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Does integrating family planning into HIV care and treatment impact intention to use contraception? Patient perspectives from HIV-infected individuals in Nyanza Province, Kenya

Sara J. Newmann[a], **Daniel Grossman**[a,b], **Cinthia Blat**[a], **Maricianah Onono**[c], **Rachel Steinfeld**[a], **Elizabeth A. Bukusi**[c], **Starley Shade**[d], and **Craig R. Cohen**[a]

[a]Bixby Center for Reproductive Health, Department of Obstetrics, Gynecology, and Reproductive Sciences, University of California, San Francisco, USA

[b]Ibis Reproductive Health, Oakland, USA

[c]Centre for Microbiology Research, Kenya Medical Research Institute, Nairobi, Kenya

[d]Center for AIDS Prevention, Department of Medicine, University of California, San Francisco, USA

Abstract

Objective—To evaluate whether HIV-infected women and men in HIV care and not using highly effective methods of contraception thought they would be more likely to use contraception if it were available at the HIV clinic.

Methods—A face-to-face survey assessing family-planning knowledge, attitudes, and practices was conducted among 976 HIV-infected women and men at 18 public-sector HIV clinics in Nyanza, Kenya. Data were analyzed using logistic regression and generalized estimating equations.

Results—The majority of women (73%) and men (71%) thought that they or their partner would be more likely to use family planning if it were offered at the HIV clinic. In multivariable analysis, women who reported making family-planning decisions with their partner (adjusted odds ratio [aOR] 3.22; 95% confidence interval [CI], 1.53–6.80) and women aged 18–25 years who were not currently using family planning (aOR 4.76; 95% CI, 2.28–9.95) were more likely to think they would use contraception if integrated services were available. Women who perceived themselves to be infertile (aOR 0.07; 95% CI, 0.02–0.31) and had access to a cell phone (aOR 0.40; 95% CI, 0.25–0.63) were less likely to think that integrated services would change their contraceptive use. Men who were not taking antiretroviral medications (aOR 3.30; 95% CI, 1.49–7.29) were more likely, and men who were unsure of their partner's desired number of children (aOR 0.36; 95% CI, 0.17–0.76), were not currently using family planning (aOR 0.40; 95% CI, 0.22–0.73), and were

*Corresponding author: Sara Newmann, Department of Obstetrics, Gynecology, and Reproductive Sciences, University of California, San Francisco, San Francisco General Hospital, 1001 Potrero Avenue, Ward 6D, San Francisco, CA 94110, USA. Tel.: + 1 415 206 4220; fax: + 1 415 206 3112, newmanns@obgyn.ucsf.edu.

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living in a peri-urban setting (aOR 0.46; 95% CI, 0.21–0.99) were less likely to think their partner would use contraception if available at the HIV clinic.

Conclusions—Integrating family planning into HIV care would probably have a broad impact on the majority of women and men accessing HIV care and treatment. Integrated services would offer the opportunity to involve men more actively in the contraceptive decision-making process, potentially addressing 2 barriers to family planning: access to contraception and partner uncertainty or opposition.

Keywords

Contraception; Decision making; Family planning; HIV; Integration

1. Introduction

Recent studies indicate large unmet need for contraception among HIV-infected women in Africa [1,2]. According to the Kenyan Demographic and Health Survey (KDHS) 2008–2009 [3], the contraceptive prevalence rate (CPR) in Kenya is 46%, with 39% of married women aged 15–49 years reporting use of modern methods. In Nyanza Province, the CPR is 37%. However, 75% of married men and women in Kenya aged 15–49 years report a desire to delay fertility for at least 2 years or cease childbearing altogether. The total fertility rate in Kenya is 4.6; in rural areas, it is 5.2. Unmet need for contraception among HIV-infected women in Kenya appears even higher than that of the general population. Despite high unmet need for contraception among HIV-infected individuals, family planning and HIV treatment services remain largely separate, leaving many HIV-infected women without easy access to contraception. Globally, interest in integrating family-planning services into HIV care has grown [4–12], yet few studies have rigorously evaluated the impact of service integration [13–15].

