

Denominational Differences in Child Mortality in sub-Saharan Africa: The example of Ghana

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The idea that religion affects survival is nothing new although the focus has mainly been on adult mortality (Hummer et al., 1999; Koenig, McCollough, & Larson, 2001; McCollough et al. 2000; Oxman, Freeman, & Manheim, 1995). Durkheim's work on suicide marks one of the earliest social scientific attempts to systematically link religious involvements and mortality. In more recent times, scholarly research has established a significant body of work that examines the relationship between religion and a host of social demographic and health-related outcomes (Gyimah, Takyi, & Addai, 2006; Takyi, 2003; Yaeger et al., 2006). Religion has a salutary or negative effect on health and survival by prescribing behaviors that may be harmful to health/care or proscribing behaviors that may prevent illness or treatment.

Despite the valorization of good health by all religions, recent events in Ghana have highlighted some distinctive denominational subcultures which may impact on survivorship (BBCNews, 2005a, Ghana News Agency, 2005; Osabutey, 2006). The emphasis on religion in this study is borne in part by its emergence as a major social force in the country. According to Gallup's (2000) millennium poll, more than 90 percent of Ghanaians belonged to a religious organization with about 82 percent reporting regular religious worship. Increasingly, religion has become the framework through which the average Ghanaian interprets life events. Diseases, illnesses, and deaths are often given religious and spiritual connotations and there are numerous reports of faith healing practices in lieu of medical care. Most people first report illnesses to 'prayer camps' and are often kept there until the situation gravely deteriorates, when they are then rushed to the hospital.

A recent BBC News (2005a) report, for instance, indicated that the Ghanaian government had to intervene in the case of a very sick young girl who was being denied access to medical care because of the religious beliefs of her parents. In a related development, the Ghana News Agency (2005) reported that many children in parts of the Central Region were not immunized because of their parents' opposition on religious grounds. These developments lead us to question whether there is a relationship between religious involvement and child survivorship in Ghana. We argue that denominational differences in proscribing behaviors that may prevent illness and encouraging conducts that may be damaging to health is likely to result in significant child mortality differentials.

Although the major sects are Christianity (in various forms), Islam and Traditional, the religious experiences in Ghana, as is the case in much of sub-Saharan Africa, have been significantly impacted by what Mazrui (1986) terms the "Triple Heritage" where the African indigenous heritage often serves as the background against which the activities of the other sects take place (see also Kirby, 1993). Besides the mainstream and established Christian denominations (Protestants and Catholics), one can identify a spectrum of "other Christian" groups including the African syncretic churches, Evangelicals, Charismatic and Pentecostals (Assimeng, 1989, 1986, 1981; Gifford, 1994b; Nukunya, 1992; Yirenkyi, 1999). At the congregational level, these "other Christian" groups account for a sizable proportion of Christians in the country. The growing popularity of the "other Christian" groups have been variously attributed to the disenchantment with the liturgy and beliefs of the mainstream churches (Assimeng 1986; Nukunya, 1992).

Considering the growing influence of religious activities and involvement in Ghana, it is not surprising that there is an emerging literature that examines its role in the socio-political lives of Ghanaians (Addai, 2000; 1999, Adongo, Phillips, & Binka, 1998; Ellis and ter Haar, 1998; Gyimah, Takyi, & Addai, 2006; Takyi, 2003). In a more recent paper, Gyimah, Takyi and Addai (2006) examined religious variations in the use of maternal health services (MCH) and found significant differences. Consistently, women who identified as adherents of traditional religion were significantly less likely to use such services compared with Catholic women. Given the empirical regularity between MCH utilization and child survival, we argue that such denominational differences could significantly impact on child mortality patterns.

Our expectation is also influenced by other considerations including the emergence of faith healing churches (Osabutey, 2006). The economic hardships of the 1980s coupled with high health user fees have made faith healing a viable economic alternative to the formal medical care. Mothers who profess such faiths are admonished to use 'holy water and ointments' coupled with prayers and fasting to deal with children's ailments instead of seeking modern medical care. These new churches have attracted so much attention that, more often, modern health services are attended only when religious healing has failed and the condition has gravely deteriorated. Osabutey's (2006) interview with the leader (*prophet*) of one such healing church, *The Divine Healers Prayer Camp* in the Greater Accra Region provides a vivid account on their activities. Some aspects of traditional religion in its various forms are also harmful to child health and survival. The basic element of traditionalism is the belief in the spirit world. Causes of illnesses are seen as resulting from ancestor sanctions, witchcraft, sorcery and the like. Kirby

(1997) observations in Ghana suggest that diviners are first consulted on how such illnesses should be remedied often resulting in fatalities.

