Neonatal Death in Sub-Saharan Africa and Associated Maternal Interpersonal Socio-cultural Factors

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Abstract: Several factors have been attributed to high neonatal death from studies. However, few studies that have examined mothers’ social factors have limits those factors on education, type of place of residence and income. This study extends on findings from previous studies, using DHS survey data conducted in 2013 in Nigeria, Liberia and Sierra Leone to examine the association between maternal socio-cultural factors and neonatal death. The result of weighted multilevel logistic regression analysis, show that the residing in rural area (OR=0.110, 95% CI=1.116-1.11), Islamic religion (OR=0.091, 95% CI=1.096-1.096), having co-wives (OR=0.105, 95% CI=1.110-1.111), justifying beating for going out without telling husband (OR=0.034, 95% CI=1.035-1.035) and justifying beating for refusing sex (OR=0.122, 95% CI=1.129-1.130) were significantly more likely to report neonatal death. After adjusting for age, education and wealth, all these factors continued to be significant predictors of neonatal death. Though, the odd of neonatal death is less with age and education. The present study shows relative influence of multiple, interrelated maternal socio-cultural factors on neonatal death and confirm our hypothesis that women context indirectly influences neonatal outcome.

Keywords: Neonatal death, maternal, socio-cultural factors, child health
Introduction
Worldwide, progress has been made in reducing the rate of neonatal mortality, the remaining burden of child mortality is not evenly distributed among nations, and progress remains insufficient in many regions. Majority of 5.9 million neonatal death estimated to be recorded in 2015 was heavily concentrated in sub-Saharan Africa and South Asia (UNICEF, 2015a). In essence, the region of sub-Saharan Africa remain the region with the highest under-five mortality rate the world, with one child in twelve dying before his or her fifth birthday (UNICEF, 2015b). With approximately 45% of under-five deaths occurring during their first month of life (WHO, 2016), neonatal death still account for about a third of under-five mortality globally (USAID, 2012; WHO, 2011). Majority of these deaths are said to be due to three main medical proximate causes: prematurity, intrapartum-related complications (including asphyxia), and neonatal sepsis (Bassani, and Jha, 2010; Aggarwal, Kumar, Pandi and Kumar, 2013). Neonatal death also has economic and social implications in the region, such as non-medical causes that has been identified in studies, (Chowdhury, Islam, and Hossain, 2010; Fink, 2014; Upadhyay, Krishnan, and Rai et al., 2014; Welaga, et al., 2014; Ndayisenga, 2016). However, these studies have limited their scope to the three levels of delay in seeking medical care, maternal education, occupation, type of latrine, and electricity. This study attempts to expand on these findings by exploring maternal socio-cultural factors affecting neonatal death.

For instance, there is considerable literature on the association of adverse neonatal outcomes with numerous maternal, obstetric and fetal factors; such as preterm labour (< 37 weeks) or premature rupture of membranes, antepartum haemorrhage, intrapartum asphyxia, infection, intrauterine growth retardation including postmaturity, hypertension, fetal abnormality, maternal disease, trauma, including chromosomal and somatic abnormalities in fetal abnormalities (Bassani, and Jha, 2010; Jehan, Harris, Salat, et al., 2009; Odendaa, Steyn and Odendal, 2002; Pattinson, De Jong, and Theron, 1989), Similarly, studies focusing on non-medical assessment of early factors found that neonatal death relate to health system factors (e.g., lack of adequate medical and nursing staff, with appropriate training), and mother’s situational factors (antenatal attendance, and lack of screening, monitoring and management of maternal condition), higher in poorer states than in the rich states, (Yego, D’Este, Nyongesa, and Williams, 2014; Velaphi and Rhoda, 2012; Bassani, and Jha, 2010). These studies are inadequate, however, in the use of data by concentrating on a limited range of early risk factors, and insufficient consideration of social factors.

