Integration of Family Planning Services into Healthcare for HIV Positive Women in Botswana

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SYNOPSIS: In an HIV clinic in Botswana, provision of on-site contraceptive services for women encouraged family planning discussions and increased interest in LARC.

ABSTRACT

Objective: In Botswana, half of all pregnancies are unintended and 30% of women of reproductive age are living with HIV. We created and assessed a clinic model to address unmet need for effective contraception among women living with HIV.

Methods: We introduced family planning services into an HIV clinic in Gaborone, Botswana. Our intervention gave HIV providers brief training on contraceptive counseling plus the option of immediate referral of interested clients to an on-site contraception provider. We administered a survey to clients and providers before and after intervention. Clients were female, aged 18 to 45 years and using antiretrovirals.

Results: At baseline, 6% of 141 clients discussed contraception with their HIV-care provider, compared to 61% of 107 post-intervention (p<0.001). At baseline, 6% of clients reported wanting to use long-acting reversible contraception (LARC) going forward. Post-intervention, 45% of clients chose to meet with the contraception provider, and 29% wanted to use LARC going forward (p<0.001 vs. baseline). All providers strongly agreed that they were better informed about contraception post-intervention and were satisfied with their ability to counsel and refer clients for contraception.

Conclusions*:*Provision of on-site contraceptive services in this HIV clinic encouraged family planning discussions and increased interest in LARC.

SYNOPSIS: In an HIV clinic in Botswana, provision of on-site contraceptive services for women encouraged family planning discussions and increased interest in LARC.

1. INTRODUCTION

Botswana has one of the highest HIV rates in the world, with 30% of women of reproductive age (15–49 years) living with HIV [[1]](https://paperpile.com/c/34uSZS/h49z3), and 44-50% of pregnancies are unintended [[2,3]](https://paperpile.com/c/34uSZS/HGrEW+B1rqw). Use of less effective contraceptive methods (WHO Tier 2 and 3 such as condoms and oral contraceptives), in combination with an unmet need for family planning (FP) which is estimated to be about 28-30%, may explain these high levels of unintended pregnancy [[4]](https://paperpile.com/c/34uSZS/sSYMH). Seventy-nine to 88% of women in Botswana who used contraception prior to an unintended pregnancy relied only on the male condom [[3,4]](https://paperpile.com/c/34uSZS/sSYMH+B1rqw). While condom use is key for sexually transmitted infection and HIV prevention, dual method use (combining condoms with highly effective contraception) should be promoted to reduce the likelihood of unintended pregnancy [[5]](https://paperpile.com/c/34uSZS/95NZC+FCmlm).

In Botswana, the majority of FP is provided in sexual and reproductive health (SRH) or general primary care clinics. Integrating contraceptive services into HIV clinics is a national priority for the Botswana Ministry of Health and Wellness (MoHW) [[6]](https://paperpile.com/c/34uSZS/Nfsr7). Despite concerns about increasing provider burden with FP-HIV integration, introduction of contraceptive services into HIV care has been shown to be instrumental in increasing uptake of more effective contraceptive methods in Southern Africa, including long acting reversible contraceptive methods (LARCs; i.e. intrauterine devices and implants) [[7-9]](https://paperpile.com/c/34uSZS/KyMnF+BzqlC+aJIPN). However, integration of FP into HIV care may be most effective in settings where FP use is already at a moderate level, indicating the need for resources and infrastructure prior to implementation [[10]](https://paperpile.com/c/34uSZS/ebsru).

Improving effective FP use in Botswana requires convenient access to contraceptive commodities and services (including LARCs), and rights-based, client- centered contraceptive counseling that enables women to align their method choice with their reproductive intentions. One component of the current unmet need for FP among women living with HIV may be the provider perception that WLHIV cannot use many of the contraceptives available, limiting their informed choice [[11]](https://paperpile.com/c/34uSZS/ZeFkd). Moreover, WLHIV are affected by factors such as stigma and discrimination around reproductive decision-making [12-14]; to reduce these effects, it is important that FP be integrated into their HIV care [[10]](https://paperpile.com/c/34uSZS/ebsru). FP integration programs in other African countries have lacked sustainability because while methods are free for research, the contraceptive cost outside the experimental setting can be prohibitive for women [[15]](https://paperpile.com/c/34uSZS/8aCGP). In Botswana, since contraceptives are provided free-of-charge by the MoHW, a well-constructed program that integrates contraceptive counselling and access into HIV care would likely be sustainable.

