

NON-OBSTETRIC RISK FACTORS ASSOCIATED WITH MATERNAL MORTALITY IN GOMBE METROPOLITAN AREA, GOMBE STATE, NIGERIA

¹Aliyu Mohammed Sani and ²Zainab Fatimah Usman

¹Department of Public Health and Disease Control, Ministry of Health, Kano State, Nigeria

²Department of Biological Sciences, Rabiu Musa Kwankwaso College of Advanced and Remedial Studies, Tudun Wada, Kano State, Nigeria

DOI: 10.5281/zenodo.14899961

Abstract

Maternal mortality is a major public health challenge faced by women worldwide especially in developing countries like Nigeria. This study set out to examine the non-obstetrics factors associated with maternal mortality in Gombe metropolitan area of Gombe state. The study aims at identifying harmful cultural practices which are associated with maternal mortality in Gombe Metropolitan. Various literatures were revealed in accordance's with the research objectives and the study adopted liberal feminist as the theoretical framework. A multistage sampling technique was adopted to draw a sample of 310 respondents. Questionnaire and interview were used as instrument of data collection. The research adopted both primary and secondary data in investigation. The data collected were analyzed using statistical package for social sciences (SPSS version 16.0) and presented using frequency, percentage, cross tabulation and chi square. Qualitative data using quotation were used to support the quantitative data. The study tested hypotheses to determine relationship between variables; the first hypotheses revealed that cultural practices such as food taboo, use of traditional herbs and female genital mutilation (FGM) are significant determinants of maternal mortality. The second hypothesis showed that use of traditional birth attendants is significant determinant of maternal mortality which is influenced by factors such as income and level of education. The findings of the study reveal that maternal mortality is influenced by social, economic and cultural factors. Therefore, the study recommends that in addressing the problem of maternal mortality there is need for creating awareness on the impact of cultural practices on maternal health issues. Effort should be made towards poverty reduction and community education on the impact of cultural practices on maternal health.

Keywords: Non-Obstetric Factors, Maternal, Mortality, Metropolitan

INTRODUCTION

Pregnancy and birth related complication constitutes a major driver to the increasing burden of death and disability especially in low income countries. It continues to be a major cause of death of women in their reproductive age and a serious public health issue in many developing countries including Nigeria (WHO, 2007). WHO and UNICEF (2010) released estimates indicating that globally, the number of women who die each year in pregnancy and childbirth is around 585,000 almost 20 percent higher than previous estimation (UNICEF, 2010). An estimated 300 million women suffer lasting damage to their health due to pregnancy or childbirth (UNICEF, 2010). It is also reported that for every woman that dies from pregnancy related causes 20 to 30 more will develop short and long term damage to their reproductive organs resulting in disabilities such as obstetric fistula, pelvic inflammatory disease, a ruptured uterus (IHME, 2012; UNICEF, 2008; WHO, 2007). The gap between developed and developing countries is wider in terms of maternal mortality than for any other health indicator. In Africa, maternal mortality ratios are highest with figures of up to 100 per 100,000 reported in rural areas of several countries, and ratios of over 500 in some cities (WHO, 2001). In Western, Central and Eastern Africa, the risk of pregnancy is generally higher than in Northern and Southern Africa (WHO, 2006). This is due to high fertility rate and poor access to medical services. According to the Federal Office of Statistics (2002) Nigeria is reported to have one of the highest occurrences of maternal mortality in the world with figures ranging from 704 to 1,500 maternal deaths per 100,000 live births. More than 70 percent of maternal deaths in Nigeria are due to major complications such as; haemorrhage, infection, unsafe abortion, hypertensive disease of pregnancy and obstructed labour (National HIV-AIDS and Reproductive Health Survey, 2003). Also, poor access to and utilization of quality reproductive health services contribute significantly to the high maternal mortality level in Nigeria. The rate of maternal mortality in Nigeria ranks the country second position on the global record for maternal mortality and wider variation even between the six geo-political zones (WHO, 2007). The northeast geo-political zone has an estimated maternal mortality rate of 1,549 per 100,000 which could be attributed to economic and social cultural practices within the region (Seye Abimbola, et al 2012). Gombe state has a high rate of maternal mortality which has been attributed to various factors including: non-utilization of maternal health services, many deliveries occurring at home rather than hospitals, shyness among Hausa women amongst others (GSMH, 2013). Thus, the Grassroots Health Organizations in Nigeria stated that poverty, low level of education and inadequate access to resources are issues which put women at great disadvantage economically and jeopardize their health status (GHOW, 2009).

