A Randomized Controlled Trial to Promote Long-Term Contraceptive Use Among HIV-Serodiscordant and Concordant Positive Couples in Zambia

Rob Stephenson, Ph.D.,¹ Bellington Vwalika, M.D.,^{2,3,4} Lauren Greenberg, M.P.H.,² Yusuf Ahmed, B.M., B.A.O.,^{2,3,4} Cheswa Vwalika, M.D., M.P.H.,⁵ Elwyn Chomba, M.D., D.C.H.,⁴ William Kilembe, M.D., M.Sc.,^{2,3} Amanda Tichacek, M.P.H.,^{2,6} and Susan Allen, M.D., M.P.H.^{2,6}

Abstract

Background: Countries facing high HIV prevalence often also experience high levels of fertility and low contraceptive use, suggesting high levels of unmet need for contraceptive services. In particular, the unique needs of couples with one or both partners HIV positive are largely missing from many current family planning efforts, which focus on the prevention of pregnancies in the absence of reduction of the risk of HIV and other sexually transmitted infections (STIs).

Methods: This article presents an examination of contraceptive method uptake among a cohort of HIV serodiscordant and concordant positive study participants in Zambia.

Results: Baseline contraceptive use was low; however, exposure to a video-based intervention that provided information on contraceptive methods and modeled desirable future planning behaviors dramatically increased the uptake of modern contraceptive methods.

Conclusions: Including information on family planning in voluntary counseling and testing (VCT) services in addition to tailoring the delivery of family planning information to meet the needs and concerns of HIV-positive women or those with HIV-positive partners is an essential step in the delivery of services and prevention efforts to reduce the transmission of HIV. Family planning and HIV prevention programs should integrate counseling on dual method use, combining condoms for HIV/STI prevention with a long-acting contraceptive for added protection against unplanned pregnancy.

Introduction

SUB-SAHARAN AFRICAN COUNTRIES continue to be disproportionately affected by the HIV/AIDS pandemic.¹ There are now more adults and children living with HIV, more new HIV infections, and more AIDS-related deaths in sub-Saharan Africa than in any other region of the world.¹ Of the estimated 2.3 million children living with HIV worldwide at the end of 2005, 2 million—nearly 90%—were living in sub-Saharan Africa, along with more than 12 million orphans on the continent.¹ In these settings, there is often a coexistence of HIV prevalence and high levels of fertility and low contraceptive use. Consequently, the potential exists for both maternal

transmission of HIV from mother to child during pregnancy or labor and a growing number of children who are orphaned when their parents die from AIDS. Comprehensive HIV/AIDS prevention programs must, therefore, address the prevention of unplanned pregnancies among couples living with HIV while also providing couples with services and support to manage their fertility desires.

Few studies have examined the intersection between HIV and contraceptive use in resource-poor settings, such as sub-Saharan Africa. Studies on the fertility preferences of HIV-positive women in the United States have shown poor family planning uptake; however, women in these cohorts were often intravenous drug users and are in many ways not

¹Hubert Department of Global Health, Rollins School of Public Health, Emory University, Atlanta, Georgia.

²Rwanda Zambia HIV Research Group, Rollins School of Public Health, Emory University, Atlanta, Georgia.

³Zambia Emory HIV Research Project, Lusaka, Zambia.

⁴School of Medicine, University of Zambia and University Teaching Hospital, Lusaka, Zambia.

⁵PMTCT, World Health Organization, Lusaka, Zambia.

⁶Department of Pathology and Laboratory Medicine, School of Medicine, Emory University, Atlanta, Georgia.

comparable to African women.³ Acceptance of contraception among HIV-positive African women may well depend on a number of social, cultural, and economic factors and the mechanisms through which family planning and voluntary counseling and testing (VCT) services are integrated and delivered. Previous studies show that despite initial uptake of contraception after counseling, contraceptive use among HIV-positive women often declines with time, as pre-seroconversion fertility desires return in the context of an environment of low contraceptive use and cultural constructs that support high fertility.^{3,4} Thus, although some attention has been paid to the contraceptive needs of HIV-positive women,^{5,6} and to the influence of knowledge of serostatus on contraceptive use,⁷ there is a lack of information on the factors that determine contraceptive use among serodiscordant couples.