This study aimed to create, and test, a simple, practical model for improving client-provider FP discussions and increasing the interest of WLHIV who want to avoid pregnancy in adopting more effective contraception methods. The specific aims were to: 1. Assess the need for and feasibility of incorporating FP care into an HIV clinic in Botswana. 2. Measure the effectiveness of FP provider training in stimulating interest for effective contraception amongst WLHIV who wished to delay or avoid pregnancy.

2. MATERIALS and METHODS

This project was a prospective, hybrid Type 2 clinical intervention and implementation study[[16]](https://paperpile.com/c/34uSZS/HENP5)of an intervention to engage WLHIV with FP services.A strength is that the hybrid study design combines assessment of implementation outcomes (acceptability, feasibility, and adoption) with measurement of clinical efficacy (interest in FP and LARC uptake).The study site was the Infectious Disease Care Clinic (IDCC) in the Princess Marina Hospital in Gaborone, the largest public sector hospital in Botswana. The IDCC is an outpatient clinic that provides care for people living with HIV and serves clients from Gaborone and outlying areas.

HIV care clients and providers were surveyed at baseline (October 2017 - March 2018), and a different cohort of clients was surveyed after intervention implementation (June 2018 - August 2018) to assess intervention impact. The HIV clinic was open every morning, Monday to Friday, and consecutive, eligible, and consenting clients were interviewed during all clinic opening hours for the duration of the study. Eligibility criteria for clients were being female, English or Setswana speaking, 18-45 years of age, and living with HIV. The eligibility criterion for providers was being a nurse or doctor providing care in the IDCC HIV clinic.

Whilst clients were waiting for their routine HIV care appointment in the waiting room at IDCC, a brief standardized announcement was made to them to introduce the study topic in very general terms and to give women a chance to consider whether or not they would like to participate. This was done in exactly the same way for the baseline and post-intervention clients. All clients were approached after they had their routine HIV consultation, and eligible participants who were interested in participating were consented. Clients were administered a survey after they saw their HIV provider. Post intervention, each client was offered an opportunity to discuss contraception in more depth with a FP doctor in the IDCC and given a direct referral to receive contraceptive methods that were not available at the IDCC at that time (i.e., oral contraception, injectables, implants, intrauterine devices and sterilization). If the clients met with a FP doctor after their HIV appointment, they completed a further survey regarding this discussion.

The intervention was a two-hour training session (implemented in May and June of 2018) with 3-4 HIV providers attending each session led by a FP doctor. The training session was developed using the Behaviour Change Wheel [[17]](https://paperpile.com/c/34uSZS/7JDsr) and the Theoretical Domains Framework [[18]](https://paperpile.com/c/34uSZS/st6AT). Relevant barriers and facilitators to FP counseling and provision were identified from the baseline provider surveys in order to address how to motivate behavior change and improve the discussion of FP in the HIV clinic. Suggestions from the IDCC staff were incorporated into the training to maximize the potential efficacy of the intervention.

The training session included a discussion on the importance of- and stigma associated with- FP in Botswana (including providers’ own personal, religious, and cultural beliefs) and how to overcome this in the clinical setting to best serve clients. Then, current FP methods available in Botswana were discussed; staff were made aware of the referral process for clients who desired contraception that the IDCC could not provide at the time (i.e., all methods apart from female and male condoms). The training aimed to provide the staff with strategies to effectively discuss FP with clients including effective communication techniques and how to introduce a discussion about reproductive plans and FP into their routine HIV care consultations. The training focused on the importance of providers engaging clients in active participation during their consultation. Role-play between the staff enabled providers to practice different methods of discussing confidentiality, encouraging shared decision-making, and where possible, helping the client access their ‘method in mind’ – the method that aligned with their needs, preferences, and values. The training session also allowed time for the providers to familiarize themselves with using the ‘Decision Making Tool’ flipchart [[19]](https://paperpile.com/c/34uSZS/WvJm5), designed by WHO to help improve the quality of FP counselling. By the end of the training, providers were able to describe the FP methods available in Botswana and how clients could obtain these, able to provide basic counselling on advantages and disadvantages of each method, and equipped to introduce a discussion about reproductive plans and contraception into their routine HIV care consultations.

