary data include map of the study area obtained from Google earth and transformed into maps using Arc-GIS software. Secondary sources of data collection include all information obtained from documented sources (journals, articles, and internet) sources such as the Nigeria Demographic Health Survey (NDHS 2013), the World Health Organization (WHO).

3.3 RESEARCH INSTRUMENT

The research instrument for this study consist of the structured questionnaire and interview. The questionnaire and interview schedule was aimed at collecting

specific information on child mortality which concerns the entire community such as husbands, mothers, in-laws, family members and relatives and maternal mortality which deals with women of reproductive age 15-49 while the interview is structured for the heads of the health centre considered relevant to the study. The questionnaire is divided into three sections. The first section would collect information about the demographic status of the respondent while section two and three would collect information on issues particular to the research objectives. The questionnaire is both open ended and close ended questions.

3.4 RESEARCH POPULATION

Ovia North East Local Government Area of Edo state has 13 Wards in its jurisdiction. There are a total of 40 health facilities across the Local Government Area, of this number 37 are primary health care facilities, 2 secondary health facilities and 1 tertiary health facility. Out of the 37 primary health centres, 34 are public owned while the remaining 3 are private health centres. The only tertiary health facility is Igbinedion Hospital and Research centre which is private owned. The population of this study will comprise mainly of women within the reproductive age range of 15-49years and every other member of the community which include men (husbands and fathers), in-laws, friends and relatives.

3.4.1 Sample Size

According to the 2006 population census figures the population of Ovia North East Local Government Area is given as 155,344. The research therefore seeks

to define a sample of the population comprising of married couples (women of reproductive age 15-49; husbands, in-laws, relatives which is 101,883 to ensure at least 95% level of confidence and the probable error that does not exceed 0.05.

$$n = \frac{N}{1+N(e)^2}$$

Where n=Sample size

N= Population size

E= Sampling error (constant at 0.05)

Population of married couples=101,883

From equation 3.5, the sample size is expressed as follows:

$$n = \frac{N}{1+N(e)^2}$$

$$n = \frac{101,883}{1+101,883(0.0025)} = 398.4$$

Using the Taro Yamane sampling system formulae, the approximate sample size (n) is 400. This is necessary for valid inference to be made about the population. The questionnaire administration is the main instrument used for data collection.

3.4.2 Administering Of Questionnaire

A total of 400 questionnaires was administered to both male and female in the Local Government Area while 13 interview questions was administered to the

heads of various health facilities. The wards in Ovia North East local Government are as follows;

Ward 1: By pass Oviobiogie, Ekiadolor, Isikhu, Utekon.

Ward 2: Channel 55, Obayantor, Ovbigua, Uhugua.

Ward 3: Azuwa, Field4, Gongo Rd, Uwan.

Ward 4: Gaja Camp, Iboro, Ikpako, Itela.

Ward5: Aigivbigie, Barrack, Ekenhuan, Igo.

Ward 6: Ekole, Iguero, Izaragbo, Ogua.

Ward 7: Azaka, Erediauwa Camp, Iyera Ogemudia Farm.

Ward 8: Ehizeweigie, Ovioma, Osenwola, Osazuwa Camp.

Ward 9: Ayekpanu, Ekasa, Ogoke, Oshodin.

Ward 10: Ekoma Rd. Evbonmore, Iguosa estate, Uniben.

Ward 11: Kolewe, Olumoye, Okagbe, Utese.

Ward12: Obazua, Oduna, Odighi, Owan.

Ward 13: Atite, Aguagu, Ita waterside, Iguosula.

Wards (1 ,3,5,7,8,10) based on population size and the presence of a tertiary and secondary health facility will be administered 40 questionnaire each while Ward (2,4,6,11,12) will be administered 30 questionnaire each because of the sparse population .Ward 13 will be administered 10 questionnaire as the population is dispersed, very rural and the community is not accessible. All the communities in the wards were selected, two of these communities were selected based on the proximity

or presence of a health facility while the other two were selected based on the distance from the health centre.

3.5 SAMPLING METHOD

The sampling method used in this study is the multi stage random sampling. At each community in Ovia North East, each street is divided into sections where individuals at every first, third, fifth house will be administered questionnaire. Then, where there is no respondent at the first the next house becomes part of the study.

3.6 METHOD OF DATA ANALYSIS

All collected data for this study will be appropriately analyzed in order to obtain reliable and valid findings. The analysis of the quantitative data will be done with the use of statistical diagrams such as bar graphs, simple percentage. Formulated hypothesis will be tested and analyzed with the logistic regression technique to test the hypothesis which is:

- There is a significant relationship between community characteristics and child mortality,
- There is a significant relationship between community characteristics and maternal mortality.

Questionnaires administered will be analyzed using the Microsoft Excel, SPSS (statistical package for social science).The ArcGIS 10.1 software was used in analyzing maps gotten from Google earth relating to some characteristics of the study area.

CHAPTER FOUR

DATA PRESENTATION, ANALYSIS AND DISCUSSION OF RESULTS

4.1 INTRODUCTION

This chapter deals with the presentation and analysis of data gathered from the administration of questionnaires and observations carried out in the study. Data were analyzed using the Statistical Package for Social Sciences (SPSS) and ArcGIS 10.1.

4.2 DISCUSSION OF RESULT

4.2.1 Demographic Characteristics of Respondents

The demographic characteristics of 400 respondents are illustrated below. The study unveiled that out of the total respondents, 44% are males and 56% of the sample are females. This indicates that the bulk of the population are females.

Table 4.1 described the age distribution of the population. The result showed that 12% are 15-25 year-olds, 26% of the population are between 26-35 years, 36% fall within 36-45years, 10% are 46-55 year-olds, and 15% are above 55 years. However, the 46-55 years old were least represented in the sample. This shows that a major subset of the population is between 36-45 years. The table also showed that 7.5% are single mothers and 79% are married, 3% are divorced and 9% are widowed; conversely. This observation shows that there are more married couples from the sample.

7% of the respondent have no formal education compared to 73% with primary education 19% went to Secondary school,4.2 % went to tertiary institution. This revealed that the majority of respondents are educated. As further revealed, 24% earn below 18,000 per month, 33% earn within the range of 18,000-30,000, 15% earn between 31000 -48,000, 12% of the respondents earn between 49,000-66,000, and 3% earn 66,000 and above. The results here presented are indicative of the fact that a meaningful percentage of the respondents can afford health care services.

The table below depicted 11% of the population as unemployed, 12% as public servants, 41% as business men and women, and 36% as involving in other activities. This showed a large percentage of the population are business men and women.

74% of the entire sample size are Christians, 9% are Muslims, and 10% are traditional worshippers. We can deduce that there are more traditional worshippers in comparison to Muslim.

Table 4.1: Demographic Characteristics of the Population

		Frequency	Percent
Sex	Male	175	44
	Female	**225**	**56**
Age	15-25 yrs	46	12
	26-35 yrs	104	26
	36-45 yrs	**145**	**36**
	46-55 yrs	41	10
	55 and above	58	15
	No response	6	2
Marital Status	Single	30	8
	Married	**317**	**79**
	Divorced	12	3
	Widow/Widower	35	9
	No response	6	2
Educational Qualification	No formal education	27	7
	Primary education	**290**	**73**
	Secondary education	60	15
	Tertiary education	17	4
	No response	6	15
Occupation	Unemployed	46	11
	Public Servant	47	12
	Business	**163**	**41**
	Others	144	36
Monthly Income	Below 18000	96	24
	18000-30000	**130**	**33**
	31000-48000	58	15
	49000-66000	46	12
	66000 and above	12	3
	No response	58	15
Religion	**Christian**	**295**	**74**
	Muslim	36	9
	Traditional worshipper	41	10
	No response	28	7

Source: Field Survey, 2016

4.2.2 Number of Children by Respondents

. 21% of the population has 1-2 children, while 25% have 2-4 children, 46% which is the highest have an average of 3-6 children in comparison to 4% that have 7-8 children and 5% have above 9 children. It can be deduced that the highest percentage of children is 3-6 for most house hold.