Although maternal mortality in Nigeria are mainly due to complication of pregnancy and delivery, there are various socioeconomic and cultural factors that also contribute to such issues including harmful traditional practices like female genital mutilation, child sex preferences, early marriage, direct taboos such as food

restrictions which could leads to malnutrition, infection, poverty and gender violence (WHO, 2012; Rush, 2010; Mumtaz, et al, 2014). Cultural perception and traditional practices are major causes of primary delay in assessing maternal health services. These socio-cultural factors are associated with traditions, norms and values of the people. Understanding the causes of maternal mortality is crucial in addressing the challenges in Sub-Saharan Africa. It is against this background that this paper seeks to address some of the non-obstetric factors associated with maternal mortality in Gombe metropolitan of Gombe state while focusing on the dominant cultural practices in the study area.

METHODOLOGY

Gombe is located between latitude 10^0 & 11^0 N within the Savannah region. It has a population of about 2.5 million people and an area of 18,000km. Gombe is located in the north eastern zone and share borders with Borno, Yobe, Taraba, Adamawa and Bauchi States. Gombe State comprises of eleven Local Governments which are Akko, Balanga, Billiri, Dukku, Funakaye, Gombe, Kaltungo, Kwami, Nafada, Shongom and Yamaltu Deba. Gombe state has 615 health facilities comprising 592 primary health care centres, 22 secondary facilities and one tertiary facility. The number of health care workers in the public sector in the state is 4,081 and 1,209 community health extension workers (CHEWS) constitute the majority, nurses and midwives constitute 1,150. Other are junior community health extension workers 605, doctors 163, community health officers 114, Environmental health officers technicians and environmental health assistants 560 and more than 1,000 village health workers.

Population of the Study

The population of the study was selected from women aged (15 - 49) which represent the Reproductive age as defined by WHO (2006), It included Relatives of Victims of maternal mortality, eligible participants includes women who have given birth as well as those who are currently pregnant at the time of the research. 10 interview respondents were selected from medical health workers that included obstetrics and gynaecology doctors as well as midwives and nurses of maternity sections of hospital within the study area.

Sample Size

The sampling size for the study was drawn from residents of Gombe Metropolitan of which 310 respondents were selected. 300 questionnaires were administered and respondents included women of reproductive age as well as some relatives of victims of maternal mortality. Interview was also conducted with 10 medical health workers.

Sampling Procedure

The study adopted a multi-stage sampling method to select respondents from the study population. The study area was Gombe metropolitan which is the capital and largest city in Gombe State which consist of 11 wards Shamaki ward, Bajoga ward, Jekadafari ward,

Harwagana ward, KumbiyaKumbiya ward, Fantami ward, Bolari North and Bolari West ward, Ajiya ward, Nasarawo ward, Dawaki ward. At the first stage, the wards were grouped into clusters which were done based on the geographical proximity of the wards.

The grouping produces five clusters which are: ◦ Shamaki and Bajoga ward ◦ Dawaki, Jekadafari and Ajiya Ward ◦ Harwagana and Nasarawo ward ◦ KumbiyaKumbiya and Bolari East ward ◦ Pantami and Balari west.

At the second stage, there was random selection of streets from the major streets in each cluster. Systematic sampling was used to select 60 households from the houses in each selected street and one individual from each household. Household that did not fulfill the criteria were replaced by another also any household with more than one eligible respondent for selection a simple random sampling was used to select a respondent. This gave a total of 300 respondents. The respondents for the interview were selected using purposive sampling methods a total of 10 respondents were selected.

Types and sources of Data

The data collected for this study were both primary and secondary, and were quantitative and qualitative in nature. The secondary source of data for the study area include the review of books, journals, magazines, reports from libraries, internet etc. These sources provided necessary information pertaining to the background and the extent of related studies. The primary data were obtained through the use of questionnaire and in-depth interviews.

Methods of Data collection

In this research, the following principal methods were used to obtain primary information. These methods include: Questionnaire and in-depth interview.