Integration of family-planning and HIV services is posited to result in fewer unintended pregnancies, and therefore decrease mother-to-child HIV transmission, illegal abortion, maternal and neonatal morbidity and mortality, and various other related health and societal costs and outcomes [16,17]. Nevertheless, studies evaluating the impact of family-planning and HIV service integration have not found an increase in the use of more effective, non-barrier contraceptive methods or decreased pregnancy rates [10,11]. Furthermore, the discussion of patients' perceptions of the influence of integrated family-planning/HIV services on contraception use is missing from the literature. This lack of data highlights the need for a randomized controlled trial (RCT) of family-planning and HIV service integration, and for a rigorous assessment of patients' attitudes toward integration. The present study describes the perceived influence of integrating family-planning and HIV services on contraceptive use among HIV-infected women and men in HIV care in Nyanza, Kenya. It was conducted in preparation for a cluster RCT evaluating the impact of integrated family-planning and HIV services on contraceptive prevalence (clinical trials.gov No. NCT01001507) [18].

2. Methods

2.1. Study design and data collection

A cross-sectional survey was conducted about knowledge, attitudes, and practices (KAP) regarding family planning conducted among HIV-infected women and men in HIV care in Nyanza. The KAP survey was conducted to inform an RCT intervention of integrating family planning into HIV care. The present paper uses data from the KAP survey and focuses on whether HIV-infected women and men who were not using a more effective

method of contraception (i.e. hormonal, intrauterine, or permanent methods) thought that integrated services were likely to change their, or their partners', contraceptive behavior.

The KAP survey was conducted at all 18 public-sector sites offering HIV care in Nyanza selected for inclusion in the RCT. These included dispensaries, health centers, and sub-district and district hospitals in the Nyatike, Rongo, Suba, and Kisumu East districts of Nyanza. Twelve sites were in rural areas and the remaining 6 were in peri-urban areas, defined in the survey as being "near a main town center." All sites were supported by Family AIDS Care and Education Services to provide comprehensive HIV care and treatment [19]. At the time of the survey, all HIV care sites referred patients who wanted contraception to the maternal–child health clinic, at the same facility, to receive counseling and method provision. Condoms were the only contraceptive method available at the HIV clinic.

Patients were eligible to complete the survey if they were an HIV-positive woman or man obtaining care at 1 of the 18 study sites; not currently pregnant; 18–45 years of age if female and at least 18 years of age if male; and willing and able to give informed consent. Five trained Kenyan interviewers, fluent in the local languages of Dholuo and Kiswahili, recruited patients and administered the face-to-face questionnaire. Informed consent was obtained, and participants were reimbursed approximately US $3. The study was approved by the Committee on Human Research at the University of California, San Francisco, USA, and the Ethical Research Committee at the Kenya Medical Research Institute. Patients were included in the analysis if they met the study criteria above and reported that they or their partners were not currently using a more effective contraceptive method, which included hormonal methods (pills, injectables, and subdermal implants), intrauterine devices, and permanent methods. Only men who reported being married or having a partner were included in the analysis.

2.2. Dependent variable

Patients' perceived impact of the influence of family-planning integration into HIV clinic services on contraception use was ascertained by responses to the question "do you think you would be more likely to use a family-planning method like birth control if it were available here [at the HIV clinic]?" among women and "do you think your partner would be more likely to use a family-planning method like birth control if it were available [at the HIV clinic]?" among men. Response options were "yes, much more likely to use family planning;" "yes, somewhat more likely to use family planning;" "no, no more likely to use family planning;" and "don't know."

2.3. Independent variables

Participant characteristics examined included age, educational attainment, possession of a household cell phone, flooring material in the home, participant occupation, current partnership status, number of living children, and disclosure of participant's HIV status to his/her partner. Examined health markers were HIV status of main partner, participant's use of antiretroviral therapy (ART), and number of children infected with HIV. Variables describing future fertility intentions, family-planning decision making, and clinic setting (rural vs peri-urban) were also included in the analysis.

2.4 Statistical methods

Because the outcome studied was participant perception of the influence of family-planning integration on personal contraception use (among women) and on partner's contraception use (among men), analyses were stratified by gender. Among female respondents, responses

of those who said they were somewhat and much more likely to use a family-planning method were collapsed together and compared with responses from those who said they were no more likely to use a family-planning method. The sample of women who responded "don't know" (n=6) was too small to examine correlations and was excluded from the analysis. Among male respondents, 2 separate analyses were performed. The first compared men who expected their partners would be somewhat or much more likely to use family planning if available through the HIV clinic with those who expected no greater likelihood of family-planning use by their partners. The second compared men who expected their partners would be somewhat or much more likely to use family planning with men who answered "don't know."