Although several studies have examined the correlates of child mortality (e.g., Amankwah, 1996; Benefo and Schultz, 1996; Binka et al., 1995; Sullivan et al., 1994; Gyimah, 2006), and religion has often been mentioned as an explanatory factor (Kuate Defo, 1996; Gyimah, 2006), there has been little theoretical articulation on how religion impacts child survival. Such an omission is unfortunate given the overwhelming influence of religion on the African social fabric and the general interpretation of illness causation within a religious context. In a recent World Service survey, for example, three-quarters of those questioned in Africa identified religious leaders as the most trusted group, compared to only a third worldwide (BBC News, 2005b). Asked who had had the most influence on their decision-making over the past year, a significantly higher proportion of respondents in Africa indicated religious leaders.

These statistics suggest that religion plays a meaningful role in life of Africans and may impact significantly on behavior formation. It is thus not surprising that at the Pan-African Forum on Building Trust for Immunization, the Executive Director of UNICEF lamented the insufficiency of policy attention on traditional and religious leaders on issues relating to child health and survival (UNICEF, 2004). Against this backdrop, this study aims to assess whether some religious groups experience better child survival chances than others, and whether such differences are due to socio-demographic factors. Although religious norms and beliefs that affect the risk of deaths cannot be assessed directly due to data limitations, religious affiliation will be used as a proxy.

Theoretical framework

Following the conceptual model adopted by Gyimah and colleagues (2006) in their study on religion and MCH service utilization, we postulate two possible pathways through which religion may impact on child survivorship. The first hypothesis is based on the notion that the doctrinal teachings, beliefs and values of the various religious groups by themselves may influence child health and survival. This conception derives, in part, from Durkheim's notion of religion as one of the three main institutions of social control. By prescribing or proscribing certain lifestyles and regulating daily health-related behaviors, religion may negatively or positively impact on health and survival. As Hummer and colleagues (2004) point out, one of the key functions of religious communities is to shape the norms of individual members through behavioral regulations that are specified in sacred teachings, reinforced through authoritative messages from congregational leaders, and solidified through social interactions in the religious community.

While the certain religious groups (mainstream Christians and Moslems) prescribe behaviours that enhance health such as the use of modern medical care, others stress on divine healing through prayers and fasting. Believers of the latter group who seek modern care in times of sickness are often chastised for having little faith in God. Other aspects of religion that affect child survival centre on perceptions of disease aetiology and treatment patterns. This is particularly so among adherents of traditional religion. In the developing world, it is often presumed that households will rely on modern health care given effective motivation and convenient accessibility. This is not always the case in much of sub-Saharan Africa primarily because some diseases and infections tend to have mythological underpinnings (Feyisetan and

Adeokun, 1992; Ogunyigbe, 2004), and as such, issues on hygiene and nutrition become secondary. Because of the spiritual undertones in illness causation, treatment is often sought likewise rather than through the modern medical care. As Adongo and colleagues (1997) have observed in northern Ghana, soothsayers are consulted on a number of issues including those pertaining to child morbidity and mortality. Similar observations have been made among the Anufo in Northern Ghana (Kirby, 1993; 1997). Convulsions are also explained in spiritual realms and treatment is often sought likewise. Traditional medicine in the form of charms, amulets and talisman is often applied to remove the bewitching spirit before resorting to modern medicine if need be. Some children are also regarded as ‘gifts’ from the gods and as such, their welfare and care are by the strict dictates of the particular deity. In times of sickness, considerable care is taken not to displease the gods by seeking modern medical attention for such children without first consulting the deity.

There is also the belief in ‘spirit children’ who are believed to be destructive to their families and community and therefore not meant for this world. Among the *Kassena-Nankana*, the spirit children locally called *chichuru* or *kinkiriko* are killed immediately after birth once identified as such by soothsayers (Allotey & Reidpath, 2001). As it pertains to this study we argue that parents’ adherence to religious teachings and performance of rituals may strengthen or weaken a child’s defense against diseases. By engaging in faith healing, for example, parents may endanger the health and welfare of their children. Given denominational differences in teachings and belief systems, we can expect child mortality differences among religious communities if this hypothesis holds.

In contrast to the preceding thesis, the second hypothesis is based on what some researchers call the “characteristics” hypothesis. This thesis assumes that variations in observed behavior between religious groups mainly reflect differential access to social and human capital rather than religion per se. Here, it is argued that religious affiliation masks other putative characteristics which are known to associate with health-related behavior and that, these factors need to be controlled statistically to be able to isolate the residual effect of religion. Previous work in Ghana, for example, has shown remarkable differences in educational attainment among the different religions (Takyi & Addai, 2002). In general, women who profess to be traditionalists and Moslems tend to be at the lower echelons of the educational ladder. Prior research however associates high maternal education with enhanced child survivorship through better hygiene and nutrition for example. Proponents of this thesis argue that child mortality differentials reflect denominational differences in socio-economic rather than religious factors per se.