In fact, little attention has been paid to the contraceptive needs of serodiscordant couples (in which one member is HIV positive and one is HIV negative). A focus on serodiscordant couples is warranted, as these couples are faced with the dual burdens of high risk of HIV transmission and risk of pregnancy and the resultant risk of mother-to-child transmission of HIV and of increased mortality in the mother.^{8,9} Although couples with two HIV-positive partners do not face the same concerns about sexual HIV transmission, they share the same risks associated with unplanned pregnancies. The challenge is to provide HIV-affected couples with family planning services that can allow them to effectively manage both their risks of HIV transmission and their fertility desires. The majority of new HIV infections in this context occur within married or cohabiting couples¹⁰; thus, this setting provides an opportunity to examine contraceptive adoption in populations that have high fertility and low contraceptive use and in which married/cohabiting couples represent the greatest risk group for HIV infection. Our previous work has shown that in this setting, despite high levels of knowledge of contraception, use of contraceptive methods remains relatively low, and reported fears of side effects are high.¹¹

Study setting

Zambia is one of sub-Saharan Africa's more urbanized countries, with approximately 36% of the total population living in urban areas.¹² Overall HIV prevalence in Zambia among persons 15–49 years is approximately 16%, with higher infection levels among women (18%) than men (13%). In urban areas, HIV infection among pregnant women declined between 1994 and 2004, especially among young people aged 15–24 years (from 30% in 1994 to 24% in 2004), yet rates in rural areas of Zambia increased slightly from 11% to 12%.^{1,12} Zambia's total fertility rate (TFR) is 5.9 births per woman, and the contraceptive prevalence rate is relatively low, with only 23% of women of reproductive age reporting contraceptive use; only 17% report use of a modern method. Among currently married women, the oral contraceptive pill (OCP) (12%) and withdrawal (5%) were the most commonly used modern and traditional methods.¹²

Materials and Methods

First established in 1986, the Rwanda Zambia HIV Research Group (RZHRG) operates 10 freestanding couples voluntary counseling and testing (CVCT) clinics and 3 clinical research centers in two countries in Africa: Project San Fran-

cisco (PSF) in Kigali, Rwanda, and the Zambia Emory HIV Research Project (ZEHRP) in Lusaka and Ndola, Zambia. This study was carried out at the Lusaka, Zambia, research site. Couples received joint, same-day HIV counseling and testing at the CVCT clinics using standardized procedures, including extensive condom counseling and condom skills training (www.cdc.gov/globalaids/resources/prevention/chct.html).

CVCT is an intervention with proven efficacy in reducing HIV incidence among high-risk populations, namely, heterosexual couples in the African setting.^{13–17} Influence network agents (INAs) from the health, religious, nongovernmental, and private sectors were trained to invite couples for CVCT.¹⁸ Previous analysis of the cohort shows that male positive, female negative couples were more likely to enroll than male negative, female positive couples.¹⁹ More detailed information about CVCT recruitment strategy and procedures, HIV results, and demographic characteristics of RZHRG study participants have been published elsewhere.^{18–23}

The data analyzed come from a cohort of couples from Zambia enrolled in Family Planning in Couples with HIV (FP), a randomized controlled trial (RCT) investigating two different video-based family planning interventions with the goal of reducing fertility in concordant HIV-positive and HIV-discordant couples. The FP interventions provided information on family planning, contraceptive methods, and future planning behaviors (including help in preparing a will and appointing guardians for existing children) to encourage contraceptive adoption among serodiscordant and concordant positive couples. Eligibility criteria for couples included cohabiting for at least 12 months, planning to stay in Lusaka for at least 1 year from the date of enrollment, and age 18–45 for women and 18–65 for men. For the FP study, both serodiscordant and concordant HIV-positive couples were eligible. Additional eligibility criteria for the FP study included no evidence of infertility and no medical contraindications to contraception. The couples were not selected based on their receptivity to family planning, although we cannot ascertain the extent to which desire to use family planning created a self-selection bias. Enrollment included medical history, physical examination, and demographic and knowledge, attitudes and practice (KAP) questionnaires. One to two weeks later, couples returned for randomization, during which behavioral interventions targeting family planning behaviors were administered. This article presents results from cross-sectional data collected at the randomization visit, examining the uptake of contraceptive use across the four study arms.

