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Full Length Research Paper

Contraceptive use among persons living with HIV and AIDS attending a care and support centre in Kabale, Uganda

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The choice of contraception in people living with the Human Immunodeficiency Virus (HIV) is constrained by the need to prevent both sexual transmission of HIV and unwanted pregnancies. We assessed contraceptive use among 400 HIV- positive persons attending a care and support centre in Kabale, Uganda. Participants completed a structured questionnaire on socio-demographic characteristics, sexuality, contraceptive use, sero-status disclosure and antiretroviral therapy. Bivariate analysis and multivariate modeling were conducted to analyze factors associated with contraceptive use. The rate of dual contraceptive use was low. On bivariate analysis, sex and age of respondents, education level, marital status, drinking habits, whether participant had a stable relationship, number of sexual partners in previous 6 months and frequency of sexual intercourse were significantly associated with contraceptive use. Likewise, disclosure of sero-status to sexual partners, partner's HIV positive status, history of new sexual partners in previous 3 months and whether respondent had been treated for STD since HIV diagnosis were significantly associated with contraceptive use (p-value < 0.05) . Factors independently associated with contraceptive use were level of educational attainment and whether respondent had changed partners since HIV diagnosis.

Key words: People living with HIV, contraception, antiretroviral therapy, Uganda.

INTRODUCTION

Worldwide, contraceptive use and compliance is related to the range of methods available, patient choice, prevalent health and religious beliefs, perceptions of method effectiveness, and side effects (Mitchell and Stephens, 2004). In Uganda, contraceptive methods are accessible from both public and private providers and are accessible to most of the population in urban and rural areas (UBOS, 2006). However, contraceptive use is low such that the contraceptive prevalence rate (CPR) among currently married women is 24% with 18% of currently married women using a modern method (UBOS, 2006). The most commonly used modern method is injectables (10%), followed by the pill (3%) (UBOS, 2006). Indeed, the Total Fertility Rate (TFR) is 6.7 births, with the rural TFR (7.1 children per woman) being higher than the urban TFR (4.4 children per woman), and overall general fertility rate being 230 births per 1,000 women of reproductive age (UBOS, 2006). The HIV prevalence is 6% in the general population, and about 60% of eligible patients have access to highly active antiretroviral therapy (HAART) (MOH, 2006).

Women with HIV infection may wish to plan pregnancy, limit their family or avoid pregnancy. The choice of contraception in people living with HIV is constrained by the need to prevent both sexual transmission of HIV and unwanted pregnancies. Correct use of most user dependent methods requires a basic knowledge of reproduction and literacy skills to follow written instructions. Dual-function contraceptives that simultaneously prevent HIV

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transmission as well as unwanted pregnancies might be the most appropriate contraceptive method for women living with HIV and AIDS (IPPF, 2000). The correct and consistent use of male condoms prevents HIV transmission to the partner (De Vincenzi, 1994; Davis and Welker, 1999). Compared with inconsistent use, consistent condom use reduces the risk of sero-conversion to half among HIV-discordant couples (Nicolosi et al., 1994) and reduces the risk of acquiring other Sexually Transmitted Infections (STIs) . Although they are associated with a high degree of protection against HIV transmission, condoms provide less protection against pregnancy (De Vincenzi, 1994). Oral contraceptives, intrauterine devices (IUDs), and sterilization are highly effective methods of contraception, which however do not prevent HIV transmission. However, correct and consistent use of condoms is seldom achieved and couples using 2 contraceptive methods were less likely than single method users to be consistent condom users (Magalhaes et al., 2002). The knowledge of contraception and access to family planning remain limited among women living with HIV and AIDS in different contexts (Lindsay et al., 1995; Olaitan et al., 1996).

The issues around contraception choice for an HIV positive woman living in poverty in a resource poor country with inadequate healthcare services and without access to antiretroviral therapy will be very different from those faced by a woman in a developed country receiving Highly Active Antiretroviral Therapy (HAART) with a wide range of contraception methods available to her. The objective of this study was to assess contraceptive use among 403 Persons Living With HIV and AIDS (PLWHA) attending a care and support centre in Kabale, Southwestern Uganda.

