Social-Economic Determinants of Maternal Mortality in Rural Communities of Oyo State, Nigeria

Dr. Dawud Oyedemi Ibrahim

[*] Oyo State College of Health Science and technology, Ibadan, Oyo state, Nigeria

Abstract- Women education is a distant factor that offers the possibility of reduction in maternal mortality while distance and transport issues in rural communities of Oyo State are highly significant factors affecting women's access to health services, especially in emergency care. The descriptive survey research design was adopted. Purposive sampling technique was used to select nine out of the 18 identified rural local government areas (LGAs). Systematic random sampling technique was used to select 63 communities across the nine LGAs, while the simple random sampling techniques was used to select 2,200 women of child bearing age from the communities. Social Determinants Scale (r=0.73), and economic Determinants Scale (r=0.71) were used in data collection. Three hypotheses tested at 0.05 level of significance. Data were analysed using descriptive statistics, multiple regression and content analyses. Age of respondents was 29 ± 2.1, 84.6% were married, while 48.1% had their first pregnancy at age 16-20years. There was relative contribution of educational status, proximity to health facilities, level of income and purchasing power on maternal mortality. Proximity to health facilities ($\beta=0.30$), level of income ($\beta=0.19$), purchasing power ($\beta=0.14$), and educational status ($\beta=0.08$) had significant contribution to mortality. Low access to health facilities, level of income, purchasing power and educational status determined maternal mortality in rural communities of Oyo State. Therefore, intensive maternal health care awareness campaign should be embarked upon. Efforts should also be geared towards the adoption of modern health practices to reduce maternal mortality.

Index Terms- Socio-economic, Determinants, Maternal mortality

I. INTRODUCTION

Women, especially those of reproductive age are one of the most vulnerable members in the community that deserve special attention to make them realize their full potentials. Each year as many as 60,000 Nigerian women die due to pregnancy related complications; therefore, for every woman who dies, some twenty others face serious or long lasting consequences. For example, depression is one of the most prevalent complications of pregnancy and childbirth. About 10 to15% of women in developed countries experience the problem, while higher percentages of women in developing countries experience serious depression during pregnancy or after childbirth (UNFPA, 2006, Chukwuezi, 2010). WHO (2012) report shows that maternal mortality is higher among women living in rural poorer communities, while young adolescents face a higher risk of complications and deaths as a result of pregnancy than older women.

Maternal mortality is described as death of a woman during pregnancy or within 42 days after pregnancy, irrespective of the duration or site of the pregnancy, from any cause related or aggravated by the pregnancy or its management, but not from accident or incidental causes. Muoghalu,(2010) submitted that there are other factors than medical causes of maternal mortality in Nigeria; these include socio-economic and cultural factors, which are impacting on maternal mortality in Nigeria. It is important to note that these non-medical factors in maternal mortality have been the causes of many maternal deaths in our rural communities. These causes include influence of poverty, lack of education, food taboos, purchasing power and cultural practices; while the introduction of user charges in government hospitals have made many rural women to patronize faith clinics and traditional practitioners .

Generally, in Nigerian context, the rural communities are associated with poverty, and as such not attractive to live in (International Fund for Agricultural Development, 2011).The Federal Government of Nigeria also identified that there is high increase in maternal mortality especially in rural communities where social and economic status are poor and there is need for maternal and neonatal health care in these areas to accelerate progress towards MDGs 4 and 5. Therefore, a Conditional Cash Transfer (CCT) of five thousand naira (N5,000.00) was introduced as an incentive to encourage pregnant women have access to ante-natal care, skilled birth delivery and post-natal care to run from 2012-2015 (NPHCDA, 2012).

Adetoro (2011) identified four major factors that determine maternal mortality in Nigeria. They are reproductive factors, obstetric factors, health service and socio-economic and cultural factors. The socio-cultural factors include cultural practices, polygamy, request for permission to visit health institution, cultural belief that a woman in labour must endure suffering. Economic factors include economic status of women, lack of access to wealth and resources, difficulty in gaining employment, cost of medical bill and government under funding of health services. The ability of women to command resources and make independent decision about their fertility and their health care has an impact on maternal mortality. Additionally, lack of education and knowledge concerning health related issues contribute to delays in seeking care when it is needed for management of life threatening pregnancy complications (Abeenab, 2009).

