

Socio demographic factors associated with maternal death in Ghana

Background

The introduction of the safe motherhood programme in 1995 introduced a range of interventions which included antenatal care, labour and delivery care, postnatal care, family planning, prevention and management of unsafe abortions, and health education but still MMR has not been encouraging over the years and improvements are so slow. The Government of Ghana in 2003 introduced a policy exempting women in the three northern regions and the Central Region attending public and private health facilities from paying user fees for delivery care. The 'fee-free' delivery policy aimed to improve levels of skilled attendance at birth and thereby reduce maternal morbidity and mortality. In 2005, the strategy was extended to the remaining six regions of the country.

Women in the reproductive age group form about 22% of the population in most developing countries; they carry the burden of pregnancy, childbirth and child care and therefore form a special vulnerable group (Britwum, 2006). Various authors have sought to describe the reality of maternal mortality in different contexts. For instance, the phenomenon of maternal mortality has been described by Rosenfield and Maine (1985) as a neglected tragedy. Similarly, Ngom, Akweongo, Adongo, Bawah and Binka (1996), illustrated maternal mortality as an unresolved tragedy. Ghana's maternal mortality rate continues at an unacceptably high level. Maternal mortality figures vary widely by source and are highly contentious, the best estimates for Ghana suggest that roughly between 1,400 and 3,900 women and girls die each year due to pregnancy-related complications. Additionally, another 28,000 to 117,000 women and girls will suffer from disabilities caused by complications during pregnancy and childbirth each year.

Maternal mortality has had unsatisfactorily high over the years, therefore a research on the factors that contribute to this phenomenon would be essential. An understanding of the factors that influence maternal mortality will serve as an important guide to the development of focused and evidence based health interventions to prevent further maternal deaths. A comprehensive understanding of the root causes of the present unacceptable toll of maternal mortality in developing countries deserves a serious attention (Hefez, 2000). Again researches in Ghana over the years have been based on the measurement of maternal mortality and description (GMHS, 2007, Ngom et al 1996), and evaluation of maternal mortality programmes (Britwum, 2006). Also this research would aim at considering the socio-demographic factors that influence maternal deaths in Ghana.

Methods

The data for this study was drawn from the 2007 Ghana Maternal Health Survey. A total of 609 maternal deaths that occurred within 2002-2007 within the ages of 12-49 were analysed. The definition of maternal death used in this review was based on the 10th revision of the International Classification of Diseases, which defines a maternal death as the death of a woman while pregnant or within 42 days of termination of pregnancy, regardless of the duration and site of the pregnancy, from any cause related to or aggravated by the pregnancy or its management but not from accidental or incidental causes. The independent variables in this study were age, educational level, place of residence, marital status and parity. Maternal

age at death was categorised into six, less than 19, 20-24years, 25-29years, 30-34years, 35-39years, 40 and above. Educational level was put into six categories, women who had no education: those who confirmed to have never had any formal education, those whose educational levels were unknown, those with primary level, middle/JSS level, SSS level (whose education ended at the senior secondary/high school level) and tertiary (those who completed training college, polytechnic or university). Marital status was put into five categories: those who never married, or were separated, divorced, widowed and married/living together with a partner. Dependent variables were the causes of death. The causes of death were categorised into two; maternal deaths and non maternal deaths. Maternal deaths were defined as the death of a woman during pregnancy or within 42 days of the end of pregnancy from causes related to or aggravated by pregnancy, but not from incidental causes. Non-maternal deaths were female deaths that were not pregnancy related. Aside descriptive, logistic regression was used to explain the likelihood of a woman dying in pregnancy as a result of maternal death. Logistic regression was employed in order to obtain the odds.

Results

The results showed that 24% of respondents were aged between 35-39 years and the lowest were women aged 19 years and below (11%). Majority of the deceased had up to primary and middle school education (61.4%). A few had tertiary education (8%) whilst those who had never had education formed 30% of the respondents. The remaining had secondary education. Sixty percent of the respondents were married and living with a partner at the time of death. The never married women formed 23% whilst the divorced and separated consisted of about 11%. Eastern and Ashanti Regions had the highest number of deceased women (18% each) whilst Upper West had 6%. Rural areas accounted for a higher percentage (59%) than urban areas.

In order to explain the effects of various background variables that account for maternal death two sequential models were created. First of all the distant variable that is level of education of a woman was been tested and later intermediate variables were added to see the effect or change the intermediate variables made on the distant factors. The choice of a logistic regression was informed by the conceptual model used for the study which postulates that the cause of maternal death is not due to a specific factor but an interplay of distant and intermediate factors to produce an outcome that is death. A chronological modelling technique of adding factors in stages was adopted to identify consistent and robust predictors of causes of maternal death.

In model 1, the level of education of the deceased woman which is considered as the distant variable in the study was measured, some of the attributes showed positive and significant probability of dying from obstetric causes. Some categories within these variables had higher chances of dying from maternal death. Those whose educational level could not be told were four times more likely to die as a result of pregnancy and its related causes (OR 4.4 $p < 0.001$). Women with senior secondary education were about 90% (OR 1.9) more likely to die of maternal causes than those with primary education. Education had a direct relationship with maternal death. With the addition of some intermediate variables such as age, marital status and parity which described the reproductive status of the woman, the likelihood of dying as a woman from maternal causes increased and decreased in some cases

suggesting a strong effect. In model 2, women with senior secondary level of education were five times more likely to die of maternal causes whilst in model one it was a little less than twice (OR 1.9, $p < 0.001$). Women within ages 20-24 were twice likely to die of maternal factors than those less than age 20. Women who were married/living together with their husbands were 30% likely to die of maternal causes.

Conclusions

All socio-demographic variables measured as a whole were found to have a significant relationship with maternal death. The socio-demographic variables were age, marital status, education and place of residence (region and urban/rural). Certain age groups are more prone to some specific causes of death. According to the analysis women less than 25-29 years were at a higher risk of dying from maternal causes. With education women whose level were less than a senior secondary school level were found more likely to die from maternal causes. The Ministry of Health and the Ghana Health Services should develop different interventions to address specific maternal death related issues in order to improve maternal health.