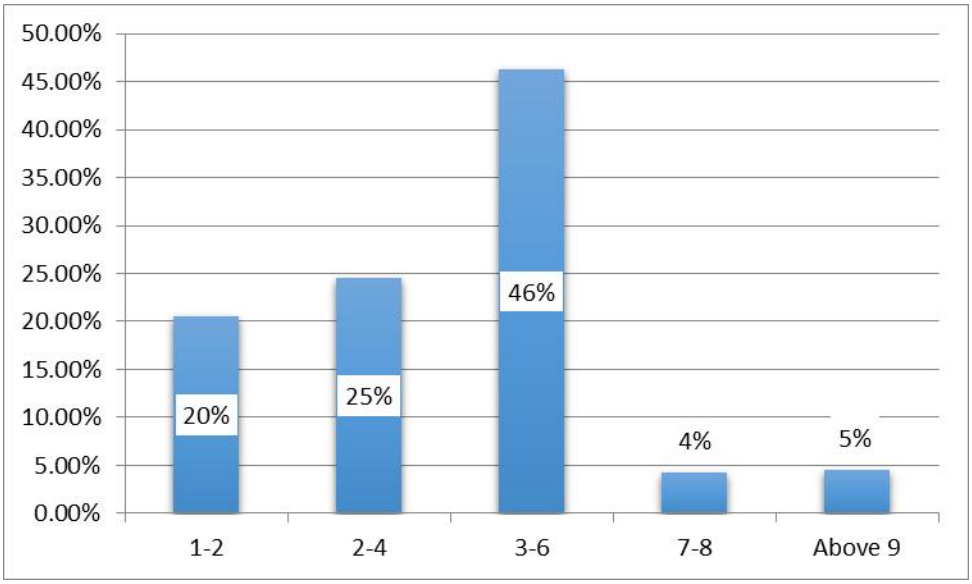


FIGURE 4.1: Distribution of Children
Source: Field survey, 2016.

Table 4.2 Cross Tabulation of Maternal Education with Child Mortality

		Death of Any Born Child				Total	
		Yes		No			
		F	*%*	*F*	*%*	*F*	*%*
Educational Qualification	No formal education	0	.0%	11	8%	11	6%
	Primary education	39	87%	112	79%	151	81%
	Secondary education	6	13%	12	9%	18	10%
	Tertiary education	0	.0%	6	4%	6	3%
Total		45	100.0%	141	100.0%	186	100.0%

Source: Field Survey, 2016

Table 4.2 is a cross tabulation of the educational status of reproductive women age 15-49 years with the number of children born dead or alive. The study intimates that 8% of women with no formal education have never experience any child loss whereas 87% of respondents with primary education claimed they lost a child. 13% of the respondents with secondary education disclosed they have lost a child at a point, 4% of respondent with tertiary education answered that they had not lost a child. It reveals that women with higher educational status experience less child mortality. This study therefore agrees with Hao (1990) who observes that the higher the educational level of the parent particularly the mother, the lower the child mortality level.

In the various health facility selected, the causes of child mortality includes malaria, anemia, malnutrition, hypokalemia, wrong use of TBA, this is depicted in figure4.2 below

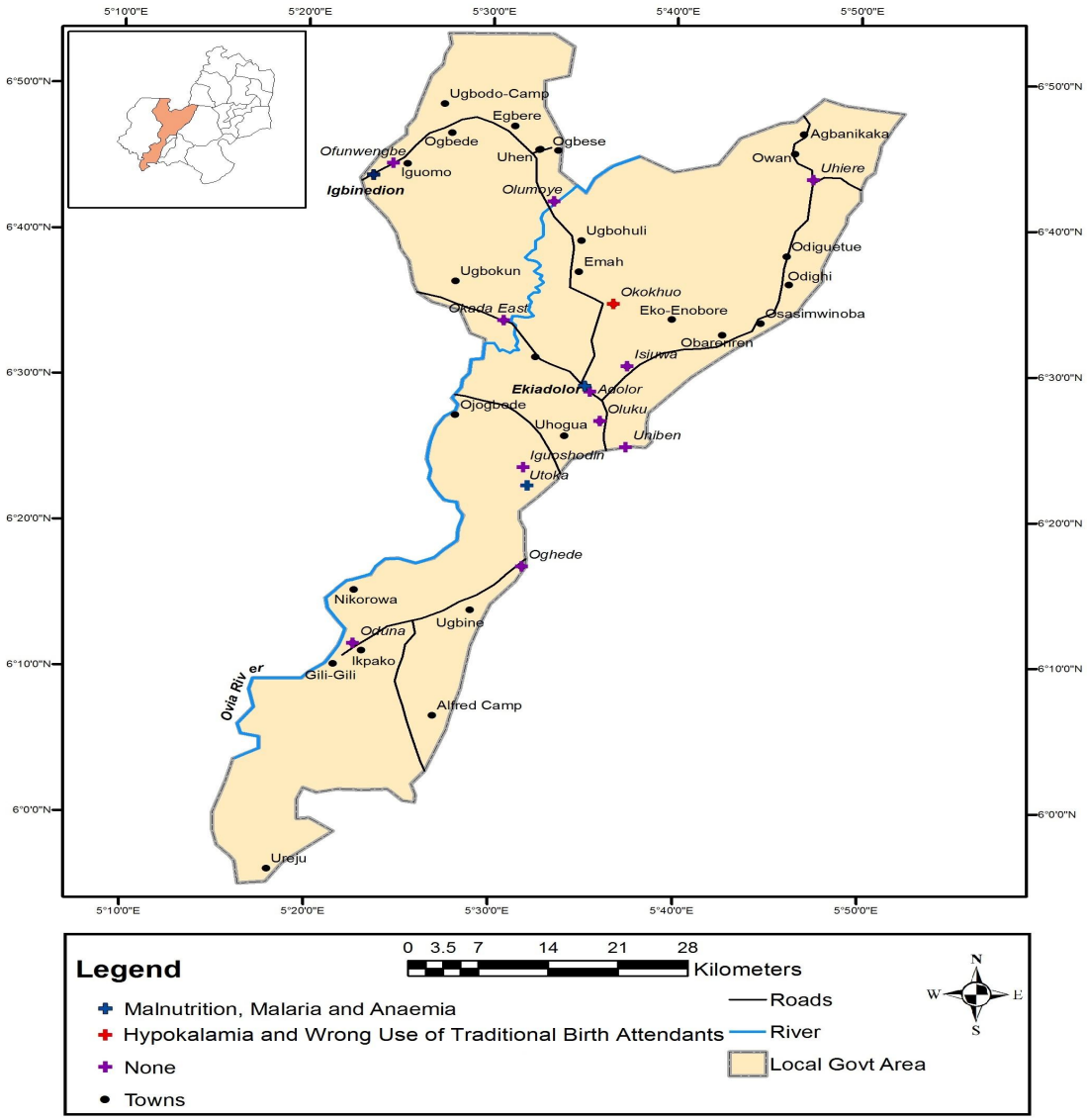


Figure. 4.2: Map Showing Causes of Child Mortality in Health Facility
Source: Field survey, 2016

Table 4.3 Cross Tabulation of Educational Qualification and Maternal Mortality

		Any Loss of Pregnant Woman in the Family				Total	
		Yes		No			
		F	*%*	*F*	*%*	*F*	*%*
Educational Qualification	No formal education	11	12%	16	5%	27	7%
	Primary education	58	63%	232	75%	290	73%
	Secondary education	18	20%	42	14%	60	15%
	Tertiary Education	5	5%	12	4%	17	4%
	No response	0	.0%	6	2%	6	2%
Total		92	100.0%	308	100.0%	400	100.0%

Source: Field Survey, 2016

The table unveiled that of the total number of respondents, 12% with no formal education. 63% of respondents with primary education agreed to the loss of a pregnant woman. 20% of respondents with secondary education answered to the loss of a pregnant woman.5% of tertiary respondent claimed they loss of pregnant woman.

4.3 MATERNAL AUTONOMY AND CHILD HEALTHCARE UTILIZATION

Below, illustrates the level of autonomy of the respondents; 50% of mothers decide where and when to take their children for medical attention, 28 % of husbands and wives take this decision together, 16% of decisions are made by the family, while 3% of decisions are made by relatives and 4% by in-laws. This reveals that the majority of women take decisions alone pertaining to the health care needs of their children who are mostly in their care.

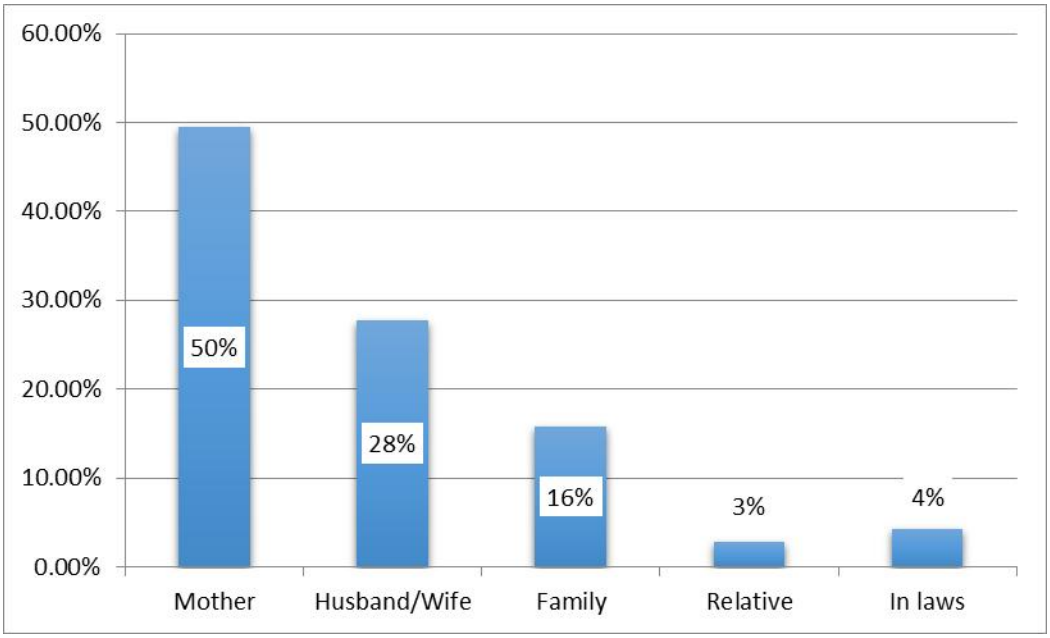


Figure 4.3 Distribution of Autonomy to Child Health Care Utilization
Source: Field Survey, 2016