Before enrollment into the FP study, couples underwent a video-based informed consent process, detailing the scope of the study, a brief description of the contraceptive methods available at the project, their expected participation as well as issues of confidentiality, participant protection, and voluntary nature of the participation. Approval for the studies was granted by the Emory University Institutional Review Board and the University of Zambia Research Ethics Committee. After completing the informed consent process, couples completed a baseline questionnaire, which included information on previous and current contraceptive use. Couples in the FP study were then randomized to one of the four study arms in a factorial design with independent randomization to two video-based interventions: information on contraceptive methods with an emphasis on intrauterine device (IUD) and implant (although all other methods of family planning were

also discussed) (methods group), a motivational video modeling desirable future planning behaviors, including will preparation, financial planning, and pregnancy prevention (motivational group), or both groups. There were thus four groups: control, methods only, motivational only, and methods and motivational. The content of the videos was based on the known efficacy of contraceptive methods, starting with the most effective long-acting methods (IUD, implant, tubal ligation) followed by injectables, OCPs, and finally condoms. (Condom use had been discussed extensively during the first couples' testing session 1–2 weeks before enrollment in the RCT.) This represented a reversal of the usual hierarchy of FP messages, which typically begin with condoms, followed by OCPs, injectables, and so on. The aim of the intervention was to promote long-term method use; hence, these methods were explained first in an attempt to focus the audience's attention on them.

Control videos with educational messages about hand-washing, bednet use, and good nutrition were used to balance the time spent in each of the four intervention arms. The control group was treated as a compassionate care group, in that they still had access to family planning services at the clinic site, but the videos they watched did not address contraceptives or family planning. The provision of family planning services to the control group avoided ethical problems of withholding services to groups who may be in need. However, previous work at this study site with these cohorts has shown that although providing family planning services on-site leads to their use, high rates of attrition occur without continued support and counseling of these couples.²⁴

Each of the videos was approximately 30 minutes long and was presented in the local language (Bemba or Nyanja depending on the group). In addition to descriptions of the contraceptive methods, the videos also detailed their known side effects in an attempt to address health concerns over contraceptive use. The videos were presented to couples in groups, after which a counselor was available to answer any questions arising from the videos. After receiving the intervention, couples were given the option to initiate, add, or switch contraceptive methods. Couples were offered a choice of OCPs, injectable contraceptives, the Norplant implant, a nonhormonal copper IUD, emergency contraception, and surgical sterilization for either partner (tubal ligation or vasectomy). OCPs, injectables, IUD, and implant were provided at the research clinic, and those who chose surgical sterilization were given an appointment with a study physician (BV) at the University Teaching Hospital. All methods were offered free of charge.

Data were collected by trained counselors at the CVCT centers. Completed data forms were scanned daily on-site with TeleForm software, and data were then transferred into Microsoft Access databases. These databases were uploaded to RZHRG servers on a weekly basis, facilitating the transfer of data to the research headquarters in Atlanta, Georgia. Statistical analyses were performed using SAS software, version 9.1. In total, 1502 couples were randomized into the FP study, including 324 baseline contraceptive users and 1178 nonusers. In the current analysis, we are concerned with the adoption of contraception only. For this reason, we categorize couples who are relying on condoms for pregnancy prevention with no contraception, given the known lower effectiveness of condoms for pregnancy prevention. Thus, the no

contraception/condoms only category refers only to condoms used for pregnancy prevention. Couples in all other categories of contraceptive use also have high levels of condom use for HIV prevention. The analysis thus looks at the factors associated with contraceptive use in addition to the high levels of condom use that already exist in the cohort.

Method use before and after the intervention is presented by intervention arm for the group as a whole and separately for the 324 baseline users. A multivariate analysis of predictors of contraceptive uptake in baseline nonusers models a categorical outcome: OCPs (referent), injectables, IUD, Norplant, and tubal ligation. This categorical variable conceptualizes contraceptive methods as least effective temporary (OCPs), more effective temporary (injectables), and longer-term (IUD, Norplant, and tubal ligation). The model controls for couple HIV status (concordant positive or serodiscordant), household income, English language ability, number of living children, male desire for more children, and health concerns around contraception. Initial analysis showed that no nulliparous couples were either using contraception at baseline or adopted contraception after the intervention. In pronatalist settings, such findings are not unusual; we thus limit our sample size to couples who are at risk of adopting contraception. The final sample size for the multivariate analysis is thus 957, with at least one living child, who chose to adopt a method of contraception after the intervention.

