Influence of Socio-Economic Factors on Infant and Maternal Mortality Rate in Yobe State.

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Abstract

The high rate of infant and maternal mortality rate in the world has become very worrisome as every birth produced become a potential incidence of death. Nigeria is second with highest maternal and infant mortality rates in the world and this necessitates greater attention given to maternal and child health service in the country (WHO, 2020). This study aimed to investigate the influence of socio-economic factors on infant and maternal mortality rate in Yobe State, Nigeria. The population of the study were 465 patients. To calculate the sample size of the study, Krejcie & Morgan (1970) sample size table was utilized. Based on the sample table, 214 were used as sample for the study. Stratified sampling technique was used in getting the respondents from various hospital/maternity wards. Descriptive and inferential statistics were adopted in data analysis. The findings revealed that there was a significant relationship between spouse economic status and infant and maternal mortality ($r = .463$, $p < 0.01$) in the study area. Also, the result indicates that spouse cultural background is significantly and positively correlated with infant and maternal mortality ($r = .723$, $p < 0.01$). It is recommended that; the government at all levels should improve maternal healthcare and eradicate poverty in order to ensure sustainable development of lives of the people; awareness campaign should also be adopted by various levels and stakeholders on the negative impact of lack of antenatal care by most families and wives, as most of the death were as a result of negligence or hardship condition.

Keywords: Infant Mortality, Maternal Mortality Spouse Economic Factor, Spouse Cultural factor.

Introduction

The pervasive nature of infant and maternal mortality rate in the world has become very alarming and worrisome as every birth produced become a potential incidence of death. Maternal mortality refers to deaths due to complications from pregnancy or childbirth (Olonade et al., 2019). Maternal mortality is any loss of a woman's life resulting from pregnancy complication or death within 42 days after childbirth, apart from the period of the pregnancy, emanating from issues that are linked or escalated by the management of the pregnancy but not from accident or incidental factors (Ibrahim, 2016). Consequently, maternal mortality has been on the increase in recent time with negative effects on the socioeconomic development of many countries. Approximately, 830 women die every day from preventable causes related to pregnancy and childbirth and more worrisome is the fact that 99% of all maternal deaths occur in developing nations (WHO, 2018). Previous studies revealed that at least one case of infant maternal mortality is reported in every 20 live births (Olonade et al., 2019). This challenge may not be unconnected to many African and developing countries poor maternal health care system, policy, corruption and lack of political will by many leaders to deal with healthcare problems that are mostly preventive in nature (Nwokocha, 2008). Infant and maternal mortality rates are signs or social indicators used to measure the

development of any country and Nigerian situation is of great concern (Okeke et al., 2016). Despite the resolution and agreement of the Sustainable Development Goals (SDGs), and effort by the United Nations enacted at the end of the Millennium Development Goals (MDGs) timeline in 2015 which its major task is the improvement of health of pregnant and nursing mothers and reducing maternal and child death by 2030 (Elem & Nyeches, 2016). In spite of this giant universal commitment by government and non-governmental organizations, the loss of women's lives resulting from complications during pregnancy has been on the increase in most African countries (Nwokocha, 2008). For instance, in Nigeria, maternal mortality accounts for 59,000 deaths of women annually (WHO, 2018 & NHRFHSP, 2012). Debatably, Nigerian women are 500 times more probable to lose their lives in childbirth when compared to most advanced countries of the world (Owumi *et al*, 2002). Owumi *et al* (2002) further argued that Nigeria is ranked second after India in world maternal incident rate and the worst in Africa. However, Nigeria's maternal mortality is reported to be 545 per 100,000 births (NDHS, 2008; Elem & Nyeches, 2016).