Structured Questionnaire

The research employed the use of both qualitative and quantitative methods of data collection as this would provide better insight about the topic. The questionnaire served as the primary instrument adopted for this study. This helped to elicit information from the entire respondents selected on specific topics. The questionnaire was developed based on the objective of the research and contains both open and closed ended questions. The close ended questions which allow the respondents to select from available options while the open ended questions on the other hand allowed the respondents to freely express their opinion about the issue. The questionnaire was framed in English and was divided into 3 sections, the first section consists of socio-economic and demographic characteristics of respondents, the second section consists of questions on maternal mortality and the third section consist of questions on the factors associated with maternal mortality. . In-depth Interview

An interview was conducted with some selected respondents who are mostly Obstetrics and Gynaecology (O&G) consultant to elicit additional information about the topic the questions for the interview were developed based on the objectives of the research. The respondents for the interview were purposively selected, the interview were

conducted at different times and location. Interview guide was used and the researcher served as the facilitator while a tape recorder was used to record the interview which was later transcribed for the purpose of analysis.

Procedure for Data Collection

To ensure speedy collection of accurate and reliable data, some steps were taken. These include the selection and training of field assistants, administration of questionnaire. The first step in the administration of the questionnaire was the introduction and informing the potential respondents of the research objectives, and soliciting for their cooperation. This procedure took a lot of persuasion for most of the respondents to agree to either filling the questionnaire or answer the questions when asked. The first level of qualitative data collection was to secure the permission to interview medical personnel in each of the various maternity centres/General Hospital within the locations. Authorization letter was given to the researcher to facilitate easy contacts.

Techniques of Data Analysis

The quantitative data collected from the research were analyzed using Statistical Package for Social Sciences (SPSS Version 16.0), copies of the questionnaire returned were edited, coded and data entry was done characteristics of the study sample were described at descriptive level using univariate analysis (frequency distribution and simple percentages) and bivariate analysis using (Cross tabulation, Pearson correlation and chi-square). The qualitative data was analyzed qualitatively, after transcription the data obtained were used to support the quantitative data.

RESULTS AND DISCUSSION
The demographic data sought in the study included general profile of the study respondents with regards to age, current marital status, level of education and economic status (Table 1). Demographic inclusion in data collection was necessary as it provide information on the subject and to sample the experienced respondents who understood the real situation.

Table 1: Showing the Personal Profile of the Respondents

Ages	Percentage %	Marital Status (%)	Level of Education (%)	Occupation	Monthly income (₦)
15-19	12.1	Married 80.1	Quranic 17.2	Business 40.1	≤ 33
20-24	6.7	10,000			
25-29	20.9	Divorced 14.5	Primary 19.2	Civil Servant 26.6	11,000- 20,000 11.1
30-34	22.6				21,000- 16.5
30,000					
35-39	20.5	widowed 5.4	Secondary 29.9	Unemployed 33.3	31,000- 17.5

[illegible]

Table 2: Percentages of respondents that have lost a relative through maternal death

Have you ever lost a family member by maternal Death?	Frequency	Percentages
YES	152	51.2
NO	145	48.8
Total	297	100

Table 3: Diseases associated to maternal death as obtained from respondents view

Causes	Frequency	Percentage
Eclampsia	18	11.8
Anaemia	30	19.7
Maternal hypertension	20	13.2

Research Article

Sepsis	12	7.9
Obstructed labour	15	9.9
Malaria	22	14.5
Haemorrhage	25	16.5
Diabetes	10	6.6
Total	152	100.0

Table 3 shows that Anaemia accounted for 19.7% of maternal mortality, Haemorrhage accounted for 16.5%, Malaria accounted for 14.5%, Maternal hypertension 13.2% of maternal mortality, Eclampsia accounted for 11.8% of maternal mortality, obstructed labour accounted for 9.9% of maternal mortality, Sepsis accounted for 7.9% of maternal mortality and finally diabetes accounted for 6.6% of maternal mortality. This shows that Anaemia contributes the highest percentage of maternal mortality in Gombe Metropolitan Area, this could be attributed to the cultural practices such as food taboos that prohibit pregnant women from consuming certain food items that are vital for maternal health.

Table 4: Cultural practices engaged during pregnancy and/or childbirth

Cultural practices	Frequency	Percentage
Food taboo	120	40.4
Use of traditional herbs	70	23.6
Hot water bath (wankan jecho)	100	33.7
Female Genital Mutilation	7	2.4
Total	297	100.0

Table 4 above shows that majority of the respondents 40.4% engage in practices of food taboo as the most widely used cultural practice in Gombe metropolitan. Pregnant women were prohibited from consuming certain food such as chicken, milk, groundnut oil etc. 33.7% of the respondents practice hot water bath (wankan jecho), 23.6% of the respondents use traditional herbs and only 2.4% of the respondents practice Female Genital Mutilation as a cultural practice. This indicates that Female Genital Mutilation is less practiced in the study area.