Results

Figure 1 shows the distribution of the 1502 couples enrolled in the FP study. Of the 1502 discordant and concordant positive couples who received the intervention, only 21.5% (324) reported baseline use of a modern contraceptive method, primarily OCPs (62.7%). After the intervention, uptake of a contraceptive method was almost universal; 1407 couples selected a new method or chose to continue a method (1084 new adopters and 323 who continued method use or switched to a new method), including 92% of couples who were not already using a nonbarrier method. The most popular method choices among new adopters were injectables (40.7%) and OCPs (40.5%). There was also significant uptake of the Norplant implant (12.2%), and a small percentage of couples chose an IUD (3.3%) or surgical sterilization (2.5%). Table 1 shows the distribution of contraceptive use before and after intervention; the percent of couples using no contraception or condoms only declines dramatically across all four study arms, and there are large gains in the uptake of longer-acting methods across all arms. Couples who viewed the methods video were more likely to choose the IUD (39 of 735, 5.3%) than those who did not (11 of 767, 1.4%). Use of Norplant and injectables was similar across all intervention arms.

Table 2 shows the distribution of contraceptive methods among the 324 couples who were already using at enrollment. Contraceptive use was dominated by the use of OCPs across all groups (62.7%), with injectables comprising approximately one third of contraceptive use. Before the interventions, there was negligible use of long-term contraceptive methods (4.0% IUD or Norplant). Again, among couples who viewed the methods video, use of the IUD was significantly higher (9 of 145, 7.4%) than in the non-methods video group (1 of 179, 0.6%), whereas use of Norplant and injectables was similar

FIG. 1. Contraceptive choices made by serodiscordant and concordant positive couples enrolled in the family planning trial. F, female; INJ, injection; IUD, intrauterine device; M, male; NOR, Norplant; OCP, oral contraceptive pill.

across the intervention groups. Table 3 details the contraceptive switching behaviors among baseline contraceptive users and confirms a pattern of switching from OCP use to Norplant and injectables. After the intervention, the use of OCPs declined among baseline contraceptive switchers in all groups (83.5% before to 2.1% after), and use of Norplant (1.0% to 32.0%) and injectables (14.4% to 55.7%) increased. Among those who viewed both the Methods and motivational video, the number using IUDs increased from 0 to 5 of 21 (23.8%), an increase not seen in the other groups.

Table 4 shows the results of modeling of contraceptive choice among the 957 serodiscordant and concordant positive couples with at least one living child who initiated a contraceptive method postintervention. Couples in the both arm of the trial were significantly more likely to adopt injectables (relative risk ratio [RRR] 1.65, 95% confidence interval [CI] 1.07-2.55) and IUD, Norplant, or tubal ligation (RRR 2.06, 95% CI 1.17-3.44) than to adopt OCPs. Couples in the methods arm were more likely to adopt injectables (RRR 1.55, 95% CI 1.03-2.34) than OCPs. No other study arms were significantly associated with contraceptive method choice. Relative to

couples with 1 or 2 children, couples with 3–5 children or >5 children were significantly more likely to adopt injectables (3–5: RRR 1.65, >6 RRR 2.51) and IUD, Norplant, or tubal ligation (3–5: RRR 1.87, >6: RRR 3.36) than OCPs. Couples in which the male reported that he understood English easily were more likely to adopt IUD, Norplant, or tubal ligation (RRR 1.53) than OCPs compared with couples in which the male did not understand English. Relative to couples in which the male wanted more children, couples in which the male wanted to cease childbearing were significantly more likely to adopt IUD, Norplant, and tubal ligation (RRR 1.93) than to adopt OCPs. Finally, couples in which the woman reported she had concerns about OCPs were more likely to adopt injectables (RRR 1.99) and IUD, Norplant, or tubal ligation (RRR 2.41) than OCPs.

Discussion

The results demonstrate the potential for a family planning intervention tailored toward the unique needs of serodiscordant and concordant positive couples to have a significant