Muoghalu (2010) asserted that many women in Nigeria are illiterates and this affects their level of knowledge, exposure and income, and all these impinge on their nutritional status. Women education is an important determinant of reproductive behaviour. It is a distant factor which offers the possibility of affecting the magnitude of maternal mortality in a number of different ways. One well-known effect of education is lowering the fertility,

because if women have less pregnancy and bear fewer children, they are less at risk of maternal death. United Nations (2007) noted that poor and uneducated women have a high possibility of marrying early, poor child spacing and unlikely to use contraceptive than their rich counterparts.

Level of income has significant implications on health and development of household generally as well as poor access to information especially in the rural communities where maternal mortality rate is higher than the urban cities. For example, data showed that 18.7% women and 6.3% men in urban areas have no access to information, while 52.5% women and 22.6% men in rural communities have no access to information. Maternal mortality level is much higher in women with no education compared to women with secondary level or higher education (Federal Ministry of Health [FMOH] and UNICEF, 2007). The factors underlying the direct causes of maternal deaths are the low social status of women in developing countries which limits their access to economic resources, basic education and inability to make decisions related to their health and nutrition. Some women are denied access to health care when it is needed either because of cultural practices of seclusion or that decision making is the responsibility of other family members (Federal Ministry of Health [FMOH] and UNICEF, 2007).

Moreover, in rural communities, goods and services are very expensive because of distance and transportation problem, and this make resources limited in circulation which predominantly affects women and children, and severely reduces the available nutritional intake for women during pregnancy. Low and inadequate nutritional intake is one of the reasons for the high incidence of anaemia in pregnant women in Nigeria. About 60 percent of pregnant women especially those in rural communities are anaemic during pregnancy (haemoglobin equal to or less than 10gms) which could eventually result to maternal mortality (Ogunbode, 2012).

Distance and transport issues in rural communities are highly significant factors affecting women's access to health services, especially in emergency care. Even if women do attempt to get to hospital for treatment, they may arrive too late for their lives to be saved because of poor roads and lack of adequate transportation and this may lead to maternal mortality. Delay to seek health care may occur at household level where the members of the household fail to recognize the seriousness of complications during pregnancy and delay seeking professional assistance. (Thaesus and Maine,1994).

Nigeria Demographic Health Survey (2008) revealed that Nigerian women reported various problems in accessing health care;14 Nigerian women cited the problem of getting permission to go for treatment, 56 reported the problem of getting money for treatment, 36 cited the problem of distance to health facility, 34 reported transportation problem,17 reported not willing to go alone, 21 reported the problem of not getting the female health care provider in the hospital,33 reported non availability of health care providers,41 reported non availability of drugs, while 74 complained of one out of all problem. In another study conducted by Federal Ministry of Health [FMOH] and UNFPA (2003), it was revealed that various factors are critical determinants of maternal mortality. These factors include; distance from place of dwelling to health care facilities, high medical bill, socio cultural factors limiting the women to take

independent decision about their lives and decision to seek appropriate health care for themselves.

II. STATEMENT OF THE PROBLEM

In spite of advancement in medical science and increased funding of maternal healthcare delivery, there is still high prevalence of maternal mortality in the rural communities, for example, in Nigeria there is urban and rural variations in maternal mortality rate of 351/100,000 live births in urban cities compared to 828/100,000 live births in rural communities (NPHCDA, 2010). The maternal mortality rate in some rural local government areas of Oyo State is higher than the urban cities of the state, while majority of the local government areas in the state did not report the cases for documentation. For instance, kajola local government area Maternal Mortality Rate (MMR) was 440, Irepo local government area MMR was 419, Iseyin LGA was 225, compared with Ibadan North Local Government area MMR of 137 (Oyo State Ministry of Health, 2008). Previous studies had focused on medical causes of maternal mortality and issue of competence of ante-natal personnel with little consideration for the likely roles of other antecedent factors such as socio and economic factors. Furthermore, many women in rural communities get pregnant without thinking of how to cope and care for it, nor thinking of complication and consequences that might follow the pregnancy, but their major thought is about the number of children to have, especially their preference for male child.