Statement of problem

Infant and maternal mortality are some of the social difficulties facing most African countries and particularly Nigeria, especially Yobe State by recent WHO (2020) report on area of effective infant and maternal healthcare delivery system. It has been observed by previous studies that so many factors are responsible for infant and maternal mortality around the world like education, economic status, culture, place of resident, physicians, hospital facilities, poverty etc. (Olonade et al., 2019; Ibrahim, 2016; Davis, 2005; Nwokocha, 2008; Brown, 1999; & WHO, 2020). However, more factors affecting infant and maternal mortality rate need to be investigated particularly in Yobe State where healthcare system, economic situation and lack of political will by those in charge of authority make increase in infant and maternal rate higher. Therefore, this study aimed to fill up the gaps in the existing literature by investigating the influence of socio-economic factors such as (spouse cultural background and spouse economic status) on infant and maternal mortality rate in Yobe State, Nigeria because it is a serious concern to all responsible government and interested stakeholders and as such it has become a crucial subject for investigation to many researchers around the globe.

It is against this backdrop that the study investigates the menace of infant and maternal mortality rate in Yobe State.

Research Questions

The following research questions have guided the study:
1. Is there any relationship between spouse economic status and infant and maternal mortality rate in Yobe State?
2. Is there any relationship between spouse cultural background and infant and maternal mortality rate in Yobe State?

Objective of the Study

The general objective of this study was to investigate the influence of socio-economic factors on infant and maternal mortality rate in Yobe State. The specific objectives were;
1. To examine the relationship between spouse economic status and infant and maternal mortality rate in Yobe State.
2. To examine the relationship between spouse cultural background and infant and maternal mortality rate in Yobe State.

Study Hypothesis

Two null hypothesis were formulated to guide the study as follows;
$H0_1$: There is no significant relationship between spouse economic status and infant and maternal mortality rate.
$H0_2$: There is no significant relationship between spouse cultural background and infant and maternal mortality rate.

