

# Contraceptive knowledge and practice among HIV-positive women receiving antiretroviral therapy at a district hospital in KwaZulu-Natal

Somera YS, MbbCh, Final-Year MMedFaMed, Medical Officer, ART Department, GJ Crookes Hospital  
Department of Family Medicine, Nelson Mandela University of KwaZulu-Natal

Ross A, MBChB, DCh, MMed(FamMed), Lecturer, Department of Family Medicine, Nelson Mandela University of KwaZulu-Natal

Correspondence to: Yashpal Satiadev Somera, e-mail: somera@sco.eastcoast.co.za

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## Abstract

**Objectives:** To determine the knowledge and use of contraceptives by HIV-positive women attending an ART clinic.

**Design:** Observational descriptive cross-sectional study.

**Setting and subjects:** Many human immunodeficiency virus (HIV)-positive South African women fall pregnant each year while receiving antiretroviral therapy (ART). In 2010, 2 056 women of childbearing age attended the ART clinic at a district hospital south of Durban. Between October 2010 and June 2011, data were collected using a validated questionnaire from 400 women on their contraceptive knowledge and use. Women over 18 years of age who consented to participate, and who had been receiving ART for more than a month, were eligible for participation in the study.

**Outcome measures:** Contraceptive knowledge and use.

**Results:** All participants had received counselling on male condom use. The majority of HIV-positive women receiving ART preferred the male condom as their contraception of choice. Knowledge of male condoms was excellent, but only 66% of the study group used condoms, and just over 50% used a dual method of contraception (male condoms plus another contraceptive method). While 97% of participants were knowledgeable about injectable contraception, only 40% used the latter as a form of contraception. Ninety-two per cent of the participants reported recent sexual activity, 14% had fallen pregnant while receiving ART, and 64% planned on having a child in the future.

**Conclusion:** The low use of dual contraception was a cause for concern. Recommendations include the integration of family planning services into HIV care at all ART sites. This should promote proper fertility management for women receiving ART.

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## Introduction

In 2009, an estimated 5.6 million people were living with human immunodeficiency virus (HIV) in South Africa; more than in any other country in the world. The prevalence rate of HIV among 15- to 49-year-old people was estimated to be 17.8%.<sup>1</sup> The most common route of HIV transmission was heterosexual sex, followed by mother-to-child transmission, which can be as high as 30% without any intervention.<sup>2</sup> As a result of the high prevalence of HIV infection, the National Department of Health committed itself to providing antiretroviral therapy (ART) at public facilities to all patients with a CD4 count of 350 or less, and to those with World Health Organization stage 4 disease.<sup>2</sup> Although South Africa has the most extensive ART programme in the world, access to treatment is still low. Only an estimated 10% of those needing treatment receive ART.<sup>3</sup>

Just over 50% of those infected with HIV are women, the majority of whom are of reproductive age. Specific attention must be given to their contraceptive knowledge and practice. This is particularly important as effective contraception has been shown to reduce vertical transmission,<sup>4</sup> and efavirenz is known to be teratogenic.<sup>5</sup> Current first-line ART comprises two nucleoside reverse transcriptase inhibitors and one nonnucleoside reverse transcriptase inhibitor: either nevirapine or efavirenz.<sup>6</sup> Nevirapine is hepatotoxic and can cause Stevens-Johnson syndrome. Efavirenz is generally preferred for paediatric patients, those on anti-tuberculosis medication, male patients not working night shifts and female patients with no intention of having children.<sup>5</sup> However, because of the teratogenic potential of efavirenz, women of reproductive age are usually started on nevirapine.<sup>5</sup> Women who are on efavirenz for a variety

of reasons must be on reliable contraception to minimise the possibility of pregnancy and the risk of congenital malformations caused by efavirenz.<sup>7</sup>

According to the national guidelines, all patients must be counselled prior to the initiation of ART. Counselling must be given to women of childbearing age and should include contraceptive options, how HIV can be transmitted to the unborn child, and the dangers of falling pregnant while on efavirenz.<sup>8</sup> Despite the need for comprehensive contraceptive counselling, condoms are often emphasised to the exclusion of other forms of contraception.<sup>8</sup> Dual contraception is defined as the use of condoms plus the use of a short- or long-term reversible contraceptive or sterilisation. Condoms prevent transmission of HIV and other sexually transmitted infections (STIs). However, effective modern contraceptive use is important as condoms are very user-dependent. There is an up to 15% failure rate, depending upon user technique.<sup>9,10</sup> HIV-positive women receiving ART should be on reliable dual contraception to enable them to plan a pregnancy, if so desired. Planning would allow time for the development of an undetectable viral load, a rising CD4 count (which reduces the chances of vertical transmission),<sup>11</sup> and a switch to nevirapine-based regimens if necessary.

