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## ABSTRACT

The results of the 2010/11 Zimbabwe Demographic and Health Survey (ZDHS) showed that 32 percent of births among women age 15-49 in the five years preceding the survey were *unintended*—either mistimed (wanted later) or not wanted at all (unwanted). Unintended births pose a serious threat to the attainment of the Millennium Development Goals, particularly for reducing child mortality and improving maternal health. The aim of this study is to establish if there is a relationship between women's HIV status and having unintended births.

The study used cross-sectional data from the 2010/11 ZDHS. Of the 9,171 women respondents in the survey, this study focused on the 1,458 women age 15-49 who had had a birth in the two years preceding the survey, were tested for HIV, and responded to the household relations module (domestic violence module). Almost 14 percent of women in this study were HIV-positive and about one-third (34 percent) reported that a birth in the two years preceding the survey was unintended.

The analysis showed that, controlling for other factors, 1) HIV-positive women were almost twice as likely as HIV-negative women to have had an unintended birth; 2) women who experienced spousal physical violence during their lifetime and women who experienced non-spousal sexual violence were strongly associated with unintended births; and 3) unintended births were significantly associated with the following variables: use of family planning, contraceptive discontinuation, mother's age at birth, marital status, and preceding birth interval of the index child.

Unintended births are a major challenge in sub-Saharan Africa. This analysis showed that HIV status is related to unintended births, with HIV-positive women being twice as likely to have an unintended birth. As a result, countries with a high HIV prevalence may be more at risk for a high burden of unintended pregnancies. HIV-positive women need comprehensive information on family planning.

## INTRODUCTION

In 2008, an estimated 86 million pregnancies globally were unintended. Of these, 41 million ended in abortion, 33 million in unplanned births, and 11 million in miscarriage (Singh 2013). It is further estimated that between 20 and 40 percent of all births occurring in developing countries were unwanted, posing hardships for families and jeopardizing the health of millions of women and children (Worku and Fantahum 2007). *Unintended births* refers to births to women who indicated that the birth was wanted later or was not wanted at all. While unintended pregnancies and unintended births share a lot in common, unintended pregnancies will not always translate to unintended births, hence the two terms cannot be used interchangeably.

Approximately 35 million women in sub-Saharan Africa cannot access family planning and those living with HIV have the greatest unmet need for family planning (Ross and Winfrey 2002). Access to and availability of family planning is a critical factor, particularly in Zimbabwe where HIV prevalence is estimated at 15 percent and unmet need for family planning is 13 percent (ZIMSTAT and ICF International 2012). In Zimbabwe, more than 400,000 live births occur every year (MoHCW, PMTCT Annual Report, 2012) and, according to the ZDHS, unintended births remain high at 32 percent despite a high level of knowledge of contraceptive methods among women (98 percent) and a high contraceptive prevalence rate (59 percent). The aim of this study is to establish if there is any relationship between the HIV status of women who give birth and unintended births. The study has two main objectives: 1) to establish the association between HIV status and unintended births; and 2) to establish the association between gender-based violence (GBV) and unintended births.

## BACKGROUND

Reducing the number of unintended births promotes reproductive health, specifically maternal health, by reducing the number of times a woman is exposed to the risks of pregnancy and increasing the length of birth intervals. A study by Singh, Singh, and Mahapatra (2013) in India noted that births identified as mistimed/unwanted had an 83 percent higher risk of neonatal mortality compared with wanted births. Several factors are associated with unintended pregnancies, including HIV infection. For example, fertility among HIV-positive women may increase as a result of societal pressure to have sexual intercourse, to have children, and to replace children who may have died (Magadi 2006; Ntozi 2002; Siegel et al. 2006). A study conducted in Kenya showed that the repeated occurrence of unintended pregnancies among HIV-positive women was due to inconsistent use of contraception (Obare et al. 2012). Some recent studies have found no significant differences in the sexual behavior and childbearing experiences and intentions of those who

have known their HIV-positive status from childhood and their counterparts in the general population (Obare et al. 2012).

