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Addressing intimate partner violence and power in relationships in HIV testing services: Results of an intervention piloted in Nairobi, Kenya

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ADDRESSING INTIMATE PARTNER VIOLENCE AND POWER IN RELATIONSHIPS IN HIV TESTING SERVICES: RESULTS OF AN INTERVENTION PILOTED IN NAIROBI, KENYA

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ACRONYMS

AIDS	Acquired immune deficiency syndrome
ANC	Antenatal care
ART	Antiretroviral therapy
ARV	Antiretroviral
CCC	Comprehensive Care Centre for HIV
CHTS	Couples' HIV testing services
COVAW	Coalition for Violence Against Women
DHS	Demographic and Health Survey
FIDA	Federation of Women Lawyers
GBV	Gender-based violence
GEM	Gender equitable men
GLMM	Generalized linear mixed model
HCT	HIV counseling and testing
HTS	HIV testing services
HIV	Human Immunodeficiency Virus
IPV	Intimate partner violence
KNH	Kenyatta National Hospital
NGO	Non-governmental organization
PMTCT	Prevention of mother-to-child transmission of HIV
RCT	Randomized controlled trial
SRH	Sexual and reproductive health
SRP	Sexual relationship power

EXECUTIVE SUMMARY

In June 2016, the United Nations General Assembly committed to ending the AIDS epidemic by 2030 (United Nations 2016). PEPFAR 3.0 and UNAIDS' Fast Track approach lay out ambitious agendas to realize an AIDS-free generation, including reaching the 90/90/90 targets¹ by 2020. Critical to achieving these targets is linking people living with HIV to treatment and retaining them in care. With new Test and Start guidelines (WHO 2016) that recommend antiretroviral therapy (ART) for everyone living with HIV regardless of CD4 count, the call to ensure that all those testing positive are able to access treatment and stay in care is both simplified and magnified.

Closing gaps in the treatment cascade, however, entails more than expanded ART provision, it entails active engagement with the structural barriers to treatment initiation and adherence. Prominent among these barriers is gender-based violence (GBV), including intimate partner violence (IPV). A recent meta-analysis found IPV to be associated with significantly lower ART use, lower ART adherence, and lower odds of viral load suppression (Hatcher et al. 2015). The overarching goal of this study was to pilot an approach to HIV testing services (HTS) that addresses IPV and sexual relationship power (SRP) inequalities, and explores the intervention's potential for improving uptake and retention of ART and prevention of mother to child transmission (PMTCT) services. The project was implemented in Kenyatta National Hospital's (KNH's) antenatal care (ANC) clinic, and examined intermediate indicators of effect, as well as operational issues around incorporating attention to IPV in hospital procedures, especially in high volume, high need settings like KNH's.

The intervention was designed to enhance post-test HIV counseling with messages about IPV, SRP, and women's rights in order to open conversations with the counselor about challenges the woman may face to receiving care or protecting her health, without lengthening the session beyond what would be feasible and acceptable in this setting. Program components included provider training and support; the promotion of counseling aids (provider script/guide and a small take-home card for women) that conveyed key messages about IPV and power in relationships and provided specific resources in Nairobi where women could find support; and an IPV counselor stationed in the ANC clinic. HTS counselors in the intervention discussed IPV and SRP with all women, and provided all women with the take-home card. For those women who disclosed to the provider that they were experiencing IPV, the HTS counselor provided immediate psychosocial support as well as referral to the IPV counselor stationed in the ANC clinic. The IPV counselor provided more extensive counseling and, as needed, continued support for IPV within the ANC clinic or referral to KNH's Gender Based Violence Recovery Centre for more specialized services and connections to other social and legal support.

The study consisted of both a process evaluation of providers' experiences, and a randomized controlled trial (RCT) to assess intermediate outcome indicators among ANC clients. For the RCT, 698 first-visit ANC clients were randomly assigned to either intervention (IPV-HTS) or control (standard HTS)

¹Where 90 percent of people living with HIV know their status, 90 percent of people living with HIV who know their status are accessing treatment, and 90 percent of people on treatment have suppressed viral load.

counseling. Participants were interviewed immediately after receiving their services, and a second time about one month later. Of the original sample, 545 clients were successfully interviewed again at their next ANC visit (78 percent retention). The final analytic sample was 688 at round 1 and 545 at round 2. For the process evaluation, 25 HTS providers were interviewed using semi-structured guides before their GBV training, and 24 were interviewed after the completion of the intervention. In addition, the study recorded time required to implement HTS (both in intervention and control groups), extracted data from ANC charts on HIV test results, and tracked provision and utilization of IPV referrals.

Over a third (38 percent) of women had ever experienced IPV (physical, sexual, or emotional²); 35 percent of the sample experienced IPV in the past year; and 21 percent reported physical or sexual violence in the past year. Thirty-three percent reported low power in their sexual relationship. According to clinic charts, 5.7 percent of participants were HIV-positive.

Women who received the enhanced counseling were far more likely than women who received standard care to report receiving IPV screening (86 percent vs. 21 percent, $p < 0.0001$). Women who were IPV-positive (i.e., reported experiencing IPV in the past 12 months) were far more likely to disclose to the provider that they were experiencing violence if they were in the intervention group than if they were in the control group (32 percent of IPV-positive women in the intervention group disclosed to their provider vs. only 7 percent of IPV positive women in the control; $p < 0.0001$). Of women who disclosed IPV to the provider, 56 percent of women in the intervention and 33 percent in the control stated that they received a referral for IPV (not significant).

Women's perspectives on the support they received during their HTS session varied significantly by study arm. Survey results demonstrate that intervention participants were far more likely than those who received standard care to report that they felt that talking with the provider made a positive difference to them, that they felt more confident about how they deserved to be treated in their relationship, and that they felt better able to take care of their health. Women in the intervention group had nearly 20 times the odds of reporting that speaking with the provider made a positive difference to her compared to women who received standard care (AOR 19.8, $p < 0.0001$).