METHODS

Study design and participants

A cross-sectional study was conducted at Kabale regional hospital HIV treatment and counseling centre, from January to August 2009. The study inclusion criteria were previous attendance to the treatment and counseling centre for at least three months, confirmed positive HIV sero-status and willingness to give informed written consent to participate in the study. During the eight-month study period, 400 individuals were recruited into the study from among participants that came to receive medical care and counseling services at the centre.

Data collection procedure

Participants were screened and recruited by research assistants who were midwives in the unit. They were allotted individual study numbers and subsequently interviewed using an interviewer-administered questionnaire adapted from the demographic and health surveys. Data was collected on socio-demographic variables such as age, level of educational attainment, marital status (single versus ever-married), marital age, age, employment status of participant and spouse, social habits (drinking alcohol or smoking) as well as the education level of spouse. Reproductive history (parity, number of living children, nature of antecedent pregnancy and contraceptive ever use) as well as sexuality (number of sexual partners, frequency of sexual intercourse, change of sexual partners and contraceptive use) were assessed. For fertility intention, women's subjective feelings regarding future conception (whether the respondent wanted to conceive again sooner or later) was also assessed.

Data analysis

Data was analyzed to provide frequencies and percentages for categorical variables and means and standard deviations for numerical variables. Characteristics of the participants who reported consistent contraceptive use were compared with those who never used or inconsistently used contraceptives, using Pearson's chi-square test for categorical data and student t-test for numerical data. To adjust for confounding, co-linearity and interactions, stratified analysis and multivariate logistic-regression analysis was conducted to analyze factors that were independently associated with consistent contraceptive use, using STATA software, release 9. During the stepwise modeling for regression analyses, all variables of clinical importance or with p-value 0.2 and less on bivariate analysis were considered for inclusion. Consistent contraceptive use was entered as present =1, absent =0. Parity, number of living children and age of spouse, age of first sexual debut and age at marriage were entered as numerical variables. Other categorical variables were entered as present or yes = 1, and absent or no=0. The age of the participants was evaluated as a numerical variable and as 5-year age categories. The model goodness-of-fit of the final logistic regression models was assessed by Pearson's chi-square test.

Ethical considerations

Ethical approval was obtained from Kabale Regional Hospital ethical committee. Counseling about sexuality, condom use, dual protection and fertility was provided to all the participants, and all eligible participants were provided with appropriate counseling, support and antiretroviral therapy.

RESULTS

Of the 400 respondents (Table 1), 101 (25.3%) were male, 47.3 were in the age category 25 to 34 years, over 85% were currently married or had ever been married, and the majority (62%) had primary level of education or less. Table 2 indicated that the mean age of sexual debut was 18.3 years. Only 191 (53.1%) described their intimate relationships as stable, over 65% had a sexual partner in the previous 6 months, 330 (82.5%) were currently taking antiretroviral therapy and 106 (28.3%) had changed at least one sexual partner since their HIV diagnosis. In Table 3, only 211 (55.1%) were currently using a family planning (contraception) method, 21(10.0%) were currently using more than one method of contraception. The condom and injectable methods were the commonest methods of contraception used. Of the 284 respondents who gave reasons as to why condoms should be consistently used among HIV positive or

Table 1. Socio-demographic characteristics of the study participants.

Characteristics	Number (Percentage)
Sex	
Males	101 (25.3)
Females	299 (74.7)
Age category	
Less than 24 years	55 (13.8)
25-29 years	106 (26.5)
30-34 years	79 (19.8)
35-39 years	53 (13.3)
40-44 years	37 (9.3)
45-49 years	51 (12.8)
50 years or more	20 (5.1)
Religion	
Catholic	140 (35.3)
Protestant	205 (51.2)
Moslem	32 (8.0)
Others	23 (5.0)
Marital status	
Single	(14.8)
Married	(49.0)
Widow/widowed	(27.8)
Divorced or separated	34 (8.4)
Level of education	
No formal education	58(14.8)
Primary	188(47.1)
Secondary	124(31.1)
Tertiary or university	30(7.9)
Drink alcohol	
Yes	(23.4)
No	307(76.5)

sero-discordant couples, reasons given were to avoid transmitting HIV infection (55.3%), to avoid re-infection with HIV (30.9%) and to avoid getting pregnant (9.2%).