4.4 MATERNAL AUTONOMY AND MATERNAL HEALTH CARE UTILIZATION

The diagram below depicted that 39% of married women decide when and where to go for medical checkup, 26% answered that decisions are made by both husband and wife, 17% intimated that husbands alone make the decisions, 6% confirmed that decisions are taken by the family members, and 2% affirmed that decisions are made by friends. This shows that women have a considerable level of autonomy pertaining to their health as they do not necessarily require permission to seek medical attention.

Education in particular has been identified as relevant in the use of maternal health care. It increases the level of female autonomy in terms of decision making

regarding health. Fotso *et.al*, (2009) observe that women's autonomy is an enhancer of the use of maternal health services. This study justifies that women autonomy has been thought to be associated with maternal health care-seeking behavior (Woldemicael & Tenkorang, 2009). Women with higher autonomy are thus more likely to seek antenatal and delivery care than those with lower autonomy.

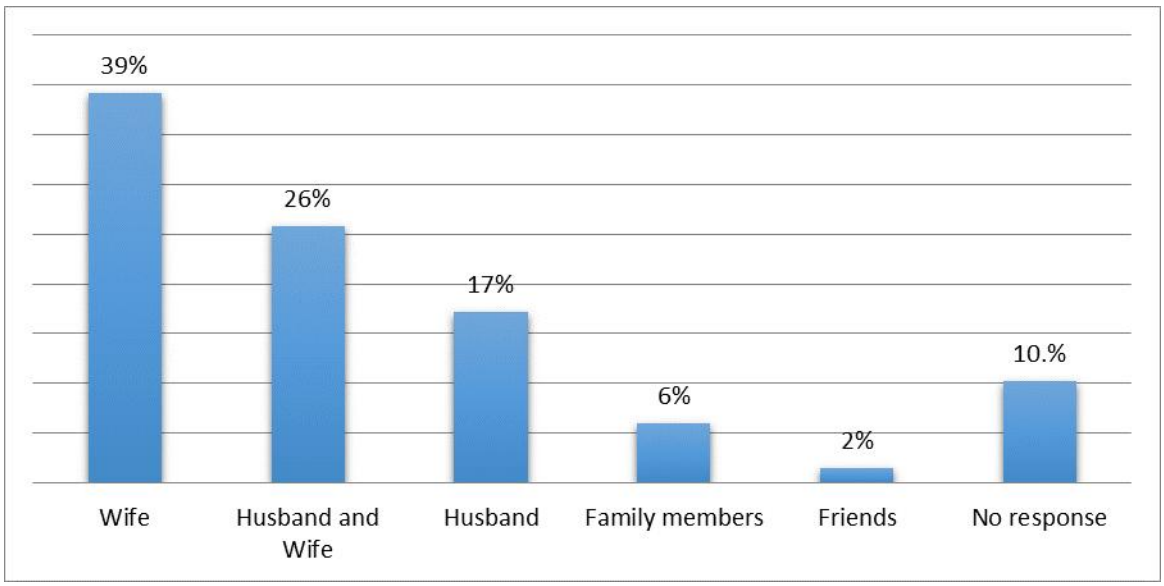


Figure 4.4: Maternal Autonomy on Maternal Health Care Utilization
Source: Field Survey, 2016.

4.5 TRADITIONAL PRACTICES INFLUENCING THE USE OF MODERN HEALTH CARE FACILITIES

Figure 4.5 depicted the distribution of the population making use of both government hospitals (35%) and Traditional Birth Attendants (TBA) (34%).This shows that the traditional belief of the people pertaining to the use of health facility is still high. 20% of the respondents' surveyed go to private hospitals, 6% use primary health centers and 4% which is the least, make use of the church.

Along this line, Okafor and Rizzuto (1994) confirm that community perceptions, attitudes and beliefs are important constraints to accessing modern health care. The proportion of traditional worshippers justifies that the population still have strong attachment to their cultural beliefs.

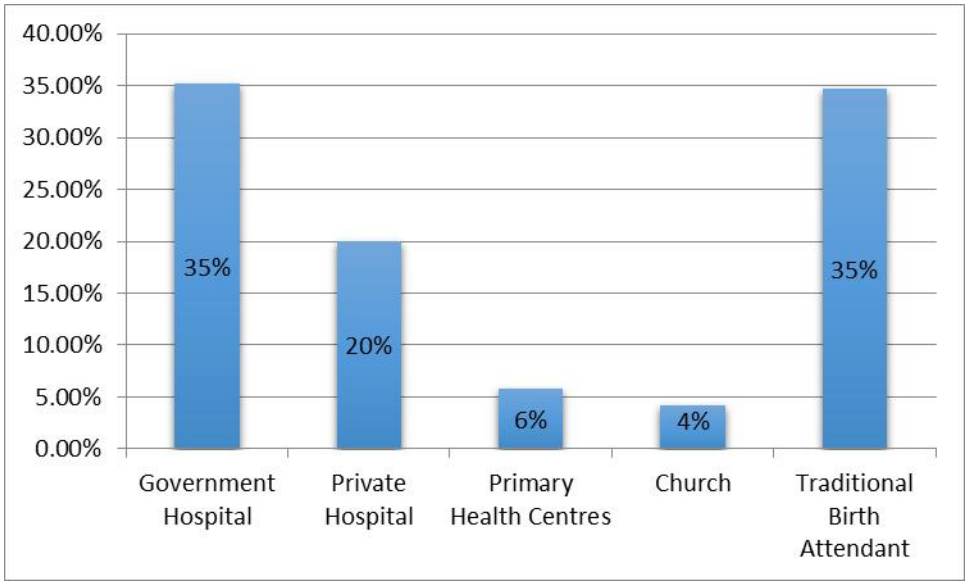


Figure. 4.5: Distribution of Health Care utilization
Source: Field Survey, 2016

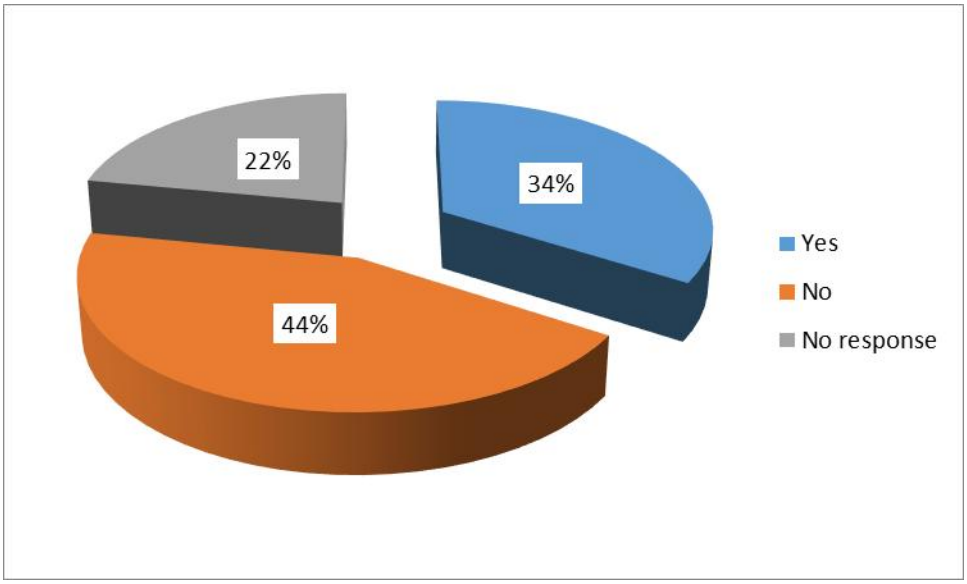


Figure 4.6: Distribution of Respondents Using Traditional Medicine

Source: Field Survey, 2016

44% of the respondents attested to the fact that they do not use any other alternative when pregnant, while 34% confirmed that they patronise traditional medicine.