	INCIDENCE RATE (%)			Total
monthly income	Occasionally	Frequently	hardly ever	

Research Article

					Relationship between level of income and maternal mortality. Cross tabulation of monthly income by incidence rate
BELOW 10,000	19.2	50.5	30.3		
10,001-20,000	9.1	54.5	36.4		
20,001-30,000	30.6	49.0	20.4	100	
30,001-40,000	17.3	44.4	38.5	100	
40,001- ABOVE	10.9	51.6	37.5		
TOTAL	17.8	49.8	32.3	100	

The table above presents the relationship between respondents' monthly income and incidence rate of maternal mortality. It can be seen from the table that majority of the respondents (54.5%) with a monthly income of 10,001-20,000 have frequent rate of maternal mortality, (51.6%) of the respondents with a monthly income of 40,001-above have frequent rate of maternal mortality, (50.5%) of the respondents with a monthly income of below 10,000 have frequent rate of maternal mortality, (49.0%) of the respondents with a monthly income of 20,001-30,000 have frequent rate of maternal mortality and (44.4%) of the respondents with a monthly income of 30,001- 40,000 have frequent rate of maternal mortality.

Poverty serves as a barrier to the utilization of maternal health services, some pregnant women are prevented from attending antenatal due to financial incapacity. We have cases of some women who complain of the inability to purchase drugs when prescribe due to financial constrain as such they resort to the use of traditional medicine which could develop medical complication that can lead to maternal mortality. (Interview responds, O&G Doctors 2016)

Many pregnant women are prevented from attending antenatal and postnatal health Care due to limited resources, some of the women complain they cannot afford the cost of registration for antenatal and their husband are not willing to support them [interview respond, 2016].

Relationship between educational status and maternal mortality rate in Gombe metropolitan. Cross tabulation of educational status by incidence rate

	INCIDENCE RATE (%)			Total
Educational status	Occasionally	Frequently	Hardly Ever	
No educational	3.9	78.4	17.6	100

Research Article

Primary	17.5	78.9	3.5	100
Secondary	33.7	48.3	18.0	100
Tertiary	11.0	20.0	69.0	100
total	17.8	49.8	32.3	100

The table above presents the relationship between education and incidence rate of maternal mortality. From the table it is seen that majority of the respondents (78.9%) with primary education are reported to have frequent rate of maternal mortality, (78.4%) of women with no formal education have frequent rate of maternal mortality. (48.3%) of women with secondary education have frequent rate of maternal mortality and only (20%) of women with tertiary education have frequent rate of maternal mortality. This clearly shows that as the level of education increases there is less occurrence of maternal mortality, it therefore signifies a relationship between education and incidence rate of maternal mortality.

. This is evident as it revealed from the interview as shown below;

Education is an important determinant of maternal mortality; women without education tend to ignore maternal health services unlike their educated counterpart, therefore level of education influence the Utilization of maternal health services. (Interview respond, Medical practioner)

Education is the major determinant of antenatal health, educated women are more likely to utilize maternal health service during pregnancy, they are more likely to take preventive Measure to avoid maternal complication therefore they are less prone to maternal mortality than uneducated women.” (Interview respond)

cross tabulation of place of delivery and incidence rate

Place of Delivery	INCIDENCDE RATE (%)			Total
	Occasionally	Frequently	Hardly ever	
Traditional birth attendants	23.7	31.9	44.4	100
Health clinics	6.1	84.8	9.1	100
At home	3.5	94.7	1.8	100

Research Article

Total 17.8 49.8 32.3 100 Yes the level of education of couples is a determinant of maternal mortality women with low level of education are more expose to the danger of maternal mortality, they lack basic knowledge about reproductive health and are more likely to engage in practices that are harmful to maternal health which could lead to pregnancy complications and eventually maternal death. (Health practioner) **Relationship between the utilization of traditional birth attendants and maternal mortality.**

The table above shows the relationship between place of delivery and incidence rate of maternal mortality. From the table it is seen that (94.7%) of maternal mortality frequently occurred at home, (9.1%) of maternal mortality occur in health clinics and only (31.9%) of maternal mortality frequently occur in traditional birth attendants. This therefore indicate that there a relationship between the place of delivery and maternal mortality in Gombe metropolitan.