A systematic review of 23 studies (17 from sub-Saharan Africa) by Calvert and Ronsmans (2013) on the contribution of HIV to mortality during pregnancy and the six-week postpartum period found that women with HIV were eight times more likely to die than their HIV-negative counterparts. Zaba et al. (2013) using network-based longitudinal data collected in six community-based studies in eastern and southern Africa found that nearly a quarter of deaths among women during pregnancy and up to six weeks thereafter in sub-Saharan Africa are attributable to HIV. For women living with HIV, preventing unintended pregnancies will, most importantly, promote women's health; however, it is also a cost-effective way to prevent new pediatric HIV infections (Reynolds et al. 2008).

Findings from studies on the pregnancy intentions of women living with HIV have shown mixed results. In Rwanda and Côte d'Ivoire, knowledge of HIV-positive results had little effect on pregnancy intentions, especially among women with no children or with fewer than the perceived optimal number of children (Aka-Dago-Akribi et al. 1999; Allen et al. 1993). In Malawi, Hoffman et al. (2008), found that receipt of HIV-positive test results led to a significant reduction in pregnancy intentions, regardless of the number of existing children. Findings from a meta-analysis by Berhan and Berhan (2013) indicated that wanting more children was associated with not having a child and being less than 30 years of age.

Intimate partner violence and unintended pregnancy have a relationship as well. Female survivors of sexual violence not only sustain physical injuries but are more likely than other women to have unintended pregnancies (Campbell et al. 2004; Pallitto and O'Campo 2004; Stephenson et al. 2008). From studies carried out in Colombia, the odds of having an unintended pregnancy were significantly higher if the women had been physically or sexually abused (Pallitto and O'Campo 2004). They further found that eliminating partner violence in Colombia would result in a decline in unintended pregnancies. Studies conducted in India revealed a similar pattern where women who have ever experienced physical violence from their husbands are less likely to use contraception and more likely to experience unwanted pregnancies (Stephenson et al. 2008). Unintended pregnancy is not only an indicator of lack of autonomy it is also an indicator of nonuse of contraception and lack of choices in fertility regulation, both of which are features of abusive relationships (Jejeebhoy 1997). The abusive spouse may insist on nonuse of contraception as a way of controlling the woman, who may eventually conceive even though she may not want the pregnancy at that point in time (Kaye 2001).

The results from the 2010/11 ZDHS show that 32 percent of births to women age 15-49 in the five years preceding the survey were unintended (ZIMSTAT and ICF International 2012). Additionally, 41 percent of ever-married women had experienced some form of violence (particularly physical violence)

from their husband/partners during the five years preceding the survey. While these findings are documented for women of reproductive age in Zimbabwe, in general there is little information available about the association between HIV status, gender-based violence (GBV), and unintended births.