Categorical variables were reported using frequencies and proportions. To adjust for clustering of patients within clinics, crude odds ratios and adjusted odds ratios (aORs) and associated confidence intervals (CIs) were derived using generalized estimating equations with robust standard errors. Multicollinearity was assessed using the Pearson correlation coefficient. To select the covariates retained in the final multivariate models, we began by fitting a full model that included every variable examined through crude analysis. A final model was then fitted that retained all variables with $P<0.20$ from the full model and any confounders whose omission resulted in a more than 10% shift in the parameter estimates of statistically significant covariates relative to their estimates from the full model. To avoid poor model fit due to sparse cell sizes, we collapsed together responses of "same" and "fewer" for partner's desired number of children in the analyses of men who answered "yes" versus "don't know" and omitted number of living children from the full model comparing men who answered "yes" versus "no." SAS version 9.2 (SAS Institute, Cary, NC, USA) was used for all statistical analyses.

3. Results

Between November 2009 and January 2010, we recruited a convenience sample of 976 female and male patients. Five women and 12 men declined participation. Among respondents who reported not using more effective contraception, men were typically older than women. Education levels were low and most respondents did not have covered floors in their homes, indicating lower socioeconomic status. Most women and all men, owing to inclusion criteria, were married or partnered, had disclosed their HIV status to their partner, had partners who were also HIV infected, and were on or about to start ART.

The majority of respondents said they preferred to either have no more children or delay fertility for at least 2 years. When asked their partner's desired number of children, the largest fraction said both wanted the same number; however, more women than men reported their partner wanting more children than they did (24% vs 10%). More men than women (87% vs 54%) reported current use of a less effective form of contraception, including condoms or natural methods. Only 3 women and 4 men reported using natural methods; thus, the analyses primarily refer to the use of condoms. Three-quarters of women using contraception reported that contraceptive decision making was conducted jointly with a partner (Table 1).

The majority of respondents said that they (women) or their partner (men) would be more likely to use a family-planning method were it offered at the HIV clinic. The proportion that thought integration would not impact choice of contraceptive methods differed by gender: 27% of women versus 10% of men. Of the women who did not think integration would impact their contraception use, 45% reported current use of a barrier or natural method and 55% reported not using contraception at all. Of the men who did not think integration would impact their partner's contraception use, 78% reported they or their partner were using

barrier or natural family-planning methods and 22% reported not using any contraception at all (data not shown). More men (17%) than women (2%) were unsure how integration would impact their own or their partner's contraceptive use practices (Table 1).

We looked for characteristics associated with women responding "yes" compared with those responding "no" to the question "do you think you would be more likely to use a family-planning method like birth control if it were available here?" In bivariable analysis, age, current use of family planning, household cell phone, relationship status, HIV status of main partner, disclosure of HIV status to partner, future fertility desires, partner's desired number of children, and being the primary family-planning decision maker were significantly associated ($P<0.05$) with responding that they would be more likely to initiate contraception use if it were offered at the HIV clinic (Table 2).

In multivariable analysis, women who reported making family-planning decisions jointly with their partner had greater odds of thinking that integrated services would result in their initiating contraception compared with women who reported being the sole decision maker regarding contraception (aOR 3.22; 95% CI, 1.53–6.80). Women aged 18–25 years not using family planning were more likely to think that integrated services would result in their initiating contraception compared with women aged 18–25 years who were using family planning (aOR 4.76; 95% CI, 2.28–9.95). Women who reported being a member of a household with a cell phone or who perceived themselves to be infertile had lower odds ($P<0.05$) of thinking that service integration would influence their contraceptive use. Associations with several additional variables did not reach statistical significance, probably because of inadequate sample size. Women who were single, had fewer than 4 children, and lived in peri-urban areas had lower odds of thinking that family-planning integration into the HIV clinic would influence their contraception practices. Women who had 1 or more HIV-positive child had greater odds of thinking that family-planning/HIV integration would impact their contraceptive practices (Table 2).