TABLE 1. CONTRACEPTIVE METHOD CHOICES BEFORE AND AFTER INTERVENTION, BY STUDY ARM

	<i>Control arm</i>		<i>Motivational arm</i>		<i>Methods arm</i>		<i>Motivational and methods arm</i>	
	<i>Before n (%)</i>	<i>After n (%)</i>	<i>Before n (%)</i>	<i>After n (%)</i>	<i>Before n (%)</i>	<i>After n (%)</i>	<i>Before n (%)</i>	<i>After n (%)</i>
Condoms ^a /none	291 (78)	22 (6)	297 (76)	23 (6)	293 (80)	23 (6)	297 (81)	27 (7)
Oral contraceptive pills	54 (14)	148 (40)	62 (16)	151 (38)	43 (12)	134 (36)	44 (12)	128 (35)
Injectables	27 (7)	139 (37)	31 (8)	161 (41)	27 (7)	150 (41)	23 (6)	139 (38)
Norplant	1 (0.3)	49 (13)	2 (0.5)	38 (10)	4 (1)	42 (11)	1 (0.3)	41 (11)
IUD	1 (0.3)	6 (1.6)	1 (0.3)	5 (1.3)	3 (1)	17 (5)	0 (0)	22 (6)
Tubal ligation	—	10 (2.7)	—	15 (4)	—	4 (1)	—	8 (2)
Total		374		393		370		365

^aThis refers to couples who were using condoms as their primary means of pregnancy prevention. Condom use to prevent HIV transmission was high in all couples.

IUD, intrauterine device.

effect on the uptake of contraceptive methods. At baseline, only 21.5% of couples were using a modern method of contraception; after the intervention, >90% of couples adopted a modern method of contraception. Additionally, among those who were already using contraception at baseline, a significant proportion switched to a longer-acting method. Increases in contraceptive use were seen across all four study arms, with IUD accepted significantly more often by couples viewing the video that reversed the usual hierarchy of methods by discussing long-acting methods first. The low level of contraceptive use recorded at baseline demonstrates the large potential unmet need for contraceptive services among HIV serodiscordant and concordant positive couples. Much of the increase in contraceptive use may be attributed to access to on-site family planning services and contraceptive methods. In addition, the consent form for all intervention arms included a detailed description of family planning methods (at the request of the U.S.-based Ethical Review Board); thus, even those in the control arm were exposed to some form of information on family planning. Previous analysis of data from this cohort has shown that exposure to the consent form acted to increase knowledge about injectables, IUD, and Norplant before randomization.²⁵ This exposure to information, coupled with access to services, likely explains why the increase in uptake of contraception occurred across all four study arms and was not limited to the intervention arms.

The video-based intervention included information on unfamiliar family planning methods, including the IUD and Norplant (for the methods arm) and information on future planning activities (for the future-planning motivational arms). Baseline noncontraceptive users in the two methods arms were significantly more likely to adopt injectables than couples who did not view the methods video, and uptake of IUD/implant/tubal ligation was significantly higher in the subset who viewed both the methods and motivation videos. This suggests that exposure to information on user-independent, long-acting family planning methods is successful in encouraging the uptake of longer-term and more effective contraception. Previous studies with couples in Lusaka demonstrated high levels of contraceptive discontinuation after initial adoption.²³ Although uptake was high in all arms at baseline in this study and long-acting method uptake was highest in the two arms that viewed the methods video, the impact of the motivational video may result in reduced attrition and lower pregnancy incidence during follow-up. Further analysis of longitudinal data is required to identify the impact of the interventions on contraceptive discontinuation and incident pregnancy.

The most popular method choices among couples were OCPs and injectables, with the proportion using injectables rising from 7% before to 39% after randomization. The relatively high uptake of injectables is encouraging; injectables

TABLE 2. CONTRACEPTIVE METHOD CHOICES BEFORE AND AFTER INTERVENTION AMONG BASELINE CONTRACEPTIVE USERS

	<i>Control arm</i>		<i>Motivational arm</i>		<i>Methods arm</i>		<i>Motivational and methods arm</i>		<i>Total</i>	
	<i>Before n (%)</i>	<i>After n (%)</i>	<i>Before n (%)</i>	<i>After n (%)</i>	<i>Before n (%)</i>	<i>After n (%)</i>	<i>Before n (%)</i>	<i>After n (%)</i>	<i>Before n (%)</i>	<i>After n (%)</i>
Condoms ^a /none	0 (0)	0 (0)	0 (0)	1 (1)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	1 (0)
Oral contraceptive pills	54 (65)	31 (37)	62 (65)	37 (39)	43 (56)	29 (38)	44 (65)	26 (38)	203 (63)	123 (38)
Injectables	27 (33)	36 (43)	31 (32)	50 (52)	27 (35)	33 (43)	23 (34)	29 (43)	108 (33)	148 (46)
Norplant	1 (1)	13 (16)	2 (2)	6 (6)	4 (5)	11 (14)	1 (1)	8 (12)	8 (2)	38 (12)
IUD	1 (1)	1 (1)	1 (1)	0 (0)	3 (4)	4 (5)	0 (0)	5 (7)	5 (2)	10 (3)
Tubal ligation	0 (0)	2 (2)	0 (0)	2 (2)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	4 (91)
Total		83		96		77		68	324	324

^aThis refers to couples who were using condoms as their primary means of pregnancy prevention. Condom use to prevent HIV transmission was high in all couples.

