Disparities in modern contraception use among women in the Democratic Republic of Congo

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In the general context of economic analyses of population growth and resources, birth control is beneficial for the health of a population. The use of modern contraception reduces the fertility rate and allows developing countries to achieve Millennium Development Goals (MDGs). Contraception use slows population growth, improves birth spacing, maternal health and reduces the risk of both infant and maternal mortality (1). The expected percentage of maternal deaths averted by contraceptive use ranged from 18.2% and 15.2% in Malawi and the Democratic Republic of Congo (DRC), respectively, to 76.8% and 73.8% in the United Kingdom and United States of America, respectively (2).

In developing countries, an estimated 35% of births are unintended and some 200 million couples reported a desire to delay pregnancy or cease fertility. However, they often do not use contraception (3). It is therefore not surprising that Sub-Saharan Africa (SSA) would turn out to be the region most affected in terms of lack of access to and use of modern contraceptives. Countries such as Rwanda and Uganda record an estimated 38% level of unmet need for family planning (FP), with Ghana and Kenya at 35% and 26%, respectively (3). A very low modern contraception prevalence of 1.0% is recorded for Guinea, 1.2% for Somalia and 1.7% for Chad (3). This situation has stalled the targeted fertility decline in Africa and this is also partly attributable to a lack of suitable population policies (4).

If all women with unmet need in developing countries were able to space or limit their births as desired, the estimated total fertility rate decline would have been in the range of 10-25%, with the value in these ranges depending on the country, and would move 30-50% of the way towards replacement fertility (4).

The DRC does not have a population policy. As such, the FP activity has not evolved into a global development plan. It was originally centred on women without taking into account either their reproductive health wishes or constraints in the physical environment. With a population growth of 2.8%, the country's population has increased fivefold over the past 5 decades (estimated at 70 million), depriving the population of the socioeconomic benefits of controlled fertility (5).

Contraceptive methods are broadly grouped into traditional and modern methods. Modern methods include female sterilization, male sterilization, the “pill”, an Intra-uterine Device (IUD), injectable contraceptive drugs, implants (such as Norplant), depotmedroxyprogesterone acetate (DMPA), female and male condoms, the lactational amenorrhea method (LAM), emergency contraception, a diaphragm and foam/jelly (3).

In 1994, in response to the Cairo conference, FP methods were extended to couples. Nearly 17 years later national investigations in the DRC, including the Demographic and Health Survey (DHS) 2007, still found poor reproductive health indicators, such as high child and maternal mortality, a high proportion of short birth intervals, and a low contraceptive prevalence of 6.7%. This was partly due to compromised births, which were either early, late or too close together, a situation which has led to a high rate of maternal and child deaths (549 women per 100,000 live births and 97 children per 1,000 live births). Nearly 26% of the births occurred at intervals of less than 24 months. This is partly attributable to a lack of access to and use of modern contraceptives. The Congolese FP market meets only 46% of the demand and 45% of potential applicants are reported to be waiting for access (6).

For youth, studies have shown that condoms are not effectively used in the DRC (7). Those aged 15 to 19 have a fertility rate of 135 per 1,000, and with the current policy of FP, these young people will continue to continue at similar levels. At this rate, the country will not be able to achieve most of its development targets or to initiate its goal of demographic transition.
This higher fertility is undoubtedly variable within the country, especially if we take into account the regional inequalities, disparity in living standards, education of women and/or area of residence. For example, the Total Fertility Rate (TFR) varies from 3.7 children per woman in Kinshasa to 7.7 in Kasai-Occidental. Factors related to regional variations in contraceptive use that typically remain unaccounted for by individual and household factors are related to the issue of availability, accessibility, affordability and remoteness: factors such as regional-level heterogeneous area cultural beliefs, the presence and quality of reproductive health services, the physical characteristics of the area, macroeconomic factors, the presence of transport routes, and whether or not the region is under armed conflict (7).

Spatial analysis of provincial variations in modern contraceptive

We conducted a study to examine the geographic distribution of the prevalence of modern contraceptive use across the provinces of the DRC using data from DHS 2007. In addition we investigated the association between modern contraceptive use, birth intervals and associated risk factors among Congolese women in general and young women in particular.

The DHSs are periodic cross sectional health surveys funded by the U.S. Agency for International Development’s (USAID) Bureau for Global Health. Data from the DHS undertaken in the DRC in 2007 were used. A random sample of 9,995 women of a reproductive age between 15 and 45 years was selected. However, the current analysis is based on 7,172 women with a complete set of data. The objectives, organisation, sample design and questionnaires used in the DHS are described elsewhere (8).

The percentages of women reporting the current use of any modern contraception (outcome variable) along with the percentages reporting a preceding birth interval of ≤ 24 months of the indexed child were tabulated by the 11 provinces of the DRC. Factors taken into account in this study were: breastfeeding, mother’s age, residence in an urban or rural area, education, household economic status and preceding birth interval between children and the province of residence. We used a novel statistical approach that account for the effects of geographical location (province) in the proportion of women reporting a current use of any modern reversible contraception. Although the modelling is complex, we present results in terms of odds ratios (ORs) and 95% confidence intervals (CIs).