## DATA AND METHODS

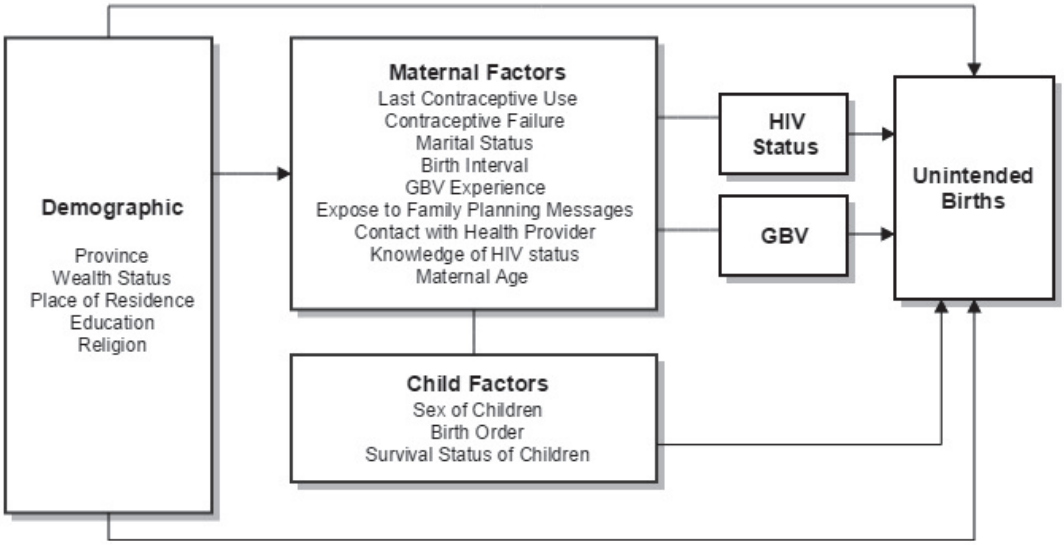
### Study Design

The data used in this analysis come from the 2010/11 ZDHS, which interviewed 9,171 women age 15-49 in a nationally representative sample. This study focused on 1,458 ever-married women who had a birth in the two years preceding the survey, were tested for HIV at the time of the survey, and who participated in the Household Relations Module. Ever-married women are used for the analysis because of the study's focus on gender-based violence (GBV)—physical violence, spousal sexual violence, and non-spousal sexual violence (Conceptual Framework).

### Variables

The outcome or *dependent variable* in this study is the planning status (intended/unintended) of the birth of a child. The survey asked whether each pregnancy was *wanted* for each resulting live birth, which is taken from the question "At the time that you became pregnant with [NAME OF CHILD], did you want to become pregnant then, did you want to wait until later, or did you not want to have any (more) children at all?" Questions were asked separately for each child born in the five years preceding the survey. The outcome variable "unintended birth" is derived by combining births reported as wanted later at time of conception (mistimed) and those not wanted at all (unwanted).

## CONCEPTUAL FRAMEWORK




*Adapted from Jacob Adetunji (1998) DHS Analytical Reports*

## ANALYSIS

We analyze the data using both descriptive and multivariate statistical methods. The multivariate logistic regression model is fitted to examine the predictors of unintended births. Controls include knowledge of own HIV status, exposure to gender-based violence (namely, physical violence, spousal sexual violence and non-spousal sexual violence), age, education level, marital status, current contraceptive use, contraceptive discontinuation, contact with health worker, exposure to family planning messages, household wealth status, urban-rural residence, and geographical region (province) of the mother. The following indicators of child characteristics are also considered in the analysis: sex of the child, survival status (whether child is alive or dead), and preceding birth interval.

All analyses were performed using STATA 12.0 (Stata Corporation 2011), accounting for complex survey design and incorporating sampling weights.

## RESULTS

Table 1 shows that among ever-married women who had a birth in the two years preceding the survey, who were tested for HIV at the time of the survey, and who participated in the Household Relations Module, almost 14 percent were HIV-positive and 34 percent had unintended births (i.e. mistimed or unwanted births). Most women are between the ages of 20 and 29 (59 percent); 17 percent were teenage mothers. Approximately two-thirds of women had secondary or higher education. Three-fourths resided in rural areas.

A majority of women in this study (70 percent) were not currently using a family planning method. Regarding discontinuation of contraceptive method before the index pregnancy, 8 percent of women reported discontinuing because of contraceptive failure, 18 percent said they wanted to become pregnant, and 4 percent stopped using contraception for other reasons. Forty-six percent of the women reported that they had no contact with a health provider, 31 percent had contact and discussed family planning, and 23 percent had contact, but did not discuss family planning with a health provider.

Approximately one-third (32 percent) of ever-married women reported having experienced physical violence from their most recent spouse/partners, 29 percent reported spousal sexual violence, and 24 percent reported non-spousal sexual violence. Forty-six percent of the women in this study live in households in the two lowest wealth quintiles (lowest and second) and one-third live in households in the two highest wealth quintiles (fourth and highest).