4.6 CHARACTERISTICS OF PHYSICAL INFRASTRUCTURE IN RELATION TO HEALTH

The map below described the distribution of health personnel or doctor in the facility. The diagram illustrates that the number of doctors in each ward is very poor. The following health facilities have doctors namely: Igbinedion Teaching Hospital and District Hospital Ekiadolor while Uniben Health center and Olumoye which are primary health facility also have doctors The following communities lack doctors they include; Iguoshodin, Isuiwa, Oghede, Utoka, Oduna, Uhiere, Oluku, Uhen, Ofunwengbe, Okokhuo, Adolor, Okada East .Although in these facilities there is the

presence of midwives, nurses and health workers. This means respondents have to travel long distance to gain access to qualified doctors.

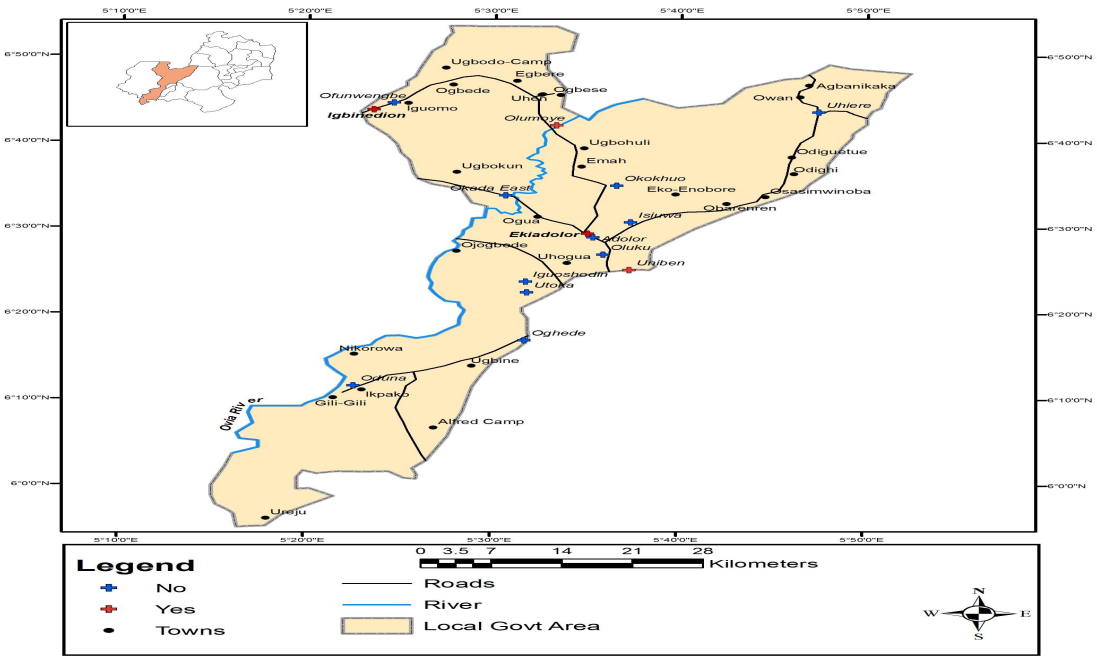


Figure. 4.7: Map showing distribution of doctors in selected health facilities
Source: Field Survey, 2016

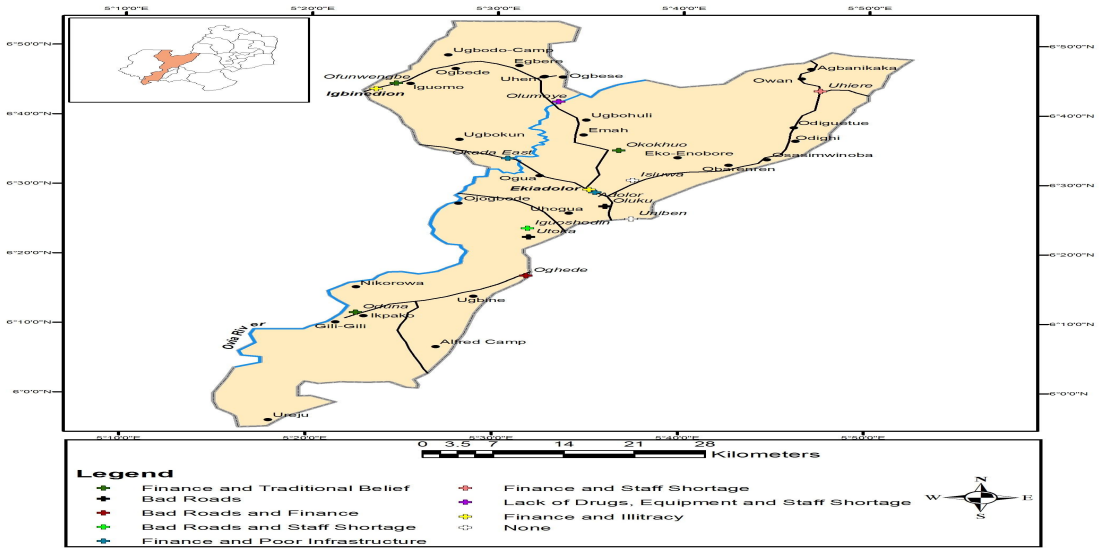


Figure 4.8: Map Showing Major Challenges of Selected Health Facilities

Source: Field Survey, 2016

Figure 4.8 provides information on the challenges faced by various health facilities are as follow: bad roads, finance and staff shortage, lack of drugs, traditional beliefs, inadequate equipment, poor infrastructural maintenance and illiteracy. The map provides locational information of these challenges and where they are prevalent. . Communities such as Adolor, Oghede, and Ofunwengbe have bad roads, lack finance and shortage of staff as indicated by the map**.**

4.7 QUALITY OF HEALTH SERVICE DELIVERY AND INFRASTRUCTURE

The quality of health facility in each area uncovered that 39% of respondent rated health services as good, 18% as poor, 5% as very good 3% as excellent. This shows that a higher percentage of the population rates the quality of health service delivery as good

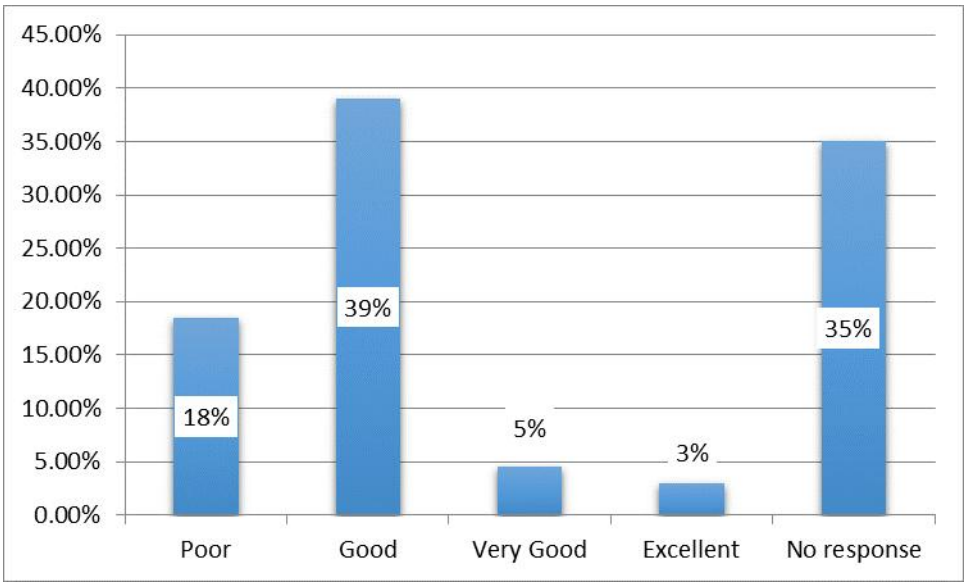


Figure. 4.9: Distribution of Quality of Health Care Delivery

Source: Field Survey, 2016

4.8 ANALYSIS OF THE RELATIONSHIP BETWEEN COMMUNITY CHARACTERISTICS AND CHILD MORTALITY.

The hypotheses formulated below are here tested:

Hi = There is a significant relationship between community characteristics and maternal mortality.

Hi = There is a significant relationship between community characteristics and child mortality.