In one of the reports on neonatal death, Koffi et al., assessed the relationship between a range of social, behavioural and health system determinant of neonatal death (Koffi, Libite, Moluh, Wounang and Kalter, 2015). Finding revealed that, household with poor socio-economic condition, labour and delivery complications, home deliveries and poor hygiene predicted neonatal death. Also, lower level of
education, father education, tribe, being single and having a single parent household, vaccination and tribes are part of the determinants of neonatal death (Lukonga, and Michelo, 2015; Ramaiya, Kiss, Baraitser, Mbaruku and Hildon, 2014; Pierce, H. M. 2014; Singh, Kumar, and Kumar, 2013; Chowdhury, Islam and Hossain, 2010; Mondal, Hossain, and Ali, 2009). In Abuqamar, Coomans and Louskx (2011), study of Gaza Strip neonatal death was related to consanguineous marriage. Studies on infant mortality have also found these factors to be predictive (Makoka, 2013; Mondal, Hossain, and Ali, 2009) although the progressive association among these factors needs to be determined. Additionally, maternal social statues are multidimensional concepts that include more than educational and economic status (Boehmer, and Williamson, 1996), prospective research is needed to explore the impact of more risk factors on neonatal health and assess how it influence varies by socio-cultural factors in sub-Saharan Africa. Therefore, this study considered social-cultural aspects of women social status in relation to neonatal death.

Theoretical Framework

This study builds upon the existing research by examining the relationship between neonatal death and socio-cultural factors of mother using data form Demography Health Survey (DHS). Based on ecological approach, we examine interpersonal and intrapersonal socio-cultural factors, which allow us to explore the individual and social relationship factors in neonatal death. Established on the literature on neonatal death, these factors were examined; place of residence, religion, other wives (having co-wives) problem with getting medical help, attitude to intimate partner violence. These we hypothesized can be causal factors in neonatal death. For instance, place of residence has been identified as an important factor linked to both maternal health and infant mortality (Gruebner et al., 2015; Sastry, 2002). Studies have indicated that most child deaths occurred in rural area (Bassani and Jha, 2010); neighbourhood social economic level can either have positive or negative effect on the health and wellbeing of the residents (Garcia-Subirats et al., 2011).

Also, a number of studies have also addressed the interrelationship between these social factors. For instance, distance and travel time have been identified as important factors influencing the use of maternity care in the rural area. Moreover, rural women are more readily influenced by traditional practices that are contrary to modern health care (Mekonnen, Yared, and Mekonnen, (2002), are particularly susceptible to poor prenatal care due to fewer resources, likely to initiate prenatal care late, and subsequently poorer outcomes (Bennett, Lopes, Spencer, et al., 2013). Also, the role of family structure has always been emphasized in birth outcome and infant mortality (Freeman, 2013). Nevertheless, the detrimental effects of having a co-wife on health of wives have also, been documented in literature (Al-Sharfi, Pfefer and Miller, 2015; Abbo, Ekblad, and Waako et al., 2008; Eleri and Ernestina, 2013). Studies have found sizeable survival disadvantages for infants in families that practice
polygyny, poorer nutrition outcome, lower utilization of healthcare services, and gender asymmetry (Smith-Greenaway, and Trinitapoli, 2014; Gibson and Mace, 2007; Stephenson, Baschieri, and Clement et al., 2006; Bove and Valeggia, 2008).

Additionally, problem with getting permission from husband and money to get medical help can be predictive of adverse neonatal outcome. In family decision making power including that of health and treatment place, the patriarchal domination orchestrated by gender roles manifested prominently as husband exercises an overwhelming control in the affairs of his household activities (USAID, 2015; Azuh, Fayomi and Ajayi, 2015). For instance, studies have demonstrated that interpersonal power dynamics between husband and wife, which is measure by various combinations of indicators, such as decision-making power, control over financial resources, and so on, are associated with maternal health (White, Dynes, Rubardt, Sisoko, and Stephenson, 2013). Husband plays an important role in family decision making, most health care decision, including using reproductive health services (Wasti, Lim, and Pathak, 2012). White et al., 2013 also suggested that, decision to seek modern institutional health care for delivery, and receiving post-natal care, falls- at least in part- in domain of the mother –in-law.

