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Contraceptive method and self-reported HIV status among women in Malawi☆

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Abstract

Objectives: We aimed to describe contraceptive methods used by women in Malawi and determine whether contraceptive use differed by self-reported HIV status. Effective contraception is a primary method of preventing mother-to-child transmission of HIV.
Study design: Analysis is based on 12,658 nonpregnant, sexually debuted women ages 15–49 years in the 2010 Malawi Demographic and Health Survey. Analysis was restricted to respondents with contraceptive need (i.e., fecund and did not want a child in the next 12 months) who reported their last HIV test result. We accounted for the two-stage cluster sampling design by applying cluster, stratum and sample weights. We assessed differences in contraceptive method use by HIV status with χ^2 tests and multivariable logistic regression.
Results: A total of 893 (7.0%) of respondents reported being HIV positive. Use of long-acting reversible contraception (LARC) was low and did not differ between HIV-positive (1.4%) and HIV-negative (1.9%) women [adjusted odds ratio (aOR)=0.7, 95% confidence interval (CI), 0.4–1.4]. HIV-positive women (15.6%) were less likely than HIV-negative women (30.4%) to use progestin-only injectable contraception (aOR, 0.7; 95% CI, 0.5–0.8). Prevalence of female sterilization was higher among HIV-positive women (17.9%) compared to HIV-negative women (9.2%; aOR=1.7; 95% CI, 1.2–2.3).
Conclusions: LARC use was low among adult women with contraceptive need in Malawi. HIV-positive women were less likely to report progestin-only injectable use but more likely to report having undergone female sterilization compared to their HIV-negative counterparts. Noncoercive interventions that provide highly effective methods of contraception to HIV-positive women with contraceptive need are valuable methods of vertical transmission prevention in Malawi.
Implications: Contraceptive use differed by self-reported HIV status among adult women with contraceptive need in Malawi. Female sterilization was significantly higher, and use of progestin-only injectables was significantly lower, among HIV-positive women compared to their HIV-negative counterparts. Use of long-acting reversible contraception was low among both HIV-positive and HIV-negative women.

Keywords: Contraception; HIV; Long-acting reversible contraception; Malawi; Sterilization; Vertical transmission

1. Introduction

The World Health Organization (WHO) recommends a four-pronged approach to end mother-to-child transmission (MTCT) of HIV, consisting of (a) preventing HIV infection in all women, (b) preventing unintended pregnancy among HIV-infected women, (c) preventing maternal transmission to offspring during pregnancy and infancy and (d) providing HIV care for HIV-infected mothers and infants [1]. In some settings, programs to prevent MTCT typically focus on the third prong, by promoting antiretroviral prophylaxis to pregnant or breastfeeding women [2]. However, logistical and financial barriers can constrain access to consistent prenatal and delivery care and breastfeeding alternatives [2]. Comprehensive prevention requires addressing each of the prongs and must include the promotion of consistent and correct use of effective contraception to reduce unintended pregnancy among HIV-infected women.

Malawi had a total fertility rate of 5.7 children per woman in 2010 [3] and an adult HIV prevalence of 9.6%–10.8% in 2013 [4]. Although public health efforts have reduced HIV prevalence in Malawi in recent years from 15.2% in 2005,

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34,000 people still acquire HIV annually [4]. Malawi's high HIV prevalence and incidence, combined with high fertility, contribute to MTCT. Our objectives were to describe contraceptive methods currently used by women in Malawi and determine whether method use varied by self-reported HIV status. We focused on four categories of contraception: (a) modern methods; (b) long-acting reversible contraception (LARC), which includes intrauterine devices (IUDs) and subdermal implants; (c) progestin-only injectables and (d) female sterilization.

