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SUPPLEMENT ARTICLE

# Contraceptive need and use among individuals with HIV/AIDS living in the slums of Nairobi, Kenya

Eliud Wekesa [a,*], Ernestina Coast [b]

[a] Reproductive Health Program, Population Council, Nairobi, Kenya
[b] Department of Social Policy, London School of Economics, London, UK

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ABSTRACT

*Objective:* To understand contraceptive need and use among individuals with HIV/AIDS living in slums. *Methods:* A sequential mixed-methods study was conducted in two slums in Nairobi, Kenya, from November 6th, 2009 to April 18th, 2010. Data were obtained by quantitative survey (n = 513), qualitative in-depth interviews (n = 41), and key informant interviews (n = 14). *Results:* In all, 250 (55.5%) participants used contraceptives. Condoms were the most frequently reported modern method (n = 142; 60.4%), followed by injectables (n = 55; 23.4%) and dual methods (n = 38; 15.3%). Unmet need was reported by 151 (33.6%) individuals. Factors associated with contraceptive use were education, marital status, number of living children, discussion of contraception with a provider, and social support. Personal, conceptual, and structural barriers to contraceptive use were identified. *Conclusions:* Individuals with HIV/AIDS wished to limit their fertility but experienced high unmet need for contraception. Multi-level interventions, including educational campaigns and integration of HIV and family planning services, are required to overcome barriers.


## 1. Introduction

More than two-thirds of the 35 million people diagnosed with HIV/AIDS worldwide live in Sub-Saharan Africa [1]. Of these affected individuals, in excess of 1.6 million are living in Kenya [1]. Urban prevalence rates of HIV/AIDS are almost twice as high as those reported in rural areas [2], and Kenyan urban slum residents have higher rates [3]. Estimates suggest that 72% of all urban residents in Sub-Saharan Africa live in slums [4]. Similarly, up to 70% of individuals living in the Kenyan capital of Nairobi are resident in slums or slum-like areas [5], making slum populations a substantial but poorly studied group.

The majority of individuals with HIV/AIDS in Sub-Saharan Africa are of reproductive age [6] and increased access to antiretroviral therapy has improved the prognosis of HIV. Approximately 50% of Kenyan adults living with HIV/AIDS are receiving antiretroviral therapy [1]. Internationally, there is also growing recognition of the fertility rights of people with HIV/AIDS [7].

Family planning plays a vital part in preventing transmission of HIV. Contraception is more cost-effective than prophylaxis with antiretroviral drugs for the prevention of mother-to-child transmission. The addition of family planning to programs designed to prevent such transmission in settings with a high prevalence of HIV could halve the number of infant infections compared to use of prevention of mother-to-child transmission strategies alone [8].

Little is currently known about the use of contraception or the contraceptive decision-making process among individuals with HIV/AIDS living in Sub-Saharan Africa in general and the Nairobi slums in particular. The contraceptive needs of this group are seldom met by health systems, which tend to focus on voluntary counseling and testing and services that provide antiretroviral therapy [9]. Research on family planning use among individuals with HIV/AIDS has predominantly focused on women, albeit with mixed findings. In some studies, knowledge of their HIV status increased contraceptive use among infected women [10], whereas no appreciable difference in contraceptive use was observed by HIV status in other studies [11]. Contraceptive use initially increases among women in response to learning their HIV status and receiving counseling but declines with time in settings with low contraceptive use and high fertility [12].

Many studies have examined determinants of contraceptive use in Sub-Saharan Africa [13,14]; however, few have assessed determinants of such behavior among individuals with HIV/AIDS. Uptake of contraception in this group might be affected by numerous issues. Factors that apply to the general population include level of education [15]; parity; marital status [13]; adverse effects and health concerns surrounding contraception [16]; cost of services and availability of stock [17]; discussion of family planning with a provider or spouse; and misconceptions [15]. Factors unique to individuals with HIV/AIDS include disclosure of

* Corresponding author at: Reproductive Health Program, Population Council, General Accident House, Ralph Bunche Road, P.O. Box 17643–00500, Nairobi, Kenya. Tel.: +254 202713480 3; fax: +254 202713479.
*E-mail address:* eliudwekesa@yahoo.co.uk (E. Wekesa).

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HIV status to their partner [18], HIV-related stigma, and integration of family planning and voluntary counseling and testing services [12,15].

The aim of the present study was to investigate contraceptive use and its determinants among people with HIV/AIDS living in Nairobi slums.

## 2. Materials and methods

A sequential mixed-methods study [19] was conducted in two slums in Nairobi, Kenya, from November 6th 2009 to April 18th, 2010. The design involved a quantitative survey of individuals with HIV/AIDS (n = 513), followed by qualitative in-depth interviews among a subsample of the survey respondents (n = 41), which were in turn supplemented by key informant interviews (n = 14). The quantitative component described prevalence and correlates of contraceptive need and use, whereas the qualitative component focused on experiences of contraception and barriers to its use. The present study was approved by the institutional review boards of the Kenyan Medical Research Institute, Nairobi, and the London School of Economics, London, UK. All participants required the ability to give written informed consent.