**Table 1. Percent distribution of ever-married women age 15-49 who had a birth in the two years preceding the survey, were tested for HIV, and responded to the household relations module, Zimbabwe DHS 2010/11**

| Mother's Characteristics | N | Percent |
|---|---|---|
| Planning status of birth | | |
| Wanted then | 960 | 65.8 |
| Mistimed or unwanted | 499 | 34.2 |
| HIV Status | | |
| HIV negative | 1259 | 86.3 |
| HIV positive | 199 | 13.7 |
| Age of mother at birth | | |
| < 20 years | 246 | 16.9 |
| 20-24 | 472 | 32.4 |
| 25-29 | 382 | 26.2 |
| 30-34 | 215 | 14.7 |
| 35-39 | 109 | 7.5 |
| 40-49 | 34 | 2.3 |
| Marital status | | |
| Currently in union | 1325 | 90.9 |
| Formerly married | 133 | 9.1 |
| Level of education | | |
| No education | 17 | 1.2 |
| Primary | 457 | 31.3 |
| Secondary and above | 985 | 67.5 |
| Region | | |
| Manicaland | 230 | 15.8 |
| Mashonaland Central | 175 | 12.0 |
| Mashonaland East | 161 | 11.1 |
| Mashonaland West | 177 | 12.2 |
| Matabeleland North | 66 | 4.5 |
| Matabeleland South | 60 | 4.1 |
| Midlands | 193 | 13.2 |
| Masvingo | 173 | 11.8 |
| Harare | 180 | 12.3 |
| Bulawayo | 45 | 3.1 |

**(continued…)**

**Table 1. – *Continued***

| Mother's Characteristics | N | Percent |
|---|---|---|
| Place of residence | | |
| Urban | 371 | 25.4 |
| Rural | 1088 | 74.6 |
| Wealth quintile | | |
| Lowest | 342 | 23.5 |
| Second | 334 | 22.9 |
| Third | 299 | 20.5 |
| Fourth | 288 | 19.7 |
| Highest | 195 | 13.4 |
| Family planning method used before birth | | |
| Did not use contraception | 1024 | 70.2 |
| Used contraception | 435 | 29.8 |
| Reason for discontinuation of method before pregnancy | | |
| Failure | 110 | 7.6 |
| Wanted to get pregnant | 262 | 17.9 |
| Other reason | 63 | 4.3 |
| Not using | 1024 | 70.2 |
| Exposure to family planning message | | |
| No | 910 | 62.4 |
| Yes | 549 | 37.6 |
| Contact with health provider | | |
| No contact with health provider | 666 | 45.7 |
| Contact/did not discussed family planning | 335 | 23.0 |
| Contact/discussed family planning | 458 | 31.4 |
| Spousal physical violence ever | | |
| No | 988 | 67.8 |
| Yes | 470 | 32.2 |
| Spousal sexual violence ever | | |
| No | 1042 | 71.5 |
| Yes | 416 | 28.6 |
| Non-spousal sexual violence ever | | |
| No | 1111 | 76.2 |
| Yes | 347 | 23.8 |
| **Child's Characteristics** | | |
| Sex of the child | | |
| Male | 717 | 49.2 |
| Female | 742 | 50.9 |
| Preceding birth interval | | |
| < 24 months | 82 | 5.6 |
| 24-35 months | 225 | 15.4 |
| 36-47 months | 223 | 15.3 |
| 48+ months | 523 | 35.9 |
| No preceding birth interval | 405 | 27.8 |
| Survival status of the child | | |
| Dead | 62 | 4.3 |
| Alive | 1396 | 95.7 |

## Bivariate Analysis

Table 2 presents the distribution of ever-married women age 15-49 who reported a birth in the two years preceding the survey by whether the birth was wanted or unintended (mistimed or unwanted). Table 2 shows that HIV-positive women had a significantly higher proportion of unintended births (48 percent) compared with HIV-negative women (32 percent). Women's experience of spousal physical violence and

spousal sexual violence as well as any non-spousal sexual violence were significantly associated with unintended births. In general, approximately, two in five women who experienced the three types of gender-based violence (GBV) were more likely to say the birth was unintended. Use of a family planning method was significantly associated with unintended births; a higher proportion of women who reported using contraception said the birth was unintended compared with those who did not use any family planning method.

