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Transportation Network in the Sissala East District of Ghana: A Bane to Maternal Health

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Abstract

The study provides an assessment of transportation network in the Sissala East District of the Upper West Region of Ghana as a bane to maternal health. The study argues that, the deplorable state of roads in the Sissala East District makes it difficult for vehicles to plough the routes linking hinterlands to health centers. This has contributed immensely to the current maternal challenges in the study District. Primary and Secondary sources of data were relied on in the study. Besides observation, purposive and simple random sampling techniques were used to choose respondents for interaction by means of interviews. Apart from content analysis for qualitative data, a component of SPSS known as descriptive statistics was used for quantitative data analysis. Data presentation was done and by the use of tables and charts. The study reveals that maternal health in the Sissala East District of Ghana is nothing to write home about as a result of the deplorable state of transportation network linking rural communities to health centers. As such, it is recommended that motorable roads should be constructed by the Ministry of Roads and High Ways to effectively link up typical rural communities in the Sissala East District to health centers as a panacea for reducing maternal mortality.

Keyword: Transportation network, Bane, Maternal health, Antenatal care, Postpartum period Sissala East district.

1. Introduction

The amazing diversity of ethnic and racial characteristics evident in Ghana has its roots in the manner that requires recognition. The lives of people have been improved as a result of the importance of geography. The physical landscape and the magnitude of spatial variations are likely to contribute to differentiation of reproductive health status. In Ghana the rate of maternal and infant mortality is alarming.

Every minute in each day, a woman in the world dies as a result of complications arising during pregnancy and childbirth [1]. The majority of these deaths are avoidable and transportation network has a critical role to play in curtailing maternal mortality.

Transportation network is a network of roads, streets, pipes, aqueducts, power lines or nearly any movement or flow of some commodity or it is a means or a root of conveying people and goods from one destination to another [2].

Maternal health is conceptualized as the health of women during pregnancy, child birth and post-partum period. It encompasses the health planning preconception, prenatal and postnatal care in order to reduce maternal morbidity and mortality. Preconception care includes education, health promotion, screening and other interventions among women of productive age to reduce risk factors that might affect future pregnancies. The goal of prenatal care is to detect any potential complications of pregnancy early to prevent them if possible and to direct women in terms of special medical care. Post natal care includes recovery from childbirth, new born care, breast feeding, nutrition and family planning [3].

Globally, conferences have been held on problems of maternal health care in an attempt to curtail the danger it poses on the lives of women presently and in the future. Approximately, in every two minutes a woman dies [4]. Majority of these may be avoidable of which transportation network has a crucial role to play in achieving proper maternal health care. The World Health Organization estimated that 358000 women and girls of reproductive age die

each year.In 2008, 342900 women died while pregnant or in the course of childbirth worldwide. Several anomalies may account for maternal deaths or poor maternal health care which are HIV/AIDS and other birth complications. HIV/AIDS plays a significant role as 45% of infected mothers transmit HIV to their children, causing 60000 maternal deaths in 2008 in sub-Saharan and East Africa.The World Bank estimated a total of USD$ 300 per person a year in the provision of basic family planning neonatal health care to women in developing countries. Many NGOs and non-profitable organizations have programs to educate the public on gaining access to obstetric care. The United Nations populations fund began a campaign on accelerated reduction of maternal mortality in Africa (CARMMA) by focusing on providing quality health care to mothers. One of the (CARMMA) programs written in Sierra Leone provided free health care to mothers and children [5].

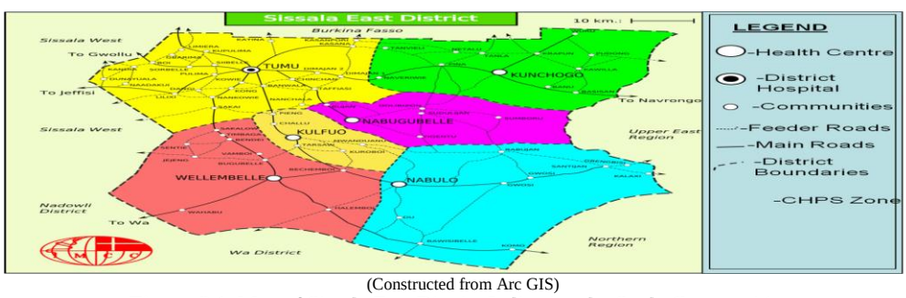
In Ghana, many people in remote areas live afar from the health centers. People tend to walk long distances either because they cannot afford transport cost or due to the slow and uncomfortable transportation services as a result of poor road network. In 1998, the Government of Ghana introduced the "Safe Motherhood Program" in Ghana. The intervention areas included free ante-natal care for all pregnant women, emergency transportation services and emergency obstetric care for pregnant women among others. In September 2000, a Millennium Declaration was adopted by 189 nations and signed by 147 heads of state and governments including Ghana during the United Nations Millennium Summit. There are 8 Millennium Development Goals (MDGs) targeted to be achieved by 2015 and Goals 4 and 5 are specifically targeted at reduction in child and maternal mortality by two-thirds and three-quarters respectively. In July 2008, the Government also announced free maternal care for pregnant women during pregnancy and at child birth Ghana Health Service [6].