In multivariable analysis of men who answered "yes" versus "no" about whether they thought their partner would be more likely to use contraception if it were offered at the HIV clinic, those who reported that neither they nor their partner was using barrier/natural family-planning methods (aOR 0.4; 95% CI, 0.2–0.7) and men who lived in peri-urban areas (aOR 0.5; 95% CI, 0.2–1.0) were less likely to think that integrated services would influence their partner's use of contraception. Additionally, men with a partner who was HIV negative and those who desired children within the next 2 years had lower odds of thinking that family-planning/HIV integration would impact their partner's contraception use; these associations did not reach statistical significance (Table 3).

In multivariable analysis of men who answered "yes" versus "don't know," those aged 35 years or older (aOR 2.5; 95% CI, 1.1–5.7) and not using ART (aOR 3.3; 95% CI, 1.5–7.3) were more likely to think their partner would initiate contraception use if family planning were available at the HIV clinic, whereas men who did not know their partner's desired number of children (aOR 0.4; 95% CI, 0.2–0.8) were less likely to have an opinion. Men who desired children within 2 years were also less likely to think integrated family-planning/HIV services would influence their partner's contraceptive practices; however, this association did not reach statistical significance (Table 4).

Women (n=142) and men (n=60) with unmet need for contraception (those who reported not using any contraception and also reported not wanting a child within the next 2 years) were asked why they were not currently using contraception. The most common answer among women and men was that they were having no or infrequent sex (34% vs 28%) or were not married (14% vs 12%), followed by—for women—they were breastfeeding (11%) or their

partner opposed contraceptive use (6%). Overall, few women and men reported health concerns (6%) or fear of adverse effects (3%) as reasons for not using contraception. Very few women and men reported that they did not know of a method or where to obtain a method, that the distance to the family-planning clinic was too great, or that contraception was too expensive (0.5%, 2%, 3%, and 0.5%, respectively).

4. Discussion

Given widespread emphasis on the implementation and scale-up of integrated services [5,8–10,12,20], it is important to assess patients' views on integration prior to implementation. To our knowledge, such research has not been previously performed. The present findings indicate that integrating family planning into HIV care would probably result in increased uptake of effective contraceptive methods among HIV-infected women currently not using these methods. We found that more than 70% of study participants thought that they (female participants) or their partners (female partners of male participants) would be more likely to use family planning if it were provided at the HIV clinic. The research provides face validity to proceed with the RCT to evaluate integrating family-planning services into HIV care. Most HIV-infected men and women in the present study accepted the idea of integration and thought that integrated services would influence their contraceptive behavior.

The proportion of participants who thought that integration would not influence contraceptive use, or who were unsure, differed by gender. Just over 25% of female participants and only 10% of male participants did not think integrated services would influence contraceptive use. Less than 2% of women and almost 20% of men were unsure. This disparity in the proportion of women and men who were unsure may indicate how absent men are or feel from reproductive health services [21–24]. It may also reflect the fact that most methods of contraception are not used by men, who therefore had to hypothesize about their partner's intentions. Additionally, men typically present to 1 clinic for 1 service and may not share women's experiences of going to different clinics for different services, waiting in multiple lines, and having to disclose information such as HIV status to multiple providers. Men may not appreciate the extent to which consolidating service integration could affect service use.

The present findings indicate that perhaps integration would have the most impact on younger women not currently using family planning, those of lower socioeconomic status, and those who make family-planning decisions jointly with their partner. The findings are especially important since younger Kenyan women are less likely to use family planning compared with older women [3]. It may be that, for older women and women of higher socioeconomic status, access to family-planning services is less of a barrier. Additionally, older women in the present study population may have already settled on natural or barrier methods after experiencing adverse effects with more effective methods, making them more resistant to trying a more effective contraceptive method if it were offered at the HIV clinic. Some older HIV-infected women may also consider themselves to be subfertile and, thus, less likely to feel the need for more effective contraception. There were some associations that lacked statistical significance, probably owing to sample size, but that may have programmatic implications. Women who were single, had no children, or lived in peri-urban areas had lower odds of thinking that family-planning/HIV integration would impact their contraceptive use; however, these women made up a minority of the study population (18%, 12%, and 37%, respectively), demonstrating that this intervention would probably have an impact on the contraception use of the majority of women with HIV who present for HIV care and treatment.