To ensure ongoing fidelity of the intervention, continuous support and mentorship were available to HIV providers from a FP doctor, who was present for the duration of the study and could be accessed during the HIV clinic appointments if required. This FP doctor was available to see any clients wishing to discuss contraception in more depth after their routine HIV appointment.

To evaluate clinical efficacy following the intervention, we surveyed providers to assess the impact and adoption of the intervention, measured their FP knowledge, and asked about organizational factors that could support or impede the intervention and how the providers rated the utility of the intervention and its impact. We surveyed clients to determine if FP counselling was discussed in their HIV consultation and whether their interest in discussing different contraceptive methods was enhanced.

Our sample size estimate was based upon evidence that integration of FP into HIV services caused effective FP use to increase from 32% to 65% in Kenya [[20]](https://paperpile.com/c/34uSZS/pd297). Effective FP use in our client population was estimated at 10% in 2014, based on IDCC clinical audit data (personal communication, clinic matron). We conservatively expected the intervention to increase interest in this to 30%. This increase required a minimum of 62 clients per group to be statistically significant (alpha 0.05, 80% power, two sided test). Descriptive statistics, group and within client comparisons (Chi-squared, Fisher, Wilcoxon or T tests as appropriate) were assessed using Stata 14.

Ethics approvals were obtained from the University of Botswana, Princess Marina Hospital in Gaborone, Botswana, the Human Research and Development Committee at the Botswana Ministry of Health, and the University of Pennsylvania. All participants gave written informed consent.

3. RESULTS

At baseline, 141 women completed the survey, and 107 did so post intervention. Demographics (Table 1) were similar between the baseline and the post intervention group, though more women preferred to use English for survey completion in the post intervention group than at baseline. All clients at baseline and post intervention were on antiretrovirals for HIV treatment. Women reported a median of two living children and most women were single (73% at baseline, 80% post intervention). Table 2 shows client family planning history, clinic visit experience, and preferences. Fifteen percent (21) of women at baseline and 34% (36) post intervention desired pregnancy in the next six months (P=0.002 between the groups). At baseline only 6% (9) of women reported discussing FP with the healthcare provider, whilst post intervention, this rose to 61% (65), indicating that adoption of the intervention was high (p<0.001). Post intervention, 45% (48) of the clients met with the FP doctor after their initial HIV consultation because they wanted to have a further, in-depth discussion regarding FP, highlighting that there was a clear desire from women for further information regarding contraception. Importantly, most women (82% at baseline and 96% post intervention) expressed a preference for FP services to be available in the HIV clinic.

Table 3 shows FP use and preferences at baseline and post intervention. The majority of women at baseline and post intervention reported currently using FP (86% and 88%, respectively). Of those who were using FP, 85% (100) at baseline, and 81% (73) at post intervention were using male condoms only. In the post intervention cohort, 30% of women (32) wanted to use highly effective contraception (including female sterilization) versus only 8% (11) at baseline. Thus, there was a significant increase (p<0.001) in the proportion of women interested in more effective contraception after the intervention. Only 3% (4) of women at baseline and 4% (5) at post intervention reported using LARC (i.e., implant or intrauterine device) prior to their visit. At baseline, after their HIV consultation, 6% (8) of clients wanted to use a LARC method going forward (Table 3 ‘very effective contraception’ total includes three tubal ligations). In the post intervention cohort, 29% (31) of women wanted to use a LARC method going forward (p<0.001) (Table 3 ‘very effective contraception’ total includes one tubal ligation). The method of greatest interest to potential users in the post intervention group was the contraceptive implant, with 26% (28) of women wanting to use it going forward.

Thirteen providers were interviewed at baseline and seven again post-intervention. Fewer providers were interviewed post intervention due to staff redeployments out of the IDCC clinic during the intervening period, which is common across Botswana MoHW services. At baseline, the providers gave a variety of reasons for why it was difficult to discuss FP with the clients; four felt that time was the main limiting factor, three believed it was due to lack of training and knowledge in offering FP, four felt that cultural, spiritual, and religious barriers prevented them from addressing FP, and one felt the lack of contraceptive methods in the HIV clinic itself impeded FP discussions. When providers were asked how these barriers could be overcome in order to offer FP, seven thought continuous education for providers was essential, three wanted more staff available, and one thought a specific clinic to offer FP would be beneficial.