Women low status in many low resources setting limits their sexual negotiating power, access to education, and health care; rendering them vulnerable to victimization, lame, and stigma, especially in reproductive matters (Haws, Mashasi, Mrisho, and Schellenberg et al., 2010). Married women are expected to satisfy the sexual desires of their husbands, when a husband wants sex, the wife should comply because that is part of the marriage contract (Kambarami, 2006; Messer, 2004; Leclerc-Madlala, 2000.) In traditional societies, women are meant to conform to the dictate to social order in marriage and any signs rebelliousness or initiative on her part are looked upon with disfavored by the family and the community (Dandekar, 1981;)This belief and other practices are entrenched, and take precedence over equality in the village where they are carried out (Maluleke, 2012). For instance, in all situations measured by Hindin (2003), study of women’s attitudes towards wife beating in Zimbabwe, and also in Dhaher, Mikolajczyk, Maxwell, and Kramer (2009), study of attitude towards wife beating among Palestinian, higher proportion of women believed that it was justifiable for husbands to beat their wives. Also, in Ayaga, et al., (1999), women’s fear of their husband disapproval of contraceptive use may lead to loss of intimacy and affection. It is therefore questionable whether the constitutional protection of gender equality is making a difference to women living in communities with a strong commitment to traditional norms and practices (Maluleke, 2010).

In essence, women lack fertility control and personal autonomy, and access to antenatal, perinatal and neonatal care can be delayed in such circumstances and subsequent worse reproductive health and child health outcomes ( Taft, Powell and Watson, 2015; WHO, 2009).

On this basis, we aim to find a relationship between maternal social
cultural factors and neonatal death in sub-Saharan Africa. Our specific research questions are:

1. Do women place of residence increase the risk of neonatal death?
2. Does having co-wives increase the risk of neonatal death?
3. Does woman having problem with getting permission and money for medical help predict neonatal death?
4. Do women attitude towards Intimate Partner Violence predict neonatal death?

Materials and Methods

This study used the children recode data from the Demographic Health Surveys (DHS) of Nigeria, Liberia and Sierra Leone conducted in 2013 in each of the countries. The DHS provides a nationally representative sample of the countries’ population. The survey utilizes a two-stage stratified cluster sampling design. The clusters were stratified by region, urban-rural location and randomly selected in proportion to population size. The eligible women for the interview were all women aged 15-49 years who were either a residents or visitor in the selected household (ICF Macro Inc, 2014). This study focused mainly on maternal socio-cultural factors and neonatal death, the unit of analysis was women who had children less than five years prior to the survey. The data were merged and weighted by women individual sample weight and a total of 43,592 samples from the three countries were extracted. The data was release on approval for use by MEASURE/DHS.

Nigeria, Liberia and Sierra Leone are part of the ten (10) African countries where newborns have the highest risk of dying (Lawn, and Kerber, 2006; Maps of World, 2014; The World Fact Book, 2015). In Nigeria, the neonatal and infant mortality rates are 37 and 69 deaths per 1,000 live births respectively. Also, in Liberia, infant mortality rate is 54 deaths per 1,000 live births, with half of the death occurring in the first month of life. Infant and neonatal mortality rate stood at 92 and 39 deaths per 1,000 live births respectively in Sierra Leone (ICF International, 2014). The results offer better understanding on the relationship between mother social context and neonatal death.

Outcome Variable

Neonatal death is the death of a child during the first 28 days of birth. To measure neonatal death, the women were asked whether they had experienced child’s death and at what age. Death that occurred between day one to 28 where included as neonatal death. The outcome variable neonatal death set as a dichotomous variable of any death from birth till the end of 28 days were coded yes (1) and others No (0).