Modern contraception is defined as "a product or medical procedure that interferes with reproduction from acts of sexual intercourse" [5]. These methods are designed to allow couples to have sexual intercourse at any time, avoiding pregnancy without concern for biological timing. LARC methods require a one-time insertion by a health care provider and, depending on the specific product, are effective at preventing pregnancy for 3 to 10 years [6]. Because LARC does not require frequent actions on the part of the user, failure rates during the first year for perfect and typical use are identical (0.2% for IUDs, 0.05% for subdermal implants) [7]. LARC methods are recommended as first-line contraception for all women and adolescents [8]. Progestin-only injectables, specifically injectable depot medroxyprogesterone acetate (DMPA), are the most commonly used and fastest-growing contraceptive method in Malawi [9]. DMPA requires reinjection every 3 months [6]. Given the possible link between DMPA use and increased risk of HIV acquisition [10], analyzing DMPA use by HIV status is a vital descriptive contribution. Female sterilization, an irreversible method of contraception involving cutting or blockage of the fallopian tubes, is useful for women who do not want future childbearing [6]. LARC, progestin-only injectables and female sterilization are all methods of contraception that have great potential to prevent MTCT because of their high effectiveness toward preventing unintended pregnancy.

2. Methods

For these analyses, we used data from the 2010 Malawi Demographic and Health Survey (MDHS), a nationally representative, cross-sectional household survey implemented by the Community Health Sciences Unit and the National Statistical Office [3]. Of the 23,020 women sampled in the 2010 MDHS, we excluded participants in a hierarchical order for those who had not reached sexual debut (n=3140); were currently pregnant (n=2162); reported the result of their last HIV test as not applicable (i.e., no test done), undetermined, refused to answer or missing (n=4100); or did not have contraceptive need because of self-reported infecundity or desire of a child in the next 12 months (n=960). Analyses are based on the remaining 12,658 participants.

Women indicated their current contraceptive method from a prespecified list: none, female sterilization, male sterilization, oral contraception, IUD, progestin-only injectables, subdermal implants, male condoms, female condoms, periodic abstinence/rhythm, withdrawal or other folk method. Respondents reporting multiple methods were assigned the highest-listed method selected in the hierarchical list (Appendix A) [3]. We created four non-mutually-exclusive dichotomous (yes vs. no) variables characterizing contraceptive use: (a) modern contraception (defined as female and male sterilization, oral contraception, IUDs, injectables, implants, male and female condoms, and emergency contraception [3]); (b) LARC; (c) progestin-only injectables; and (d) female sterilization. Modern methods, therefore, are not mutually exclusive with our other three categories of interest.

Self-reported HIV status (positive vs. negative) was derived from the survey question that asked participants for the result of their "last test for the AIDS virus." Although laboratory-diagnosed HIV testing also was performed, we used data on self-reported status as we were interested in the relationship between women's perceived HIV serostatus and their contraceptive behaviors. Because only publically available data were used, the analyses were exempt from ethical review at the authors' institution.

All analyses used survey, strata and cluster weights to adjust for the differences in probability of selection resulting from the MDHS' complex, two-stage cluster sampling design. We used χ^2 tests for statistical differences in contraceptive methods by self-reported HIV status, and logistic regression (in separate analyses) to determine whether use of the four categories of contraception differed by HIV status. Logistic regression models were adjusted for the following confounders as identified in the literature: age (continuous variable), wealth quintile, type of place of residence (urban vs. rural), gravidity (continuous variable) and union status (never, currently or formerly married). All analyses were performed in SAS (Statistical Analysis System, version 9.4; SAS Institute, Cary, NC, USA).

3. Results

Mean age of respondents was 29.7 years, and most lived in a rural area (80.1%). Highest educational level attained by nearly two thirds of women was primary school (63.5%), while 15.4% had received no education and 21.1% had completed secondary school or higher. Most women were married (77.8%), 6.1% had never been married, and 16.1% were formerly married. Most were Christian (86.2%), followed by Muslim (12.9%). Only 0.9% of participants had no religious affiliation. Median number of children ever born was three. About 60.2% of women were currently working. A total of 893 women (7.0%) reported being HIV positive.