Numerous studies have found that increased spousal communication regarding fertility preferences is associated with increased contraceptive use in African contexts and has been suggested as a way to reduce unmet need [25–28]. Similarly, opposition from male partners is frequently cited as a major barrier to contraceptive use in Sub-Saharan Africa [28–31]. In the present study, 75% of women reported making contraceptive decisions jointly with their partner, and these women had 3 times the odds of believing that integrating family planning into HIV care would result in their initiating use of a more effective contraceptive method compared with women who reported making contraceptive decisions alone.

We hypothesize that women may see integration as a way to involve men more actively in the contraceptive decision-making process. For women who make family-planning decisions jointly with their partner, integration may surmount 2 barriers to family planning: access to contraception and partner opposition or uncertainty. Integrating family planning into HIV services provides a unique opportunity to include couples counseling in the HIV care setting, thereby incorporating men into reproductive healthcare decision making and facilitating communication among couples about fertility and related matters such as HIV disclosure among serodiscordant couples; this, in turn, may lead to increased contraceptive use and improved reproductive health outcomes [32]. Integrated services would probably also benefit from a component targeted at men, in addition to couples, in order to increase familiarity with family planning. The HIV clinic already serves men and women, so it is a prime location for incorporating both into family-planning decisions.

Among men, older individuals were more likely to think that integrated services might result in their partner using more effective methods of contraception. These findings indicate that older men are perhaps feeling the burden of larger family sizes more than younger men, have reached their ideal family size, and thus are in greater need of family planning. Other studies have found that ART use is associated with more consistent condom use [33]. The present finding that men not using ART were more receptive to family-planning service integration might imply that these men have greater need for a family-planning intervention because they may be less likely to use condoms. Men who reported not using family planning (them or their partner) were less likely to think that integrated services would impact their partner's contraceptive use, perhaps indicating that these men have made a conscious decision about not using family planning in their relationship. Additionally, men who lived in peri-urban areas were less likely to think their partners would use contraception if offered at the HIV clinic. This might indicate that men in peri-urban areas believe that their partner has easy access to contraception outside of the clinic and that family-planning/HIV integration is unnecessary. The following associations came close to reaching statistical significance and may have important programmatic implications: men who desired children within 2 years and those who reported their partner was HIV negative had lower odds of thinking that family-planning/HIV integration would impact their partner's contraception use.

However, the proportion of men who fell into these categories made up less than one-quarter of the population, implying that most men believe that integration might impact their partner's contraceptive use.

Fewer covariates were associated with whether or not men thought that integrated services would impact their partner's contraception use if available in the HIV clinic. It does not appear that there are many salient differences among men who are supportive, unsure, or unsupportive of family-planning integration. The lack of multiple predictors among men with respect to whether family-planning integration would impact their partner's contraception use perhaps implies that men may be less likely than women to have an

opinion about what might impact contraceptive use and that integrated services should target all men.

Similar to KDHS findings [3], very few women and men in the present study with unmet need reported that lack of access, convenience, or finances were important reasons for non-use of contraception. These findings support our belief that integrating family-planning services into HIV care might increase contraceptive use through means beyond simply increasing access to contraception. Following the implementation of integration, more research is needed to explore the pathways by which integration influences contraception use. Integration of these services may provide a neutral space for men and women to be involved in the contraceptive decision-making process, which may in turn positively impact contraception use, especially among those with high unmet need.

The present study had several limitations. The sample was drawn as a convenience sample from the population of HIV-infected women and men attending HIV care and treatment clinics in western Kenya; thus, the respondents who agreed to participate in the study may differ in certain ways from the HIV-infected population as a whole, decreasing the potential generalizability of the study findings. The present findings are also potentially biased by respondents answering according to what they thought the interviewers wanted to hear with respect to integration (i.e. social desirability). Finally, the findings are based on responses to a hypothetical question relating to whether or not contraception use would change if family-planning services were integrated into HIV care. It is hard to predict how well an affirmative answer to the question correlates with future contraception use if integration were to occur. Several previous studies have demonstrated that responses to hypothetical questions, such as intentions to use contraception or to have more children, can predict subsequent behavioral outcomes [34–36].