Hypotheses
The following hypotheses were tested:
1. Social factors (educational status and proximity to health facilities) will not be significant determinants of maternal mortality in rural communities of Oyo State, Nigeria.
2. Economic factors (Level of income and purchasing power) will not be significant determinants of maternal mortality in rural communities of Oyo State, Nigeria.
3. There will not be significant relative contribution of educational status, proximity to health facilities, level of income and purchasing power to maternal mortality in rural communities of Oyo State, Nigeria.

III. METHODOLOGY

The descriptive survey research design was used to investigate social-economic determinants of maternal mortality in rural communities of Oyo state, Nigeria. Multi-stage (Purposive and Cluster random sampling technique sampling technique) was used to select two thousand two hundred (2200) women of child bearing age from rural communities in Oyo state, Nigeria. The respondents were selected from sixty three rural communities from eleven rural local government areas in Oyo state, Nigeria. Simple random sampling technique was used to give each of the respondents in the chosen rural communities an equal and independent chance of being included in the study. The instrument for data collection in the study was a self developed and validated questionnaire. The socio-demographic characteristics of the respondents covered in section A include;

age, marital status, religion, birth order, educational qualification, occupation and age at first pregnancy of the respondents. Section B was used to elicit information on independent variable educational status, proximity to health facilities, level of income and purchasing power. The responses in sections B were constructed in a 4-point modified Likert format of Strongly Agree (SA), Agree (A), Disagree (D) and Strongly Disagree (SD).

The instrument was validated through expert review, which in turn helped to remove ambiguities and item construction problems. The data generated through pre-testing of the instrument were then subjected to factor analysis. A cronbach alpha method was used to test the internal consistency of questionnaire which yielded reliability values of 0.87. In totality, twenty six (26) items that met with 0.40 as criterion for retention of items were retained in the questionnaire. The data collected were analyzed using descriptive statistics of frequency counts and inferential statistics of multiple regression analysis to test the hypotheses at 0.05alpha level.

IV. RESULT

Table 1: Socio-demographic characteristics of the respondents

Variable	Frequency	Percent (%)
Age (years):		
15-19 years	117	5.3
20-24years	439	20.0
25-29years	549	24.9
30-34years	588	26.7
35-39years	323	14.7
40years and above	184	8.4
Total	**2200**	**100**
Marital status		
Single	60	2.7
Married	1861	84.6
Divorced	123	5.6
Widow	110	5.0
Separated	46	2.1
Total	**2200**	**100**
Birth order		
Nil	127	5.8
1-2	919	41.8
3-4	933	42.4
5 and above	221	10.0
Total	**2200**	**100**

Religion		
Christianity	1141	51.9
Islam	933	42.4
Traditionalist	126	5.7
Total	**2200**	**100**
Educational Qualification	598	27.2
Primary school drop out	1043	47.4
Secondary school drop out	434	19.7
Primary school certificate	115	5.2
Secondary school certificate	9	0.4
OND/NCE	1	0
B.Sc/B.Ed/HND		
Total	**2200**	**100**
Occupation		
Unemployed	577	26.2
Trading	1121	51.0
Farming	406	18.5
Civil servant	94	4.3
Others	2	0
Total	**2200**	**100**
Age at first pregnancy	56	2.5
Less than 15years	1059	48.1
16-20 years	1057	48.0
21-30 years	28	1.3
31-40 years		
Total	**2200**	**100**

Hypotheses Testing

Hypothesis 1: Social factors (educational status and proximity to health facilities) will not be significant determinants of maternal mortality in rural communities of Oyo State, Nigeria.

Table 4: Regression analysis on social factors as determinants of maternal mortality

Model	Sum of squares	Df	Mean square	F	Sig.