Level of utilization of maternal health clinic poses great challenge to maternal health, women who attend regular antenatal and postnatal care has less chances of developing complication that could lead to maternal mortality this is because complication would be detected and properly treated Interview responds, (O&G Doctors) Off course place of delivery has great implication on maternal health, women who do not utilize maternal health services are more likely to suffer from pregnancy complication that preventable.

The research was conducted in Gombe metropolitan area of Gombe state. The research focus on the non-obstetrics factors associated with maternal mortality by focusing on the relationship between cultural practices (food taboo, use of traditional herbs and female genital mutilation), level of education, household income and non-utilization of maternal health services as determinant of maternal mortality. Data was collected on both demographic characteristics of the respondents as well as questions related to the research topic.

Cultural practices significantly influences maternal health the cultural beliefs and practices influence the ways of life of people in the study area. The patriarchy nature of the society has ascribe gender role and subordination of women over their male counterpart hence tend to make important decision including that of reproductive health. Cultural factors serves as a major determinant for the utilization of maternal health care. The practice of Food taboo constitutes a major area of cultural impact that creates problems for pregnant women. In the study area, some pregnant women are prohibited from consuming certain food items that are rich in protein, carbohydrate, vitamin and minerals such as egg, milk, fish, chickens etc. This is in agreement with previous studies conducted in Ekpomo Southern Nigeria by (Ityavyer 1999, Chiwuzue & Okolocha 2001, and Maclean 1971) which reveals that women eating behaviours during pregnancy are guided by cultural taboos that prohibit the consumption of certain food items for cultural reasons. The use of traditional herbs was found to have significant relationship with maternal mortality. In the study area some pregnant women resort to the use of traditional herbs as an alternative for modern health services due to cultural reasons and also due to financial constrain that serves as barrier to the utilization of health services. This is in agreement with study conducted by pathfinder international (2013) which states that cultural norms such use of herbs discourage the use of more effective modern methods of health care.

Female genital mutilation was found to have significant relationship with maternal mortality. The practice of FGM has great implication on the health of the victim, it is reported that FGM contribute to maternal health complication such as urine retention, obstruction of menses, infertility, and painful intercourse, prolong and obstructed labour as well as adverse obstetric outcome This is in agreement with study conducted by Olusegun (2012) which stated FGM is a risk factor for obstructed labour and a major indirect cause of maternal mortality. Household income was found to have positive significant relationship with between monthly income and maternal mortality. This indicates that income is a major determinant of maternal mortality as women with low economic status are more prone to maternal mortality than those with high economic status. Poverty limits accessibility to basic services like health, it limit access to quality health care and consequently human development. Poverty influences negatively the ability to utilize modern health facilities which can result to high maternal mortality especially among the poor (USAID 2006). Majority of the respondents from the study earn below N10, 000 as income and engage in economic activities that are tedious even during pregnancy. They live on daily income and this make it mandatory for them to keep working in order to meet their daily needs. The socio-economic pressure brought about by lack of opportunities' and high level of unemployment push pregnant women in to risky activities just to generate income. Poverty serves as a barrier to the consumption of food items that are considered vital for maternal health. Many pregnant women suffer from maternal malnutrition which results in Anaemia in pregnancy. Anaemia is a leading cause of maternal complication and eventual death of many pregnant women. Health practitioners said most

women don't eat the right nutrition that can sustain them and their foetus during pregnancy largely due to lack of money. A large number of studies have shown that a woman's position in the household largely determines her range of acceptable reproductive options (Orubuloye and Ajakaiye, 2002; Das Gupta, 1997; Falkingham, 2003; Ogujuyigbe and Liasu, 2007).

The result from the research found a significant relationship between level of education and the use of cultural practices which is associated with maternal mortality. Education is major determinants of maternal health women with low level of education are less likely to utilize maternal health services than those with high level of education as such they are more prone to maternal mortality. Women without formal education appear to ignore antenatal health care however, as the level of education increases the probability of attending antenatal equally increases. This is consistent with study conducted by Oxaal and Baden (1996) who reported that educated women have more understanding of the physiology of reproduction are less disposed to accept the complication and risks of pregnancy as inevitable than illiterate women. Lack of education affects health because it limits young women's knowledge about nutrition, birth spacing, and contraception. Most of the respondents with low level of education seem to have positive disposition to maternal health care utilization in terms of attending ante natal care.

