Correlates of unmet need for contraception in Zambia: A look at community-level determinants

About 200 million women of reproductive age in developing countries who do not want to have any more children or want to delay the birth of their next child for at least two years are not using contraceptives. These women are said to have unmet need for contraception (Sedgh et al. 2007; Singh and Darroch 2012). Women who do not want any more children have unmet need for limiting whereas those who want to delay their next pregnancy have unmet need for spacing.

Though the 1990s saw a drop of 2% in the proportion of married women with unmet need for contraception (19% to 17%), the number of women with unmet need has remained nearly constant because of population growth (Ashford 2003; Ross and Winfrey 2002). Bayer (2002:2) asserted that despite the increase in contraceptive use, “the number of people who want family planning is growing faster than the population of reproductive age, contributing to a high level of unmet need.” Sub-Saharan Africa’s level of 26% is the highest compared to the other regions (World Bank 2010). Zambia’s figure of 27% is slightly above that of the region. The reason for the sub-Saharan’s level being the highest is that the region has high fertility rates and low contraceptive use (Bayer 2002; Gribble and Haffey 2008).

Family planning is considered to be key in achieving Millennium Development Goals (MDGs). Unmet need for contraception (unmet need) was added to the fifth MDG in 2006 as a way of tracking improvement on maternal health (Ferdousi et al. 2010; Ko etal. 2010; UNFPA and Program for Appropriate Technology in Health [PATH] 2008). The fifth MDG has two targets: to reduce maternal mortality ratio by three-quarters and to achieve universal access to reproductive health by 2015. The former has two indicators while the latter has four indicators and the fourth one (Unmet need for family planning) is the focus of this study. Some studies have made a case for family planning by showing how each MDG is linked to family planning (Bernstein 2006; Singh et al. 2003). They contended that achieving MDGs is dependent on satisfying unmet need, in that family planning can among other things, aid in ensuring that all children go to school, curb the AIDS pandemic, reduce infant mortality and promote gender equality.

Family planning helps families to have fewer children who they can afford to educate unlike when they have more children. The use of the condom offers dual protection against pregnancy and Sexually Transmitted Infections (STIs) including HIV/AIDS (Smith et al. 2009). Furthermore, Reynolds et al. (2006) suggested that investing in a family planning project was more effective than investing in an antiretroviral drugs project aimed at preventing mother-to-child-transmission. They noted that expenditure on the former prevents about 29% more births of babies infected with the HIV virus than an equal amount spent on the latter. Women who use contraceptives are more likely to space their births for at least 36 months apart (UNFPA and PATH 2008). This helps the mother to breastfeed the baby for a longer period. Moreover, the mother will have more time to take care of the baby than when another one comes to soon. This reduces chances of the baby being affected by diseases which may lead to early deaths. Family planning emancipates women. Women who do not use contraceptives risk having unintended pregnancies which can hinder their progress in education and employment (Cates Jr. 2010). Studies have established that contraceptive users are more likely to be employed compared to
non users (Riyami et al. 2004; MacPhail et al. 2007; Seutlwadi 2012). Similarly, Bernstein (2006:72) asserted that “Investing in a career …would be inconceivable for a woman with no control over the timing and spacing of her pregnancies”.

Since meeting unmet need has numerous benefits to individuals and society, it is imperative for governments to come up with strategies aimed at reducing the risk of having unmet need. Doing so requires that we first understand the correlates of unmet need. Several studies have shown that there are a number of factors determining unmet need which vary according to different areas (Ahmadi and Iranmahboob 2005; Bhandari et al 2006; Bongaarts and Bruce 1995; Devi et al. 1996; Ikamari and Lwaanga 2000; Klijzing 1999; Korra 2002; Omwago and Khasakhala 2006; Robey et al. 1996; Shah et al. 2004; Short and Kiros 2002; Siddiqua and Kabir 2004). Among others, these studies have established that unmet need is significantly lower among women from wealthier households, those with secondary or higher education, those residing in urban area and those in formal employment. On the other hand, older women, women with higher parity, those who married before their eighteenth birthday, those who did not hear about family planning on media and those whose fertility desires were not the same as their partner’s had a significantly higher unmet need.

Though these studies have provided useful information on correlates of unmet need among married women, the tendency has been to focus on factors operating at the individual and household levels. Thus, community factors have largely been ignored and yet these are more effective policy informing instruments than the individual and household ones (Degraff et al. 1999; Stephenson & Tsui 2002). Similarly, Babalola & Fatusi (2009) observed that overlooking these factors results into a gap in research and program implementation. Furthermore, building on Claeson, Griffin and Johnston et al.’s (2001) work, Shaikh (2010) argued that the analysis of factors underlying unmet need just like other health outcomes ought to incorporate individual, household and community levels. This is because individuals are influenced by households in making decisions related to seeking reproductive health care. Additionally, individuals, responses to health programmes will be influenced by the kind of community they live in (Stephenson et al 2006).