Regression	28103.6776	2	14051.838	525.044	.000
Residual	58798.702	2197	26.763		
Total	86902.378	2199			

R=569
R^2=.323
 Adj R^2=323

Regression	28879.593	2	14439.796	546.755	.000
Residual	58022.785	2197	26.410		
Total	86902.378	2199			

R=.576
R^2=.332
Adj. R^2=.332

Table 4 showed that ($F_{(2, 2197)}$ = 525.044; R=.569, R^2 =.323, Adj. R^2=323, P < 0.05), and 32% of the variation in maternal mortality was accounted for by the independent variables. This implies that Social factors (Educational status and proximity to health facilities) are significant determinants of maternal mortality in rural communities of Oyo state. The null hypothesis was therefore, rejected. The outcome of this study is in conformity with findings of Umurung (2010) that education is a key determinant of health facility utilization for delivery, because education increases women's autonomy, understanding and decision making power within the house hold. In addition, educated women tend to seek out higher quality health care services and likely to deliver at a health facility compared to the uneducated one.   More so, Chakraborty etal (2006) and Navaneethem and Dharmalingamb (2002) found that female education is a strong determinant of maternal health services utilization, while uneducated women are less likely to use maternal health care services for delivery. The study also buttressed submission of Chakraborhy, Islam, Chowdhury and Akhter (2003) that proximity to health facilities has been found to affect the use of maternal health care services in rural communities as these facilities are usually located at long distances, and for many rural women, lack of transportation and cost of transportation serve as mitigation factors to health care seeking, while some thought of low quality of services and anticipation of poor behaviour from health staff and instead they exercises home delivery.

Hypothesis 2: Economic factors (Level of income and purchasing power) will not be significant determinants of maternal mortality in rural communities of Oyo State, Nigeria.

Table 5: Regression analysis on economic factors as determinants of maternal   mortality

Model	Sum of squares	Df	Mean square	F	Sig.

Table 5 showed that ($F_{(2,197)}$ = 546.755, R=.576, R^2= .332, Adj. R^2=.332, P < 0.05), and about 33% of the variation in maternal mortality was accounted for the independent variables. This implies that economic factors (level of income and purchasing power) are significant determinant of maternal mortality in rural communities of Oyo State, Nigeria. The null hypothesis was therefore, rejected. The outcome of this study is in line with International Fund for Agricultural Development (IFAD) (2012) that poverty is severe in rural communities of Nigeria, where up to 80% of the population lives below the poorest groups and often short of food, particularly during pre-harvest period. The finding also corroborates the submission of Ogunjuyigbe and Liasu (2010) that poverty has implication for access to health and treatment, and poor people are less likely to be able to afford the cost of treatment for most diseases and where an illness becomes protracted and treatment becomes costly, the poor people are likely to resign themselves to faith and death. The finding also supported Babalola and Fatusi, (2009) who noted that in rural communities, goods and services are very expensive because of distance and transportation problem. Then income generating activities by women are governed by their husbands. For example, female engage in house-maid work and men do farming, buying and selling. The income disparity takes a woman away from her right to decide on her own health. It leaves women dependent on men's decisions whose preference on income and expenditure could be different. It was also noted that many Nigerian rural women are not gainfully employed and many of them work in their husband's farms and in their homes and are not paid for their services. Many of them work in the informal sector; they work for long hours and earn so little for their labour (World Bank, 1996).

Hypothesis 3: There is no significant relative contribution of educational status, proximity to health facilities, level of income, purchasing power, female genital mutilation, early marriage and food taboo/restriction to maternal mortality in rural communities of Oyo state, Nigeria.