Education is a key determinant of maternal health, Not only does education lead to higher income and greater awareness of important maternal health indicators it also enhances the value for a healthy life style. Studies have shown that educated women are more likely to take measures to protect themselves, accept change and be more receptive to prevention messages. Another benefit of education according to UNFPA (2005) is the increased ability to think critically and analyse situations before acting. The study also found support in study conducted by Babalola and Fatusi (2009) who stated that educated women are more likely to shun traditional practices and use modern health care.

A large number of studies have shown that a woman's position in the household largely determines her range of acceptable reproductive options (Orubuloye and Ajakaiye, 2002; Das Gupta, 1997; Falkingham, 2003; Ogujuyigbe and Liasu, 2007).

Use of traditional birth attendants has significant relationship with maternal mortality. Women who do not utilize maternal health services are more prone to maternal mortality than those who attend maternal health services. Use of traditional birth attendants was found to be a major cause of maternal mortality in the study area various factors were identified as reason for not attending maternal health services by pregnant women; some of these factors include lack of financial capacity many women are prevented from attending ANC because they cannot afford the cost of treatment. The health and survival of a pregnant woman depends in part on the availability, accessibility and utilization of quality health care in terms of antenatal care, emergency obstetrics care and skilled provider at delivery. It has been noted that poor utilization of quality reproductive health service continues to contribute to maternal mortality in Nigeria. This is consistent with the study of Ajaegbu O.O (2013). Low level of education

also contribute to nonutilization of maternal health services, some pregnant women lack knowledge on the importance of maternal health services as such rely on traditional birth attendants. Another important factor that prevents women from utilizing health services is cultural factor. Some cultural practices restrict a pregnant woman from attending health services, the patriarchal system restrict women from taking healthcare decisions by themselves. This is in agreement with studies conducted by Babalola (2009) who stated that cultural restriction on women prevent them from accessing antenatal and postnatal health care services. The theoretical framework adopted by the study is liberal feminist theory the theory explains that women subordination are as a result of gender relation in society. Men takes decision in virtually all aspect of life, the structural and systematic domination of women by men in patriarchy society has implications on women health and wellbeing. Patriarchy system is practiced in the study area, majority of the area consisted of Muslim who practice the purdah system where women are restricted from leaving their homes without the permission of their husband, this practice had denied many women access to attending medical health facilities during pregnancy and childbirth. Patriarchy system has also resulted to gender discrimination against women with regards to education as women in some societies are viewed as child bearers and wives as such are denied access to schooling making them illiterate and further increase their dependence on their husbands for financial support.

REFERENCES

- Adamu M. and Salisu H.M. (2002) Barriers to the use of Ante-natal and Obstetric Care Services in Rural Kano, Nigeria Journal Obstetrics and Gynaecology: 22 pp. 600-603
- Adewuyi, A. (1999). "Understanding Male Involvement in Maternal Emergencies" Centre for Research, Evaluation Resources and Development, OkeGada, Ede, Nigeria.
- Ahmed Y., Mwaba P., Chintu C., Grange J.M., Ustianowku A. and Zumla A. (1999) A Study of Maternal Mortality at the University Teaching Hospital Lusaka, Zambia: The Emergence of Tuberculosis as major non-obstetric cause of Maternal Death. International Journal Tuberculosis Lung Diseases pp.675-680
- Ajayi O.A. (1994) Educational Development in Nigeria since Independence. Ibadan: Vantage Publisher
- Babalola S. and Fatusi A. (2009) Determinants of use of Maternal Health Services in Nigeria: Looking beyond Individual and Household Factors. Retrieved November, 2015 from <http://www.biomedcentral.com>