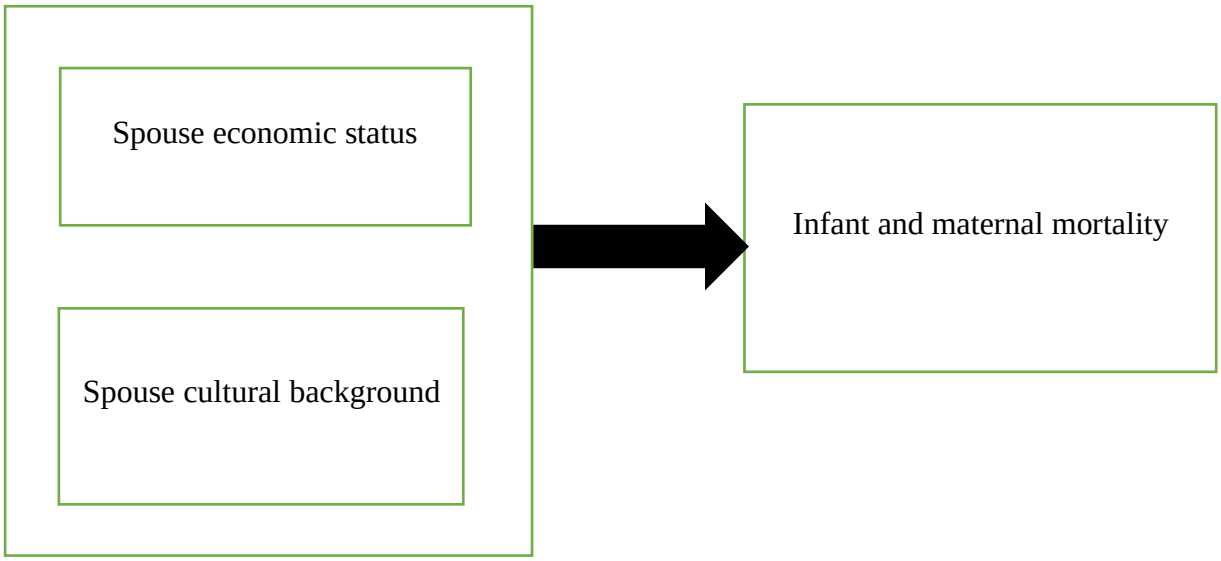

Figure 1.1 indicates the conceptual framework of the study

Conceptual Clarification

Maternal Mortality Rate

Maternal mortality is defined by WHO (2020) as the death of a women while pregnant or within 42 days of termination of pregnancy, irrespective of the duration and the site of the pregnancy from any cause related to or aggravated by the pregnancy or its management, but not from accident or incidental causes of childbearing, the commonest causes of which are hypertensive and hemorrhagic disorders. Maternal mortality refers to deaths due to complications from pregnancy or childbirth. From 2000 to 2017, the global maternal mortality ratio declined by 38 per cent – from 342 deaths to 211 deaths per 100,000 live births, according to UN interagency estimates. This translates into an average annual rate of reduction of 2.9 per cent. While substantive, this is less than half the 6.4 per cent annual rate needed to achieve the Sustainable Development global goal of 70 maternal deaths per 100,000 live births (UNICEF, 2019). Maternal mortality rate for any year is the number of deaths attributed to pregnancy and child bearing per 1000 registered total birth (Brown, 1999). Maternal death occurring more than 42 days after pregnancy or child birth are no longer included in the figure. This is in line with the international definition of maternal death, which state that maternal death is one occurring during pregnancy or labor or as a consequence of pregnancy within 42 days after delivery or abortion. Organization for Economic Cooperation and Development, (2011) defined maternal death as the death of a woman within 42 days of termination of pregnancy, irrespective of the duration and size of the pregnancy, from any cause related to or aggravated by the pregnancy or its management but not from accidental or incidental causes. This definition is in accordance with the definition adapted by the International Federation of Gynecology and Obstetrics. Child bearing kills so many

women in the developing world of which Nigeria is one. In many developing countries, complications of pregnancy and childbirth are leading causes of death among women of reproductive age.

Davis (2005) state that maternal mortality is a measure of the risk to the mother connected with child-birth. Maternal death is only counted if they are directly relate to pregnancy. For example, death from renal failure, which had commenced with a serve toxemia of pregnancy and pyelonephritis, would be counted as maternal death even if the woman died years later. However, death from completely unrelated cause such as road accident, medical or surgical emergency, would not be counted ad maternal death even if it took place during pregnancy. Thus, maternal death due to associated cause are recorded where death due to disease (e.g. cardiac disease, pulmonary tuberculosis, malaria, pyelonephritis, raised blood pressure and diabetes disease, mellitus) and a maternal condition (e.g. pregnancy) is giving as a secondary cause of death. It is well known in the medical profession that cardiac disease may be aggravated by pregnancy (Brown,1999).

Neonatal death (death of infants within the 28 days of life) in Nigeria is 48 per 1000 live birth (NDHS, 2000). The highest neonatal rates were recorded in the North-East, follow by North-West zone while he lowest rate (34 per 1000) were reported in the South-East zone. Most of these deaths occur in the first week of life and is the reflection of the link with quality of maternal care (NDHS, 2000).

Infant Mortality

The infant mortality rate is the number of deaths of children under one year of age in a year, expressed per 1000 live births, while Neonatal mortality refers to the death of children during the first four weeks of life (OECD, 2011). WHO (2020) refers to Infant mortality rate is the probability of a child born in a specific year or period dying before reaching the age of one, if subject to age specific mortality rates of that period. Infant mortality rate is strictly speaking not a rate (i.e. the number of deaths divided by the number of populations at risk during a certain period of time) but a probability of death derived from a life table and expressed as rate per 1000 live births. Infant mortality is the death of an infant before his or her birthday. The infant mortality rate is the number of infant deaths per 1,000 live birth (Tinda, 1997). Infant mortality refers to the death of an infant between 1 day and 1-year age. (Deaths before age 28 days can also be classified as neonatal mortality.) There are many causes of infant mortality, ranging from infections to accidents.

Spouse Economic Status

Socio-economic status of couples can determine the level of healthcare a particular family can afford. Several studies have indicated that some couple lost their infant or even the mother sometimes as a result of economic condition that the couples found themselves. Sometimes, even a couple can be literate and have positive attitude or intention of going to hospital for maternity examination but because of the low or poor socio-economic status a child or mother can be lost particularly in present situation where three square meals is very difficult to afford by many families.

Spouse Cultural Background

Culture as a total ways of life of people also play a vital role in influencing infant and maternal mortality rate in Yobe State. This happened particularly in less educated community where many

men don't agree to allow their wives to be examined by male medical practitioners when they go for antenatal or even general medical checkup.