In both baseline and post intervention HIV provider surveys (Table 4), all participants agreed that it would be feasible to offer FP counseling and provision in the HIV clinic. The proportion of providers who reported feeling comfortable discussing FP with clients rose from 77% at baseline to 86% post intervention. At baseline, less than half of the 13 providers reported feeling that they were adequately trained on counselling for LARC methods; post intervention 100% of seven providers believed they were adequately trained to discuss the range of methods including Copper IUD, implant, injectable contraception, oral contraceptive pills, male and female condoms, and the permanent methods.

4. DISCUSSION

Addressing the unmet need for contraception among women living with HIV, through the successful integration of FP and HIV services, is a critical component of meeting public health goals that include reduced maternal and child mortality, fewer unintended pregnancies, and reduced risk of maternal to child transmission of HIV [[21]](https://paperpile.com/c/34uSZS/oL7cH).

Unsurprisingly this study has highlighted that there is an unmet need for FP amongst WLHIV and that the majority of WLHIV in this setting, in Botswana, use the less-effective, shorter-acting contraceptives, mostly male condoms, despite the fact that more than 60% of clients reported wanting to postpone pregnancy for more than 6 months at both baseline and post intervention. FP is an essential component of comprehensive HIV care and the WHO recommends integration of family planning services within HIV care settings [[22]](https://paperpile.com/c/34uSZS/Wh81o). However, pre-intervention, the majority of women were not being asked about their reproductive plans and FP needs during their HIV consultation. Following a simple intervention (engaging and educating HIV providers in FP), there was a significant increase in FP discussions with clients. There was also an increase in the number of women expressing a desire to use a LARC method, going forward. Making contraceptive services and a full range of methods, including LARCs, readily available in HIV care, in a supportive and confidential environment, is likely to increase FP uptake, as suggested by this study. These findings corroborate studies from other sub-Saharan African settings that have shown similar results [[10]](https://paperpile.com/c/34uSZS/ebsru).

There are multiple reasons why providers were not asking clients about FP in HIV care, including a lack of basic FP training, lack of communication skills, and lack of clarity about the referral pathways. Following this brief and simple intervention, the providers felt more confident across these domains; however, they had concerns regarding the additional time it may take to discuss FP in HIV care and the need for more staff to offer this service. Despite these concerns, all providers felt that FP could be logistically and feasibly offered in the HIV clinic. Nevertheless, it is important to recognize that ongoing uptake of integration will depend on staffing and continuous training for healthcare providers to ensure that this practice will have longevity and sustainability.

This study is limited by the fact that it was done in only one clinic located at the main hospital for the country, and clients and providers at this clinic may not be fully representative of clients and providers at other clinics in the country, and/or the region. However, the study population is likely to be representative of approximately 70% of the PLHIV in Botswana [[23]](https://paperpile.com/c/34uSZS/auAmV). Client language preferences for interview were different between the baseline and post intervention cohorts - this likely reflects the fact that the clinic population is generally bilingual and that most clients would use Setswana and English interchangeably throughout a consultation or interview as opposed to any fundamental differences that could be associated with study outcomes between the two groups. There are a limited number of providers at this clinic, and the HIV providers, both doctors and nurses, change often; therefore, this training intervention would need to be repeated at regular intervals and as part of induction training for new staff, and ongoing training through regular mentoring visits [[24]](https://paperpile.com/c/34uSZS/igr4X) and onsite FP specialists [[25]](https://paperpile.com/c/34uSZS/hIHvw) would be beneficial. More detailed qualitative assessments with providers of reasons for intervention acceptability and feasibility would be useful. Given the single time point of post-intervention measurement, this study cannot confirm whether FP interest and uptake, even if increased post intervention, would continue to be offered outside of and beyond the study period.