The study was not powered to detect differences among HIV-positive and IPV-positive subgroups, yet despite this, evidence suggests positive health outcomes. For example, IPV-positive women in the intervention were more likely to take some positive action to address IPV—such as following up on an IPV referral or leaving their partner—than IPV-positive women who received standard care (46 percent vs. 31 percent; $p = 0.07$).

Qualitative findings suggest integrated IPV-HTS counseling was well-accepted by providers, and helping their clients in this way was gratifying—it was important to them from a health and compassion perspective and rewarding from a personal and professional perspective. Although the enhanced counseling took on average 6.5 minutes longer to implement than standard HTS (29 minutes vs. 23 minutes), the most common length (mode) of both enhanced and standard HTS sessions was 10 minutes.

²Emotional (psychological) abuse manifests in acts such as insults, belittling, constant humiliation, intimidation (e.g., destroying things), threats of harm, threats to take away children, etc. (WHO and PAHO 2012).

The findings from this study suggest that providing some minimal IPV/SRP counseling to all women—not just IPV screening, and not just to those who disclose violence—is warranted in settings such as HTS and ANC. Recent IPV in this sample was reported in response to the survey by a full third (35 percent, N = 241) of ANC clients, but only a third of these women in the intervention arm—and a much smaller percent in the control arm—actually disclosed violence to the provider. Thus while in many instances (N = 73 in the intervention arm and N = 125 in the control arm) the provider did not know that women were experiencing violence, at least in the intervention arm, these women still received important information about IPV, power in relationships, and meaningful social support.

Moreover, IPV referrals and referral follow-up are not the only beneficial outcomes for women experiencing violence. In addition to social support, women reported a range of actions that can positively affect their health and well-being, including seeking help for IPV elsewhere or leaving their partner.

The approach taken by this pilot appears to allow for what can sometimes be a gradual disclosure process. Several women who were not part of the study came to the ANC clinic to see the IPV counselor after hearing about the intervention from other women who had participated. Also some women who were in the study and had not disclosed their IPV experience at first, returned later to say that they were in fact experiencing violence and would like to see the counselor. Repeating all or some of the intervention during multiple ANC visits might better reflect the fact that recognition and disclosure of violence can be a slow process.

Given the high prevalence of IPV and its role in hindering HIV testing, treatment initiation, adherence, and retention in care, many have noted the importance of addressing IPV in HTS and during ANC. This intervention—using simple tools and provider training and support—demonstrated that doing so can lead to some significant effects.

INTRODUCTION

BACKGROUND

In June 2016, the United Nations General Assembly committed to ending the AIDS epidemic by 2030 (United Nations 2016). PEPFAR 3.0 and UNAIDS' Fast Track approach lay out ambitious agendas to realize an AIDS-free generation, including reaching the 90/90/90 targets³ by 2020. Critical to achieving these targets is linking people living with HIV to treatment and retaining them in care. With new Test and Start guidelines (WHO 2016) that recommend antiretroviral therapy (ART) for everyone living with HIV regardless of CD4 count, the call to ensure that all those testing positive are able to access treatment and stay in care is both simplified and magnified.

Meeting this challenge and closing gaps in the treatment cascade entails more than expanded ART provision, it entails active engagement with the structural barriers to treatment initiation and adherence. Prominent among these structural barriers is gender-based violence (GBV). GBV—including sexual violence and intimate partner violence (IPV)—is a profound, global challenge for health, development, and women's rights. Worldwide, the number of women and girls affected by GBV, including IPV, is vast. Indeed, WHO has estimated that 30 percent of ever-partnered women globally have experienced physical and/or sexual IPV, calling IPV a public health problem of “epidemic proportions” (WHO et al. 2013). In Kenya, the most recent Demographic and Health Survey (DHS) found that almost half (47 percent) of females aged 15–49 have experienced either physical or sexual violence (KNBS et al. 2015). Among ever-married women, over a third (39 percent) reported experiencing physical and/or sexual violence at the hands of their intimate partner in the past 12 months. Yet less than half (44 percent) of women experiencing physical or sexual violence have sought assistance to stop the violence, and only 11 percent didn't seek help but told someone.

Gender-based violence requires urgent attention not only in and of itself, but also because of its impact on other health and development sectors. It is a human rights violation, it causes injury and death, and it decreases girls' and women's access to public spaces, safe and decent livelihoods, and utilization of health services. IPV has, in some settings, been linked temporally with subsequent adverse health outcomes, including non-use of contraception and HIV infection (Stephenson et al. 2006; Jewkes et al. 2010; Kouyoumdjian et al. 2013). Violence, and the fear of violence, can undermine HIV prevention, care, and treatment. Consequently, addressing and reducing gender-based violence has become an explicit part of a number of international agencies' AIDS strategies and aims. For example, it was part of USAID/PEPFAR's 5-year strategy (Office of the US Global AIDS Coordinator 2009) and is a key component of its gender strategy (PEPFAR 2013).

One particularly important programmatic point of intersection between HIV and IPV is HIV testing services (HTS). For women obtaining HTS, post-test counseling offers a private and confidential setting where individualized counseling is provided about HIV transmission and how HIV transmission risk can be reduced, including condom use, knowing one's partner's status, disclosing one's own status, and

³Where 90 percent of people living with HIV know their status, 90 percent of people living with HIV who know their status are accessing treatment, and 90 percent of people on treatment have suppressed viral load.

utilizing prevention of mother-to-child transmission of HIV (PMTCT) and ART services if needed.⁴ For a woman to be able to act on such prevention, treatment, and care recommendations is in considerable part determined by the context of her relationship. If the relationship is characterized by abuse, or significant power disparities, her ability to use these services and HIV infection prevention methods will be compromised. Indeed, a recent meta-analysis found IPV to be associated with significantly lower ART use, lower ART adherence, and lower odds of viral load suppression among women (Hatcher et al. 2015). A study in Lusaka, Zambia found that women who reported experiencing IPV had significantly reduced odds of adherence to PMTCT, including a reduced likelihood of adherence to drugs during pregnancy, adherence to drugs postpartum, and adherence to giving the infant prophylaxis (Hampanda 2016). Knowing whether a woman is experiencing IPV will not only allow for better tailoring of the HIV counseling session to her situation—including how best to immediately start and stay on ART should she fear her partner’s reaction—but it also offers the opportunity to provide immediate support to her. Such immediate, “first-line” assistance for IPV includes being non-judgmental and supportive; listening carefully and empathetically; and helping her access information and legal, social, and health resources, including, if indicated, trauma counseling and post-exposure prophylaxis (WHO et al. 2013).