Empirical Studies

The rate at which infant and maternal mortality rate is increasing day by day in many African countries and Nigeria in particular cannot be overemphasized. Study conducted by Olonade et al., (2019) on maternal mortality and maternal health care in Nigeria found that economic factor is significantly correlated with maternal mortality rate. They also emphasized that the financial power of spouse, inadequate access to wealth and economic resources as well as difficulty in getting an employment influence maternal mortality rate. This assertion may be true when you look at the present global economic crises that have compounded the difficulty of many people with increase in the costly of healthcare services and other basic needs. Nwokocha, (2008) argued that the right to use maternal health services is best on quite a lot of factors such as social and economic status, socio-cultural factors and practices to mention a few. Furthermore, in Nigeria, a high percentage of pregnant women do not receive adequate care because of inability for couples to afford they services because they are too cost which influence infant and maternal mortality in the country (Tella, 2014). Contrariwise, studies by Harrison- (2009), Aghoja et al- (2010) and Idowu et al., (2014) reported that economic factors are negatively correlated with infant and maternal mortality rate in their studies and this may be connected to the fact that their studies were conducted in urban centers where most of the spouse have something to do as government workers or self-independent business men.

Cultural factors influence infant and maternal mortality. Salami and Taiwo (2012) reported that some cultural practices have been associated with incidences of maternal and infant mortality in Nigeria and other parts of some African countries. Similarly, Elem and Nyeche (2016) conducted a study on health inequality and the empowerment of reproductive age of women for development in River State found that that incidences of maternal mortality rate are on increase which is badly affected by socio-cultural factors. Another study by Rahman et al., (2022) on socio-economic factors affecting high infant and child mortality rates in selected African countries: does globalization play any role? The findings revealed that cultural factor was among the predicting variable for infant and maternal mortality rate in some African countries including Nigeria. Similarly, Akinlo and Sulola (2019) studied health care expenditure and infant mortality in Sub-Saharan Africa. The findings revealed that government health expenditure and cultural factors are among the factors that increase infant and maternal mortality rates in African regions. Conversely, Anyanwu and Erhijakpor (2009), (Dutta et al., 2020) and Emamgholipour (2016) reported a negative relationship between cultural factors and infant and maternal mortality rate in their studies in which factors like; health facilities, place of resident, socio-economic status, educational level, corruption were factors influencing infant and maternal mortality rates.

Theoretical Framework

This study was guided by functionalist theory. Functionalist theory draws substantially upon the ideas of Auguste Comte, Herbert Spencer, and Emile Durkheim. Its theorists take a broad view of society and focus on the macro aspects of social life. In 1950s and early 1960s, the theory was refined by Talcott Parsons and his student Kingsley Davis to explain society from macro point of view. The general assumption of functionalist theory is that it looks at society as a system, a set of elements or components that are related to one another in a more or less stable fashion through a

period of time. Functionalist focus on the part of society, particularly its major institutions, such as the family, religion, the economy, the state and education.

The relevance of this theory to this study was that the theory support the fact that for a successful pregnancy or maternity outcome, there must be a mindful working together of all the interrelated stages of pregnancy ranging from antenatal, family planning, pregnancy delivery to the postnatal days, environment with good healthcare facilities, medical doctors, nursing and maximum cooperation from the couples in order to ensure a very good positive outcome of any pregnancy because in any situation if the factors mentioned above are lacking, definitely will lead to the danger or even the death of the mother or child.

Methodology

Quantitative approach with correlational research design were adopted to determine the influence of socio-economic factors on infant and maternal mortality rate in Yobe State. The population of the study area is 2,321,339 (NPC, 2022**).** But the target population were patients who were admitted in various maternity wards of the six different specialist hospitals in Yobe State such as Damaturu Specialist Hospital (98), Geidam Specialist Hospital (52), Fune Specialist Hospital (61), Potiskum Specialist Hospital (102), Gashua Specialist Hospital (69) and Nguru Specialist Hospital (73) which amount to total of 465 ideal population.