Table 6: Relative contributions of independent variables of educational status, proximity to health facilities, level of income, purchasing power, female genital mutilation, early marriage and food taboo/restriction on maternal mortality

Model	Unstandardized coefficient		Standardized coefficient	T	Sig
	B	Std error	B		
Constant	11.605	.851		13.635	.000
Educational status	-.199	.043	.082	-4.609	.000
Proximity to health facilities	.338	.023	.300	14.579	.000
Level of income	.368	.042	.190	8.717	.000
Purchasing power	.268	.043	.138	6.315	.000

Table 6 showed the relative contribution of each of the independent variables on the dependent variable. All the variables were independently significant Proximity to health facilities has the highest contribution of 30% of the total equation (β =.300, t=14.579, P < 0.05), followed by level of income which contributed 19% of the total equation (β = .190, t=8.717, P < 0.05). This is followed by purchasing power which contributed 13.8% of the total equation (β =.138, t=6.315, P < 0.05), it then followed by educational status that contributed 8.2% of the total equation (β = .082, t=4.609, P < 0.05). This result indicated that each of the independent variables (Educational status, proximity to health facilities, level of income and purchasing power) contributed significantly to maternal mortality in rural communities of Oyo State, Nigeria. The finding of the study revealed that educational status, proximity to health facilities, level of income, purchasing power, female genital mutilation, early marriage and food restriction/taboos are significant determinants of maternal mortality in rural communities of Oyo state, Nigeria. This finding agreed with the submission of Ogunjuyigbe and Liasu (2010) that the major indicators of maternal mortality in Nigeria are poverty at the house hold level that predominantly affects women and children and severely reduces the available nutritional intake for women during pregnancy which is one of the causes of high incidence of anaemia in pregnant women. Moreover, low status of women deny them access to appropriate decision making with regards to their reproductive functions, and high level of female illiteracy is a proxy for poor health seeking behaviour for maternity services and dogma to harmful traditional practices such as early marriage, food taboo and female circumcision. Additionally, WHO (2005) reported that urban rural migration, high cost of goods, unemployment, gender inequality, lack of money, transportation, distance to health facility, fear of going alone to health facilities, inability to make informed choices and the need to obtain permission from some authority such as husband in the case of some married women are major factors to maternal mortality in Nigeria.

V. CONCLUSION AND RECOMMENDATIONS

Base on the findings of this study, it is concluded that social economic factors (educational status, proximity to health facilities, level of income and purchasing power) are significant determinants of maternal mortality in rural communities of Oyo State. Moreover, decision making and places of deliveries during pregnancy were significant determinants of maternal mortality in rural communities of Oyo State. Base on the findings of this study, it is recommended that: Modern health care facilities need to be provided in rural communities of Oyo State, so as to meet the objectives of primary health care which are accessible, available and affordable for rural women. National Health Insurance scheme for women of child bearing age, especially pregnant mothers and children should be extended to rural communities to reduce incessant maternal mortality that may result from poor financial problem, and there should be continuous public awareness and orientation on the need to patronize hospital for antenatal clinic and delivery, so as to reduce maternal mortality in rural communities.

REFERENCES

[1] Abeenab, G. (2009). Maternal mortality: Should women die giving life. Retrieved May16, 2016, from http://www.worldpulse.com/taxony/term/5556.

[2] Adetoro, O. O. (2011). *Maternal Mortality*: the way forward. Retrieved Aug.16, 2016, from www.issuuw.com/thenation/docs/ .

[3] Adesokan, F. O. (2010). Reproductive Health for all: Corporate Graphics Ltd: ISBN 978-35473-6-4.

[4] Babalola, S. and Fatusi, A. (2009). Determinant of use of maternal health service in Nigeria looking beyond individual and household factor: Bio medical central pregnancy and child birth.

[5] Chandrashekhar, T. S., Joshi, H.S., Sreekumaran, B. V., Giri, S. and Chuni, N. (2006).Home delivery and Newborn care practice among urban women in western Nepal: Retrieved Aug.3,2016,from http://:biomed central. Com/1471-2393/6/27.

[6] Charkraborhy, N., Islam, M.A., Chowdhury, R. I. and Akhter, N. N. (2003). Determinants of the use of maternal health services in rural Bangladesh: *Health promotion international vol. 18, No 4 (on line)* RetrievedAug.2,2016,from http:// heapro. Oxford journals. Org/content/18/4/327. Full pdf html .