Key Explanatory Variables

Place of resident was measured by living in urban or rural area, religion as whether Christianity, Islam, or Traditional. The other variable was if the husband has more than one wife. This variable was based on the response to the question how many wives does your husband has. The answer was coded as no other wife and other wives if the husband has more than one wife. Also, women ability to get medical help was measured by response to two questions: first, do you have problem getting permission for medical help and second, do you have problem getting money for medical health. The variables were
coded “No problem” if the woman answered no problem and “problem” if the woman answered not a big problem and big problem. Also, the influence of male authority on women ability to make choices was examined by two hypothetical circumstances of Intimate Partner Violence (IPV). Women were asked “in your opinion, is a husband justified in beating his wife in the following situations”: (1) if she goes out without telling him and (2) if she refuses to have sex with him. The responses were coded “yes/no” in both instances.

Co-variance - Includes social demographic characteristics: age, education, marital status, occupation, wealth index, husband’s age and husband’s educational level. Age was recoded into three groups less than 20, 20-24 and above 35. Occupation variable was categorized into no working, professional, agriculture sector and others. Also, wealth index was categorized into poor, middle, and rich. Husband age was regrouped into 16-25, 26-35, 36-45, 46-55 and above 55.

Analysis
The data were analyzed using univariate and binary logistic regression models to examine patterns of association that exist between the dependent variable and independent variables, reporting Odds Ratio (OR) and CI at 95% in each analysis. In table 1, we first conducted univariate and binary regression of socio-demographic characteristics of mother with neonatal death to those who were not. We then conducted univariate and binary regression analyses to identify significant maternal socio-cultural predictors of neonatal death in table 2. The first model examines the impact of maternal socio-cultural factors alone. In the second model, we build on maternal socio-cultural factors, to consider the impact of maternal age, education and wealth index, which allow us to assess their direct effects. All analyses were carried out with the use of SPSS 21.

Table 1: Socio-Demographic Factors of Mothers and their Association with Neonatal Death

<table>
<thead>
<tr>
<th>Variables</th>
<th>%</th>
<th>OR(95%CI)</th>
<th>Variables</th>
<th>%</th>
<th>OR(95%CI)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Age</strong></td>
<td></td>
<td></td>
<td><strong>Wealth Index</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>&lt;20</td>
<td>6.3</td>
<td>1</td>
<td>Poor</td>
<td>46.2</td>
<td>1</td>
</tr>
<tr>
<td>20-34</td>
<td>68.7</td>
<td>-0.384(0.681-0.681)</td>
<td>Middle</td>
<td>18.9</td>
<td>-0.076(0.927-0.927)</td>
</tr>
<tr>
<td>35+</td>
<td>25.0</td>
<td>-0.330(0.718-0.719)</td>
<td>Rich</td>
<td>34.1</td>
<td>0.007(1.007-1.007)</td>
</tr>
<tr>
<td><strong>Education</strong></td>
<td></td>
<td></td>
<td><strong>Husband Age</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>No Education</td>
<td>53.0</td>
<td>1</td>
<td>16-25</td>
<td>5.3</td>
<td>1</td>
</tr>
<tr>
<td>Primary</td>
<td>19.5</td>
<td>0.099(1.103-1.104)</td>
<td>26-35</td>
<td>32.5</td>
<td>0.078(1.081-1.082)</td>
</tr>
<tr>
<td>Secondary</td>
<td>23.3</td>
<td>-0.139(0.870-0.870)</td>
<td>36-45</td>
<td>32.8</td>
<td>-0.014(0.986-0.987)</td>
</tr>
<tr>
<td>Higher</td>
<td>4.3</td>
<td>-0.138(0.871-0.871)</td>
<td>46-55</td>
<td>13.7</td>
<td>0.036(1.036-1.037)</td>
</tr>
<tr>
<td><strong>Marital Status</strong></td>
<td></td>
<td></td>
<td>Above 55</td>
<td>15.7</td>
<td>0.138(1.147-1.148)</td>
</tr>
<tr>
<td>Never in Union</td>
<td>5.2</td>
<td>1</td>
<td><strong>Husband Education</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>In union/with Partner</td>
<td>91.0</td>
<td>0.252(1.286-1.287)</td>
<td>No Education</td>
<td>41.1</td>
<td>1</td>
</tr>
</tbody>
</table>
Table 2: Maternal Socio-cultural factors and their association with Neonatal Death