TABLE4.4 LOGISTIC REGRESSION ON COMMUNITY CHARACTERISTIC AND CHILD MORTALITY

	N	%	Mortality (.05)	Health Delivery (.05)	P-Value
Age					<0.001
15-25 yrs	46	11.7%	.035	.001	
26-35 yrs	104	26.4%	.053	.837	
36-45 yrs	145	36.8%	.751	.648	
46-55 yrs	41	10.4%	.000	.002	
55 and above	58	14.7%	.618	.419	
Educational Qualification					>0.001
No formal education	27	6.9%	.000	.003	
Primary education	290	73.6%	.030	.004	
Secondary education	60	15.2%	.000	.421	
Tertiary education	17	4.3%	.000	.017	
Occupation					<0.001
Unemployed	46	11.5%	.000	.470	
Public Servant	47	11.8%	.000	.185	
Business	163	40.8%	.693	.411	
Others	144	36.0%	.323	.727	
Monthly Income					<0.001
Below 18000	96	28.1%	.002	.049	
18000-30000	130	38.0%	.144	.244	
31000-48000	58	16.9%	.000	.000	
49000-66000	46	13.5%	.000	.448	
66000 and above	12	3.5%	.053	.111	
Community Infrastructure					<0.001
Health Facility	157	40.9%	.000	.000	
Schools	68	17.8%	.051	.000	
Electricity	117	30.5%	.405	.008	
Pipe Borne Water	12	3.1%	.053	.111	
Sewage Disposal	17	4.4%	.000	.057	
Telecommunication	12	3.1%	.053	.002	
Community Quality of Health Facilities					<0.001
Poor	74	28.5%	.038	.003	
Good	156	60.0%	.045	.004	
Very Good	18	6.9%	.300	.421	

Excellent	12	4.6%	.053	.111	
Community Education					>0.001
Low	317	80.5%	.000	.005	
Medium	60	15.2%	.000	.324	
High	17	4.3%	.000	.016	

Source: Field Survey, 2016.
Significance level <0.05

The logistic regression results in table 4.4 showed that all the explanatory variables such as age, occupation, monthly income, community infrastructure, community quality of health facilities except educational qualification and community education are significantly associated with child mortality ($p<0.05$).Respondents (36-45) years old, who had secondary and higher education, employed (public servant) or business owners had lower child mortality.

Conversely, the highest proportion of child mortality was found among respondents with no formal education and primary education. The study clearly shows that the inclusion of community level variables such as community education, community infrastructure, community quality of health delivery had strong independent effects. At the individual level, age, occupation, income were significantly associated with child mortality. The study provides that living in communities with a high proportion of individual with medium/high income status, who deliver in health facility reduces the odds of child mortality whereas living in communities with a proportion of individuals from poor house hold increases the odds of child mortality .The findings demonstrates that in the sample the

characteristics of community in which individuals reside influence their health care utilization.

4.9 Analysis on the Relationship between Community Characteristics and Maternal Mortality

TABLE4.5 LOGISTIC REGRESSION TABLE ON COMMUNITY CHARACTERISTICS AND MATERNAL MORTALITY

	N	%	Mortality(.05)	Health Delivery(.05)	P-Value
Age					<0.001
15-25 yrs	46	11.7%	.038	.000	
26-35 yrs	104	26.4%	.001	.137	
36-45 yrs	145	36.8%	.000	.333	
46-55 yrs	41	10.4%	.000	.000	
55 and above	58	14.7%	.000	.871	
Educational Qualification					>0.001
No formal education	27	6.9%	.023	.002	
Primary education	290	73.6%	.021	.042	
Secondary education	60	15.2%	.111	.037	
Tertiary education	17	4.3%	.018	.001	
Occupation					
Unemployed	46	11.5%	.088	.081	>0.001
Public Servant	47	11.8%	.000	.138	
Business	163	40.8%	.000	.121	
Others	144	36.0%	.000	.991	
Monthly Income					
Below 18000	96	24.0%	.091	.070	<0.001
18000-30000	130	32.5%	.980	.305	
31000-48000	58	14.5%	.000	.000	
49000-66000	46	11.5%	.044	.138	
66000 and above	70	17.5%	.055	.066	
Autonomy					
Wife	157	43.7%	.006	.000	<0.001
Husband/Wife	103	28.7%	.046	.000	
Husband	69	19.2%	.006	.009	
Family Members	30	8.4%	.066	.003	
Community Hospital Delivery					<0.001
Poor	74	29.0%	.000	.000	
Good	156	60.0%	.002	.000	
Very Good	18	6.6%	.286	.023	
Excellent	12	4.4%	.055	.066	
Community Poverty					<0.001

Low	96	28.1%	.980	.203	
Medium	188	55.0%	.044	.000	
High	58	16.9%	.055	.165	
Community Education					
Low	317	80.5%	.023	.044	>0.001
Medium	60	15.2%	.111	.038	
High	17	4.3%	.018	.023	

Source: Field Survey, 2016
Significance Level <0.05

Table 4.5 showed that the individual /community variables such as age, income, autonomy, community hospital delivery, community poverty with the exception of education, occupation, community education was significantly associated with maternal mortality. Respondents within the age group (15-35) years old, who had no formal education and primary education, earn less than 18,000 and 18,000-30, 000, who depend on decisions taken by both their family members, friends had a high proportion of maternal mortality compared to the proportion who took the decision alone .The study proves that living in communities with a high proportion of women with autonomy decreases the odds of maternal mortality. The findings re-iterates the point that woman's decision to use health care may be influenced by availability of health facility and quality of health care in the community (Antai ,2009).Residing in low poverty communities and communities having a high percentage of educated individuals could enhance the socio economic status of women.

CHAPTER FIVE

SUMMARY OF FINDINGS, CONCLUSION AND RECOMMENDATIONS

5.1 INTRODUCTION

This chapter presents the inferences drawn from the analysis and elucidates on the findings. In presenting the discussion the key findings were brought together, this is followed by conclusion and recommendation

5.2 SUMMARY OF FINDINGS

The study focuses primarily on community characteristics and child maternal mortality .It examined the impact of community characteristic on child mortality, and the impact on maternal mortality .A number of deductions were made from the analysis. These are highlighted as follows;

- The study confirmed that a major percentage of the sample are 36-45years old, with high proportion of the respondents being married .The educational qualification of the respondents showed a high level of primary education.
- The study proved a percentage of maternal mortality and child mortality are respondents with low educational qualification.

- In the sampled population, the study revealed a large percentage of women with higher educational qualification having a high level of autonomy pertaining to health care than women with lower educational qualification.
- The study confirms there are more doctors in tertiary hospitals to primary health facilities and these facilities are associated with various challenges and constraints that limits their health care delivery.

5.3 RECOMMENDATION

With the above findings observed in the course of the researched work the following are therefore recommended to the various communities and health facility on the various challenges being posed by mortality.

- Some of these communities should be briefed up about the utilization of modern health services as the level of education is still low.
- There is a strong tie between people and their cultural beliefs and these negates the utilization of health care, overall the communities should be enlightened on the benefits of heath care services.
- More awareness should be given to child maternal mortality as these helps achieve Vision 2020.
- Programs that target poverty alleviation and empowerment of women socially and economically should be encouraged, particularly in disadvantaged communities.

- To reduce the risk of child mortality in the country, there should be more investments on women empowerment programs in terms of education and employment opportunities which could increase age at first birth and reduce poor health outcomes of the child.

5.4 CONCLUSION

The study community characteristic influence on child maternal mortality in Ovia North East concludes that the gap that exist between maternal and child health can be holistically looked at from the angle of poverty alleviation, increasing women education as well as community women education More awareness on maternal health and child health care delivery should be carefully advocate and all hands should be on deck.

REFERENCES

Adamu, Y.M., & Salihu, H.M. (2002). Barriers to the use of antenatal and obstetric care services in rural Kanu, Nigeria. *Journal of Obstetrics and Gynecology, 22* (6), 600-603.

Adesiji, G.B., Dada S.O & Komolafe, S.E (2012). Problems faced by rural people in Accessing Health Facilities in Akure North and Akure South Local Government Area of Ondo State Nigeria. *Journal of Applied Sciences Research, 8*(4): pp2260-2266.

Andersen, R. M. (1995). Revisiting the behavioral model and access to medical care: Does it matter? *Journal of Health and Social Behavior 36*, 1-10.

Antai, D. (2009). Inequitable childhood immunization uptake in Nigeria: a multilevel analysis of individual and contextual determinants. BMC Infectious Diseases 9, 181.

Antai, D. (2011). Regional Inequalities in Under-5 Mortality in Nigeria: A population-based analysis of individual and community-level determinants. *Population Health Metrics, 9*, (6), 2011.

Antai, D. (2011). Regional inequalities in under-5 mortality in Nigeria: A population-based analysis of individual and community-level determinants. *Population Health Metrics*, *9*(6).

APHRC. (2002). Population and Health Dynamics in Nairobi Informal Settlements. African Population and Health Research Center. Nairobi.

Aremu O., Lawoko S., Moradi T. & Dalal K. (2011). Socio-economic determinants in selecting childhood diarrhea treatment options in Sub-Saharan Africa: a multilevel model. *Italian Journal of Paediatrics 37*(13), 2–8

Arguillas, M. (2008). A multilevel analysis of the community and household determinants of child mortality in Metro Cebu, the Philippines. Ph.D. Thesis, Cornell University: New York, United States.

Azuh, D. (2012). Socio demographic factors influencing health programme usage by pregnant mothers in Nigeria: Implications for policy action, demography and social statistics program. Covenant University, Ogun sate, Nigeria.