The association between age at birth and unintended status of birth is U-shaped: 35 percent of women age < 20, 29 percent of those age 25-29, and almost 62 percent of those age 40-49 reported their index birth was unintended.

Regarding child characteristics, survival status and birth interval were significantly associated with the planning status of the birth being unintended. Women in the study reported that most of the children who died were unintended births. In addition, a large proportion of women said that children with short birth intervals were unintended births. For example, 57 percent of the births occurring after an interval of less than 24 months were reported as unintended, compared with 27 percent of the births occurring after an interval of more than 48 months.

There were no significant differences in unintended status of births by women's exposure to family planning messages, contact with a health provider, residence (urban-rural), region (province), marital status, and sex of the child.

**Table 2. Percent distribution of ever-married women age 15-49 by planning status (wanted or mistimed/ unwanted) of most recent birth in the two years preceding the survey by selected socio-demographic characteristics, HIV status, and spousal violence indicators (n = 1,458), Zimbabwe DHS 2010/11**

| Mother's Characteristics | Wanted | | Mistimed/Unwanted (unintended births) | |
|---|---|---|---|---|
| HIV status ** | N | Percent | N | Percent |
| HIV negative | 857 | 68.1% | 402 | 31.9% |
| HIV positive | 103 | 51.6% | 97 | 48.4% |
| Spousal physical violence ever ** | | | | |
| No | 695 | 70.3% | 294 | 29.7% |
| Yes | 265 | 56.4% | 205 | 43.6% |
| Spousal sexual violence ever ** | | | | |
| No | 720 | 69.1% | 322 | 30.9% |
| Yes | 239 | 57.5% | 177 | 42.5% |
| Non-spousal sexual violence ever ** | | | | |
| No | 772 | 69.5% | 339 | 30.5% |
| Yes | 188 | 54.1% | 159 | 45.9% |
| Family planning method used before birth ** | | | | |
| Did not use contraception | 721 | 70.5% | 303 | 29.5% |
| Used contraception | 239 | 54.9% | 196 | 45.1% |
| Reason for discontinuation ** | | | | |
| Failure | 18 | 16.2% | 92 | 83.8% |
| Wanted to get pregnant | 207 | 79.1% | 55 | 21.0% |
| Other reason | 14 | 22.0% | 49 | 78.0% |
| Not using | 721 | 70.5% | 303 | 29.5% |
| Exposure to family planning message | | | | |
| No | 601 | 66.0% | 309 | 34.0% |
| Yes | 359 | 65.4% | 190 | 34.6% |
| Contact with health provider | | | | |
| No contact with health provider | 436 | 65.5% | 230 | 34.5% |
| Contact/did not discussed family planning | 216 | 64.6% | 119 | 35.4% |
| Contact/discussed family planning | 307 | 67.2% | 150 | 32.9% |
| Age of mother at birth ** | | | | |
| < 20 years | 160 | 64.9% | 86 | 35.1% |
| 20-24 | 316 | 66.9% | 156 | 33.1% |
| 25-29 | 271 | 70.9% | 111 | 29.1% |
| 30-34 | 143 | 66.5% | 72 | 33.6% |
| 35-39 | 57 | 52.4% | 52 | 47.6% |
| 40-49 | 13 | 38.4% | 21 | 61.6% |
| Marital status | | | | |
| Currently in union | 912 | 68.8% | 413 | 31.2% |
| Formerly married | 48 | 36.0% | 85 | 64.0% |
| Level of education* | | | | |
| No education | 8 | 46.9% | 9 | 53.1% |
| Primary | 279 | 61.1% | 178 | 38.9% |
| Secondary and above | 673 | 68.3% | 312 | 31.7% |
| Province | | | | |
| Manicaland | 151 | 65.7% | 79 | 34.3% |
| Mashonaland Central | 106 | 60.6% | 69 | 39.4% |
| Mashonaland East | 98 | 60.9% | 63 | 39.1% |
| Mashonaland West | 111 | 62.4% | 67 | 37.6% |
| Matabeleland North | 46 | 69.3% | 20 | 30.7% |
| Matabeleland South | 37 | 62.8% | 22 | 37.2% |
| Midlands | 143 | 74.3% | 50 | 25.7% |
| Masvingo | 117 | 67.7% | 56 | 32.3% |
| Harare | 122 | 67.7% | 58 | 32.3% |
| Bulawayo | 29 | 65.3% | 15 | 34.7% |