Table 4 shows that the sex, age, education level, marital status, alcohol dinking habit, whether participant had a stable relationship, number of sexual partners in the previous 6 months prior to the study and frequency of sexual intercourse were significantly associated with contraceptive use ($p < 0.05$). Disclosure of sero-status to sexual partners, whether any of respondent's partners were HIV positive, whether participant had changed sexual partners in the previous 3 months prior to the study and whether the respondent had been treated for STD since their HIV diagnosis were found significantly associated with contraceptive use ($p < 0.05$). Table 5 shows the factors independently associated with contr-aceptive. These were level of education and whether respondent had changed partners since HIV diagnosis. Though not statistically significant, those with infrequent sexual intercourse and having a stable relatio-nship were less likely to use contraceptives ($p > 0.05$).

DISCUSSION AND CONCLUSION

The study shows that factors independently associated with contraceptive use were level of education and whether respondent has changed partners since HIV diagnosis. Regarding education, our findings do not differ from those in the general population (UBOS, 2006), where use of both modern and traditional contraceptive methods increases with educational attainment. Though not statistically significant, those respondents with infrequent sexual intercourse or having a stable relationship were less likely to use contraceptives. Our findings support the need for increased attention to better integration of reproductive health services such as family planning and HIV and AIDS services for women who are HIV positive.

At the end of 2007, an estimated 15.4 million women were infected with HIV, most of them being of fertile age (www.data.unaids.org). Young women aged 15 to 24 have a 4- to 7- fold increased risk of becoming infected with HIV, when compared with young men of the same age (Simon et al., 2006). In sub-Saharan Africa, the majority of cases of HIV transmission are estimated to occur via heterosexual intercourse (www.data.unaids-.org).Several methods of providing protection from both unintended pregnancy and sexually transmitted disease (STD) should ideally be available. According to the current consensus of opinion, HIV-infected women and women at risk of HIV infection can use all available contraceptive methods (www.who.int/reproductive-health). However, male condoms represent the only contraceptive method effective in prevention of horizontal transmission of HIV (Weller and Davis-Beaty, 2002).

There is wide variation in contraception prevalence worldwide ranging from 8% of women aged 15 to 49 years in western Africa up to 78% in northern Europe (UN, 2001). Female sterilization (32%), intrauterine devices (22%), and the oral contraceptive pill (14%) account for more than two thirds of all contraceptive practice worldwide (UNICEF, 2000). However, in less developed countries, where contraceptive prevalence rates are low and fertility is high, 70% of contraception users rely on female sterilisation and intrauterine devices in part because they are advocated by healthcare services as a result of cost effectiveness in terms of pregnancy prevention and service provision (Mitchell and Stevens, 2004). Though some studies do not indicate that HAART is associated with increased sexual risk behaviors (Sarna et al., 2008), unprotected sex among

Table 2. Reproductive and sexual history of the study participants.

Characteristics	Number (Percentage) or Mean (± Standard deviation
Number of living children	3.0 ± 1.4
Have any of your children died?	
Yes	(39.5)
No	242 (60.5)
Mean age of sexual debut	18.3 ± 2.9
Mean age at first marriage if married	20.5 ± 3.8
Mean age when participants had first child	21.8 ± 3.9
***Do you have stable sexual relationship?**	
Yes	191 (53.1)
No	159(46.9)
Have you had sex in the last 6 months?	
Yes	(59.2)
No	162(40.8)
On average, how often did you have sex in the last 6 months?	
At least 3 times per week	(12.8)
Around once a week	(32.7)
About once a month	(19.1)
Less frequently than once a month	33 (9.4)
Never had	97(26.4)
How many sexual partners have you had in the last 6 months?	
None	(34.4)
One	(55.1)
Two	(5.6)
Three	(2.6)
More than 3	9(2.3)
Does your regular partner know your HIV status?	
Yes	(53.1)
No	(19.1)
Don't know	112(28.8)
Are you currently is on ARVs?	
Yes	(82.5)
No	70(17.5)
Do you know the HIV status of your regular partner/partners?	
Yes	197(49.3)
No	203(50.7)
Is your partner HIV positive?	
Yes	170 (86.7)
No	27 (13.3)

Table 2. Contd.