Despite the limitations, this study provides good baseline data on the unmet need for FP information and services among women living with HIV in Botswana, which did not exist previously; provides evidence that this can likely be addressed with a simple intervention; and demonstrates that both clients and providers are supportive of integrating such a service into the clinic. Given the significance of these findings, it is now essential to evaluate the effect of an integrated service on actual contraceptive uptake. This study clearly documents that most women, as expected, are currently using short-acting FP methods, mostly condoms, which are ranked among the less effective methods of contraception, despite a desire to delay pregnancy for a long period of time. The study also demonstrates that when services become available, many would consider starting a more effective and long-term method, particularly the LARC method of implant. Given that Botswana already provides free FP (including multiple LARC options) and HIV care in the public sector health services, this intervention is likely easily reproducible, and can be readily scaled up for use in other HIV clinics around the country and in other sub-Saharan African countries that offer similar services. This will be a useful step towards implementing comprehensive, client-centered care in HIV clinics. Subsequent to this study and based on our findings, the Botswana MoHW has now implemented an integrated FP service in the Princess Marina Hospital IDCC clinic and most methods of contraception are now provided on site in the clinic as part of routine HIV care (i.e., implants, injectables, oral contraception, and condoms); referrals are made for intrauterine devices and sterilization.

AUTHOR CONTRIBUTIONS

TM, PGW, CAS, DRM and CM contributed to the conception and design of the study, analysis and interpretation of the data, and writing and revising of the manuscript. LH and AMG contributed to the design of the study, study implementation, data collection, interpretation of data, and revising the manuscript. OS and OP contributed to study implementation and data collection. AM contributed to interpretation of data and revising the manuscript. All authors read and approved the final manuscript.

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CONFLICTS OF INTEREST

The authors have no conflicts of interest.

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Table 1: Client Characteristics

|  |  |  |  |
| --- | --- | --- | --- |
|  | Baseline  (n=141) | Post intervention  (n=107) | P  value |
| Language preference |  |  | <0.001 |
| - English | 2 (2) | 24 (22) |  |
| - Setswana | 135 (95) | 83 (78) |  |
| - unknown | 4 (3) | 0 |  |
| Age: mean (SD), n | 38.5 (5.3), 138 | 39.3 (5.0), 100 | 0.24 |
| Marital status |  |  | 0.40 |
| - Single | 103 (73.0) | 86 (80.4) |  |
| - Married / in union | 32 (22.7) | 18 (16.8) |  |
| - Divorced | 3 (2.1) | 2 (1.9) |  |
| - Widowed | 2 (1.4) | 1 (0.9) |  |
| - Unknown | 1 (0.7) | 0 |  |
| Highest education level |  |  | 0.99 |
| - None | 2 (1.4) | 0 |  |
| - Non formal | 1 (0.7) | 0 |  |
| - Primary | 6 (4.3) | 15 (14.0) |  |
| - Junior secondary | 76 (53.9) | 49 (45.8) |  |
| - Senior secondary | 34 (24.1) | 17 (15.9) |  |
| - Tertiary | 21 (14.9) | 26 (24.3) |  |
| - unknown | 1 (0.7) | 0 |  |
| Living children: mean (SD) | 2.2 (1.5) | 2.3 (1.4) | 0.59 |
| - median, range | 2, 0-8 | 2, 0-6 |  |
| Pregnancies: mean (SD) | 2.6 (1.8) | 2.7 (1.5) | 0.64 |
| - median, range | 2, 0-10 | 2, 0-7 |  |

Data are n (%) or mean (SD); Group comparisons by Chi-squared, Fisher, Wilcoxon or T tests

Table 2: Client family planning history, clinic visit experience, and preferences

|  |  |  |  |
| --- | --- | --- | --- |
| Question | Baseline (n=141) | Post intervention (n=107) | P  value |
| Want to get pregnant in the next 6 months? |  |  | 0.002 |
| - Yes | 21 (14.9) | 36 (33.6) |  |
| - No | 106 (75.2) | 65 (60.8) |  |
| - Unsure | 12 (8.5) | 5 (4.7) |  |
| - unknown | 2 (1.4) | 1 (0.9) |  |
| Did patient discuss contraception with the HIV healthcare provider today? |  |  |  |
| - Yes | 9 (6.4) | 65 (60.8) | <0.001 |
| - No | 132 (93.6) | 41 (38.3) |  |
| - unknown | 0 | 1 (1.9) |  |
| Did patient meet with FP doctor today to discuss contraception? |  |  |  |
| - Yes | N/A | 48 (44.5) |  |
| - No |  | 57 (53.3) |  |
| - unknown |  | 2 (1.9) |  |
| Would you like to have family planning services available in the following clinics? |  |  |  |
| - HIV Clinic | 116 (82%) | 103 (96%) | 0.14 |
| - Cervical Cancer Screening Clinic | 63 (45%) | 56 (52%) |  |
| - Maternal and Child Health Clinic | 60 (43%) | 57 (53%) |  |
| - None/other | 33 (23%) | 14 (13%) |  |