<table>
<thead>
<tr>
<th>Variables</th>
<th>%</th>
<th>Model 1 OR (95%CI)</th>
<th>Model 2 OR (95%CI)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Place of residence</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Urban</td>
<td>34.6</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>Rural</td>
<td>65.4</td>
<td>0.110(1.116-1.116) $\rho=0.000$</td>
<td>0.128(1.137-1.137) $\rho=0.000$</td>
</tr>
<tr>
<td><strong>Religion</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Christianity</td>
<td>59.7</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>Islam</td>
<td>39.3</td>
<td>0.091(1.096-1.096) $\rho=0.000$</td>
<td>0.102(1.107-1.108) $\rho=0.000$</td>
</tr>
<tr>
<td>Traditional</td>
<td>1.0</td>
<td>-0.322(0.724-0.725) $\rho=0.000$</td>
<td>-0.342(0.710-0.710) $\rho=0.000$</td>
</tr>
<tr>
<td><strong>Other Wives</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>No Other</td>
<td>62.5</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>Other wives</td>
<td>37.5</td>
<td>0.105(1.110-1.111) $\rho=0.000$</td>
<td>0.098(1.103-1.103) $\rho=0.000$</td>
</tr>
<tr>
<td><strong>Need Permission to getting medical help</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>No Problem</td>
<td>15.7</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>Problem</td>
<td>84.3</td>
<td>-0.94(0.910-0.910) $\rho=0.000$</td>
<td>-0.095(0.909-0.909) $\rho=0.000$</td>
</tr>
<tr>
<td><strong>Problem with Money to get medical help</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>No Problem</td>
<td>3.3</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>Problem</td>
<td>96.7</td>
<td>-0.179(0.836-0.837) $\rho=0.000$</td>
<td>-0.170(0.843-0.844) $\rho=0.000$</td>
</tr>
<tr>
<td><strong>Beating for going out without telling husband is Justify</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>No</td>
<td>62.1</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>Yes</td>
<td>36.6</td>
<td>0.034(1.035-1.035) $\rho=0.000$</td>
<td>0.033(1.034-1.034) $\rho=0.000$</td>
</tr>
<tr>
<td>Don’t Know</td>
<td>1.2</td>
<td>-0.454(0.634-0.635)</td>
<td>-0.450(0.637-0.638)</td>
</tr>
<tr>
<td><strong>Beating for Refusal of Sex is Justify</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>No</td>
<td>74.8</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>Yes</td>
<td>23.4</td>
<td>0.122(1.129-1.130) $\rho=0.000$</td>
<td>0.125(1.133-1.133) $\rho=0.000$</td>
</tr>
<tr>
<td>Don’t know</td>
<td>1.7</td>
<td>-0.096(0.908-0.909) $\rho=0.000$</td>
<td>-0.098(0.907-0.907) $\rho=0.000$</td>
</tr>
</tbody>
</table>
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<table>
<thead>
<tr>
<th>Age</th>
<th>Education</th>
<th>Wealth Index</th>
</tr>
</thead>
<tbody>
<tr>
<td>&lt;20</td>
<td>-</td>
<td>1</td>
</tr>
<tr>
<td>20-34</td>
<td>-</td>
<td>-0.337(0.714-0.714) ρ=0.000</td>
</tr>
<tr>
<td>35+</td>
<td>-</td>
<td>-0.294(0.714-0.714) ρ=0.000</td>
</tr>
<tr>
<td>No Education</td>
<td>-</td>
<td>1</td>
</tr>
<tr>
<td>Primary</td>
<td>-</td>
<td>0.161(1.175-1.175) ρ=0.000</td>
</tr>
<tr>
<td>Secondary</td>
<td>-</td>
<td>-0.60(0.941-0.942) ρ=0.000</td>
</tr>
<tr>
<td>Higher</td>
<td>-</td>
<td>-0.022(0.978-0.979) ρ=0.000</td>
</tr>
<tr>
<td>Poor</td>
<td>-</td>
<td>1</td>
</tr>
<tr>
<td>Middle</td>
<td>-</td>
<td>-0.062(0.940-0.940) ρ=0.000</td>
</tr>
<tr>
<td>Rich</td>
<td>-</td>
<td>0.061(1.063-1.063) ρ=0.000</td>
</tr>
</tbody>
</table>