Maternal health can be affected by the provision of affordable and accessible care as well as the use of antenatal care, safe delivery and essential obstetric care. Health care provision by the public sector has been reviewed regularly in a bid to make services more relevant. In addition, safe motherhood has also received a greater attention [7]. For instance, one of the long-term objectives of the health sector as stipulated in the Alma Ata Declaration of the (1994–1996) national development plans was to increase coverage and accessibility of health services with active community participation [8]. The ultimate aim of the 1989-1993 plan was to promote the health of mothers and children. In an attempt to achieve this, a number of activities were operationalized. Among them were the training of traditional birth attendants (TBAs) and strengthening of district health management teams [9]. However, it appears that although significant gains were made in improving child health, the case was not so for maternal health.Currently, nurses and midwives provide most of the Maternal Health Center Services (MHCS) especially in rural areas where there are very few doctors. Moreover, 60% of the doctors are in private practice sector and are based in the urban areas. TBAs also provide health services in most of the rural communities in the country, although their actual numbers are not known. They mostly practice traditional medicine. The operations of Traditional Birth Attendants are often superstitiously influenced as disclosed by the Alma Ata Declaration of (1994–1996). In Ghana, medical and paramedical training have been given to some 6000 traditional midwifes in an effort to promote maternal health care [9]. Regionally, Upper West is the youngest of the ten administrative regions of Ghana which was carved out from the former upper region in 1983 in view of accelerating development of the said area since it is quite remote from Bolgatanga the then regional capital. The region is divided into nine districts thus Wa central, East and West, Nadowli, Jirapa, Lambusie, Lawra, Sissala East and Sissala West. The carving out of this region with the aim of accelerating development has only been partly achieved as some parts of the region are very much deprived and will need much attention in terms of the provision of road network. This is because poor transportation network is a major setback in the Upper West Region of Ghana and for that matter the Sissala East District contributing to a high rate of maternal mortality. The region recorded high rates of maternal deaths of which roads linking the remote villages to the district capital might be the causative factor as such several steps taken to curb the situation has proven futile because the roads linking such places to health centers are not considered. Vehicles to convey emergency cases become a great risk as road linking the villages and communities within the district are in a bad state.The Sissala East district as at now has no ambulance for referral cases as ambulances allocated to the district by the national ambulance service including that of the district hospital have all broken down due to the bad nature of the roads in the district and surrounding communities.Generally it is difficult to accept the fact that transportation network is a contributory factor to maternal mortality because it is not seen as a condition that may not have direct effect on maternal health care delivery as such there is little or no research efforts on the accuracy of this assertion and what may be the effective intervention. In actual sense, little has been made mentioned of with regards to the causes of maternal death and maternal health care in relation to road network and its accessibility. This study therefore sets out to investigate or to find out the contribution of transportation network to maternal health care in the Sissala East district of Ghana.

2. Materials and Methods

The study made use of the following materials and methods:

2.1. Materials



(Constructed from Arc GIS)

Figure-2.1. Map of Sissala East District Indicating the Study Communities

2.2. Study Area and Methods

2.2.1. Study Area

The Sissala East District is located in the North- Eastern part of the Upper West region of Ghana. It falls between Longitudes. 1.30^0 W and Latitude. 10.00^0 N and 11.00^0 N. The district has a total land size of 4,744 square kilometres representing 26% of the total landmass of the region. It shares boundaries to the North with Burkina Faso, to the East with Kassena Nankana and Builsa Districts, to the South East with West Mamprusi District, to the South West with Wa East and Nadowli Districts and to the West by Sissala West District [10].