SETTING

In Kenya, government commitment to addressing IPV is manifest in its issue of the Sexual Offences Act in 2006, and of the National Guidelines on Management of Sexual Violence in 2009 (Kenya Ministry of Public Health 2009). Moreover, Kenya’s National AIDS Strategic Plan considers gender equality, gender norms, and women’s rights as central to addressing HIV and specifically notes the importance of addressing sexual and gender-based violence within that context (National AIDS Control Council 2009). Local non-governmental organizations have played a key role in Kenya in advocating for attention to GBV, and have undertaken a number of programmatic efforts to address GBV and IPV. For example, the Coalition for Violence Against Women (COVAW) and Federation of Women Lawyers (FIDA) provide legal assistance for females experiencing GBV; the Centre for Rights Education & Awareness provides legal assistance to women who are survivors of sexual and gender-based violence; and the Women’s Rights Awareness Programme provides shelter for GBV survivors. Notably, the health sector has also responded concretely. In 2006, soon after the enactment of the Sexual Offences Act by the government, Kenyatta National Hospital (KNH) established the Gender-Based Violence Recovery Centre at KNH. KNH is located in Nairobi County, the capital of Kenya; it is the oldest and largest public referral hospital in the East Africa region and is the teaching hospital for the University of Nairobi, School of Medicine.

Despite these guidelines and programs, many gaps in services remain. Referrals remain weak, even within medical facilities such as KNH that have dedicated GBV services, and the services provided are predominantly for acute, emergency medical treatment. KNH recognized that this pattern misses many

⁴Knowing one’s partner’s status and disclosure are significant issues. An analysis of DHS data from 20 sub-Saharan African countries found that in high-prevalence countries about half of partnerships affected by HIV are discordant; in low-prevalence countries, 75 percent of partnerships where at least one individual is HIV-infected are discordant (Chemaitelly et al. 2013). A nationally representative study in Kenya found that among all married or cohabiting people who were HIV positive, 83.6 percent did not know their HIV status correctly (Kaiser et al. 2011). Among those that did know their status, most disclosed to their partner (14.9 percent knew their status and disclosed to their partner); whereas among the subset of discordant couples, only 5.5 percent both correctly knew their status and disclosed to their partner.

women who are dealing with ongoing IPV in their lives, as well as women at risk of IPV. In response, the Population Council partnered with KNH in 2011–2012 to test the acceptability and feasibility of IPV screening in several KNH departments, including their antenatal care (ANC) clinic, youth center, and comprehensive care center for HIV (CCC). The studies used descriptive case study designs, finding IPV screening to be acceptable and feasible: providers, given training and tools, were willing and able to incorporate IPV screening into their practice despite the severely resource-constrained context, and clients welcomed the intervention (Undie et al. 2016).

At KNH, the largest number of female HTS clients present via the hospital's ANC clinic. As the National Referral Hospital, KNH receives high risk ANC clients from facilities within and outside of Nairobi County, but most ANC clients come from Nairobi. The aforementioned study by Undie and colleagues tested IPV screening in this ANC setting (among other KNH departments) and found IPV screening to be feasible (Undie et al. 2016). IPV screening is now part of standard HTS counseling in the ANC clinic, although in practice it is inconsistently implemented. A qualitative study in South Africa by Christofides and Jewkes (2010) looked at this question of sustainability in their assessment of an intervention to train lay HTS providers to screen for IPV. They also found that while IPV screening was acceptable and welcomed by women, at one year follow-up IPV screening was no longer being conducted by the counselors. Sustainability is thus one operational issue in addressing IPV in HTS.

Another outstanding question is effectiveness. In a recent Cochrane systematic review of studies conducted in high income countries, brief screening in healthcare settings increased the identification of women experiencing IPV compared to controls, especially among studies conducted in ANC settings (O'Doherty et al. 2015). However clinical identification of IPV by health providers was modest—ranging from 3 percent to 17 percent; median 8 percent—when compared to estimated prevalence of IPV in healthcare settings. Screening did not increase referral to support services (though only two studies assessed this and the quality of evidence was low), and evidence was insufficient to assess service uptake (O'Doherty et al. 2015). While Undie and colleagues were not assessing effects of the IPV screening intervention with their formative work, suggestive data indicate that not all women identified as IPV-positive via screening in the ANC clinic were referred to KNH's GBV Centre (12 out of 26 were referred). Even among those referred to the GBV Centre, less than half (5 out of 12) received services, due mostly to clients' time constraints and the availability of GBV Centre staff (Undie et al. 2016). Christofides and Jewkes also found that screening alone was not meeting women's broader concerns regarding gender power inequity and how this related to their risk of HIV infection. While providers reported referring clients for IPV services if the woman disclosed she was a survivor of IPV, they were not adequately equipped to discuss either gendered power dynamics or IPV with clients (Christofides and Jewkes 2010).

To address such challenges and evidence gaps, O'Doherty and colleagues, Undie and colleagues, and Christofides and Jewkes, recommend testing interventions that take a step beyond IPV screening and referral. Recommendations include providing basic psychosocial support for IPV and information at the time of screening or equipping counselors to discuss gender power inequality in relationships more broadly, including IPV as a manifestation of that inequality.

The pilot study described herein sought to respond to these recommendations and tested a simple intervention that aimed to take a step beyond IPV screening and discuss violence and power with all women. Counselors utilized a counseling script and a small card with key messages that women could keep, and provided referrals to an IPV counselor on site for those women disclosing IPV.