**(continued…)**

**Table 2. – *Continued***

| Mother's Characteristics | Wanted | | Mistimed/Unwanted (unintended births) | |
|---|---|---|---|---|
| Place of residence | | | | |
| Urban | 253 | 68.1% | 118 | 31.9% |
| Rural | 707 | 65.0% | 380 | 35.0% |
| Wealth quintile | | | | |
| Lowest | 212 | 61.9% | 130 | 38.1% |
| Second | 227 | 67.9% | 107 | 32.1% |
| Third | 196 | 65.5% | 103 | 34.5% |
| Fourth | 186 | 64.7% | 102 | 35.3% |
| Highest | 139 | 71.2% | 56 | 28.8% |
| **Child's Characteristics** | | | | |
| Sex of the child | | | | |
| Male | 475 | 66.2% | 242 | 33.8% |
| Female | 485 | 65.4% | 257 | 34.6% |
| Preceding birth interval ** | | | | |
| < 24 months | 35 | 42.9% | 47 | 57.1% |
| 24-35 months | 111 | 49.3% | 114 | 50.7% |
| 36-47 months | 138 | 61.8% | 85 | 38.2% |
| 48+ months | 382 | 73.0% | 141 | 27.0% |
| No preceding birth interval | 294 | 72.5% | 111 | 27.5% |
| Survival status of the child * | | | | |
| Dead | 31 | 49.0% | 32 | 51.0% |
| Alive | 929 | 66.6% | 467 | 33.4% |

Significance Level: ** p < .01; p < .05

## Multivariate Analysis

Table 3 shows factors associated with unintended birth among ever-married women age 15-49 who reported a birth in the two years preceding the survey, were tested for HIV, and responded to the household relations module.

Controlling for socio-demographic and other characteristics of women and children in the study, HIV-positive women were about twice as likely as HIV-negative women to report the planning status of their birth as "unintended" (AOR = 1.77, 95% Confidence Interval [CI] = (1.17, 2.68)). Women who reported experiencing spousal physical violence and women who reported any non-spousal sexual violence had significantly higher odds of having an unintended birth—AOR = 1.50, 95%CI = [1.05, 2.15] and AOR = 1.57, 95%CI = [1.08, 2.28], respectively. At the same time, Table 3 shows there was no significant association between the experience of spousal sexual violence and unintended birth.

Women age 40-49 have a significant likelihood of having unintended births compared with women age 15-19, after controlling for other factors (AOR = 3.42, 95%CI = [1.26, 9.24]). Women who stated method failure or reasons other than wanting to become pregnant as the reason for discontinuation of a contraceptive method had significantly higher odds of having an unintended birth compared to women who stated they wanted to become pregnant.

Women formerly in union had a greater risk than women currently in union of having an unintended birth, after adjusting for other factors (AOR = 3.70, 95%CI = [2.21, 6.19]). Women with a preceding birth interval of 36 to 47 months (AOR = 0.44, 95%CI = [.21, .96]) or 48+ months (AOR = 0.26, 95%CI = [.13, .53]) had a very low likelihood of having an unintended birth compared to women with a preceding birth interval of less than 24 months. Similarly, women for whom the birth was their first (and hence had no preceding birth interval) were less likely to report an unintended birth.

The analysis also showed most of the social and demographic factors—education level, residence, household wealth status, and sex of the index child—were not significant predictors of unintended births.