Babalola, S., & Fatusi, A. (2009). Determinants of use of maternal health services in Nigeria - looking beyond individual and household factors. *BMC Pregnancy and Childbirth, 9*, 43.

Bloom, S. S., Wypij, D., & Gupta, M. D. (2001.). Dimensions of women's autonomy and the influence on maternal health care utilization in a North Indian city. . *Demography. 33*(1), 67-78.

Boco, A. G. (2010). Individual and Community Level Effects on Child Mortality: An Analysis of 28 Demographic and Health Surveys in Sub-Saharan Africa DHS Working Papers. Calverton, Maryland, USA.

Boerma, J. T. (1987). Levels of maternal mortality in developing countries.*Studies in Family Planning*, *18*(4), 213-221.

Boone P. & Zhan, Z. (2006). Lowering Child Mortality in Poor Countries: The Power of Knowledgeable Parents*, LSECEP Discussion Paper 751*.

Brown, C. A., Sohani, S. A., Khan, K., Lilford, R., & Mukhwana, W. (2008). Antenatal care and perinatal outcomes in Kwale district, Kenya. *BMC Pregnancy and Childbirth*.

Caldwell, J. C. (2009). Education as a Factor in Mortality Decline: An Examination of Nigerian Data. *Population Studies, 33* (3), 395– 414.

Chakraborty, N., Islam, M. A., Chowdhury, R. I., Bari, W., & Akhtar, H. H. (2003). Determinants of the use of maternal health services in rural Bangladesh. *Health Promotion International, 18*(4), 327-337.

Das, S., Bapat, U., More, N. S., Chordhekar, L., Joshi, W., & Osirin, D. (2010). Prospective study determinants and costs of home births in Mumbai slums. *BMC pregnancy and Childbirth 10*, 38.

Desai, S. & S. Alva. 1998. Maternal Education and Child Health: Is There a Strong Causal Relationship? *Demography 35*: 71-81.

Do, D.P. and B.K. Finch. (2008). The Link between Neighborhood Poverty and Health: Context or Composition? *Am. J. Epidemiology. 168:* 611-619.

Doctor, H. V. (2011). Intergenerational differences in antenatal care and supervised deliveries in Nigeria. Health & place, 17, 480-489.

Eidangbe, L. (1998). Cartography in the development of infrastructures in Ovia North East Local Government Area of Edo State., University of Benin.

Eijk A.M., Bles .M, Odihiambo .F.Ayisi .I. E., Blokland .D. & Slutsker K. A. (2006). Use of antenatal services and delivery care among women in rural western Kenya: A community based survey. *Reproductive Health.* 2006; 3:2.

Ellen, I.G., T. Mijanovich, & K.-N. Dillman. (2001). Neighborhood Effects on Health: Exploring the Links and Assessing the Evidence. *Journal of Urban Affairs23*: 391-408.

Ensor, T., & Cooper, S. (2004). *Overcoming barriers to health service access and influencing the demand side through purchasing*. HNP Advisory Services, Washington, DC. Available from:healthpop@worldbank.org.

Entwisle, B., K. Faust, R.R. Rindfuss, & T. Kaneda (2007). Networks and Contexts Variation in the Structure of Social Ties. *American Journal of Sociology 112*: 1495-1533.

Erci, B. (2003). Barriers to utilization of prenatal care services in Turkey. *Journal of Nursing Scholarship, 35*(3), 269-273

Fauveau, V., Stewart, K., Khan, S., & Chakraborty, J. (1991, November). Effect on mortality of community based maternity care programme in rural Bangladesh. *The Lancet*, *338*, 1183-1186.

Fayehun, O. & Omololu, O., (2009): *Ethnic Differentials in Childhood Mortality in Nigeria* .Paper Presented at Detroit, Michigan, USA. April 30 – May 2, 2009.

Figa'-Talamanca, I. (1996). Maternal mortality and the problem of accessibility to obstetric care; the strategy of maternity waiting homes. *Social Science and Medicine 42*(10), 1381-1390.

Filippi, V.; Ronsmans, C.; & Campbell, O. (2006). Maternal Health in Poor Countries: The Broader Context and a Call for Action. *Lancet 368*(9546), 1535–1541

Fotso, J. C., Ezeh, A., & Essendi, H. (2009.). Maternal health in resource-poor urban settings: how does women's autonomy influence the utilization of obstetric care services? *Reproductive Health 6:9*

Freire, C & Kajiura, N. (2011) "Impact of Health Expenditure on Achieving the Health-Related MDGs" MPDD *Working Papers Macroeconomic Policy and Development Division*

Gage, A. J. (2007). Barriers to the utilization of maternal health care in rural Mali. *Social Science & Medicine, 65*(8), pp 1666-1682.

Graham, J. K. (2008). Japan Setting an example to the world in reducing maternal mortality. University of Aberdeen. United Kingdom

Greenaway, E.S. Leon J, Baker D .P. (2012). Understanding the association between maternal education and use of health services in Ghana Exploring the role of health knowledge. *NIH Public Access 44*(6), pp 733–747.

Griffiths P., Madise N., Whitworth A. & Matthews Z. (2004). A tale of two continents: A multilevel comparison of the determinants of child nutritional status from selected African and Indian regions. *Health & Place 10*, 183–199

Griffiths, P., & Stephenson, R. (2001). Understanding users' perspectives of barriers to maternal health care in Maharashtra, India. *Journal of Biosocial Science*, *33*(3), pp 339-357

Griffiths, P., & Stephenson, R. (2001). Understanding users' perspectives of barriers to maternal health care in Maharashtra, *India. Journal of Biosocial Science*, 33(3), 339 357.

Hao, C (1990) "An Analysis of Discrepancies in China's Child Mortality Rate" China *Journal of Population Studies*.

Hazarika, I. (2009). Women's Reproductive Health in Slum Populations in India: Evidence from NFHS-3. *Journal of Urban Health: Bulletin of the New York Academy of Medicine, 87*(2).

http://gemini.info.usaid.gov/photos/displayimage.php?album

http://gemini.info.usaid.gov/photos/displayimage.php?album

http://www.unmillenniumproject.org/documents/maternalchild-

Huie, S.A.B. (2001). The Concept of Neighborhood in Health and Mortality Research. *Sociological Spectrum 21*: 341-358.

Ikamari, L. D. E. (2004). Maternal health care utilization in Teso district. *African Journal of Health Science, 11*, 21-32.

Iyaniwura, C. A., & Yussuf, Q. (2009). Utilization of antenatal care and delivery services in Sagamu, south western Nigeria. *African Journal of Reproductive Health / La Revue Africaine de la Santé Reproductive, 13*(3), 111-122

Jinadu, M.K., Olusi, S.O., Agun, J.I. & A.K. Fabiyi (1991). "Childhood diarrhea in rural Nigeria: Studies on prevalence, mortality and socio-environmental factors" *Journal of Diarrhea Diseases Research*, *9* (4), 323-327.

Khan, S., Wojdyla, D., Say, L., Gulmezoglu, A., & Van Look, P. (2006). WHO analysis of Cause of maternal death: a systematic review. *Lancet, 367:1066-1074.*

Kibet, M. (2010). Comparative study of infant and child mortality: The case of Kenya and South Africa. *Journal of African Population Studies 24, 1&2.*

Kongnyuy, E. J., Mlava, G., & Van den Broek, N. (2009). Facility-Based Maternal Death Review in three Districts in the Central Region of Malawi; An Analysis of Causes and Characteristics of Maternal Deaths. *Women's Health*, *19(1), 4-20.*

Kravdal, O. (2004). Child Mortality in India: the Community-Level Effect of Education *Population Studies 58*: 177-92.

Lamb, W., Foord, F., Lamb, C., & Whitehead, R. (1984). Changes in maternal and child mortality rates in three isolated Gambian villages over ten years. *The Lancet*, 912- 915.

Lindsay, H. (1997). Pregnancy and iron deficiency: unresolved issues. *Nutrition Journal Rev; 55:91 –101.*

Lubbock, L. N., & Stephenson, R. B. (2008). Utilization of maternal health care services in the department of Matagalpa, Nicaragua. *Rev Panam Salid publication/ Pan American Journal of Public Health, 24*(2), 75-84.

Lynn P., Ronald J, Helen .P & Meg E. (2009) "Who's got the power?" (London: Task Force on Child Health and Maternal Health, Accessed June 5, 2010

Macintyre S., Ellaway A. & Cummins S. (2002). Place effects on health: how can we conceptualise, operationalise and measure them? *Social Science & Medicine 55*, 125–139

Maine, Deborah, Akalin, Murat Z., Chakraborty, Jyotsnamoy, Francisco, Andres de, & Strong, Michael, (1996.). Why did Maternal Mortality Decline in Matlab? *Studies in Family Planning*, *27(4),* 179-187.