OBJECTIVES

The broad goal of this study was to pilot an approach to HTS that addresses IPV. Specific objectives were to:

1. Compare ANC clients in the intervention (IPV-HTS) and control (standard HTS) groups to assess:
 - a. Knowledge regarding IPV, awareness of IPV/GBV services, and agency regarding talking with their partner about HIV testing.
 - b. Among clients experiencing IPV and/or in low power positions in their relationship, reports of receiving referrals for IPV services, receiving meaningful support during HTS, and receiving IPV services.⁵
2. Assess providers' perspectives, including comfort and experience implementing the intervention.

⁵Due to financial constraints, we could only power this study to detect differences between intervention and control groups; a larger sample size would have been required to detect differences among sub-groups (such as women with HIV or women experiencing violence). The differences within sub-groups, however, are important, and we conducted these analyses on an exploratory basis.

METHODS

STUDY DESIGN

The study consisted of a process evaluation of providers' experiences and a randomized controlled trial to assess intermediate outcomes of the pilot intervention among ANC clients. For the RCT, first-visit ANC clients were randomly assigned to either intervention (IPV-HTS) or control (standard HTS) counseling. Review of clients' ANC card and HTS forms supplemented survey questionnaires administered to participants. Participants were interviewed immediately after receiving their ANC and HTS services, and then interviewed again approximately one month later at a subsequent ANC visit.⁶ For the process evaluation, HTS providers were interviewed using semi-structured guides before their IPV training, and again after the completion of the intervention. We documented the time required to implement HTS post-test counseling both in intervention and control groups, and tracked provision and utilization of referrals.

The study protocol was reviewed and approved by the Population Council Institutional Review Board (New York), and the Kenyatta National Hospital/University of Nairobi Ethics and Research Committee. Written informed consent was obtained from each respondent prior to study participation. The study is registered with ClinicalTrials.gov (#NCT02577380).

STUDY SITE

The study took place in Kenyatta National Hospital's ANC clinic in Nairobi, Kenya, from February 2015 to August 2015. KNH's ANC clinic receives upwards of 1,000 clients per month. All ANC clients receive HTS as part of their first ANC visit of their current pregnancy. HTS includes pre-test counseling in groups with individual elaboration before the test is done, and individual post-test counseling. Women can choose to opt out of HIV testing. While IPV screening is supposed to be part of standard HTS counseling in the ANC clinic, sometimes providers screen for IPV and refer IPV-positive clients and sometimes they do not.

Referrals for IPV are to KNH's Gender-Based Violence Recovery Centre, located at the King George Wing within the KNH complex, about five minutes' walk from the ANC clinic. The GBV Centre provides comprehensive post-rape care that includes emergency medical care such as post-exposure prophylaxis (PEP); treatment for sexually transmitted infections; trauma counseling; and psychological support via individual counseling, support groups, and connecting women to social workers. The Centre also arranges referrals to safe houses if the client's home environment is unsafe, to police, and to organizations that offer free legal services. Other KNH departments, including the Youth Center and CCC (Comprehensive Care Centre for HIV), also refer clients to the GBV Centre.

⁶The first round interview was conducted after the intervention for ethical and research design reasons. Had we interviewed women before they received their HTS, and if a participant disclosed experiencing violence to the interviewer, the interviewer would, for ethical reasons, refer the woman for IPV counseling. As identifying women who are experiencing violence and referring them for IPV counseling is part of the intervention, such support and referrals by the interviewer would have pre-empted the intervention.

INTERVENTION

The pilot intervention included four main parts. The first component was a provider training. All providers in the ANC clinic participated in a one-day off-site training on GBV. The training included participatory activities to sensitize providers to IPV, evidence on the impact of IPV on sexual and reproductive health (SRH) and HIV prevention and care, and overview of related Kenyan laws, and practice using the counseling aids.

The second component included counseling aids for providers to use during the HTS session. One was a small (approximately 4" x 2.5") tri-fold card with key messages and resources regarding IPV, power, and women's health (Appendix A). Messages included things like, "You matter. You have a right to be free from violence," and "There are people here who can help you. The providers will not judge you and you have nothing to be ashamed of." The names, addresses, and phone numbers of four places to turn to for help in Nairobi were included: The GBV Centre at KNH, the Women's Rights Awareness Programme (provides safe shelter), Nairobi Women's Hospital Gender Violence and Recovery Centre, and Centre for Rights Education and Awareness. A card developed by Futures Without Violence (Miller et al. 2011) for clinical settings in the US was adapted to suit the objectives of this study and the setting. HTS counselors used the 8-panel card as a prompt for discussion and then gave the card to the woman as a resource to keep or share. Providers were also given a counseling script that followed the main messages on the card.

Third, an IPV counselor from the GBV Centre was posted on-site in the ANC clinic to handle all IPV referrals immediately, with the intent of significantly cutting down the logistical and time barriers women face when following-up on referrals to clinics elsewhere in the KNH complex. To further remove logistical barriers to care and provide accompaniment, a volunteer peer counselor⁷ walked women to the IPV counselor. The counselor provided counseling, helped women develop a safety plan, discussed ways to talk about HIV status with their partner, talked about power inequalities, counseled about ART if HIV-positive, and discussed benefits and risks of couples HTS, among other topics.

Finally, all HTS providers and counselors involved in the study attended support group sessions facilitated by experienced counselor supervisors from KNH's mental health unit. The purpose of the support group was to offer a space for the counselors to debrief and process the emotional and psychological effects of hearing women's narrations of their IPV experiences, receive psychosocial support, and discuss questions and strategies about how to handle different situations.

DATA COLLECTION AND ANALYSIS

A total of 698 ANC clients attending KNH's ANC clinic during the enrollment period met study eligibility criteria, provided written informed consent, and were randomized to intervention or control groups. Inclusion criteria included: first-time ANC client (i.e., a woman presenting for her first ANC visit of her current pregnancy) and aged 15–49 years. Exclusion criteria included aged younger than 15 years or older than 50 years and having received an HIV test in the previous six months (in case she had already adjusted her behavior in response to the previous test). While participants were informed that they were

⁷Volunteer peer counselors are women who themselves had suffered IPV and sought assistance at the GBV Centre. They have received basic training in counseling and life skills and now volunteer at the hospital providing only referrals and peer support.

participating in a study regarding IPV as part of the informed consent process, they were not informed whether they were assigned to the intervention or control group.