**Table 3. Odds ratio and 95% confidence interval from logistic regression showing predictors of unintended births among ever-married women age 15-49 who reported a birth in the two years preceding the survey, were tested for HIV, and responded to the household relations module, controlling for selected characteristics, Zimbabwe DHS 2010/11**

| | Adjusted Odds Ratio (AOR) | 95% Confidence Interval | |
|---|---|---|---|
| **Mother's Characteristics** | | | |
| HIV Status ** | | | |
| HIV Negative | 1.00 | | |
| HIV Positive | 1.77 | 1.17 | 2.68 |
| Spousal physical violence ever * | | | |
| No | 1.00 | | |
| Yes | 1.50 | 1.05 | 2.15 |
| Spousal sexual violence ever | | | |
| No | 1.00 | | |
| Yes | 1.32 | 0.87 | 2.01 |
| Non-spousal sexual violence ever * | | | |
| No | 1.00 | | |
| Yes | 1.57 | 1.08 | 2.28 |
| Reason for contraceptive discontinuation | | | |
| Wanted to get pregnant | 1.00 | | |
| Failure ** | 19.25 | 9.81 | 37.77 |
| Other reason ** | 12.73 | 5.77 | 28.06 |
| Not using | 1.53 | 0.99 | 2.36 |
| Exposure to family planning message | | | |
| No | 1.00 | | |
| Yes | 1.03 | 0.75 | 1.41 |
| Contact with health provider | | | |
| No contact with health provider | 1.00 | | |
| Contact/did not discussed family planning | 0.96 | 0.63 | 1.45 |
| Contact/discussed family planning | 0.93 | 0.64 | 1.34 |
| Age of mother at birth | | | |
| < 20 years | 1.00 | | |
| 20-24 | 0.72 | 0.42 | 1.25 |
| 25-29 | 0.69 | 0.37 | 1.28 |
| 30-34 | 0.95 | 0.50 | 1.79 |
| 35-39 | 1.90 | 0.91 | 3.94 |
| 40-49 * | 3.42 | 1.26 | 9.24 |

**(continued…)**

**Table 3. – *Continued***

| | Adjusted Odds Ratio (AOR) | 95% Confidence Interval | |
|---|---|---|---|
| **Mother's Characteristics** | | | |
| Marital status | | | |
| Currently in union | 1.00 | | |
| Formerly married ** | 3.70 | 2.21 | 6.19 |
| Level of education | | | |
| No education | 1.00 | | |
| Primary | 0.43 | 0.13 | 1.39 |
| Secondary and above | 0.33 | 0.11 | 1.04 |
| Province | | | |
| Manicaland | 1.00 | | |
| Mashonaland Central | 1.21 | 0.66 | 2.19 |
| Mashonaland East | 1.62 | 0.87 | 3.03 |
| Mashonaland West | 1.27 | 0.69 | 2.34 |
| Matabeleland North | 0.97 | 0.50 | 1.88 |
| Matabeleland South | 1.35 | 0.62 | 2.93 |
| Midlands | 0.74 | 0.41 | 1.34 |
| Masvingo | 1.05 | 0.56 | 1.99 |
| Harare | 1.03 | 0.49 | 2.16 |
| Bulawayo | 1.65 | 0.73 | 3.75 |
| Place of residence | | | |
| Urban | 1.00 | | |
| Rural | 1.07 | 0.56 | 2.04 |
| Wealth quintile | | | |
| Lowest | 1.00 | | |
| Second | 0.76 | 0.49 | 1.19 |
| Third | 0.76 | 0.50 | 1.18 |
| Fourth | 1.01 | 0.61 | 1.69 |
| Highest | 0.97 | 0.50 | 1.87 |
| **Child's Characteristics** | | | |
| Sex of the child | | | |
| Male | 1.00 | | |
| Female | 1.18 | 0.88 | 1.59 |
| Preceding Birth Interval | | | |
| < 24 month | 1.00 | | |
| 24-35 months | 0.79 | 0.38 | 1.63 |
| 36-47 months * | 0.44 | 0.21 | 0.96 |
| 48+ months ** | 0.26 | 0.13 | 0.53 |
| No preceding interval * | 0.39 | 0.18 | 0.83 |
| Survival status of the child | | | |
| Dead | 1.00 | | |
| Alive | 0.72 | 0.38 | 1.35 |