Have you changed regular sexual partners since HIV diagnosis?	
Yes	(28.3)
No	268(71.7)
If they have changed partners, what were the reasons?	
Partner died	(47.9)
Divorced	(10.3)
Rejected by spouse	(16.3)
Other reasons	30 (25.6)

*This excludes all those who responded that they were not sexually active.

Table 3. Contraceptive use and condom use among the study participants.

Characteristic	Number (Percentage)
***Are you currently using a family planning method? N=383**	
Yes	(55.1)
No	172(44.9)
***Do you use more than one method of contraception? N =211**	
Yes	21(10.0)
No	190(90.0)
***What main contraceptive methods are you using? N=211**	
Pills	(18.4
Injection	(22.2)
Implant	(5.1)
Condom	(47.0)
Periodic abstinence	(6.4)
Withdrawal	2 (0.9)
***Why was that particular method chosen? N=211**	
Convenience	(33.3)
Cost (it is cheap)	(40.2)
Can be used secretly	(3.4)
No longer want more children	(13.3)
Others	23(9.8)
Would you recommend contraception to others? N =400	
Yes	(43.4)
No	(13.2)
Not certain	172(43.4)
***Have you ever used condoms? N =383**	
Yes	277(72.3)
No	106(27.7)
***How would you best describe your use of condoms in the last 6 months? N=323**	
Always use (consistently use)	(57.0)
Often use	(16.4)
Sometimes use	(7.7)
Rarely use	61 (18.9)

Table 3. Contd.

***When do you often use condoms? N=323**	
With regular sexual partners	(71.3)
With casual sexual partners	93(28.7)
***Have you ever heard of dual protection? N=383**	
Yes	(38.1)
No	237 (61.9)
***Do you think HIV positive couples should consistently use condoms? N=383**	
Yes	(93.8)
No	25(7.2)
***Why should HIV positive persons use condoms? N=383**	
Prevent re-infection	(86.1)
Prevent STDs	(8.5)
Prevent infecting their sexual partners	17(4.1)

* There were some non-responders who were not sexually active and did not respond to these questions.

Table 4. Bivariate analysis of factors associated with use of contraceptives among HIV positive individuals in Kabale.

Characteristic	Odds ratio and confidence limits	p-value
Sex		
Male versus Female (reference group)	0.50 (0.31, 0.83)	0.007
Age of respondent	0.87 (0.77, 0.98)	0.024
Level of education	1.59 (1.23, 2.06)	<0.001
Religion	1.16 (0.90, 1.49)	0.249
Marital status		
Single versus married, divorced or separated	0.55 (0.43, 0.69)	<0.001
Occupation	1.07 (0.94, 1.22)	0.307
Drinking habits		
Drinks versus does not drink	0.48 (0.29, 0.80)	0.005
Number of living children	0.97 (0.83, 1.12)	0.646
Whether any of the respondents' children died		
Yes versus No	1.28 (0.84, 1.94)	0.249
Whether respondent is on ARVs		
Yes versus No	0.98 (0.58, 1.66)	0.955
Age at sexual debut	0.97 (0.90, 1.04)	0.409
Age at first marriage	1.04 (0.98, 1.10)	0.219
Whether participant has a stable relationship		
Yes versus No	0.12 (0.08, 0.20)	0.001
Number of sexual partners in the previous 6 months	6.80 (4.28, 10.80)	0.001
Frequency of sexual intercourse	0.43 (0.34, 0.53)	0.001

Table 4. Contd.

Disclosure of HIV status to sexual partner/partners		
Yes versus No	0.38 (0.22, 0.67)	0.001
Whether any of respondent' partners HIV positive		
Yes versus No	0.64 (0.48, 0.85)	0.002
Whether participants has changed sexual partners in previous 3 months		
Yes versus No	0.28 (0.17, 0.48)	0.001
Whether respondent is has been treated for STD since HIV diagnosis Yes versus No	0.62 (0.41, 0.95)	0.027

Table 5. Factors among the study participants that independently predict contraceptive use.