Following receipt of post-test HIV counseling, clients were interviewed by research staff using a structured questionnaire. The immediate post-counseling questionnaire included questions related to socio-demographic information, clients' relationship status, and partner characteristics. HIV-related questions covered condom use, HIV testing, couples HTS, disclosure of HIV status, knowledge of partner's status, and perceived difficulty disclosing or asking about a partner's status. Power inequalities in the relationship were assessed using the Sexual Relationships Power Scale (Cronbach's $\beta = 0.67$) (Pulerwitz et al. 2000). Gender attitudes were measured using a South African adaptation of the gender inequitable sub-scale (19 items) of the Gender Equitable Men (GEM) scale (Cronbach's $\beta = 0.80$) (adaptation: Gottert et al. 2016; original scale: Pulerwitz et al. 2008). We asked about women's experience of emotional, physical, and sexual violence in her lifetime, in the past 12 months, and by current and other partner/s, as well as whether the woman had ever sought help for IPV. Finally, the questionnaire also asked women about their HTS counseling experience, including whether the participant was screened for IPV by the HTS provider, whether she disclosed violence to the provider, whether the provider gave her a referral for violence, and her intent to follow-up on the referral.

A second interview was conducted with participants at a subsequent ANC visit (mean duration between interviews was 4.4 weeks) in order to ascertain whether women had followed up on referrals and to monitor whether she had experienced any adverse outcomes as a result of the intervention. While the study was not powered to assess changes in utilization of PMTCT or condom use among women experiencing IPV, we asked questions related to such behaviors to explore whether the intervention had the potential to improve these outcomes.

We successfully interviewed 545 women at the 2nd follow-up (retention rate of 78 percent). Of the women lost to follow-up, most did not return to KNH for a subsequent ANC visit, either because they had delivered their baby ($n = 69$) or because they changed clinics or did not pursue additional ANC visits ($n = 52$).⁸ Others did not respond to calls to make an appointment for follow-up ($n = 26$), or had decided at the first interview that they did not wish to complete the study because obtaining the ANC services had taken longer than they had planned and they had elsewhere to be ($n = 5$). Finally, 10 questionnaires had conflicting data on intervention assignment that could not be resolved and have been excluded from analysis. The final analytic sample was 688 at round 1 and 545 at round 2. Of the 153 who were not interviewed at round 2, 84 (55 percent) were from the control group and 69 (45 percent) were from the intervention group.

Statistical analysis of the quantitative data was performed in R Studio Version 3.1 (RStudio Inc., Boston, MA). We used an intent-to-treat approach, whereby those women assigned to the intervention arm were considered to have participated in the intervention, regardless of whether women reported receiving the intervention or not. Chi-square tests of association and two-sample t-tests were used to assess that there

⁸Because of the labor/delivery services available at KNH, women sometimes attend the KNH ANC clinic to get a KNH ANC card so that they may easily access good care in the event of complications. After their one visit, they then just continue with ANC services closer to home or do not appear again until delivery. This also means that despite recruiting first-time ANC clients, some women were quite far along in their pregnancy and thus delivered before the end of the study.

were no significant demographic differences between women assigned to the intervention and control groups and between women who were and were not followed up. These bivariate analyses were also used to assess cross-sectional differences between intervention and control group participants at first and second follow-up. Pairwise missing data were excluded from analysis. In the event that cell counts were less than five, the p-value for the Fishers Exact test was used. A generalized linear mixed model (GLMM) was used to model differences in outcomes at time 2 by intervention assignment, while adjusting for time 1 outcome levels and accounting for individual-level clustering. Final GLMMs also adjusted for covariates that were marginally statistically different between intervention and control groups at time 1 and length of time between the time 1 and time 2 assessments ($p < 0.08$). Dichotomous outcomes were modeled using GLMM by specifying the binomial family and logit link function. Differences were considered statistically significant at $p < 0.05$.

In addition, semi-structured in-depth interviews were conducted with providers involved in HTS in KNH's ANC clinic pre- and post-intervention ($n = 25$ pre-intervention; $n = 24$ post-intervention). Providers included doctors—obstetrics and gynecology (OBGYN) specialist, OBGYN registrars—doctors in training, nurse-midwives, and counselors. The interviews covered topics such as providers' attitudes toward IPV and their comfort discussing IPV with clients. Post-intervention interviews also included provider reflections on the intervention. Interviews were audio-recorded with permission of the respondents and transcribed. Transcripts were reviewed to identify themes and develop codes; and coded using Atlas.ti Version 7.5.10 (Atlas.ti GmbH, Berlin).

Finally, we also monitored implementation of the pilot intervention. Interviewers logged the duration of HTS counseling sessions in order to compare the length of the enhanced counseling with standard care. A total of 600 HTS sessions (319 intervention and 281 control) were timed (not all HTS sessions were observed because interviewers were also interviewing participants). Additionally, to monitor whether the pilot affected referrals to the GBV Centre, we counted referral forms submitted to the GBV Centre, and recorded the origins of the referral for a one year period, beginning in August 2014 and ending in July 2015. There were 54 intra-hospital referrals during this time period. We note that formal intra-hospital referrals make up a relatively small proportion of the Centre's client load, as most clients at the GBV Centre come via informal or formal referrals from outside of KNH (such as NGOs, shelters, friends) or women simply come on their own ("self-referred").