TABLE 3. CONTRACEPTIVE METHOD CHOICES BEFORE AND AFTER INTERVENTION AMONG BASELINE CONTRACEPTIVE USERS WHO SWITCHED CONTRACEPTIVE METHOD

	Control arm		Motivational arm		Methods arm		Motivational and methods arm		Total	
	Before n (%)	After n (%)	Before n (%)	After n (%)	Before n (%)	After n (%)	Before n (%)	After n (%)	Before n (%)	After n (%)
Condoms ^a /none	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)
Oral contraceptive pills	23 (85)	0 (0)	24 (88)	0 (0)	16 (73)	2 (9)	18 (86)	0 (0)	81 (84)	2 (3)
Injectables	4 (15)	13 (48)	2 (8)	21 (77)	5 (22)	11 (50)	3 (14)	9 (43)	14 (14)	54 (56)
Norplant	0 (0)	12 (44)	0 (0)	4 (15)	1 (5)	8 (36)	0 (0)	7 (33)	1 (1)	31 (32)
IUD	0 (0)	0 (0)	1 (4)	0 (0)	0 (0)	1 (5)	0 (0)	5 (24)	1 (1)	6 (6)
Tubal ligation	0 (0)	2 (8)	0 (0)	2 (8)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)	4 (3)
Total		27		27		22		21		97

^aThis refers to couples who were using condoms as their primary means of pregnancy prevention. Condom use to prevent HIV transmission was high in all couples.

administered every 12 weeks provide effective prevention against pregnancy. OCPs, however, are associated with a higher degree of method failure, primarily the result of user error, and their continued high use among concordant positive and serodiscordant couples is surprising. The multivariate analysis showed that the decision to adopt a longer-acting method vs. the pill was largely driven by parity and health concerns. Women at higher parities may be more likely to adopt a longer-term contraceptive method because of a desire to limit childbearing, whereas lower parity women may continue with the pill as a means of spacing childbearing. It is possible that high levels of OCP use are influenced by local, cultural perceptions of contraception or by ongoing family planning program efforts in Zambia; however, further research is needed to understand why OCPs continue to be so popular among this cohort. Only by identifying these influences can messages developed to encourage longer-term and more effective contraceptive use among serodiscordant and concordant positive couples be successful.

Several other factors proved to be significantly associated with the decision by couples to adopt longer-term or more effective contraceptives relative to OCPs. Couples with more children were more likely to adopt longer-term contraceptive methods, reflecting an association between higher parity and the desire to limit childbearing. Couples in which the man had a desire for no more children were more likely to adopt a longer-term contraceptive method, demonstrating the influence that the male partner has on decisions around both childbearing and contraceptive use. Involving men in family planning education, providing family planning services tailored to the needs of men, and delivering family planning education directly to men are some of the mechanisms through which the role of men as barriers to contraceptive use may be reduced. This is particularly important in an environment in which male desires for large numbers of children and high HIV prevalence may coexist. The involvement of men in family planning programming may act to reduce both fertility and the heterosexual and mother-to-child transmission of HIV.

TABLE 4. REGRESSION MODEL OF CONTRACEPTIVE METHOD CHOICE AMONG SERODISCORDANT AND CONCORDANT POSITIVE COUPLES (N=957)

	<i>Injection vs. oral contraceptive pill</i>	<i>IUD, Norplant, and tubal ligation vs. oral contraceptive pill</i>
Study arm (control) ^b		
Motivational	1.02 (0.68-1.52) ^a	1.34 (0.81-2.21)
Methods	1.55 (1.03-2.34)	1.20 (0.70-2.05)
Motivational and Methods	1.65 (1.07-2.55)	2.00 (1.17-3.44)
Woman is HIV positive (male or both are HIV positive)	1.31 (0.76-2.26)	1.23 (0.57-2.63)
Couple is serodiscordant (concordant positive)	1.44 (0.95-2.17)	0.89 (0.50-1.58)
Number of living children (1-2)		
3-5	1.65 (1.20-2.26)	1.87 (1.24-2.83)
>6	2.51 (1.45-4.34)	3.36 (1.77-6.37)
Household income is above median for cohort	1.16 (0.86-1.56)	0.96 (0.66-1.40)
Female understands English easily	1.23 (0.88-1.77)	1.02 (0.67-1.55)
Male understands English easily	1.53 (1.02-2.29)	1.01 (0.96-1.02)
Number of years female has lived in Lusaka	1.01 (0.98-1.02)	1.01 (0.98-1.03)
Male reports current alcohol use	1.18 (0.87-1.61)	0.94 (0.64-1.37)
Male wants to cease/limit childbearing	1.15 (0.85-1.56)	1.93 (1.29-2.86)
Female has health concerns about oral contraceptive pills	1.99 (1.42-2.80)	2.41 (1.60-3.62)