- Bankole O. and Eboiyehi F. (2003)."Formal Education, Women Employment and Poverty".Gender and Behaviour. 1, 94-114.
- Benue Health Fund (undated). Operation Research on Health Related Belief and Practices Associated with Environmental Hygiene and Malaria in Rural Benue State. Report prepared by Alachi J, Emishe K, Igado O, Ikon J; Ahemen T, Akuto G, Annyebe W, Ebe M, and Maxwell K.
- Chiwuzie, Okolocha. C. (2002) Traditional Belief System and Maternal Mortality in Ekpoma a Semi-Urban Community in Southern Nigeria. African journal of reproductive health 5(1): 75-82
- Federal Ministry of Education, UNICEF, UNESCO and UNDP, UNESCO. (2000), Lagos and Abuja. The State of Education in Nigeria. UNESCO, Abuja, Nigeria
- Federal ministry of health (FMOH) (2005) National Guidelines for the Implementation of Prevention of Mother to Child Transmission (PMTCT) of HIV/AIDS Abuja Nigeria: Federal Ministry of Health and Social Service.
- FGN/UNICEF/UNESCO/UNDP (2000). Comprehensive Education Analysis Project (Secondary Data Report).
- Female Circumcision in Nigeria (1997) A Monograph of Inter-African Committee on Harmful and Positive Traditional Practices Affecting Women and Children.
- Garcia, J., Hromi-Fiedler, A., Mazur, R. E., Marquis, G., Sellen, D., Lartey, A., and Pérez- Escamilla, R. (2013). Persistent household food insecurity, HIV and Maternal stress in Peri-Urban Ghana. BMC Public Health, 13(1), 1-9.
- Harrison, K.A., (1997) Maternal Mortality in Nigeria: the real issues African journal of reproductive health, vol.1, No.1, pp. 7-13.
- Iyatvyer D. (1999) Positive and Harmful Traditional Practices Affecting Women and Girls in Nigeria. A Paper Presented at the Seminar on Reproductive Health in Benue State Ministry of Health.
- National Population Commission. 1998. 1991 Population Census of the Federal Republic of Nigeria. Analytical Report at the National Level. Abuja, NPC.

Ogunkelu B. 2002. The State of Health in Nigeria: A Focus on Women and Children. Statement Presented by Nigeria's Minister for Cooperation and Integration in Africa at the Advocacy Day, 29 Annual Conference, Global Health Council, Washington D.C, and USA on 28 May 2002.
www.acoshed.net/Documents/AdvocacyStatement-CongressionalLunch.pdf

Okonofua, F.E. Abejide, A., Makanjuola, and R.A. (1992) Maternal Mortality in Ile- Ife, Nigeria: A Study of risk Factors Studies in Family Planning, vol.23, no 5 pp.319-324 Omoruyi, G. (2008), Causes of Maternal Mortality in Nigeria, Sunday Observer, Benin.

Onwudiegwu, U (2001). The Influence of Poverty on the Utilization of Maternal Health Services in Nigeria: in: Afonja S., Adelekan, D., Soetan F, Alimi T., Ayanwale B (Eds.). Research and Policy Directions on Poverty in Nigeria. Centre for Gender & Social Policy Studies, Ile-Ife

Ujah I.A et al (2005) Factors Contributing to Maternal Mortality in North Central Nigeria: A Seventeen year Review African Journal Reproduction Health Vol. 9, No3, pp27-40

Urassa E., Massaive S., Mgaya H., Lindmark G. and Nystron L. (1994) Female Mortality in Reproductive Ages in Dar es Salam, Tanzania. East African Medical Journal.

UNICEF (1999)."Debt Relief and Poverty Reduction. Meeting the Challenge". Paper Presented at heavily Indebted Poor Countries Review Seminar, United Nations Commission for Africa, July, Addis Ababa.

UNICEF (2001). Women and Children's Rights in Nigeria: A Wake up Call, Situation Assessment and Analysis.

United Nations (UN), World Health Organization (WHO) and World Bank partner to combat maternal mortality. The World Bank group news release no.2000/080/S.

United Nations Population Fund. UNFPA Africa Regional Strategy 2004 – 2015. Revised Draft Version, 16 November 2003. New York, UNFPA Africa Division USAIDS/WHO (2002) AIDS Epidemic update December 2002. USAID Geneva

World Health Organization (WHO) (1994) International Classification of Disease (ICD). 10th revision

World Health Organization (WHO) (2000) Maternal Mortality estimate 2000 Department OF Reproductive Health and Research. World Health Organization, Geneva

World Health Organization (1999) Reduction of Maternal Mortality, A joint WHO/UHFFA/UNICEF, World Bank Statement

World Health Organization (WHO) (2006) Female Genital Mutilation Complicates Births: WHO Collaborative Prospective Study in six African Countries. Lancet 367: 1835-1841. CrossRef Medline web of Science

World Health Organization/United Nation Children Fund (1990) Estimate of Maternal Mortality. A new approach by WHO and UNICEF, WHO Geneva.