Manun'ebo, M. N., Haggerty, P. A., Kalangaie, M., & Ashworth, A., Kirkwood, B. R. (1994). Influence of demographic, socio-economic, environmental variables on childhood diarrhea in a rural areas of Zaire. *Journal of Tropical Medicine and Hygiene, 97,* 31-38.

McCaw-Binns, A., La Grenade, J., & Ashley, D. (1995). Under-users of antenatal care: A comparison of non-attenders and late attenders for antenatal care, with early attenders. *Social Science & Medicine, 40*(7), 1003-1012.

Mock, N., T. Sellers, A. Abdoh & R Franklin. (1993). Socioeconomic, Environmental, Demographic, and Behavioral Factors Associated with the Occurrence of Diarrhea in Young Children in the Republic of Congo. *Social Science and Medicine 167*: 36-42.

Mosley, W.H. & L.C. Chen. (1984).An Analytical Framework for the Study of Child Survival in Developing Countries. *Population and Development Review 10:*25-45.

National Population Commission (NPC)/Nigeria. 2000. Nigeria Demographic and Health Survey 1999. Calverton Maryland: National Population Commission and ORC/Macro

Okafor, C. B., & Rizzuto, R. B. (1994). Women's and health care providers' views of maternal practices and services in rural Nigeria. *Studies in Family Planning. 25*(6), 353-361.

Okojie, C. E. E. (1998). Social dimensions of the health behavior of rural women: Findings from focus group discussion research in Nigeria. In J. T. Boerma

(Ed.), *Measurement of maternal and child mortality, morbidity and health care: Interdisciplinary approaches*: International union for the scientific study of population.

Omariba D., Beaujot R. & Rajulton F. (2007) Determinants of infant and child mortality in Kenya: an analysis controlling for frailty effects. *Population Research and Policy Review 26*, 299–321.

Osonwa, O.K., Iyam, M.A., & Osonwa, R.H., (2012). Under-Five Mortality in Nigeria: Perception and Attitudes of the IKWERRES in Rivers State towards the Existence of "OGBA – NJE". *Journal of Sociological Research. 3*(2), 2012. ISSN 1948-5468.

Pandey, M. J. (2009). Maternal health and child mortality in rural India. ASARC *Working Paper 12*. Institute of Economic Growth, Delhi, INDIA

Pathfinder International (2013). Reproductive health knowledge and practices in northern Nigeria: Challenging misconceptions, the reproductive health/family planning service delivery project in Northern Nigeria Funds from David and Lucile Packard Foundation.

Policy Project. (2003). Maternal and Neonatal Program Effort Index (MNPI): A Tool for MaternalHealthAdvocates[Online]Availableat:http://www.policyproject.com/pubs/MNPI/Uganda_MNPI.pdf[Accessed 14 July 2012].

Population Reference Bureau 2008

PRC, (2006). Executive Summary -Maternal Mortality and Morbidity, Population Resource Center

Riddell, E. (2006). Health Unlimited. Available online at:http://www.eldis.org/go/topics/resourceguides/health&id=3332

Robert, S.A. (1999). Socioeconomic Position and Health: The Independent Contribution of Community Socioeconomic Context. *Annual Review of Sociology 25*: 489-516.

Rosenweig, M.R & Wolpin K.I (1986). Evaluating the effects of optimally distributed public program, child health and family planning intervention, *Review America. Economic 76*: 470-482

Rosenzweig, M.R & Schultz, T.P. (1982). Child Mortality in Colombia Individual and Community effects. *Health policy and education 2*, 305-348.

Royston, E., & Armstrong, S. (1989). *Preventing maternal deaths*. Geneva: World Health Organization.

Rush, D. (2000). Nutrition and maternal mortality in the developing world. *American Journal of Clinical Nutrition*, *72*, 212S

Rutstein, S .O.(2000): Factors associated with Trends in Infant and Child Mortality in Developing Countries during the 1990s, Bulletin of the World Health Organization, *78*(10):1256- 1270.

Sastry N. (1996). Community characteristics, individual and household attributes, and child survival in Brazil. *Demography 33*(2), 211–229

Sastry N. (1997) Family-level clustering of childhood mortality risk in northeast Brazil. *Population Studies 51,* 245–261.

Sastry N. (1997). What explains rural–urban differentials in child mortality in Brazil? *Social Science & Medicine 44*(7), 989–1002.

Sastry, N. (2004). Urbanization, Development, and Under-Five Mortality Differentials by Place of Residence in Sao Paulo, Brazil, 1970-1991. *Demographic Research*, *14*, 355-386.

Save the children (2010). Women at the front line of Health.

Schaffner, W., Federspiel, C. F., Fulton, M.. L., Gilbert, D. G,, & Stevenson, L. B. (1977). Maternal mortality in Michigan: An epidemiologic analysis, 1950-1971.*American Journal of Public Health, 67*(9). 821-9.

Schultz, T.P. (1984). Studying the Impact of Household Economic and Community Variables on Child Mortality. *Population and Development Review*, *10*: 215-235.

Shaikh, B. T., Haran, D., & Hatcher, J. (2008). Women's social position and health seeking behaviors: is the health care system accessible and responsive in Pakistan? Health care for women international, *29* (8), pp 945-956.

Shaikh, B. T., Haran, D., & Hatcher, J. (2008). Women's social position and health-seeking behaviors: is the health care system accessible and responsive in Pakistan? *Health care for women international, 29* (8), 945-956.

Shaikh, B.T., Haran D., & Hatcher, J. (2004). Where do they go, whom do they consult, and why? Health-seeking behaviors in the northern areas of Pakistan. *Qualitative Health Research, 18:747*.

Shamaki, M.A. & Buang A. (2014). Sociocultural practices in maternal health among women in less developed economy: An Overview of Sokoto State Nigeria Malaysia *Journal of Society Space 10* (6) 1-14.

Shulman, C. E., Dorman, E. K., Cutts, F., Kawuondo, K., Bulmer J. N., Peshu, N., & Marsh, K. (1999). Intermittent sulphadoxine-pyrimethamine to prevent severe anemia secondary to malaria in pregnancy: A randomised placebo-controlled trial. *Lancet; 353:632 –636.*

Simkhada, B. Edwin, R. Teijlingen, V. Porter, M., & Simkhada. P. (2008) Factors affecting the utilization of antenatal care in developing countries: Systematic review of the literature. *Journal of Advanced Nursing* ***61*** (3), 244–260.

Simkhada, B., Porter M. A., Teijlingen E. R. (2010). The role of mothers-in-law in antenatal care decision-making in Nepal: a qualitative study. BMC Pregnancy and Childbirth *10*, 34.

Stephenson, R., & Tsui, A. O. (2002). Contextual Influences on Reproductive Health Service Use in Uttar Pradesh, India. *Studies in Family Planning, 33*(4), 309-320.

Stokols, D. (1996). Translating social ecological theory into guidelines for community health promotion. *American Journal of Health Promotion, 10*(4), 282-298

Teklemariam, S., Getaneh, T., & Bekele, F. (2000). Environmental determinants of diarrheal morbidity in under-five children, Keffa-Shekan zone, Southwestern Ethiopia. *Ethiopian Medical Journal, 38***,** 27-34.

The Cebu Study Team. (1991). Underlying and Proximate Determinants of Child Health: The Cebu Longitudinal Health and Nutritional Study. *American Journal of Epidemiology 133*:185-201.

Uddin, M., Hossain, M., & Ullah M.O., (2009). Child Mortality in a Developing Country: A Statistical Analysis. *Journal of Applied Quantitative Method, 4,(*3) 2009.

Ujah, I. & Ejeh I. (1999). *Postpartum Hemorrhage and Maternal Mortality in Nigeria*. Available at http://www.sapienspublishing.com/pph_pdf/PPH-Chap-52.pdf.

UNICEF (2010): S*tate of the World's Children*. New York, UNICEF.

United Nations Children's Fund (2010). Levels and Trends in Child Mortality - Report 2010. Estimates Developed by the United Nations Inter-agency Group for Child Mortality Estimation. United Nations Children's Fund. 2010.

United Nations Inter-agency Group for Child Mortality Estimation (2013). Levels & Trends in Child Mortality - Report 2013. UN Inter-agency Group for Child Mortality Estimation. United Nations, NewYork.2013.http://www.mamaye.org.ng/evidence/levels-trendschild-mortality-report- 2013

United Nations, (2011). *World Population Prospects: The 2010 Revision*. New York: Department of Social Affairs, Population Division, United Nations.

United Nations, (2012). *Assessing progress in Africa toward the Millennium Development Goals*. MDG Report 2012.

Wall, L. L. (1998). Dead mothers and injured wives: the social context of maternal morbidity and mortality among the Hausa of northern Nigeria. Studies in Family Planning*, 29*(4), 341-359.