Numbers shown are relative risk ratios and 95% confidence intervals.

^aRelative risk ratios (95% confidence intervals).

^bReference categories are in parentheses.

Couples in which the man or woman understood English were more likely to adopt the injection. All messages were delivered in local languages (Bemba and Njanya); thus, this association likely reflects a relationship between education and contraceptive adoption. Couples in which the woman reported health concerns about OCPs were more likely to choose other methods. Previous research with the same cohort of couples showed a high level of health concerns around contraceptive methods, with the highest percentage of men and women reporting concerns about OCPs compared with injectables, Norplant, or IUD.¹¹ In particular, previous work has demonstrated that men in this cohort report more concerns about IUDs than women and that the IUD was the method both men and women were most likely to report would fail to prevent pregnancy. This may explain the low levels of IUD uptake after the interventions.¹¹ It is important that efforts to provide family planning services to couples affected by HIV incorporate information on the efficacy, likely side effects, and impact on health of contraceptive methods and take steps to tackle any misconceptions that may surround contraception. Although such misinformation is likely present in the general reproductive-age population, it is plausible to suggest that those affected by HIV may have more concerns about contraceptive use linked to perceptions of their own health status.

The cohort of couples analyzed here is not representative of the general adult population. They are couples who opted to attend for joint HIV testing and to enroll in research studies. This potential lack of representation is the main limitation of this study. In particular, previous studies of the cohort have shown couples in which the male is seropositive are more likely to enroll, and these may also be couples in which the man is more concerned about his health and may be more invested in reducing fertility. However, there are currently no nationally representative datasets that are both couple-based and include the serostatus for each partner. The data presented here provide a unique opportunity to understand contraceptive use among couples at high risk of HIV transmission.

Conclusions

Despite low levels of baseline contraceptive use, the exposure to a family planning intervention that provided both information on long-acting methods and planning services and, perhaps most importantly, access to the full range of contraceptive methods acted to dramatically increased contraceptive use among a cohort of serodiscordant and concordant positive couples. Among contraceptive users, there was a switch to longer-lasting contraceptive methods. The unique needs of serodiscordant and concordant positive couples in terms of balancing fertility desires and HIV risks make them a key target group for the prevention of heterosexual and mother-to-child HIV transmission. These needs are, however, largely missing from many current HIV efforts, which focus on the reduction of the risk of HIV transmission without attention to the prevention of pregnancy.²⁶ They are also largely missed from current family planning efforts in many resource-poor settings. Both family planning and HIV services need to recognize these dual needs, and there is clearly a need to further integrate the two types of service. Current government, nongovernmental organizations, and privately op-

erated HIV testing facilities need to take steps to include family planning information in posttest counseling, in particular, promoting longer-term methods that allow couples to reduce unwanted fertility. Including information on family planning in VCT services in addition to tailoring the delivery of family planning information about longer-acting methods to meet the needs and concerns of HIV-positive women or those with HIV-positive partners is an essential step in the delivery of services and prevention efforts to reduce the transmission of HIV. Providing exposure to messages that simultaneously provide information on contraceptive methods and promote the need for future planning behaviors appears to be a successful methodology for encouraging the adoption of long-term effective contraceptive use among those affected by HIV. The video approach used in this study could easily be adapted and used by both FP and HIV service providers to promote long-term contraceptive use among clients.

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Disclosure Statement

The authors have no conflicts of interest to report.

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Address correspondence to:

Rob Stephenson, Ph.D.

Hubert Department of Global Health, #722

Rollins School of Public Health

1518 Clifton Road, NE

Atlanta, GA 30322

E-mail: rbsteph@sph.emory.edu