[7] Chuckwuezi, C. (2010). Socio-cultural Factors Associated with Maternal Mortality in Nigeria: *Research Journal of Social sciences 1(5): 22-26, INSI Net Publication*.

[8] Federal Ministry of Health and United Nations. (2007). Integrated Maternal, Newborn and Child Health Strategy. Abuja, Nigeria.

[9] Federal Ministry of Health and UNFPA, (2003). National HIV/AIDS and Reproductive Health Survey (NARHS), Abuja, Nigeria.

[10] International Fund for Agricultural Development. (2011). Rural poverty in Nigeria. RetrievedApril.3,2016,from http://www.ruralpovertyportal.org/web/guest/country/home/tags/nigeria.

[11] International Fund for Agricultural development (IFAD), (2012). Rural poverty in Nigeria. Retrieved Aug.5,2016,from http:// www. Rural poverty portal org/web/rural//home/-/ asset publisher/qwqRZMROQ Eeh/rss.

[12] Muoghalu, C.O. (2010). Socio-economic and Cultural Factors in Maternal Mortality in Nigeria: Ife Centre for Psychological Studies. Retrieved Jan.10,2016,from http://www. Fags.org/teems.

[13] National Primary Health Care Development Agency. (2010). The MDG-DRG Funded Midwives Service Scheme, Concept, Process and Progress: MPP Ltd., Abuja.

[14] National Primary Health Care Development Agency. (2010). The MDG-DRG Funded

[15] National Primary Health Care Development Agency. (2012). SURE-PMCH Midwives and CHEWs orientation and enrolment at Lafia Hotel, Ibadan 12-15 Sept. 2012.

[16] Navaneethem, k. and Dharmalingamb, A. (2002). Utilization of maternal health care services in Southern India. Soc sci med journal 2002;55: 1849-1869

[17] Nigeria Demographic Health Survey.(2008).Socio-economic in equity coverage: National Population Commission Abuja.

[18] Ogunbode, O. (2012). Lecture on Primary Health Care Education: A Tool for Preventing Maternal and Infant Mortality at Primary Health Care Tutor's Lecture Hall, University College Hospital (UCH), Ibadan, Nigeria.

[19] Ogunjuyigbe, P.O. and Liasu, S.(2010). The social and economic of maternal morbidity and mortality in Nigeria. Retrieved Aug.5,2016, from http:// www. poverty to maternal mortality .

[20] Olayiwola, L.M. and Adeleye, A.O. (2005). Rural Infrastructural Development in Nigeria between 1960 and 1990: *Problems and challenges. Journal of social science* 11(2)91-96.

[21] Oyo state Ministry of Health. (2008): Oyo state comprehensive Health Bulletin: Department of planning, Reseach and Statistics. Health system Development project.HSDP-11..HMIS unit secretariat, Ibadan.

[22] Thaessus, S., and Maine, D. (1994). Too Far to Walk*: Maternal Mortality in Context.* Social Science Medicine 38:1091:110.

[23] Umurung,Y.S. (2010). Determinants of utilization of deliver services by pregnant in Rwanda.

[24] United Nations. (2007). The Millennium Development Goals Report 2007. Retrieved Aug.5,2016, from http://www.un.org/milleniumgoals/pdf/mdg 2007.

[25] UNFPA. (2006). Maternal Morbidity. Retrieved Aug.5, 2016, from http://wwwunsystem.org/public/acheoffonce.F9E6FBEB6D6373B20134EA2821268.Jahicol .

[26] World Bank. (1996). Nigeria Poverty in the Midst of Plenty: The Challenge of Growth with Inclusion. A World Bank Poverty Assessment Report No: 14733-UNI.

[27] World Health Organization. (2005). Reducing Maternal Deaths: The Challenge of the New Millenium in the Africa Region. Brazzaville. WHO.

[28] . World Health Organization.(2012). WHO Maternal Mortality RetrievedAug.23, 2012, from http://plusgoggle.com/+WHO.

AUTHORS

First Author – Dr. Dawud Oyedemi Ibrahim, Oyo State College of Health Science and technology, Ibadan, Oyo state, Nigeria