In conclusion, most HIV-infected women and men in HIV care in Western Kenya interviewed in the present study and not currently using effective methods of contraception supported integrating family planning into HIV care and thought integrated services would result in use of more effective methods of family planning. The magnitude of this finding demonstrates the importance of evaluating the effect of integrated services on actual contraceptive use. The study supports appeals from policy makers to move toward integration [37] and uniquely gives voice to patients' perspectives on integration—which are quite supportive. We hypothesize that integration of family planning into HIV care offers a novel structural model that will not only increase access to contraception but might also facilitate incorporating men more actively into decision making and services regarding reproductive health. Further research into how best to incorporate men into such decision making is warranted so as not to diminish women's autonomy and reproductive freedom, but to empower women to make decisions about reproduction. The findings validate our plan to conduct an RCT testing whether integrating family-planning and HIV services would increase contraceptive prevalence, and identify further areas of research regarding the intersection between fertility decision making and gendered power dynamics—the understanding of which is essential to creating programs that adequately address HIV-infected individuals' vast unmet need for family planning.

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Table 1

Selected characteristics of HIV-infected men and women who reported they or their partner was not using more effective contraception (pills, injectables, implants, intrauterine devices, and permanent methods)

Measure	Women (n=359)		Men (n=364)	
	No.	%	No.	%
Exposures				
Age, y				
18–25	98	27.4	38	10.4
26–34	166	46.4	134	36.8
≥35	94	26.3	192	52.8
Highest educational level attained				
None or primary	318	88.6	264	72.5
Secondary or greater	41	11.4	100	27.5
Covered floors in home	71	19.8	60	16.5
Household has a cell phone	155	43.2	193	53.0
Occupational setting				
Home	193	53.9	159	43.7
Outside of home	165	46.1	205	56.3
Married/partnered	292	81.8	364	100.0
HIV status main partner				
HIV positive	171	60.6	233	64.4
HIV negative	27	9.6	70	19.3
Don’t know	84	29.8	59	16.3
Disclosed to partner	221	75.2	315	86.5
Taking or about to start antiretroviral therapy	284	79.8	273	75.6
Number of living children				
0	43	12.0	31	8.5
1–3	205	57.3	185	50.8
≥4	110	30.7	148	40.7
Number of children infected with HIV				
0	239	73.3	283	85.5
≥1	87	26.7	48	14.5
Desired fertility delay				
0–2 y	80	22.4	87	24.5
>2 years	54	15.1	55	15.5
Says she/partner can’t get pregnant	19	5.3	0	0.0
Does not prefer to have any or more children	189	52.8	182	51.3
Other [a]	16	4.5	31	8.7
Partner’s desired number of children				
Same	106	39.3	155	43.1
More	66	24.4	35	9.7
Fewer	17	6.3	23	6.4

Measure	Women (n=359)		Men (n=364)	
	No.	%	No.	%
Don't know	81	30.0	147	40.8
Currently using family planning [b]	186	53.5	314	87.0
Who makes decisions about family planning?				
Respondent	38	20.9		
Partner	9	5.0		
Joint	135	74.2		
Clinic setting				
Rural	228	63.5	231	63.5
Peri-urban	131	36.5	133	36.5
Outcome				
Do you think you (women)/your partner (men) would be more likely to use a family-planning method like birth control if it were available here at the HIV clinic?				
Yes	256	71.3	265	72.8
No	97	27.0	37	10.2
Don't know	6	1.7	62	17.0

[a] Groups together responses of undecided, wants to wait until after marriage, doesn't know.

[b] Family-planning methods include natural and barrier methods only.

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Table 2

Predictors among women (yes vs no) of initiating more effective contraception if family-planning services were integrated into HIV care