The sample size for the quantitative survey was determined on the assumption that 50% of the cohort would desire to have a first child or additional children in the future, with a sampling error of 5% and a 95% confidence level [20]. Eligible respondents had been diagnosed with HIV/AIDS and were men aged older than 18 years or women aged 18–49 years. Individuals who were not registered members of the Nairobi Urban Health and Demographic Surveillance System were excluded from the present study, as were those deemed too weak or sick to be interviewed.

Respondents were recruited from the Nairobi Urban Health and Demographic Surveillance System slum sites of Korogocho and Viwandani. To ensure a representative survey sample, HIV sero-prevalence ratios by sex, marital status, ethnicity, age, and education level were used as quota guides to systematically select respondents, based on previous findings in these settings [3]. Eight experienced interviewers, who were supported by community health workers, approached individuals with HIV/AIDS to participate in the present study and recruitment continued until all quotas were filled. The recruitment process was iterative; regular meetings were held with interviewers and community health workers to evaluate and revise recruitment targets.

The quantitative survey respondents provided a sampling frame for the subsequent in-depth interviews, which were intentionally selected on the basis of participants' responses. Individuals were typically selected for in-depth interview following classification as follows: (1) sexually abstinent during the past 12 months, no fertility desire, and not currently using contraceptives; (2) sexually active during the past 12 months, desire for future fertility, consistently using condoms, and currently using contraception; or (3) sexually active during the past 12 months, desire for future fertility, inconsistent or non-use of condoms, and not currently using any other form of contraception. Consequently, 45 individuals were identified to undergo in-depth interview; 41 interviews were conducted (three had moved and we were unable to trace them, one refused to be re-interviewed).

Data collected from the survey respondents was supplemented by the key informant interviews, which were intentionally designed to include a range of service providers (doctors, nurses, HIV counselors, and community health workers) for individuals with HIV/AIDS living in the Nairobi slums. Face-to-face interviews were conducted in a private setting of the respondent's choice to ensure confidentiality.

The two outcome variables were contraceptive use and unmet need for contraception. Contraceptive use was defined as women or men who were using (or whose sexual partner was using) at least one method of contraception. These methods included both supply (modern) forms of contraception (i.e. female and male sterilization, oral contraceptives, intrauterine devices, injectable contraceptives, implants, and female and male condoms) and behavioral (traditional) forms of contraception (i.e. lactational amenorrhea, withdrawal, and terminal or periodic abstinence). Unmet need for contraception was defined on the basis of whether or not the respondent was sexually active and had reported that they did not want to have a first child (or further children) in the next 2 years or that they did not want to have any children (first or additional children), and that they were not using any method of contraception at the time of the interview.

The survey questionnaire collected information on sociodemographic, medical (e.g. duration since HIV diagnosis; use and duration of antiretroviral therapy), and behavioral (e.g. disclosure of HIV status to their sexual partners) factors. Detailed questions were used gather information from interviewees on current contraceptive use, sources of family planning methods, preferred contraceptive options for future use, and whether health providers had ever discussed family planning with them. Questions were also posed regarding stigma and psychological distress related to HIV; responses were assessed with item scales, averaged, and standardized into a composite score using the Cronbach α [21]. Household wealth quintiles were derived using factor analysis [22].

The in-depth interview items were open-ended and interviewers probed participants to elicit detailed responses. The interview guide included questions to explore the contexts of past and current contraceptive use, experiences of contraceptive use, and reasons for use or non-use. Key informant interviews focused on the sexual and reproductive health needs of individuals with HIV/AIDS and service provision challenges in slum settings.

Quantitative data were analyzed using Stata version 11 (Stata, College Station, TX, USA). Univariate, bivariate, and multivariate analyses assessed predictors of contraceptive use and unmet need. A multivariate logistic regression model with forward and backward selection, which used a *P* value of less than 0.05 as the entry criterion, was generated to calculate the odds ratios and 95% confidence intervals. Where appropriate, findings were compared with secondary data obtained from the general population of the Nairobi slums [23].

Qualitative data were managed and analyzed using Nvivo version 9 (QSR International, Melbourne, VIC, Australia). Interviews were first audio recorded in Kiswahili, then transcribed and translated into English. Interview transcripts were systematically reread to ensure familiarity with the content before the thematic analysis was conducted. A coding frame was developed to identify dominant themes and subthemes related to family planning experiences. Quantitative and qualitative data were both integrated in the present analysis and the interpretation of the findings.

## 3. Results

The socio-demographic characteristics of the 513 survey respondents are presented in Table 1. The proportion of men and women included in the present study reflected differential HIV infection rates among men (4.3%) and women (8.0%) in Kenya [24]. Just over half (54.8%) of the respondents were either married or co-habiting. Approximately two-thirds (65.3%) had attained primary level education and 28.3% had reached secondary level. The majority of the cohort comprised four ethnic groups (Kikuyu, Luo, Luyia, and Kamba). Approximately three-quarters (70.5%) of respondents were aged 30–49 years (mean, 38 years). The sample was almost evenly split with regards to antiretroviral therapy status; however, women were more likely to be receiving treatment and for a longer duration than men. This finding reflected women's increased likelihood of early HIV testing, which is often related to prenatal testing. Almost three quarters (73.0%) of respondents had known their HIV status for less than 5.0 years (mean, 3.2 years).

Family planning needs and use among survey respondents versus the general population of the Nairobi slums are summarized in Table 2. Secondary data for the Nairobi slums reported contraceptive