Results

The results obtained in tables 1 and 2 shows that all of the variables have significant effect on the association maternal socio-cultural factors and neonatal death as they all have p-values that < 0.05, which therefore stipulates that they are important predictors of neonatal death. As shown in Table 1, the samples included in the study were more between the age 20-34 (68.7%), (53%) no education, more in union, and 46.2% of poor wealth index. Sociodemographic factors that indicated more significant association with neonatal mortality in the logistic regression model were age 20-24; 35 and above (OR, =0.384, 95%CI: 0.681-0.681); (OR, =0.330, 95%CI: 0.718-0.719) and secondary; higher education (OR=0.139, 95%CI: 0.870-0.870); (OR=0.138, 95%CI: 0.871-0.871) less likely to suffer neonatal death.

Maternal Socio-Cultural Predictor of Neonatal Death

Table 2 shows the binary logistic regression results of two sequential models: model 1-maternal socio-cultural characteristics alone, and in model 2- maternal socio-cultural characteristics, age, education and wealth index. In model 1, we found that residing in rural area (OR=0.110, 95% CI=1.116-1.11, Islamic religion (OR=0.091, 95% CI=1.096-1.096), having co-wives (OR=0.105, 95% CI=1.110-1.111), justifying beating for going out without telling husband (OR=0.034, 95% CI=1.035-1.035) and justifying beating for refusing sex (OR=0.122, 95% CI=1.129-1.130) were significantly more likely to report neonatal death.

In model 2, when age, education and wealth index were added, residing in rural area, having co-wives, Islamic religion, justifying beating for going out without telling husband and justifying beating for refusing sex continued to be significant predictors of neonatal death. Though, the odd of neonatal death is less with age and education.

Discussion

Results from this study greatly expand the data available on neonatal death. The current study shows that socio-cultural factors such as explored in this study are causally related to neonatal outcomes in sub-Saharan Africa through other intervening factors that have be identified in studies (Bassani, and Jha, 2010; Ndayisenga, 2016). While other findings have associate social factor to neonatal death,
(Lukonga, and Michelo, 2015; Pierce, 2014; Singh et al., 2013; Chowdhury et al., 2010; Mondal et al., 2009), these findings have been base on education, place of residence, mothers’ age, occupation, (Pierce, 2014; Singh et al., 2013), our result encompasses on these factors by considering maternal actual interaction within the social cultural context. Firstly, our results support other finding from literatures; mothers’ individual socio-demographic factors (age, no or low level of education, wealth and place of resident) are associated with adverse neonatal outcomes even when husband’s socioeconomic factors are taken into account.

The multivariate analysis examining an array of other social context of neonatal death not previously examined potentially in studies of neonatal death. The results show that the context of place of residence, religion, having other wives, having problem with getting permission and other cultural mentality that beating is justify for not telling husband before going out and for refusing sex with husband were related to neonatal outcome. While the effect of these factors can be reduce by age, education and economic status. This is so, because in more traditional society, higher level of female education may also indicate greater female autonomy, and earlier ages at marriage and childbearing may restrict female access to higher levels of education (Stephenson et al., 2006). These finding correspond with the literature on important of mother education and its impact on mother and invariably on the new born (Makoka, 2013; Mondal, Hossain, and Ali, 2009).