Measure	Yes, %	Odds ratio (n=353)	95% confidence interval	Adjusted Odds ratio [a] (n=327)	95% confidence interval
Age, y, and whether currently using family planning [b,c]					
18–25 on family planning	79.7	—		—	
26–34 on family planning	79.6	1.02	0.63–1.63	0.71	0.35–1.46
≥35 on family planning	68.8	0.59	0.29–1.20	0.44	0.14–1.40
18–25 not on family planning	88.9	2.08	1.10–3.94	4.76	2.28–9.95
26–34 not on family planning	72.7	0.87	0.45–1.66	2.05	0.71–5.96
≥35 not on family planning	47.3	0.27	0.13–0.56	0.57	0.23–1.40
Highest educational level attained					
None or primary	74.0	—			
Secondary or greater	61.0	0.58	0.32–1.04		
Floors in home					
Dirt	72.1	—		—	
Covered floors	74.3	1.08	0.72–1.60	1.41	0.87–2.28
Household has a cell phone					
Yes	65.6	0.65	0.44–0.95	0.42	0.25–0.70
No	77.9	—		—	
Occupational setting					
Home	72.9	—		—	
Outside of home	72.0	0.93	0.63–1.37	0.75	0.49–1.16
Relationship status					
Married/partnered	76.6	—		—	
Single	54.1	0.40	0.26–0.63	0.53	0.23–1.20
HIV status main partner					
HIV positive	79.9	—			
HIV negative	81.5	1.35	0.40–4.52		
Don’t know	67.9	0.57	0.33–0.99		
Disclosed to partner					

Measure	Yes, %	Odds ratio (n=353)	95% confidence interval	Adjusted Odds ratio [a] (n=327)	95% confidence interval
Yes	75.9	—			
No	66.4	0.54	0.34–0.83		
Antiretroviral use					
Taking or about to start	72.8	—			
Not on antiretroviral therapy	71.8	1.13	0.75–1.71		
Number of living children					
0	64.3	0.60	0.27–1.35	0.58	0.24–1.42
1–3	73.4	0.91	0.50–1.64	0.56	0.27–1.17
≥4	73.8	—		—	
Number of children infected with HIV					
0	71.5	—		—	
≥1	82.6	1.65	0.95–2.86	1.61	0.96–2.68
Desired fertility delay					
0–2 y	78.8	1.25	0.72–2.19	1.91	0.97–3.76
Says she/partner can't get pregnant	17.7	0.08	0.03–0.28	0.08	0.02–0.39
>2 y or other [d]	74.1	—		—	
Partner's desired number of children					
Same	81.7	—			
More	81.8	1.11	0.49–2.51		
Fewer	70.6	0.81	0.17–3.83		
Don't know	70.4	0.60	0.36–0.98		
Who makes decisions about family planning?					
Respondent	65.8	—		—	
Partner	88.9	4.02	0.50–32.65	4.03	0.43–37.41
Joint	79.7	2.03	1.09–3.78	3.22	1.53–6.80
Clinic setting					
Rural	78.0	—		—	
Peri-urban	63.1	0.46	0.20–1.02	0.44	0.19–1.01

[a]Point estimates and 95% confidence intervals for all covariates retained in the multivariate model are shown; blank spaces reflect variables omitted from the final model.

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[b] Owing to effect modification by the variable current use of family planning on the relationship between age and the outcome of whether women said they were more likely to use family planning if offered at the HIV clinic, odds ratios are shown for all levels of the interacted variables compared with a single referent.

[c] Family-planning methods include natural and barrier methods only.

[d] Groups together responses of desires fertility delay >2 y, does not prefer to have any or more children, undecided, wants to wait until after marriage, and doesn't know.

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Table 3

Predictors among men (yes vs no) of initiating more effective contraception if family-planning services were integrated into HIV care

Measure	Yes, %	Odds ratio (n=302)	95% confidence interval	Adjusted odds ratio [a] (n=291)	95% confidence interval
Age, y					
18–25	96.3	—			
26–34	87.2	0.24	0.02–2.97		
≥35	86.8	0.21	0.02–2.72		
Highest educational level attained					
None or primary	88.4	—			
Secondary or greater	86.2	1.07	0.60–1.92		
Floors in home					
Dirt	88.0	—			
Covered floors	86.5	0.96	0.25–3.67		
Household has a cell phone					
Yes	87.3	0.97	0.52–1.84		
No	88.3	—			
Occupational setting					
Home	87.1	—			
Outside of home	88.2	1.07	0.64–1.79		
HIV status main partner					
HIV positive	89.2	—		—	
HIV negative	82.8	0.65	0.20–2.13	0.58	0.18–1.88
Don’t know	87.8	0.91	0.26–3.19	1.71	0.51–5.74
Disclosed to partner					
Yes	88.2	—			
No	84.6	0.72	0.26–1.98		
Antiretroviral use					
Taking or about to start	88.5	—			
Not on antiretroviral therapy	86.6	0.94	0.47–1.92		
Number of living children					

