

Original research article

# The influence of partnership on contraceptive use among HIV-infected women accessing antiretroviral therapy in rural Uganda<sup>☆,☆☆</sup>

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## Abstract

**Objective:** The objective was to determine individual and dyadic factors associated with effective contraceptive use among human immunodeficiency virus (HIV)-infected women accessing antiretroviral therapy (ART) in rural Uganda.

**Study design:** HIV-infected women enrolled in the Uganda AIDS Rural Treatment Outcomes cohort completed questionnaires (detailing sociobehavioral characteristics, sexual and reproductive history, contraceptive use, fertility desires) and phlebotomy (October 2011–March 2013). We describe prevalence of effective contraceptive use (i.e., consistent condom use and/or oral contraceptives, injectable hormonal contraception, intrauterine device, female sterilization) in the previous 6 months among sexually active, nonpregnant women (18–40 years). We assessed covariates of contraceptive use using multivariable logistic regression.

**Results:** A total of 362 women (median values: age 30 years, CD4 count 397 cells/mm<sup>3</sup>, 4.0 years since ART initiation) were included. Among 284 sexually active women, 50% did not desire a(nother) child, and 51% had a seroconcordant partner. Forty-five percent ( $n=127$ ) reported effective contraceptive use, of whom 57% ( $n=72$ ) used condoms, 42% ( $n=53$ ) injectables, 12% ( $n=15$ ) oral contraceptives and 11% ( $n=14$ ) other effective methods. Dual contraception was reported by 6% ( $n=8$ ). Only “partnership fertility desire” was independently associated with contraceptive use; women who reported that neither partner desired a child had significantly increased odds of contraceptive use (adjusted odds ratio: 2.40, 95% confidence interval: 1.07–5.35) compared with women in partnerships where at least one partner desired a child.

**Conclusions:** Less than half of sexually active HIV-infected women accessing ART used effective contraception, of which 44% ( $n=56$ ) relied exclusively on male condoms, highlighting a continued need to expand access to a wider range of longer-acting female-controlled contraceptive methods. Association with partnership fertility desire underscores the need to include men in reproductive health programming.

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*Abbreviations:* ART, antiretroviral therapy; HIV, human immunodeficiency virus; Viral load, HIV RNA plasma level (copies/mL); IUD, intrauterine device; BMI, body mass index.

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**Implications statement:** Less than half of sexually active HIV-infected women accessing ART in rural Uganda reported using effective contraception, of whom 44% relied exclusively on the male condom. These findings highlight the need to expand access to a wider range of longer-acting, female-controlled contraceptive methods for women seeking to limit or space pregnancies. Use of contraception was more likely when both the male and female partner expressed concordant desires to limit future fertility, emphasizing the importance of engaging men in reproductive health programming.

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## 1. Introduction

Human immunodeficiency virus (HIV) prevalence is estimated at 7% among women attending antenatal clinics in Uganda [1]. With an average of 6.1 children per woman, Uganda has one of the highest total fertility rates in the world [2]. Expanding access to antiretroviral therapy (ART) and the accompanying benefits on health, survival, and sexual and perinatal HIV transmission influence fertility desires and expectations for childbearing among women living with HIV [3]. In one Ugandan cohort, one third of HIV-infected women initiating ART become pregnant within 3 years [4]. While some of these pregnancies are desired, an estimated 50%–86% are unwanted [5,6], with a high proportion of unwanted pregnancies terminated illegally, contributing to a high risk of maternal death [7].

Provision and appropriate use of effective contraception are important strategies to prevent unintended pregnancy; however, contraceptive uptake remains low among Ugandan married women at 30% [5]. Despite messages promoting the importance of preventing unwanted pregnancies among women living with HIV to both reduce perinatal HIV transmission and promote women's health, contraceptive uptake remains low among Ugandan HIV-infected women [8], including those accessing HIV care [9,10].

Understanding factors associated with contraceptive use among HIV-infected women is essential to tailoring interventions to reduce unwanted pregnancies for those who want to delay or prevent pregnancy and to support safer conception strategies. Data from the Rakai cohort in Uganda suggest that use of condoms and hormonal contraceptives increases over time among HIV-infected women particularly after enrollment into HIV care [11,12]. Regular health monitoring and access to other health services have been suggested as reasons for these trends [13].

Previous studies on contraceptive use investigated individual-level predictors of contraceptive uptake (including woman's fertility desires, age and education level), but less is known about the influence of dyadic factors (e.g., male partner's fertility desires, partner's HIV status) on contraceptive uptake among HIV-infected women, despite recognition of the critical role that male partners play in reproductive decision making [14–16]. Given observations of an increased risk of HIV transmission and acquisition among women using injectable hormonal contraceptives [17], the World Health Organization currently recommends

that HIV-serodiscordant couples practice dual contraception (i.e., use of condoms and a hormonal or permanent contraceptive method) to prevent HIV transmission and unwanted pregnancy [18]. However, little is known about actual patterns of dual contraceptive use. We measured the prevalence of effective contraceptive use and assessed individual and dyadic factors associated with use of contraception among sexually active HIV-infected women enrolled in care and receiving ART at a tertiary care center in rural Uganda.

## 2. Material and methods

### 2.1. Study design

This is a cross-sectional analysis of data from HIV-infected women enrolled in a cohort study and accessing ART.

### 2.2. Participants and setting

Participants were enrolled in the Uganda AIDS Rural Treatment Outcomes (UARTO) cohort study initiated in July 2005 with the primary objective of determining predictors of ART adherence and virologic failure. Participants were recruited from treatment-naïve patients initiating ART at an HIV clinic in southwestern Uganda. Clinic patients who were at least 18 years old and living within 60 km of the clinic were eligible to enroll in the study.

UARTO participants completed baseline then triannual interviews and phlebotomy. Interviewer-administered questionnaires detail sociodemographics, mental and physical health, sexual risk behavior and participant report of partner dynamics including partner HIV status. Interviews were conducted by trained interviewers fluent in English and the dominant local language (Runyankole).

This analysis utilizes data from the Reproductive Health Component of UARTO, initiated in October 2011 with follow-up through to March 2013. This annual questionnaire assesses sexual and reproductive health and history, contraceptive use and personal fertility desire as well as partner dynamics including partner HIV status and fertility desire (by participant self-report using the Pregnancy Risk Assessment Monitoring System instrument [19]). This analysis includes women aged 18–40 years who completed the Reproductive Health Component questionnaire at least once.

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