2.2.2. Methods

The study generated first hand information from the field apart from the use of documented sources. Respondents were selected by the use of purposive and simple random sampling techniques. Sissala East district was purposively chosen by virtue of the fact that it is one of the deprived districts in Ghana in terms of road infrastructure where by maternal mortality and complications are engineered by deplorable state of roads linking rural communities to health centres. Quantitative and qualitative approaches were resorted to, in data collection, analysis and presentation. Qualitative tools such as face to face interviews, key informant interviews and observation were used for data collection alongside content analysis, whereas quantitative tools, namely descriptive statistics and Microsoft Excel were resorted to for data analysis. However, tables and charts were used for data presentation along side descriptive analysis.

2.2.3. Sampling Procedure

Besides the choice of key informants, the study also targeted pregnant women who are likely to suffer from complications as a result of deplorable state of roads linking rural areas to health centres. As such, one hundred pregnant women from five different communities in the Sissala East district formed the sample size. The communities are Tumu, Wellembelle, Nabulo, Kuchogu, and Nabugubelle. In all, twenty women were selected from each of the five selected communities summing up to one hundred pregnant women as the sample size.

3. Results and Discussion

3.1. Responses on the State of Roads from the Communities to Nearest Health Centers

Table-3.1. Conditions of roads linking communities to health centers.

		Frequency	Percent	Valid Percent	Cumulative Percent
	Good	12	12.0	12.0	12.0
	Bad	38	38.0	38.0	50.0
	Poor	16	16.0	16.0	66.0
	very poor	34	34.0	34.0	100.0
	Total	100	100.0	100.0	

Source: Field Survey, June 2014

From the survey it is clear from table 3.1 that, 38% of the respondents are aware of the bad nature of the road in the various communities, whiles 34% of the respondents think the roads are very poor. Only 12% of the respondents think the roads are good. However 16% think roads linking communities to health centers are poor.

The study sought to find out the relationship between the nature of the road and the means by which pregnant women visit heath centers and hospital. Table 3.2 presents on the relationship between nature of roads and means by which pregnant women visit health centers by cross tabulation.

Table-3.2. Cross Tabulation of Nature of Roads and means by which pregnant women visit the Hospital or Clinic.

		Means by Which Pregnant Women visit the Hospital or Clinic.			Total
		On Foot	Motor Bike	Car	
Nature of the Roads	Good	4	6	2	12
	Bad	13	20	5	38
	Poor	5	10	1	16
	Very poor	15	12	7	34
Total		37	48	15	100

Source: Field Survey, June 2014.

From table 3.2 , 48% of the respondents visit the health center by motor bike, 37% on foot and 15% by car. By implication, majority of the interviewees resort to motor bikes as a means of visiting health centers and hospitals.

Table 3.3 sought to find out the relationship between the nature of roads and consequent underlying causes of deaths among pregnant women as outlined by the respondents and confirmed by medical practitioners in the study district. They are: late arrival to the health facility; loss of excessive blood, absence of ambulance service and negligence on the part some health attendants. However, the factors outlined are as a result of the nature of roads linking typical rural communities to health centers. The study reveals that, though transportation network may not be the immediate cause of death but a contributory factor as the time spent travelling to a health center and the means by which they get there contributes to maternal mortality. Table 3.3 depicts the contribution of nature of roads to factors which causes death among pregnant women.

Table-3.3. Contribution of Nature of Roads to factors which causes Death among Pregnant Women by Cross-Tabulation.