Measure	Yes, %	Odds ratio (n=302)	95% confidence interval	Adjusted odds ratio [a] (n=291)	95% confidence interval
0	95.2	3.68	0.06–233.80		
1–3	84.6	0.59	0.20–1.76		
≥4	90.4	—			
Number of children infected with HIV					
0	88.0	—			
≥1	84.6	0.80	0.33–1.98		
Desired fertility delay					
0–2 y	83.3	0.62	0.28–1.36	0.53	0.25–1.12
>2 y or other [b]	89.5	—		—	
Partner's desired number of children					
Same	87.1	—			
More	85.3	0.86	0.25–3.00		
Fewer	91.3	1.78	0.30–10.58		
Don't know	88.2	0.98	0.55–1.75		
Currently using family planning [c]					
Yes	89.1	—		—	
No	81.4	0.50	0.29–0.86	0.40	0.22–0.73
Clinic setting					
Rural	90.4	—		—	
Peri-urban	83.5	0.55	0.24–1.28	0.46	0.21–0.99

[a] Point estimates and 95% confidence intervals for all covariates retained in the multivariate model are shown; blank spaces reflect variables omitted from the final model.

[b] Groups together responses of desires fertility delay >2 y, does not prefer to have any or more children, undecided, wants to wait until after marriage, and doesn't know.

[c] Family-planning methods include natural and barrier methods only.

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Table 4

Predictors among men (yes vs don't know) of initiating more effective contraception if family-planning services were integrated into HIV care

Measure	Yes, %	Odds ratio (n=327)	95% confidence interval	Adjusted odds ratio [a] (n=310)	95% confidence interval
Age, y					
18–25	70.3	—		—	
26–34	79.2	1.57	0.84–2.94	1.55	0.67–3.56
≥35	84.7	2.32	1.05–5.12	2.45	1.06–5.67
Highest educational level attained					
None or primary	79.5	—			
Secondary or greater	85.2	1.43	0.77–2.63		
Floors in home					
Dirt	80.3	—			
Covered floors	84.9	1.35	0.60–3.05		
Household has a cell phone					
Yes	83.7	1.38	0.80–2.37		
No	78.1	—			
Occupational setting					
Home	81.0	—			
Outside of home	81.1	1.00	0.61–1.66		
HIV status main partner					
HIV positive	81.6	—			
HIV negative	80.0	0.86	0.49–1.50		
Don't know	81.1	0.90	0.44–1.81		
Disclosed to partner					
Yes	81.7	—			
No	76.7	0.71	0.34–1.49		
Antiretroviral use					
Taking or about to start	77.4	—		—	
Not on antiretroviral therapy	92.2	3.44	1.59–7.43	3.30	1.49–7.29
Number of living children					
0	66.7	0.38	0.16–0.90		

Measure	Yes, %	Odds ratio (n=327)	95% confidence interval	Adjusted odds ratio [a] (n=310)	95% confidence interval
1–3	82.0	0.92	0.51–1.65		
≥4	83.1	—			
Number of children infected with HIV					
0	83.5	—			
≥1	78.6	0.76	0.43–1.32		
Desired fertility delay					
0–2 y	72.4	0.51	0.25–1.03	0.57	0.25–1.31
>2 y or other [b]	83.6	—		—	
Partner's desired number of children					
Same/fewer	85.5	—		—	
More	96.7	5.28	0.53–52.62	4.94	0.53–46.33
Don't know	72.4	0.30	0.04–2.39	0.36	0.17–0.76
Currently using family planning [c]					
Yes	79.7	—		—	
No	89.7	2.24	0.64–7.87	1.33	0.42–4.22
Clinic setting					
Rural	79.3	—		—	
Peri-urban	84.2	1.40	0.70–2.80	1.74	0.84–3.63

[a] Point estimates and 95% confidence intervals for all covariates retained in the multivariate model are shown; blank spaces reflect variables omitted from the final model.

[b] Groups together responses of desires fertility delay >2 y, does not prefer to have any or more children, undecided, wants to wait until after marriage, and doesn't know.

[c] Family-planning methods include natural and barrier methods only.