Covariate	Odds ratio and confidence limits	p-value
Age of respondent	0.94 (0.77, 1.16)	0.591
Level of education	1.48 (0.99, 2.22)	0.012
Whether respondent is currently on ARVs	0.40 (0.19, 0.84)	0.724
Whether respondent has had sex in previous 6 months	0.48 (0.21, 1.07)	0.075
Whether respondent has a stable relationship	0.44 (0.19, 1.01)	0.053
Average number of sexual partners	1.65 (0.93, 2.93)	0.085
Frequency of sexual intercourse	0.74 (0.54, 1.00)	0.054
Whether respondent's partner/partners know the HIV status	0.90 (0.16, 1.29)	0.141
Whether respondents has changed partners since HIV diagnosis	0.42 (0.18, 0.98)	0.046

persons receiving highly active antiretroviral therapy (HAART) remains a concern because of the risk of HIV-transmission, especially in sero-discordant couples or where HIV infected persons fail to disclose their sero-status to sexual partners. Many studies indicate that HIV disclosure rates are low even among persons living with HIV/AIDS (Akani and Erhabor, 2006), some of whom maybe taking antiretroviral drugs (Kalichman et al., 2002; Serovitch and Mosack, 2003; Crepaz and Marks, 2003; Maman et al., 2003; Stanwood et al., 2007; Grabbe et al., 2009). HIV positive individuals may continue with high risk behavior even after HIV diagnosis (Camoni et al., 2009). Such high-risk behavior may manifest as inconsistent or low use of contraceptives and condoms, having multiple sexual partners, failure to disclose sero-status to sexual partners and getting new sexual partners after the diagnosis of HIV. Disclosure of HIV sero- status is facilitated by communication with one's partner. Such communication provides opportunity to discuss about HIV in general, fertility related issues, safe sex practices such as condom or contraceptive use and avoidance of sexually transmitted infections. Just like in the general population, HIV positive persons who are sexually active may inconsistently use contraception (UBOS, 2006; Moore and Amy, 2008).

Our findings agree with previous research that HIV patients may not disclose HIV sero- status (Akani and Erhabor, 2006). Individuals who fail to disclose sero-status are not likely to negotiate contraceptive use, including condom use, with their sexual partners. The findings of our study agree with the literature that contraceptive use rates among HIV positive persons are low or inconsistent (Moore and Amy, 2008; Bakeera-Kitaka et al., 2008; Anand et al., 2009). This low use may happen even among persons who have high knowledge about contraceptives (UBOS, 2006). There are concerns that easy access to antiretroviral drugs may increase fertility intentions, thereby leading to reduced use of effective contraceptive methods and raised fertility levels among HIV positive individuals (Panazzo et al., 2003; Paiva et al., 2003; Myer et al., 2005; Oladapo et al., 2005). Inconsistent use of contraception and related fertility intentions of HIV positive individuals, some of whom may be on antiretroviral therapy, threaten the successes of preventive strategies against vertical and heterosexual transmission of HIV in Uganda and other countries with both high fertility and high HIV prevalence (Nakayiwa et al., 2006; Ngubane et al., 2008).

A major limitation of this study was that it was cross-sectional in nature and for the validity of information, we relied on self -report. This may under- estimate or over-estimates the actual contraceptive rate in this population. The implication of the findings is that there is need to provide a comprehensive approach to HIV care, which includes couple counseling for individuals in steady or marital relationships, prevention and treatment of

opportunistic infections, contraceptive counseling and services for eligible PLWHA, and ongoing support to ensure adherence to contraception, antiretroviral therapy and treatment for opportunistic infections.

There is need to assess how to scale-up a comprehensive set of services for persons living with HIV and those at risk of contracting HIV (such as those in HIV sero- discordant relationships). This should be based on local and individual circumstances: for instance, in a country with high fertility and low contraceptive use, emphasis should be on integrating family planning services into HIV care, so that HIV treatment centers become a focus for availing contraceptive services. Since many affected individuals are in the reproductive age-group, there is need for policies and programmes to address the individual concerns of this population. Such concerns may be contraception, desire to have children, opportunistic infection prophylaxis or training in life skills. For this to happen, there is need to provide basic components (skills, supplies, infrastructure and adequate human resources) in order to provide comprehensive services for HIV positive individuals. Health professionals should enable these reproductive choices by counseling and appropriate contraception provision at the time of HIV diagnosis and during follow up.

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