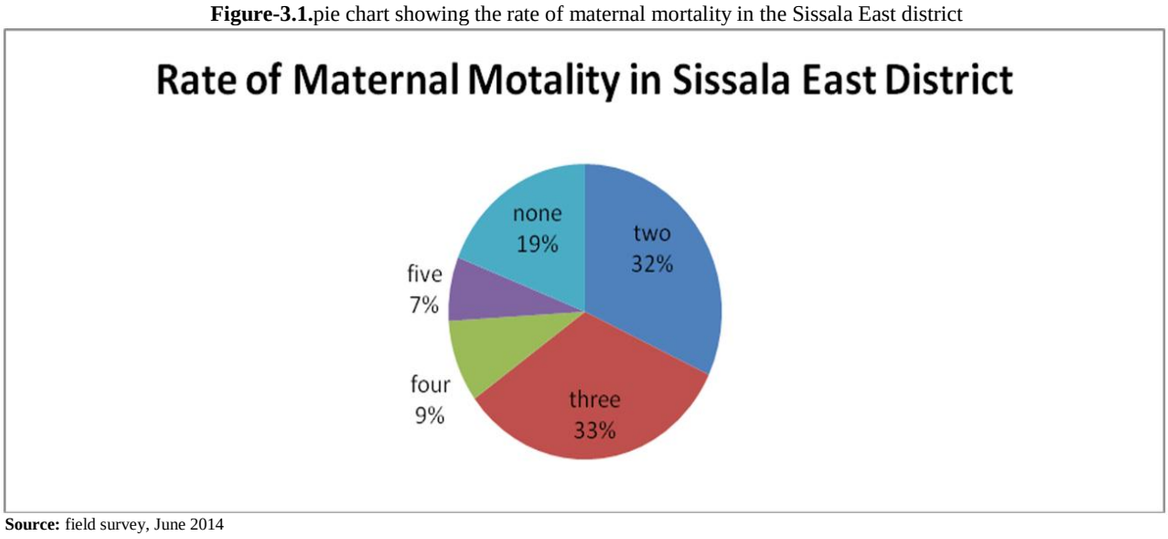
		causes of deaths.				Total
		late arrival to health facility	loss of excessive blood	Absence of ambulance services	negligence by heath wokers	
nature of the roads	Good	4	4	1	3	12
	Bad	15	9	8	6	38
	Poor	10	2	2	2	16
	very poor	21	5	4	4	34
Total		50	20	15	15	100

Source: field survey: June 2014

From table 3.3 only a smaller proportion of the respondents consider roads linking rural communities to health centers to be good therefore they are of the opinion that they do not encounter much complications as they can reach the health centers or hospital by car. This constituted 12% 0f the respondents' whiles 38%, 16% and 34% consider the road network to be bad, poor and very poor respectively. Therefore these percentages of people are of the view that pregnant women are vulnerable to the four possible causes of death as outlined in table 3.3.

3.2. Rate of Maternal Mortality in the Sissala East District.

Figure-3.1.pie chart showing the rate of maternal mortality in the Sissala East district



Source: field survey, June 2014

Figure 3.1 present views of respondents on the rate of maternal mortality in the study district from 2006-2013. The study reveals that out of the total number of life births yearly, two children die constituting 32% of the respondents, 33% of the interviewees indicated that out of total yearly live births, three children die. 9%, 7% and 19% of respondents indicated four, five and none respectively as deaths per yearly total live births. Table 3.4 depicts maternal deaths recorded in health centers of the selected communities and district hospital in the Sissala East District from 2006-2013.

Table-3.4. Maternal deaths recorded in the district from 2006 – 2013.

Sub-district	2006	2007	2008	2009	2010	2011	2012	2013
Kunchogu	0	0	0	0	0	0	1	0
Nabugubelle	0	0	0	0	0	0	0	0
Nabulo	0	0	0	0	0	1	0	0
Wellembelle	0	0	0	0	0	0	1	0
Tumu	0	0	0	0	1	0	2	0
Hospital	2	3	3	5 (2*)	4	0	0	2
Total	2	3	3	5 (2*)	5	1	4	2

Source: Records of the District Hospital-Tumu

The number of women who lost their lives in the process of child bearing has gone down from four (4) to two (2) between 2012 and 2013. It is also worth noting that no maternal death has being recorded in 2014 so far.

3.3. Measures That Can Be Used To Address the Issue of Maternal Mortality

Since maternal mortality is a great challenge to the development of the youth in the district, the people think that action needs to be taken to reduce or prevent this challenge. From the study, there has been a lot of efforts by the community leaders and the District as a whole to curb the situation. Table 3.5 is a cross tabulation of the responses on how the construction of the roads will help reduce maternal mortality in the district at large.