To calculate the sample size of the study, Krejcie and Morgan, (1970) sample size table was utilized. Based on the sample table, 214 samples were used for the study. Questionnaire was used as the main instrument for data collection, because it's the well-established methods of data collection within the context of social science (Dillman, 2000). All the questionnaires were returned by the respondents after being distributed using stratified sampling method, for respondents that are unable to read and write, the researchers read and interpret the options for them. In order to verify the instrument, content validity was applied to all the items in which all the items were evaluated by experts. 0.81 was obtained as Cronbach Alpha, which indicated that the instrument was reliable and suitable to use. Simple frequency and percentages were applied to the collected data. Finally, the null hypotheses were tested using Pearson Product-Moment correlation.

Result of the Findings

Table 1. Demographic information of the Respondents

Variables	Frequency	Percentage
Age		
18-27	89	41.58
28-37	112	52.35
38 & above	13	6.07
Hospital		
Damaturu Specialist Hospital	43	20.09
Geidam Specialist Hospital	30	14.01
Fune Specialist Hospital	33	15.43
Potiskum Specialist Hospital	47	21.97
Gashua Specialist Hospital	29	13.55
Nguru Specialist Hospital	32	14.95
Total	**214**	**100**

The Table 1 above shows the demographic information of the respondents. The respondents were between the age of 18 to 38 years old with mean age equals 23.19 (SD= 2.64). The data shows that

more than half of the respondents (52.35%) were in the age category of 28-37 years old followed by respondents between 18-27 years old 41.58% and lastly, 6.07% of the respondents were in the age category of 38 years and above. However, on the hospital of the respondents, the findings reveals that majority (21.97%) of the respondents were from Potiskum Specialist Hospital, 20.09% of the respondents were from the Damaturu Specialist Hospital, 15.43% of the respondents were from the Fune Specialist Hospital, 14.01% of the respondents were from the Geidam Specialist Hospital, finally 13.55% of the respondents were from the Nguru Specialist Hospital.

Hypotheses testing;

Correlation analyses was performed to determine the relationship between independent variable (economic status and cultural background) and the dependent variable (infant and maternal mortality rate).

$H0_1$: There is no significant relationship between spouse economic status and infant and maternal mortality rate.

Table 2. Correlational Analysis between Spouse Economic Status and Infant & Maternal Mortality (n=214)

Variable		Infant & Maternal Mortality rate	Economic Status (Category)
Infant & Maternal Mortality rate	Pearson Correlation	1	**.463****
	Sig. (2-tailed)		**.000**
	N	214	214
Economic Status (Category)	Pearson Correlation	**.463****	1
	Sig. (2-tailed)	**.000**	
	N	214	214

**. Correlation is significant at the 0.01 level (2-tailed).

Pearson correlation (**r**) was conducted to determine the relationship between spouse economic status and infant and maternal mortality rate in Yobe State. The results of the Pearson Product-Moment Correlation in Table 2. Showed that, there was a significant positive relationship between spouse economic status and infant and maternal mortality rate **($r= .463, p < 0.01$)**. Based on the present findings, the null hypotheses was rejected. Therefore, Alternative Hypothesis (**H_1**) is accepted. Thus, it can be concluded that there is a significant and positive relationship between spouse economic status and infant and maternal mortality rate in Yobe State.

$H0_1$: There is no significant relationship between spouse cultural background and infant and maternal mortality rate.

Table 3. Correlational Analysis between Spouse Cultural Background and Infant & Maternal Mortality (n=214)

Variable		Infant & Maternal Mortality rate	Cultural Background (Category)
Infant & Maternal Mortality rate	Pearson Correlation	1	**.723****
	Sig. (2-tailed)		**.000**
	N	214	214
Cultural Background (Category)	Pearson Correlation	**.723****	1
	Sig. (2-tailed)	**.000**	
	N	214	214

**. Correlation is significant at the 0.01 level (2-tailed).

Correlation (**r**) was conducted to determine the relationship between spouse cultural background and infant and maternal mortality rate in Yobe State. The results of the Correlation in Table 3. Showed that, there was a significant positive high relationship between spouse cultural background and infant and maternal mortality rate **(r= .723, p < 0.01)**. Based on the present findings, the null hypotheses were rejected. Therefore, Alternative Hypothesis ($\mathbf{H_1}$) is accepted. Thus, it can be concluded that there is a significant positive high relationship between spouse cultural background and infant and maternal mortality rate in Yobe State.