Whitworth A. & Stephenson R. (2002) Birth spacing, sibling rivalry and child mortality in India*. Social Science & Medicine 55*, 2107–2119

WHO. (2005). *the World Health Report 2005 - Make Every Mother and Child Count.*

WHO. (2008). Maternal Mortality Fact sheet. Online, Accessed March 2014, from http://www.who.int/mediacentre/factsheets/fs348/en

WHO. (2010). Maternal mortality in 2010: estimates developed by WHO, UNICEF, UNFPA, and The World Bank. Geneva. WHO

WHO. (2013). under five Mortality. Accessed on 27th Feb 2014 from http://www.who.int/gho/child_health/mortality/mortality_under_five_text en/

Woldemicael, G. (2001). Diarrhea morbidity among young children in Eritrea. *Health Population and Nutrition, 2*, 83-90

World Health Organization (2006). UNFPA. *Pregnant Adolescents*. Geneva: WHO, 2006.

World Health Organization (2006). UNFPA. *Pregnant Adolescents*. Geneva: WHO.

World Health Organization (2007). Maternal mortality", Geneva, Switzerland.

World Health Organization (2014). Trends in maternal mortality (1990-2015) Estimates by WHO, UNICEF, UNFPA, The World Bank and the United Nations Population Division.

World Health Organization (WHO) (2014). Trends in maternal mortality: 1990 to 2013 Estimates by WHO, UNICEF, UNFPA, The World Bank and United Nations Population Division. Geneva, Switzerland.

Yakasai, I., & Gaya, S. (2011). Maternal and fetal outcome in patients with Eclampsia at Murtala Muhammad Specialist Hospital Kano, Nigeria. *Ann Afr Med: 10(4):305-309.*

Zimmermann, A., Bernuit, D., Gerlinger, C., Schaefer's., & Geppert. K. (2012).Prevalence, symptoms and management of uterine fibroids: an international internet Based survey of 21,746 women.

Zozulya, M. (2010). Maternal Mortality in Nigeria: An Indicator of Women's Status. Available at http://www.consultancyafrica.com/index.php?option=com_content&view=article&id=358:maternal-mortality-in-nigeria-an-indicator-of-womensstatus&catid=59:gender-issues-discussion-papers&Itemid=267.

APPENDIX 1

RESEARCH QUESTIONAIRE
DEPARTMENT OF GEOGRAPHY AND REGIONAL PLANNING
FACULTY OF SOCIAL SCIENCE
UNIVERSITY OF BENIN
BENIN CITY

Dear Sir/ Madam

I am a final year student of the above named department carrying out a research project titled: **Community Characteristics and Child Maternal Mortality in Ovia North East Local Government Area of Edo State**. Kindly assist me by providing answers to the questions below. The information supplied will be strictly kept confidential and used only for academic purpose.

Thank you

SECTION A (DEMOGRAPHIC AND SOCIO ECONOMIC CHARACTERISTICS)

1. Community/Ward:

   _____

2. Sex of respondent: a) Male [ ] b) Female [ ]

3. Age of respondent: (a) l5-25yrs [ ] (b) 26-35yrs [ ] (c) 36-45yrs [ ] (d) 46-55yrs [ ] (e) 55 and above [ ]
4. Marital status of respondent: (a) Single [ ] (b) married [ ] (c)Divorced [ ] (d)Widow/Widower[ ]
5. Educational qualification of respondent: (a) no formal education [ ] (b) Primary education [ ] (b) Secondary education [ ] (c) Tertiary [ ] (e) Others please Specify _____
6. Occupation of respondent: (a) Unemployed [ ] (b) public servant [ ] (c) Business [ ] (d)Others specify_____
7. Monthly Income of respondent(a)Below N18,000[ ] (b)N 18,000-N30,000 [ ] (c) N 31,000—N48, 000 [ ] (d) N 49,000-N66, 000 [ ] (e) N66, 000 and Above [ ]
8. Religion (a) Christian[ ] (b) Muslim [ ] (c) Traditional worshipper [ ] (d) Others please specify_____

SECTION B CHILD AND HEALTH CARE UTILIZATION

9. How many children do you have (a) 1/2[ ] (b) 2/4[ ] (c) 3/6[ ] (d) 7/8 [ ] (e) Above9[ ]
10. Have any child been born alive but later died in your household (a)Yes [ ] (b) No[ ]
11. If Yes, what is the age of the child_____
12. What is the mothers age_____
13. How educated is the mother of the child_____
14. Where do your family members deliver their babies (a) Government Hospital[ ] (b) Private Hospital[ ](c)Primary health centers[ ] (d) Church [ ] (e) Traditional birth attendant [ ]
15. When a child is sick where do you take him/her to?(a)Government Hospital[] (b)Private Hospital [ ](c) Primary Health center[ ](d) Traditional healer[(e)Church[ ]

16. How far is the nearest medical facility in your community from your house: (a) 1-250 metres[ ] (b) 260-500metres [ ] (c) 501-1km [ ] (d)1.1-2km (e)Above 2km
17. Who decides where to take the child when sick? (a) Mother [ ] (b) Husband/Wife [ ] (c) Family [ ] (d)Relative[ ](e)in-laws[ ]
18. On the average what is the cost on hospital services at the health center? (a) Free [ ] (b)N 1000-N25,000 [ ] (c)N26,000-30,000(d)N31,000-N45000 (e)Above N 45,000
19. Can you afford the hospital bills (a) Yes [ ] (b) No [ ]

SECTION C MATERNAL AND HEALTH CARE UTILIZATION

20. Have there been a loss of pregnant woman in your family: (a) Yes[ ](b)No[ ]
21. If yes, when did she die (a) During pregnancy [ ] (b) 1-3months [ ] (c)6-9months [(d)During delivery[ ](e)After delivery[ ]
22. Do pregnant women in your household go for antenatal checkup? (a)Yes [ ] (b) No [
23. Who decides where and when to go for checkup (a) Wife [ ] (b) Husband/Wife [ ] (c) Husband [ ](d)Family members[ ] (e)Friends[ ]
24. When a pregnant woman is sick where does she gets treatment (a)Private[ ](b)Government Hospital [ ] (c)Primary health center[ ](d)Church[ ] (e)Traditional birth attendant[ ]
25. Do you go elsewhere for pregnancy checkup(a)Yes[ ](b)No[ ]
26. If Yes, where_____
27. Tick the available basic amenities in your community.

    Hospital/Health center [ ]

    Schools: Primary [ ], Secondary [ ], Tertiary [ ]

    Electricity [ ]

    Pipe borne water [ ]

    Sewage disposal [ ]

Telecommunication [ ]

28. How regular do you use health care services_____
29. How will you rate the quality of health facilities close to your place of residence(a)Poor[ ](b)Good[ ](c)Very good[ ](d)Excellent[ ]

APPENDIX 2
DEPARTMENT OF GEOGRAPHY AND REGIONAL PLANNING
FACULTY OF SOCIAL SCIENCE
UNIVERSITY OF BENIN
BENIN CITY.

Dear Sir/ Madam

I am a final year student of the above named department carrying out a research project titled: **Community Characteristics and Child Maternal Mortality in Ovia North East Local Government Area of Edo State**. Kindly assist me by providing answers to the questions below. The information supplied will be strictly kept confidential and used only for academic purpose.

Thank You

INTERVIEW SCHEDULE

1. Name of Health Center: _____
2. Ward: _____
3. Sex of respondent (a) Male ( ) (b) Female ( )
4. Marital status of respondent (a) Single ( ) (b) Married ( ) (c) Divorced ( ) (d) Widow/ Widower ( ).
5. Educational qualification of respondent (a) Primary school ( )(b) Secondary school (c)OND/HND( ) (d) B.Sc. ( )
   (e) Others, please specify_____

6. Monthly salary of respondent (a) Below 18,000 ( ) (b) N18, 500-N55, 000( ) (c) N55, 500-N101, 000( ) (d) N101,500-156 000 ( )(e)Above156,000( )
7. Do families in this community patronize the health facility (a) Yes ( ) (b) No ( )
8. Do you offer child health care services at this center (a) Yes ( ) (b) No ( )
9. Have you lost children to death at this center (a) Yes ( ) (b) No ( )
10. If yes, what are the main cause of death?
    (a)_____
    (b)_____
    (c)_____
11. What family services do you render in this facility_____
12. How many mothers/pregnant women are registered here? _____
13. What are the numbers of children registered in this health center _____
14. What are the challenges faced by your establishment on child health care in your community_____
15. Has government improved on the medical facility in your community lately? (a) Yes ( ) (b) No ( )
    If Yes how often_____
16. Do pregnant women come for antenatal ,delivery and postnatal care_____
17. What are the services rendered to pregnant women at this health center _____
18. How many days and time of the week does the facility open (a) Always ( ) (b) Twice a week ( ) (c) Once a week ( ) (d) Not always ( )
19. Are there doctors available every time/ day of the week_____

20. How is patronage level the health center _____

21. Do Husband/family members encourage their spouse to utilize_____

22. If yes, how regular / often do they utilize the services rendered _____

23. How relevant is this center to the community_____