Data are n (%)

Table 3: Client contraceptive use and preferences

|  |  |  |  |
| --- | --- | --- | --- |
| Contraceptive method | Prior to visit | Want to use going forward | P  valuea |
| Baseline (n=141) |  |  | 0.16 |
| Very effective contraception | 7 (5.0) | 11 (7.8) |  |
| Effective contraception | 11 (7.8) | 18 (12.7) |  |
| Less effective contraception | 100 (70.9) | 92 (65.2) |  |
| Not effective contraception | 20 (14.2) | 19 (13.5) |  |
| Unknown | 3 (2.1) | 1 (0.7) |  |
|  |  |  |  |
| Post intervention (n=107) |  |  |  |
| Very effective contraception | 6 (5.6) | 32 (30.0) | <0.001 |
| Effective contraception | 11 (10.3) | 14 (13.1) |  |
| Less effective contraception | 73 (68.2) | 46 (43.0) |  |
| Not effective contraception | 13 (12.2) | 11 (10.3) |  |
| Unknown | 4 (3.7) | 4 (3.7) |  |

Very effective contraception included the copper and hormonal IUCD, the levonorgestrel and etonogestrel implants and tubal ligation. Effective contraception included the 3-monthly injectable (DMPA, Depo Provera) and OCP (both combined and progesterone only). Less effective contraception included the male and female condom. Not effective contraception included no method and abstinence. No clients in either survey indicated using natural methods, withdrawal, the patch or the ring. Data are n (%). a P relates to within-participant comparison.

Table 4: Provider characteristics and perceptions of FP in clinic

|  |  |  |
| --- | --- | --- |
| Provider Questions | Baseline (n=13) | Post Intervention (n=7) |
| Gender |  |  |
| Male | 3 (23) | 3 (43) |
| Female | 10 (77) | 4 (57) |
|  |  |  |
| Position |  |  |
| Nurse | 8 (62) | 4 (57) |
| Midwife | 1 (8) | 0 |
| Doctor | 4 (31) | 3 (43) |
|  |  |  |
| FP clinical experience (years) | 6.1 (9.7) | 2.7 (5.3) |
|  |  |  |
| Helping patients decide on FP takes too much time |  |  |
| Strongly disagree/ Disagree | 7 (54) | 3 (43) |
| Neither agree nor disagree | 2 (15) | 3 (43) |
| Agree/ Strongly agree | 4 (30) | 1 (14) |
|  |  |  |
| I am comfortable discussing FP methods with patients |  |  |
| Strongly disagree/ Disagree | 2 (15) | 1 (14) |
| Neither agree nor disagree | 1 (8) | 0 |
| Agree/ Strongly agree | 10 (77) | 6 (86) |
|  |  |  |
| I have been adequately trained to offer the following FP methods |  |  |
| Copper IUD | 4 (31) | 7 (100) |
| Hormonal IUD | 0 | 1 (14) |
| Etonogestrel contraceptive implant | 1 (8) | 7 (100) |
| Levonorgestrel contraceptive implant | 0 | 2 (28) |
| 3-month injectable | 4 (31) | 7 (100) |
| Combined oral contraceptive pills | 8 (62) | 7 (100) |
| Progesterone only contraceptive pills | 5 (38) | 7 (100) |
| Female Condoms | 5 (38) | 7 (100) |
| Male Condoms | 11 (85) | 7 (100) |
|  |  |  |
| Is it feasible to offer family planning method provision in HIV clinic? |  |  |
| Yes | 14 (100) | 7 (100) |

Data are n (%) or mean (SD)