RESULTS

PARTICIPANT CHARACTERISTICS AND RETENTION

Women participating in the study were, on average, 29 years old (see Table 1).⁹ Approximately half (49.6 percent) of participants had completed some tertiary education. Over three-quarters (82 percent) were currently married, 2 percent unmarried but living with a man, 9 percent had a regular partner but were not living together, and 6 percent were single. Based on ANC client charts, 5.7 percent of women were living with HIV. Approximately 8 percent of women reported food insecurity (in the past week there were times when there was not enough food in the household because of a lack of resources to get food). Women's average scores were 2.5 on the GEM scale (with 1 being the least equitable and 3 being the most equitable gender norms) and 2.5 on the SRP scale (with 1 being a low power position for women and 4 being a high power position). The GEM and SRP scores were also categorized into terciles to reflect low, moderate, and high equity and power status in sexual relationships, respectively. The distribution of women's responses according to these levels did not vary by intervention assignment ($p = 0.289$, $p = 0.219$, respectively). Thirty-eight percent of women reported ever experiencing intimate partner violence, and 35 percent of participants reported experiencing IPV in the past year. There were no significant differences between the intervention and control groups on any of these characteristics. Two variables, IPV in the past 12 months and SRP score were marginally ($p < 0.10$), although not statistically significantly different and these were adjusted for in multivariate analysis.

⁹The age distribution is consistent with KNH's ANC clinic records. For the period February to September 2015, most first-time ANC clients were between ages 25 and 30, with the second largest age group 31–35. There were relatively few aged 19 and under (1.97 percent of total); 16.0 percent were aged 20–24; 37.6 percent were 25–30 years old; 27.5 percent were 31–35; and 15.5 percent were 36 years and older.

Table 1 Sample characteristics by intervention assignment

	Total N = 688 n (%)	Intervention N = 337 n (%)	Control N = 351 n (%)	P-value
Age				
Mean (SD)	29.4 (±5.2)	29.2 (±5.2)	29.6 (±5.3)	0.26
Age group				
15-19	11 (1.6)	4 (1.1)	7 (2.1)	0.31
20-24	112 (16.4)	59 (16.9)	53 (15.9)	
25-29	233 (34.1)	122 (35.0)	111 (33.2)	
30-34	204 (29.9)	109 (31.2)	95 (28.4)	
35-39	105 (15.4)	44 (12.6)	61 (18.3)	
40-45	18 (2.6)	11 (3.2)	7 (2.1)	
Education level				
Primary	122 (17.8)	67 (19.1)	55 (16.4)	0.47
Secondary	223 (32.6)	117 (33.4)	106 (31.6)	
College/university	340 (49.6)	166 (47.4)	174 (51.9)	
Marital status^a				
No	124 (18.1)	58 (16.6)	66 (19.7)	0.32
Yes	561 (81.9)	292 (83.4)	269 (80.3)	
HIV status				
Negative	566 (94.3)	293 (94.5)	273 (94.1)	0.86
Positive	34 (5.7)	17 (5.5)	17 (5.9)	
Food insecure				
No	632 (91.9)	324 (92.3)	308 (91.4)	0.68
Yes	56 (8.1)	27 (7.7)	29 (8.6)	
Gender Equitable Norms (GEM) Scale^b				
Mean (SD)	2.46 (±0.4)	2.48 (±0.4)	2.44 (±0.4)	0.080
Low equity	204 (30.0)	92 (27.7)	112 (32.1)	0.289
Moderate equity	239 (35.1)	115 (34.6)	124 (35.5)	
High equity	238 (35.0)	125 (37.7)	113 (32.4)	
Sexual Relationship Power (SRP) Scale^c				
Mean (SD)	2.52 (±0.4)	2.54 (±0.4)	2.49 (±0.4)	0.086
Low power	224 (33.1)	99 (30.2)	125 (35.8)	0.219
Moderate power	212 (31.3)	103 (31.4)	109 (31.2)	
High power	241 (35.6)	126 (38.4)	115 (33.4)	
Ever IPV+				
No	423 (62.1)	206 (59.2)	217 (65.2)	0.11
Yes	258 (37.9)	142 (40.8)	116 (34.8)	

^aMarried or living together;

^bGEM is 3-point scale: 3 = most gender equitable norms, 1 = least equitable norms;

^cSRP is a 4-point scale: 4 = high power position for woman, 1 = low power position for woman. The GEM and SRP scales were categorized into low, moderate and high categories by tercile.

Of the women who had ever experienced IPV, the vast majority—93 percent (241 out of 258)—had experienced it in the past year. Table 2 shows the type of IPV experienced by women in the past 12 months. About one-third (35 percent) of women reported any IPV in the past year. Emotional IPV was reported by 29 percent of women; physical IPV was reported by 14 percent of women; and sexual violence was reported by 13 percent of women. Close to one quarter (21 percent) of women reported experiencing physical or sexual violence. The intervention and control groups do not differ statistically on any type of reported IPV, although “any IPV in past 12 months” approached significance ($p = 0.079$).

Table 2 IPV experience by intervention group

	Total N = 688 n (%)	Intervention N = 337 n (%)	Control N = 351 n (%)	Chi-Sq P-value
IPV+ past 12 mo				
No	447 (65.0)	217 (61.8)	230 (68.2)	0.079
Yes	241 (35.0)	134 (38.2)	107 (31.8)	
Emotional IPV past 12 mo				
No	483 (70.9)	237 (68.1)	246 (73.9)	0.11
Yes	198 (29.1)	111 (31.9)	87 (26.1)	
Physical IPV past 12 mo				
No	584 (85.8)	296 (85.1)	288 (86.5)	0.66
Yes	97 (14.2)	52 (14.9)	45 (13.5)	
Sexual IPV past 12 mo				
No	592 (87.1)	297 (85.6)	295 (88.6)	0.26
Yes	88 (12.9)	50 (14.4)	38 (11.4)	
Physical or sexual IPV past 12 mo				
No	536 (78.7)	269 (77.3)	267 (80.2)	0.40
Yes	145 (21.3)	79 (22.7)	66 (19.8)	

The intervention and control groups did not differ with respect to attrition status ($p = 0.31$) (Appendix B, Table B-1). There also was no significant difference between those women who remained in the study and those women lost to follow-up based on sociodemographic-characteristics, HIV status, or IPV experience.