Significance Level: ** p < .01; p < .05

## DISCUSSION

Unintended births are a major challenge in high HIV burden countries like Zimbabwe because countries with high HIV prevalence are more at risk for a high burden of unintended pregnancies. Advances in treatment and access to antiretroviral therapy (ART) have improved the life expectancy of HIV-positive women. As a result, greater numbers of HIV-positive women who are living longer, healthier lives many want to have children. Currently, there is limited information available on the fertility and reproductive intentions of HIV-positive women in sub-Saharan Africa.

The goal of this study was to investigate the relationship between HIV status and unintended births. The results showed that there is a strong relationship between women's HIV status and unintended births. About 34 percent of HIV-positive women reported having an unintended birth in the two years preceding the survey. HIV-positive women were twice as likely as HIV-negative women to have an unintended birth. However, a study by Obare et al. (2012) showed no significant difference in childbearing experiences and intentions between women who knew they were HIV-positive and women in the general population.

Our results revealed that women who experienced some types of gender-based violence (GBV) are more likely to have unintended births compared with women who have never experience GBV. Various studies (Campbell et al. 2004; Pallitto and O'Campo 2004; Stephenson et al. 2008) found that women who experienced physical and sexual abuse were more likely to have unwanted births.

Other factors that influence the prevalence of unintended births are maternal age and marital status. Our findings showed that increase in maternal age is associated with increased likelihood of unintended births. Women who were formerly in union were found to have a higher risk of unintended births than currently married women. Because nonuse of contraception increases the chances of unintended births, family planning programmes should include older women and recently widowed and divorced women in their target groups.

The results have also shown the linkage between family planning (i.e., contraceptive discontinuation), HIV and GBV in increasing the likelihood of unintended births. This linkage shows the need for policy and programmes in Zimbabwe to step up efforts in the integrated approach to service delivery, especially sexual reproductive health and HIV. Women with known HIV-positive status need information on contraception and gender-based violence to aid in their reproductive decision-making processes and child bearing intentions. Clinical and support services for HIV-positive women of reproductive age should focus on promoting contraceptive use, access to methods, and correct and consistent use of contraceptive methods to prevent unwanted pregnancies and births.

This study does have some inherent limitations. It focuses on cross-sectional data from the 2010/11 ZDHS, which is susceptible to recall bias—women who have giving birth are asked to recall what transpired when they became pregnant, during pregnancy, during the birth, and following the birth. HIV status at the time of the survey might not be the same as at the time of the pregnancy. In addition, circumstances following the conception of the child—for example, spending time with the child or losing a husband—might change the unintended status of the birth itself. The study focuses on unintended births rather than unintended pregnancies (because of data limitations); hence, it fails to capture the planning status of pregnancies that were terminated by abortion or miscarried before full term and might have had the same

impact as unintended births. HIV-positive women who know their status may access services to terminate pregnancies differently than HIV-negative women.

## CONCLUSIONS

HIV status is significantly associated with unintended births. In a country like Zimbabwe with a high disease burden unintended births among HIV-positive women may increase the chances of vertical transmission. HIV-positive women need comprehensive information on family planning and there is a need to address missed opportunities to contact women. The linkage between family planning and HIV needs to be strengthened and the National Prevention of Mother-to-Child Transmission (PMTCT) Programme is an opportunity to maximize this integration. Gender-based violence (GBV) has also proved to be a major challenge not only in terms of national development but at the household and individual level. Unintended births that occur as a result of women experiencing GBV reiterates the need for an integrated approach in sexual and reproductive health programming, especially family planning.

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