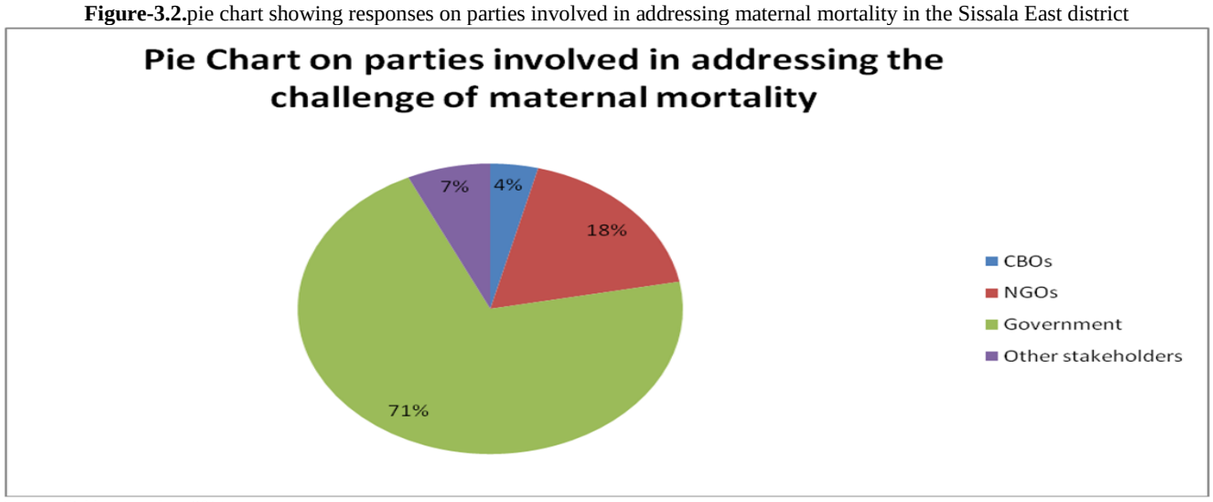
From table 3.5, majority of the respondents (91%) agreed that construction of road will reduce maternal mortality with the opinion that it will ensure easy accessibility and will also reduce maternal complications. However, only 9% of the interviewees disagreed to the fact that construction of roads will reduce maternal mortality. Figure 3.2 depicts parties to be involved in road construction as a panacea for reducing maternal mortality.

Table-3.5. Cross Tabulation on how the Construction of Roads would help reduce Maternal Mortality

		if yes, how?		Total
		easy accessibility	reduce complication	
would the construction of roads help reduce maternal mortality	Yes	64	27	91
	No	7	2	9
Total		71	29	100

Source: field survey June 2014

Figure-3.2.pie chart showing responses on parties involved in addressing maternal mortality in the Sissala East district



Source: Field survey, June 2014.

Figure 3.2 is an illustration of parties involved in trying to address the problem of maternal mortality by means of construction of roads. 71%, 18%, 7% and 4% of respondents mentioned Government, NGO, Community-based organizations, and other stakeholders respectively as parties responsible for addressing maternal mortality by means of construction of roads.

Table-3.6. Cross tabulation of parties involved and what should be done in addressing Poor Road Network towards ensuring Maternal Health

		Should something be done by policy makers in trying to address Maternal Mortality by means of road construction?		Total
		Yes	No	
Parties to be involve in Addressing Poor Transportation Network?	CBOs	4	0	4
	NGOs	14	4	18
	Government	66	5	71
	Other stakeholders	7	0	7
Total		91	9	100

Source: Field survey July 2014

Table 3.6 is a cross tabulation of parties responsible and the need for policies to address poor road network towards ensuring maternal health. The possible ways of reducing maternal mortality as revealed by the study are good road networks, provision of referral systems, and addition of trained midwives. In their perspective CBOs represent 4%, NGOs, Government; other stakeholders constitute 18%, 71%, 7% respectively. This means that majority of the people see government as the party responsible for tackling the challenge.

4. Conclusion and Recommendations

4.1. Conclusion

From the major findings of the study, it is obvious that maternal health is nothing to write home about in the Sissala east district as a result of the deplorable state of transportation network linking rural communities to health centers.

4.3. Recommendations

On the basis of the findings of the study, the following recommendations are forwarded for consideration:

Non Governmental Organizations in collaboration with the Ghana Government and stakeholders should provide adequate health care logistics such as ambulances and equipment for construction of the roads linking Tumu and the various communities as the best way to tackle this phenomenon in the district.

Ghana Health Service should post more midwives to the District to ease pressure on the existing ones. Again, Government in collaboration with Non-governmental Organizations (NGOs) and Community Based Organizations (CBOs) should assist in rural capacity building and training of the Traditional Birth Attendants to attend to pregnant women in case of emergencies.

Government, NGOs, CBOs with other stake holders are therefore call upon to collaborate and take up their responsibilities to help solve the challenge of maternal health.

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