We argue that these viewpoints may be synergetic in that while some religious differences are likely to attenuate in the context of socio-economic factors, there is the likelihood of the persistence of some differences. To test these competing hypotheses in the multivariate analysis, two statistical models are estimated. The first model has religion as the only independent variable and assesses whether religious affiliation significantly impacts on child survivorship. In the full model, we include some controls for the mediating influence of geographic, socio-economic, socio-cultural and demographic factors to assess if religious affiliation has an independent effect net of the control variables. Given data limitations, however, we are unable to consider all theoretically relevant factors that affect child survivorship.

DATA AND METHODS

Data from the 2003 Ghana Demographic and Health Surveys (GDHS) were used for the study. This nationally representative survey is the fourth in the series of similar surveys undertaken by the Ghana Statistical Service in collaboration with Macro International. It is based on a self-weighting probability sample of women in the reproductive ages of 15 to 49 years and solicited information on socio-demographic and health variables. The sample size of 5691 contributed a total of 3298 children in the five years preceding the survey. Following previous work (see Gyimah, 2006), this study is restricted to these recent births for the following reasons. First, the quality of information on such births is better than births that occurred years ago which are associated with a higher likelihood of displacement of vital events such as age at death for deceased children. Again, focusing on recent births reduces the problems associated with period effects of child mortality and lastly, it also ensures that maternal and household characteristics relate to current conditions.

Table 1 presents the operationalization of the variables used for the study. The main independent variable is religion. In prior research on the interconnectedness between religion and health outcomes, religion is measured in several ways to include the frequency of church attendance (religiosity), subjective views about God (Krause, 1993), denominational affiliation (Goldscheider & Mosher, 1988). In this study, we are constrained by the lack of multiple measures of religion in the dataset. Given that the only question used to capture religion in Ghana asked about affiliation, denominational affiliation is used as a proxy. As Lehrer (2004) has pointed out however, religious affiliation on its own makes a difference in the discussion of a host of economic and demographic behavior since it has an impact on the perceived costs and

benefits of several decisions that people make over their life time. Thus, while we acknowledge the limits that come with the use of one dimensional variable to capture a concept that has several meanings, we also contend that religious affiliation alone may provide a window to assess how it impacts on child survival. Theoretically, a more coherent approach to understanding the influence of religious background on child mortality is to consider the denominational affiliation of both parents. Unfortunately, the DHS children's file contains only the religious affiliation of the mother and this is a limitation that needs to be recognized. Religious affiliation was categorized into 5 groups. Although we recognize the differences in liturgy of Catholic and Protestant churches, given the differences in between these mainstream Christian churches and other Christian groups with respect to issues on faith healing, we combined the former into a category and compared them with the other Christian sect.

The outcome variable is the risk of death in childhood (0-59 months) measured as duration from birth to the age at death or censored. Since most children were censored at the time of the survey, an event history model was used to account for censoring in the estimation of exposure time in the multivariate analysis. Children contributed data records for each time unit from birth until they died or were censored. In the DHS, age at death, reported in days and months, is subject to heaping at certain ages. Given this, a discrete formulation of time was preferred to a continuous one. Discrete time models require that episodes be split into periods of risks (Singer & Willet, 2003). Because the risk of death fluctuates less by age in later childhood period, time was unevenly split into five risk groups as 0-3months, 4-6 months, 7-11 months, 12-23 months; 24 months and above, with dummies for each duration. Each child contributed one observation for each time period through which she survived. This resulted in a total of

observations from the 3488 children in the 2003 sample. The discrete time hazard model is specified as

where,

is log odds of dying at period j ,

are the sequence of dummies indexing the five time periods; and

are the regression coefficients for observed heterogeneity. The coefficients in the multivariate models are to be interpreted as the effects of a given variable on the log odds of dying. For categorical variables, negative coefficients suggest a lower risk while positive coefficients imply a greater risk. The coefficients can also be exponentiated and interpreted as odds ratio.

DHS data typically have a hierarchical structure due mainly to randomly sampling naturally occurring groups in the population with children nested within mothers. Most women contributed more than one child to the sample and such children are expected to be more alike at least in part because they share common characteristics thus violating the independence assumption of conventional regression models. Unless some allowance is made for clustering, standard statistical methods are no longer valid as they generally underestimate the variance. To account for heterogeneity and possible clustering within households, we used the Huber-White sandwich estimator to produce robust variance estimates (StataCorp, 2003; White, 1980; Williams, 2000). This approach allows observations to independent between but not within households.

Although the impact of the child survival is the main focus of this study, we also consider a number of bio-demographic, socio-economic and household factors traditionally known to affect child mortality. These included maternal age at birth, single or multiple birth, birth order of child, breastfeeding duration, length of the birth interval, mother's education, household size and facilities, place of residence, religion, place of delivery and the use of prenatal services (Hobcraft, McDonald & Rustein, 1985; Kuate Defo,1996; Palloni & Millman,1986; Pebley & Millman,1986; Pedersen,2000; Majumder et al., 1997; Rafalimanana & Westoff, 2000).

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Southern Medical Journal: Volume 97(12) December 2004 pp 1223-1230

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