Despite pre-initiation counselling, 22 000 HIV-positive women receiving ART fall pregnant each year in South Africa.<sup>5</sup> No data are available to determine whether or not these pregnancies were planned. In 2009, a study undertaken in Zambia of 18 407 women at 16 ART clinics investigated contraceptive use,<sup>10</sup> and in 2008, a study undertaken in South Africa assessed dual contraception use (condoms plus additional contraception) in areas of high prevalence in South Africa.<sup>12-15</sup> These studies found that women with increased parity, women over 25 years of age and couples in short-term relationships, were more likely to use condoms than women with low levels of education and those in more stable or marital relationships. In 2006, a cohort study from rural Uganda of 733 HIV-positive women showed that a significant number of HIV-positive women on ART fell pregnant within 18 months of starting treatment.<sup>15</sup> Risk factors for falling pregnant identified in this study were a younger age, being married or living with a partner and inconsistent condom use.<sup>15</sup>

In 2009, a significant number of women attending the Siyalulama ART clinic at a district hospital south of Durban were noted to have fallen pregnant after initiation of ART. The aim of this study was to determine the contraceptive knowledge and use of women attending this ART clinic in order to make recommendations about their reproductive health.

Permission to conduct the study was given by the Biomedical Research and Ethics Committee of the University

of KwaZulu-Natal, the KwaZulu-Natal Department of Health and the clinic management. The women who participated in the study gave their informed consent.

## Method

This was an observational descriptive study carried out at an ART clinic south of Durban. Two thousand and fifty-six women of childbearing age attended this clinic in 2010. In consultation with a biostatistician, a sample of 400 women was selected (representing 20% of the study population). Women between the ages of 18 and 45 years, who had been receiving ART for a minimum of one month and who were willing to participate, were included in the study. Every third presenting woman at the clinic was selected to participate in the study until the required sample was reached. Participants were given information pamphlets and if they agreed to participate, were asked to sign a consent form.

Data were collected between October 2010 and June 2011 by an HIV counsellor who completed the questionnaire with the patients. Patient charts were marked to ensure that the subjects only participated once. The questionnaire was adapted from knowledge, attitude, practice and behaviour studies in Nigeria, Uganda and South Africa.<sup>5,14-16</sup> The questionnaire was validated in a pilot study on 10 patients attending the ART clinic at a neighbouring hospital. Minor modifications were made to the questionnaire after the pilot study. Data were entered into an SPSS<sup>®</sup> computer programme and analysed descriptively.

## Results

Ninety-six per cent of the patients were black and 4% were coloured. Seventy-three per cent were under the age of 35, with just over half between the ages of 25 and 35. Other important data are presented in Table I.

Contraceptive counselling was provided to all participants prior to initiation of ART with 95% (380/400) receiving counselling on the dangers of falling pregnant while receiving ART. Table II details the contraceptive knowledge and usage of participants.

Despite the excellent self-assessment, only 56% (224/400) of the women knew of three contraceptive methods, only 47% (188/400) knew about emergency contraception, and only 11% (44/400) had used any form of emergency contraception. Over 90% of the women were sexually active and 34% reported at least one episode of unprotected sex in the last six months (Table III). Just over 50% (203/400) reported using dual contraception, of which the majority was condoms and an injectable form of contraception. Of those using male condoms, 60% preferred to buy products despite the fact that free condoms (Choice<sup>®</sup>) are distributed by the government. Of those using Choice<sup>®</sup>, 11% developed

**Table I:** Baseline characteristics of human immunodeficiency virus-positive women who participated in the study

Variable	Number (%)
<b>Age</b>	
18-24 years	75 (18.8%)
25-29 years	117 (29.3%)
30-34 years	106 (25.6%)
35-39 years	63 (15.8%)
40-45 years	39 (9.8%)
<b>Marital status</b>	
Single	316 (79%)
Cohabiting	47 (11.8%)
Married	28 (7%)
<b>Level of education</b>	
Primary	55 (13.8%)
Secondary	277 (69.3%)
Tertiary	43 (10.8%)
<b>Number of children</b>	
Nil	60 (15%)
1	152 (38%)
> 1	188 (47%)
<b>HIV status disclosed to partner</b>	
Yes	316 (79%)
No	84 (21%)
<b>Employment status</b>	
Unemployed	264 (66%)
Temporary	92 (23%)
Permanent	48 (12%)
<b>Latest CD4 count</b>	
> 300	80 (20%)
< 300	< 300
<b>Duration of ART</b>	
> 2 years	80 (20%)
< 2 years	320 (80%)
<b>Currently on efavirenz-based ART regimen</b>	
Yes	220 (55%)
No	180 (45%)