Discussion of Findings

One of the findings of this study revealed that there was a significant relationship between spouse economic status and infant and maternal mortality **(r= .463, p < 0.01)**. This result is in line with Olonade et al., (2019) who found that economic factor was among the factors that influence infant and maternal mortality in their study. This result is also supporting the assertion of Nwokacha, (2003) who argued that the right to use maternal health services is bent on quite a lot of factors such as social and economic status, cultural factors and practices to mention a few. This declaration may be truth when you look at the present global economic crises that have compounded the difficulty of many people with increase in the cost of healthcare services and other basic needs. Tella, (2014) argued that in Nigeria, a high percentage of pregnant women do not receive adequate care because of inability for couples to afford they services because they are too cost which influence infant and maternal mortality in the country. This findings was contrary to the findings of Harrison (2009), Aghoja *et al* (2010) and Idowu *et al* (2014) who reported a negative correlation between economic factor and infant and maternal mortality rate in their studies and this may be connected to the fact that most of their studies were conducted in urban centers where most of the spouse have something to do as government workers or self-independent business men.

However, the study also revealed that there was a strong high relationship between spouse cultural background and infant and maternal mortality **(r= .723, p < 0.01)**. This result supports the findings of Salami and Taiwo (2012) who argued that some cultural practices have been associated with incidences of maternal and infant mortality in Nigeria and other parts of some African countries. Similarly, Elem and Nyeche (2016), Akinlo and Sulola (2019) and Rahman et al (2022) asserted that incidences of infant and maternal mortality rate are on increase which is badly affected by socio-cultural factors of many communities in Africa. Conversely, Anyanwu and Erhijakpor (2009), (Dutta et al., 2020) and Emamgholipour (2016) reported a negative relationship between cultural factors and infant and maternal mortality in their studies in which factors like; health facilities, place of resident, socio-economic status, educational level, corruption as factors influencing infant and maternal mortality rates.

Conclusion

The study examined the influence of socio-economic factors on infant and maternal mortality rate in Yobe State. Based on the findings of this research, it can be concluded that there were a significant relationship between the independent variables (spouse economic status and spouse cultural background) and dependent variable (infant and maternal mortality rate) in Yobe State. However, spouse cultural background appeared to be strong relationship with infant and maternal mortality **(r= .723, p < 0.01).** These results can be attributed to the fact that many Nigerians are experiencing economic hardship where a meal has become very difficult to many families talk less of going to hospital for antenatal care. Also due to the people believed and so much attachment to their religion and cultures some families or husbands don't allow their wives to visit medical

centers for antenatal examination because in most of the clinic and hospital men are they major medical personnel that do almost the antenatal and others medical examination and their cultures is not comfortable with that.

Recommendation

Based on the findings of this research the following recommendations were made:

i. Since infant and maternal mortality rate seems to be in increase in Africa and Nigeria, the government at all levels should dedicate a lot fund in medical healthcare system in order to address the problems of staffing and infrastructure deficit because previous studies indicates that lack of hospital facilities and man power affect infant and maternal mortality rate.

ii. Proper sanitization and enlightenment should be carried out regularly to traditional leaders and religious bodies about the danger of not accepting orthodox system of medical care in order for people to know the negative impact of lack of antenatal care by many families.

iii. Government should continue to be providing enable environment to her citizens because some people want to send their wives for the antenatal care but lack of employment or money to do that has blocked them to do it despite the fact that they knew the danger of lack of doing it.

iv. This study was conducted based on quantitative approach, further studies should employ qualitative or mix method approach in order to have an in-depth knowledge about the factors that influence infant and maternal mortality rate in Yobe and Nigeria at large.

v. Only two factors (couple economic status and couple cultural background) were examined in this study, further research should investigate more variables like educational background, place of residence, hospital facilities, man power, attitude etc.

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