We sub-divided the analysis into two groups: the first analysis used all women of reproductive age between 15 to 45 years old (N=9,995) and the second analysis focused on young women, defined as young women of reproductive age between 15 to 24 years old (N=1389).

Factors which were statistically significant associated with modern contraception in bivariate analyses were considered further in the statistical model that accounted for the distortion of the relationship observed by other hidden factors.

With regards to the use of modern contraception among all women, in the geographic analyses there was a striking variation across provinces relative to Kinshasa, the highest being in Bas-Congo [1.47 (1.22, 1.78)] and North Kivu [1.32 (1.12, 1.55)], with the lowest in Kasai Oriental [0.63 (0.52, 0.79)], Kasai Occident [0.77 (0.63, 0.92)] and Katanga [0.77 (0.63, 0.94)]. For the young women sample, except for North Kivu with the highest use of modern contraception, all of the other provinces exhibit a pattern of lower use. There was a clear (East-south-West) East-West gradient; specifically, the two Kasai Provinces were associated with a lower prevalence of modern contraception, while the North Kivu and Oriental provinces were associated with a higher modern contraception use.

In terms of location of residence, women in rural areas have a 53% (OR 0.47; 95% CI 0.34, 0.65) reduced likelihood of using modern contraception than women living in urban areas. For household economic status, women of middle income (OR 0.43; 95% CI 0.30, 0.62) and low income (OR 0.45; 95% CI 0.31, 0.66) have respectively 55% and 57% less of a chance of using modern contraception than those of higher income. Usage of modern contraception depends also on the level of education. Uneducated women have 37% (OR 0.63, 95% CI 0.44, 0.91) less of a chance of using modern contraception than those of higher or secondary education.

Considering age, the usage of modern contraception has a pattern of being restricted to young women and women > 40 years of age. In fact, women who are between 25-40 years have on average 49% less of a chance of using modern contraception than women of 45-49 years. In contrast to women of all ages, the adjusted model for young women’s use of modern contraception shows that the region of residence, location of residence, education and birth intervals are
not significant factors. However, household economic status [0.32 (0.13, 0.75) for high income compared with poorer] and breastfeeding [0.37 (0.19, 0.72) for women never breastfed compared to those with a mixed breastfeeding practice] was associated with the use of modern contraception among young women.

**What do these findings mean for the DRC?**

The results show that the use of modern contraceptives is dependent on the province of residence, location of residence, household economic status, level of education and age. These findings by themselves are not new findings. What is novel in the context of the DRC is the evidence for distinct geographic patterns in the use of modern contraceptive in young women and the whole sample of women in the DRC, suggesting a potential role for socio-economic factors such as accessibility, affordability and availability as well as environmental factors at the province-level, beyond any individual-level risk factors.

As reported in some countries of SSA, this study shows that the use of modern contraception is low in the DRC. These women exhibit a pattern of contraception late in their reproductive period, i.e. when they already have more than two children. The use of contraception increases with age. It is used more frequently between the ages of 20 and 29 and peaks again between 45 and 49, when its use is motivated by the need to stop further child birth.

Women practicing exclusive breastfeeding are reportedly less likely to use contraceptives. However, the study did not show any significant differences between breastfeeding practices and a lengthening of the period between births. No association was found between the use of modern contraceptive methods and the interval between births. Compared to our study, which used data from a single DHS (2007), other studies on the use of modern contraceptive methods, made from successive DHS data collections in Malawi (1992 and 2000), Tanzania (1992, 1996 and 1999) and Zambia (1992, 1992 and 2001), have reported similar results. The substantial increase in contraception in these countries was not accompanied by a reduction in the percentage of short interval births (9).

As in most reported analyses at the individual level, regardless of the husband's influence on the decision of a woman, the use of contraception is related to wealth status and the level of female education. Compared to South Africa, where contraception is free and easy to access, in the DRC, the access to contraception is not only difficult but comes with a fee. In a context where 75% of the population lives on less than $1 per day, most of the population can pay for condoms ($1); other contraceptives are not practically affordable ($800 for an IUD). Women might switch methods if they could afford to (10). The culture in the different provinces also contributes to the unequal access. In the West, which consists of the capital Kinshasa, Bas-Congo and Bandundu, there is a matrilineal culture, and women have more opportunities of access and thus an increased frequency of the use of contraception. The Eastern provinces, which have been engulfed in a long conflict, must rely on massive interventions by NGOs to improve women’s access to contraception. This is not the case in Equateur and the two Kasai regions, in which there is a persistence of a pronatalist culture associated with a low level of female education, gender inequality and a situation in which 86% of all women do not have access to modern health facilities when they need them (11).

In conclusion, there are many factors which account for the spatial variations of contraceptive use within provinces of the DRC. First, the country relies upon a variable physical and human health infrastructure that has suffered lack of investments and fallen prey to decades of protracted conflict, poor governance and economic mismanagement. Second, access to health care, the health services infrastructure and level of development are unevenly distributed and lack adequate and developed health infrastructure to address reproductive health issues. Third, recent conflict in the eastern part of the country has exacerbated this situation even further.

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