ART: antiretroviral therapy, CD4: cluster of differentiation 4 count, HIV: human immunodeficiency virus

a rash or itched after using it, 10% claimed that the condom burst easily, 10% didn't trust it, 7% said that it smelt bad and 4% said that it didn't feel good.

Eighty-two per cent (328/400) of participants reported having only one sexual partner. However, only 79% had disclosed their HIV status to their partner. Of the women whose partners used male condoms, 60% shared the responsibility with their partners for ensuring that a condom was available before intercourse, 28% took responsibility themselves for providing a condom, while 10% relied on

**Table II:** Contraceptive counselling, knowledge and usage as reported by those who participated in the study

Variable	Number (%)
<b>Quality of contraceptive counselling received</b>	
Excellent	72 (18%)
Satisfactory	288 (74%)
Uncertain	32 (8%)
<b>Male condom</b>	
Knowledge	400 (100%)
Usage	264 (66%)
<b>Injectable contraceptive</b>	
Knowledge	388 (97%)
Usage	160 (40%)
<b>Emergency contraception</b>	
Knowledge	188 (47%)
Usage	44 (10.9%)
<b>Intrauterine contraceptive device</b>	
Knowledge	137 (34%)
Usage	9 (2.3%)
<b>Participants' assessment of contraceptive knowledge</b>	
Excellent	52 (13%)
Satisfactory	288 (74%)
Good	52 (13%)
<b>Female condom</b>	
Knowledge	224 (56%)
Usage	8 (2%)
<b>Oral contraception</b>	
Knowledge	222 (55%)
Usage	2 (0.5%)
<b>Tubal ligation</b>	
Knowledge	281 (70%)
Usage	32 (8%)

**Table III:** Reported sexual activity of those who participated in the study

Variable	Number (%)
<b>Sexually active</b>	
Yes	368 (92%)
No	32 (8%)
<b>Episode of unprotected coitus in the last six months</b>	
Yes	136 (34%)
No	264 (66%)
<b>Sexually active in the last six months</b>	
Yes	352 (88%)
No	48 (12%)

their partners to do so. Thirty-four per cent of the study group indicated that their partners were resistant to condom use. Eight per cent said they were forced into unprotected sex when their partners were abusive or drunk, or insisted

on unprotected sex. Fourteen per cent of patients (56/400) had become pregnant while receiving ART. Three per cent had had two pregnancies while receiving ART, and 64% of the study group (256/400) planned to have a child within the next three years.

## Discussion

The demographics of this study are in keeping with those of young, sexually active infected patients with HIV in South Africa. In 2009, national studies showed that almost one in three women in South Africa aged between 25 and 29 years lived with HIV.<sup>17</sup> The majority of women in this study were single, young and unmarried. The 2003 National Strategic Plan identified single women aged between 15 and 25 years as displaying the highest risk behaviour. They have a less than 25% chance of negotiating condom use when engaging in sexual activities.<sup>18</sup>

Ninety-three per cent of the study population had received some schooling and 80% had a secondary school education. Numerous studies in southern Africa have shown that low education levels lead to decreased condom usage and decreased contraceptive compliance.<sup>5,9,11,12</sup> The association between level of education and contraceptive use needs further study as in this study, there did not appear to be a correlation between the two. A large percentage of patients in this study had at least one child, suggesting that the prevention of mother-to-child transmission programme is effective in identifying HIV-positive pregnant women and referring them to treatment sites.

Contraceptive counselling and knowledge of barrier methods were reported to be excellent among the women who took part in this study. Ninety-five per cent of them had been counselled on the risks associated with having an unplanned pregnancy while receiving ART. However, it is of concern that barrier methods were the predominant and often sole method of contraception used. Only 53% of women used another form of contraception.