This study found that births to mothers from rural area, below age 20, low education and are more likely to die pre-maturely than births to mothers in urban centers. These results are similar in some respects to others reported in the literature (Gruebner et al., 2015). Some arguments have been put up to explain adverse neonatal outcome in women of under age, low education, low socioeconomic status and place residence. Mekonnen, Yared, and Mekonnen, (2002) in their study of utilization of maternal health care shows that the reason for high level of utilization of maternal health care services among urban women compare to rural counterparts is that urban women tend to benefit from increased knowledge and access to maternal health services compared with their rural counterparts.

The role of family structure have been identified in cross sectional and reflective studies of neonatal death (Smith-Greenaway, and Trinitapoli, 2014; Freeman, 2013; Stephenson et al., 2006), and in the systematic Review of Risk Factors for Neonatal Mortality in Adolescent Mother’s in Sub-Saharan Africa by Ramaiya et al., (2014) also found family structure an important predictor of neonatal death. Here we build on these findings by prospectively demonstrating that the negative impact of being in a having a co-wife to be strong factor in neonatal death. Our results show that the odd of having negative neonatal outcome is higher in co-wife family. This is not surprising, as research on polygamous unions suggests that having a co-wife influences her status, reproductive success and child’s health (Gibson and Mace, 2007). This is consistent with a statement in Bove, and Valeggia,
study of polygyny and women’s health, which states that polygyny, represents a “co-operative conflicts” paradigm, because of its role in structuring women’s access to resources essential for their own health and that of their children. As such, utilization of maternal and child healthcare services tends to be lower among polygynous women (Stephenson et al., 2006). Therefore, the contextual prevalence of polygyny is associated with infant mortality, which is spuriously explained by the concentration of socioeconomic disadvantage and, to some extent, the widespread gender inequality that characterizes highly polygynous settings (Smith-Greenaway, and Trinitapoli, 2014). In another finding, Eleri, and Ernestina, (2013) hypothesized that the vulnerability and distress associated with polygamous marriages may be mediated by the quality of the relationship with the husband.

Finally, this study investigated the attitude of women to husband IPV and its impact on neonatal death by analyzing their response to the question whether beating is justify when a women go out without telling the husband and when a woman refuses sex. Indeed, we found a strong influence on neonatal death. The finding corresponds with finding in studies, that considers the attitudes of women’s justification of beating as a reflection of women’s perceptions of social norms concerning violence and their acceptance of male decision making authority may have implication on maternal and child health: by limiting decision-making power around reproductive health, maternal and child health; reducing women ability to decide when to become pregnant, how often pregnancies should occur, and not able the type of services can be access for antenatal service, delivery and post-natal services (Hindin, 2003; White et al., 2013; Taft et al., 2015; USAID, 2015).

This study is limited by the data available. Some studies have pointed to the fact that having single parent and consanguineous marriage are also causal factors in neonatal death, which we did not have enough information on. However, this study provides some evidence of the possibility of social context factors in neonatal death. It draws from social demographic factor to the socio-cultural factors that are likely to be a causal factor in neonatal death. This study therefore recommends that, to reduce the rate of neonatal death and ensure maternal health, the socio-cultural context need to be considered. Focus on women empowerment and spousal enlightenment will be of great advantage.

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**Availability of Data**
The data for this study is from Demographic and Health Surveys Program website and is available on request.

**Ethical Consideration**
The data for this Study were collated by MEASURES DHS, ICF Macro in Calverton, Maryland, USA. The data
were made available as a secondary data without any link to the respondent. The survey exercises and the data were approved by Institutional Review Board of ICF Macro in Calverton, Maryland, USA, and also by specific ethics-related committees of the countries concerned. International standards of data collections were duly employed and all participants gave informed consent before participation and information collected were accorded the right confidentiality. For this study, the lead author is a registered and applied for the use of the data and adequate permission was given by MEASURES DHS before the data were downloaded and used.

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