Existing studies on contraceptive use have established that community factors significantly influenced geographical differentials in contraceptive use (Stephenson & Tsui 2002; Stephenson et al. 2007). No study has examined the community factors underlying unmet need in Zambia. Understanding community factors underlying unmet need is crucial in coming up with strategies aimed at addressing unmet need. Therefore, the aim of this study is to examine the influence of community-level determinants on unmet need in Zambia.

**Data source and methods**

The data set for this study’s analysis is the 2007 Zambia Demographic Health Survey (ZDHS). This is the most recent nationally representative sample survey of women and men of reproductive age. It was designed to provide information on levels and trends in fertility and use of family planning methods among other things. Based on the 2000 Census of Population and Housing of the Republic of Zambia (CPH), the sampling frame comprised 16,757 standard enumeration areas (SEAs). These were the Primary sampling Units (PSUs) and in this case served as the communities. They comprised both rural and urban areas. A systematic, two stage
A stratified sampling method was used to come up with 8,000 households. Among the selected households, 7,146 women aged 15-49 and 6,500 aged 15-59 men were interviewed. Data was collected using three questionnaires: Household, Women’s and Men’s. Though sexually active never married and formerly married women can have unmet need, they are not included in this study. This is because it considers variables related to the partner and marriage. Thus the sample included in the analysis for this study was restricted to 4,316 currently married women.

Ethical Considerations

The study was based on secondary analysis of data from the 2007 Zambia DHS without participant identifiers. Therefore, the authors did not need any ethical approval for the study. Permission to use the data set was obtained from MEASURE DHS, ICF International.

Variables Measurement

Outcome variable

The outcome variable for this study was unmet need. The measure was generated from a constructed DHS variable which employed various variables to describe the condition of fecund women who are married or living in a union and do not want any more children or want to delay their next birth for at least two years but not using contraception. Pregnant or ammenorrheic women with unwanted or mistimed pregnancies or births were also considered to have unmet need if they were not using contraception at time they conceived. The variable is dichotomous and it was categorised as: unmet need (met need, unmet need).

Independent variables

The independent variables include age, number of living children, region, education, employment, wealth index. These were classified as individual, household and community level determinants.

Individual level factors include age categorised as (15-24, 25-34, 35-49); age at first marriage (<18, 18 and above); number of living children (0, 1-2, 3-4, 5 & above); ethnicity (Bemba/Mambwe, Tonga, North Western, Barotse, Nyanja/Eastern/Tumbuka, Other); education (no education, primary, secondary/higher); occupation (no work, professional/clerical, sales/service, agriculture, manual).

Household level factors include wealth index categorised as (poor, middle and rich); partner’s desire for children (same, wants more, wants fewer, don’t know).

Community level factors categorised as residence (rural, urban); region (Central, Copperbelt, Eastern, Luapula, Lusaka, Northern, North Western, Southern, Western); mean age at marriage of women in the PSU; percentage of women who were exposed to a family planning message in the past six months in the PSU (low, medium, high); percentage of women with a high social economic status in the PSU (low, medium, high); percentage of women with an ideal number of four or less children (low, medium, high); percentage of women with secondary or higher education in the PSU (low, medium, high).
Analytic plan

Analysis will be done in three stages: univariate, bivariate and multivariate. The first stage involves presenting percentage distributions of selected characteristics of the respondents. At the second stage, chi-square analysis will be conducted to identify differences between the dependent variable and each of the independent variables. The final stage will employ multilevel modeling to examine the relationship between unmet need and individual, household and community–level determinants. All analyses will be done using Stata version 11.1.

A multilevel modeling technique is appropriate for this study in that it is able to account for the hierarchical structure of the DHS data. The individuals (level 1) are nested in households (level 2), and households in communities (level 3) (Goldstein 2011; Guo & Zhao 2000; Sharma 2011). Therefore, individuals from the same community are more likely to have similar behavior, contraceptive inclusive (Leite & Gupta 2007; Merlo et al 2005). Multilevel modeling also allows researchers to study the extent to which factors at each level account for the variation in the outcome variable which is unmet need in this case (Diez-Roux 2000; Kaggwa 2008). Furthermore, Browne et al. (2005); Goldstein (2011); Guo & Zhao (2000); Pallitto & O’campo (2004) asserted that the technique assumes interdependence of observations.

Preliminary results

The women’s age at first marriage was 17.8 years whereas the mean number of children ever born to these women was four. More than one third (37.8%) of the currently married women belonged to the Bemba/Mambwe ethnic group. Eastern province had the highest percentage (14.5%) of the respondents whereas Western had the lowest (9.0%). More than half (53.7%) of these women married before reaching their eighteenth birthday. The percentage of those with secondary or higher education was 26.9%. Women aged 25-34 had the highest level of unmet need followed by those aged 35-49. Those aged 15-25 were the least. Unmet need was highest among women with primary education (66.5%) compared to those with no education and those with secondary/higher. The highest proportion of women with unmet need resided in Eastern Province whereas Western Province had the lowest. Rural women had a higher level of unmet need compared to urban ones. The empty model (no explanatory variables) revealed that the random effects at the community level were 47%. This was significant at p<0.001. This justifies assessing random effects at that level. The large community variance in unmet need suggests that there are big differences in unmet need across communities. Therefore, there is need to contextualise family planning services in Zambia.