Women who experienced IPV in the past year were less likely to have disclosed their HIV status to their partner compared to women who had not experienced IPV (81 percent vs. 89 percent, $p = 0.004$; Table 3). They were also significantly less likely to have been to couples HTS (59 percent vs. 71 percent, $p = 0.002$). Women reporting violence and women not reporting IPV did not differ with regard to knowledge of their partner’s HIV status. Our sample for this pilot was not powered to assess differences in HIV status between IPV-positive and IPV-negative women. However, preliminary analysis shows that the prevalence of HIV is higher (10 percent) among women who experienced physical and/or sexual violence in the past year relative to women who did not experience either forms of violence (4 percent; $p = 0.018$; data not shown).

Table 3 Women’s experience of IPV in the past year and HIV risk

	Total N = 688 n (%)	IPV 12mo- N = 455 n (%)	IPV 12mo+ N = 243 n (%)	Chi-Sq P-value
Disclosed HIV status to partner				
No	89 (13)	45 (11)	44 (19)	0.004
Yes ^a	572 (87)	380 (89)	192 (81)	
Know partner’s HIV status				
No	159 (23)	93 (21)	66 (27)	0.072
Yes ^a	523 (77)	348 (79)	175 (73)	
Have been to couples HTC				
No	227 (33)	129 (29)	98 (41)	0.002
Yes (Ever)	455 (67)	313 (71)	142 (59)	

^aRefers to positive or negative HIV status

EXPOSURE TO THE INTERVENTION

Despite the fact that IPV screening is part of the standard HTS protocol at the ANC clinic, women in the intervention group were far more likely to report IPV screening than women in the control group (86 percent vs. 21 percent, $p < 0.0001$) (data not shown). Among women who reported experiencing IPV in the past year, the same difference is evident: 76 percent of IPV-positive women in the intervention reported being screened for violence by the counselor compared to 22 percent of IPV-positive women in the control ($p < 0.0001$; Table 4). Women in the intervention group who reported experiencing violence were also more than four times as likely to disclose that they were experiencing IPV in the intervention compared to the control group (32 percent vs. 7 percent, $p < 0.0001$). Of women who disclosed IPV to the provider, 56 percent in the intervention and 33 percent in the control stated that they received a referral ($p = 0.28$).¹⁰ The lack of observed statistical significance may be attributable to small sample size ($n = 22$ women given a referral). Of women given a referral, there was no significant difference between intervention and control groups in terms of following up or intending to follow up.

¹⁰While we did not track why women in the intervention who reported IPV to their provider did not receive a referral, anecdotally most cases were because women did not want a referral. Women didn’t want them because they were satisfied with the counseling they received in the HTS room, they did not feel the violence was serious, they did not have time for a referral, or they felt these were personal issues that they will solve on their own.

Table 4 Reported exposure to IPV screening and referral during HTS among women experiencing violence in the past year

	Total IPV+ past 12 months N = 241 n (%)	Control N = 134 n (%)	Intervention N = 107 n (%)	P-value
Screened for IPV by HTS counselor				
No screening	130 (54)	104 (78)	26 (24)	< 0.0001
Provider screened	110 (46)	29 (22)	81 (76)	
Disclosed IPV to HTS counselor				
No	198 (82)	125 (93)	73 (68)	< 0.0001
Yes	43 (18)	9 (7)	34 (32)	
Given referral by provider (of those who disclosed IPV to provider)				
No	n = 43	n = 9	n = 34	0.28
Yes	21 (49)	6 (67)	15 (44)	
Followed-up on referral (of those given referral)				
No	n = 22	n = 3	n = 19	0.52
Followed-up/intend to today	7 (32)	0 (0)	7 (37)	
	15 (68)	3 (100)	12 (63)	

At the second interview we asked women who did not follow-up on the referral why they did not follow-up. Most (n = 5) did not respond or an invalid code was entered. The two respondents that did reply said it was because they did not have time. We also asked women who reported physical or sexual violence in the past year (regardless of whether they received a referral) whether they sought help anywhere else, and, if not, why not. Unfortunately, most women did not respond to this question. Of the 29 women who responded, the largest proportion (31 percent, n = 9) said it was because they did not believe it would help. This top reason was followed by: being embarrassed about it or afraid they would not be believed (21 percent, n = 6); and that their partner had apologized or they resolved the problem (17 percent, n = 5). Other reasons cited by one or two people each were fear of violence (n = 2); they considered the violence normal/not serious (n = 2); they considered it a personal/private issue (n = 2); they went to the GBV Centre (n = 1); and it happened a long time ago (n = 2).

EFFECTS OF THE INTERVENTION

Participants' knowledge of women's rights vis a vis IPV was uniformly high from the start. For example, 94 percent and higher of participants were aware that women have a legal right not to be subjected to IPV and that women can legally divorce a husband due to cruel treatment, irrespective of intervention group or time of follow-up (Appendix B, Table B-2). These high levels of correct responses were found for most knowledge questions with no statistically significant differences between intervention and control groups with the exception of two questions: knowing that women who experience IPV are at greater risk of HIV, and having heard of KNH's GBV Centre.

We summed IPV knowledge items (6-point index, ranging from 0 to 5)¹¹ and assessed—using GLMMs—whether there was an independent effect of the intervention on IPV-related knowledge (Table 5).

Controlling for power in sexual relationships and experience of IPV in the past 12 months (covariates that were marginally statistically different at baseline between study groups), women in the intervention group scored on average approximately 0.16 points higher on the IPV knowledge index, adjusting for potential confounders ($p = 0.049$).

Table 5 GLMM of IPV-related knowledge scale at second follow-up, by intervention assignment

Variables	(Crude) Beta Coef		(Adjusted) Beta Coef	
	95%CI	P-value	95%CI	P-value
Intervention vs. control	0.176** (0.02–0.033)	(0.027)	0.155** (0.00–0.31)	0.049

*** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$

Note: Adjusted analyses control for IPV experienced in the past 12 months and sexual relationship power.