The finding of low use of dual methods of contraception is consistent with the outcomes of a study carried out in Soweto, which showed that the importance of using condoms in preventing STIs and reinfection with HIV, as well as the need to use effective forms of contraception, was not clearly discussed with HIV-positive patients.<sup>19</sup> However, this finding was better than the reported rate in Uganda, where only 18% of sexually active women receiving ART used dual methods of contraception.<sup>20</sup> Further research is needed to assess the information that is provided to patients, barriers to the use of dual contraception methods and factors that influence the limited use of other contraceptive methods.

The shortage of family planning services in South Africa, identified as a deficiency in primary healthcare services,<sup>12,14</sup>

could be a reason for patients' lack of knowledge about contraceptive options. It is important for healthcare workers to counsel patients whenever they visit the ART site, and to address any deficiencies in patients' contraceptive knowledge and willingness to use dual contraception methods.<sup>12</sup>

There is no doubt that condoms are the most common form of contraception available in South Africa.<sup>18</sup> Two hundred and fifty-six million condoms were freely distributed by the government in 2007. Condoms have the advantage of preventing transmission of STIs. Despite 3.5-million female condoms being distributed between 2006 and 2007,<sup>18</sup> only 56% of the women in this study had received education on them and only 2% had ever used one. This is lower than that reported in other sub-Saharan countries.<sup>20</sup> In 2005, a study in Zimbabwe which assessed female condom usage, reported that less than 10% of women had ever used a female condom.<sup>20</sup> Female condoms are as safe as male condoms in protecting against STIs and HIV,<sup>21</sup> and have the added advantage of giving women the power to protect themselves, rather than relying on men to provide the contraception. This is important as 35% of participants indicated that their partners would not always use condoms. A study in Cape Town which examined the reproductive needs and choices of men and women living with HIV concluded that everyone needed to be empowered to make informed choices about his or her own reproductive needs.<sup>5</sup>

In keeping with other studies that have been carried out in South and other African countries,<sup>15</sup> this study reaffirmed that HIV-positive women receiving ART are sexually active. This is unsurprising as ART restores health and fertility, and as women's health improves, they resume socially productive and sexually active lives.<sup>15</sup> This finding reinforces the need to provide appropriate advice on dual contraception to women on ART. It is of concern that despite sufficient knowledge about condoms, 31% (124/400) of participants admitted to having unprotected sex in the last six months. This finding is consistent with those from other studies in Africa which showed that the rate of unprotected sex among women having sex with a regular partner varied between 26 and 59%.<sup>6,9</sup> Trust was identified as one of the major factors for not using condoms.<sup>11</sup> Women in long-term relationships were less likely to use a condom than those in short-term ones. It was of concern that only 79% of women had disclosed their HIV status to their partners. This highlights some of the challenges that women face when discussing sensitive issues with their partners.

Current recommendations by the National Department of Health are that HIV-positive couples should always use a condom to prevent the possibility of acquiring another STI or a drug-resistant strain of HIV, as well as utilise a reliable form of contraception.<sup>18</sup> Identified factors which contribute

to condoms not being used include the unplanned nature of sexual encounters, the desire to have children and not wanting to be identified as being infected with HIV.<sup>13,15</sup> A study that was carried out in South Africa at two ART sites on 369 patients showed that with proper education and family planning workshops, dual contraception use in HIV-positive women receiving ART improved from a baseline of 10% to 30-50%.<sup>22</sup> A study that was conducted in Lusaka demonstrated that when family planning services were integrated into care that was offered at the ART site, the rate of dual contraception improved by 33%.<sup>14</sup> However, when family planning was provided outside the ART site, there was a drop of 15% in non-barrier contraceptive use over a one-year period.<sup>14</sup> In the current study, 14% of patients had already fallen pregnant while on ART, and 64% of the patients indicated that they planned to have a child in the future. Healthcare providers working at ART sites need to be alert to this and must discuss contraceptive options, possible ART regimen change, as well as readiness to have children, with women of childbearing age on a regular basis.

## Conclusion and recommendations

This study has demonstrated that most HIV-positive women are sexually active and are well informed about condom use and hormonal forms of contraception (oral and injectable). However, the majority of these women rely on male condom use for protection against STIs and the prevention of pregnancy. Just over half of the women used modern hormonal contraceptive methods.

Recommendations from this study include integration of HIV and family planning services to improve dual contraception use, as well as routinely making enquiries about contraceptive usage and a women's desire to have a child. Ongoing education must be provided on pregnancy and the risks of mother-to-child transmission of HIV to the unborn child. Female condoms need to be readily available and their use popularised. Further research is required to assess barriers to the use of female condoms and dual contraception use.

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