Although we did not think it would be possible to shift attitudes about IPV with such a short intervention—and thus did not include it among our objectives—we did assess women’s attitudes toward IPV (see Appendix B, Table B-2, lower panel). At the first follow-up, women in the intervention group were less likely to agree with one or more justifications for wife beating, although the difference only approached significance. At the second follow-up there was no difference in attitudes toward wife beating between intervention and control group women.

Women’s perspectives on the support they received in their HTS session are shown in Table 6 for IPV-positive women. Among women experiencing IPV, women in the intervention group were significantly more likely than controls to report that talking with the provider about power in relationships and women’s rights in relationships made a positive difference to them; the difference continued to be significant at the second follow-up (36 percent intervention vs. 9 percent control, $p < 0.0001$ in R1; 28 percent intervention vs. 15 percent control, $p = 0.032$ in R2). Women who experienced IPV and were in the intervention group, compared to those in the control group, were significantly more likely at second follow-up to report that they had learned new things about women’s rights in relationships (mean 2.6 vs. 2.0, $p < 0.0001$). At round 1, women experiencing IPV and in the intervention group were significantly more likely than those in the control group to report that they were better able to take care of their health (94 percent vs. 84 percent, $p = 0.027$) and that they felt more confident about how they deserved to be treated in relationships (84 percent vs. 63 percent, $p = 0.0004$); at the second follow-up the difference between the intervention and control groups was no longer statistically significant for these latter two indicators.

¹¹Items included: A woman who is experiencing violence in her relationship is at higher risk of HIV infection (strongly agree vs agree, disagree); There is nothing that a woman can do if she is experiencing violence in her relationship, she just has to live with it (strongly agree vs agree, disagree); Do women have a legal right not to be subjected to any form of violence? (Yes/No); Can a woman petition to legally divorce her husband due to cruel treatment? (Yes/No); Have you ever heard of a short stay homes, shelter, safe house for women who experience violence? (Yes/No); Have you heard of the GBV center at KNH? (Yes/No)

Table 6 Differences between intervention and control groups' perceived intervention support among women experiencing IPV in past 12 months, Rounds 1 and 2

	Total IPV+ past 12 months N = 241 N (%)	Control N = 134 N (%)	Intervention N = 107 N (%)	P-value
Talking with provider about power & women's rights made a positive difference^a				
Round 1				
A little/fair amount/not at all	190 (78.8)	122 (91.0)	68 (63.6)	< 0.0001
Yes—a lot	51 (21.2)	12 (9.0)	39 (36.4)	
Round 2				
A little/fair amount/not at all	151 (79.1)	87 (85.3)	64 (71.9)	0.032
Yes—a lot	40 (20.9)	15 (14.7)	25 (28.1)	
Learned new things about a woman's rights in her relationship^b				
Round 2 ^c				
Mean (SD)	2.3 (±1.1)	2.0 (±1.0)	2.6 (±1.1)	< 0.0001
Feel better able to take care of health than before visit^d				
Round 1				
Same	29 (12.0)	22 (16.4)	7 (6.5)	0.027
Better	212 (88.0)	112 (83.6)	100 (93.5)	
Round 2				
Same	11 (5.8)	5 (4.9)	6 (6.7)	0.76
Better	180 (94.2)	97 (95.1)	83 (93.3)	
Feel more confident in how deserve to be treated^d				
Round 1				
Same	65 (27.4)	48 (36.9)	17 (15.9)	0.0004
Better	172 (72.6)	82 (63.1)	90 (84.1)	
Round 2				
Same	45 (23.6)	29 (28.4)	16 (18.0)	0.12
Better	146 (76.4)	73 (71.6)	73 (82.0)	

^aResponse coded as “Yes a lot” vs. “A little,” “A fair amount,” or “Not at all”; ^bVariable not comparable between R1 and R2; R2 data is displayed only; ^c4-point scale, 4 = “Yes a lot,” 1 = “Not at all”; ^dResponse coded as “Better,” “Same,” or “Worse.” Note: No women responded “Worse.”

To assess the relevance of the enhanced counseling to other ANC clients, not just those who were experiencing IPV, we first expanded the sub-population of interest to also include women who reported low power in their relationship (Appendix B, Table B-3). We see similar results among IPV-positive or low power women as in the above analysis, with one main difference. This is that the percent of women who reported that they felt more confident in how they deserve to be treated retained a statistically significant

difference between intervention and control groups at the second follow-up (84 percent of women in the intervention group reported feeling more confident in how they deserve to be treated, compared to 71 percent in the control group, $p = 0.009$).

Notably, when we look at these same indicators for all women, we see that women in the intervention group were significantly more likely to report better results than the control group across all these indicators and at both follow-up points (Appendix B, Table B-4). The only exception is that at second follow-up, women in the intervention group were no longer significantly more likely to report feeling better able to take care of their health.

Using GLMM analyses specifying the logit function and a binomial distribution for dichotomous outcomes, we assessed whether the intervention provided women with meaningful support relative to control participants (Table 7). The odds of women in the intervention group reporting that speaking with the provider made a positive difference to them was more than 18 times higher compared to women who received standard care in both an unadjusted model (OR: 18.6, $p = 0.001$) and model adjusting for exposure to IPV in the past 12 months and the woman’s level of sexual relationship power (AOR: 19.8, $p < 0.001$).

Table 7 GLMM model of whether talking with provider made positive difference

Variables	OR		AOR	
	95%CI	P-value	95%CI	P-value
Intervention vs. control	18.64*** (3.24–107.13)	(0.001)	19.82*** (3.74–105.11)	(0.000)

*** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$

To assess whether the intervention had any unintended harmful effects, we asked women whether they were embarrassed about or afraid that someone would find the IPV resource card. No women in the intervention group felt this way (data not shown). Over two-thirds of the intervention group women reported having read it (69 percent of all women and 72 percent of women experiencing IPV; data not shown). In addition, we asked women at the second follow-up whether they had experienced any violence since the intervention. There was no difference in exposure to violence between intervention and control group women (Table 8). Indeed, the lower sexual violence since the Round 1 interview among intervention vs. control group approached significance (3 percent in the intervention vs. 6 percent in the control, $p = 0.058$).

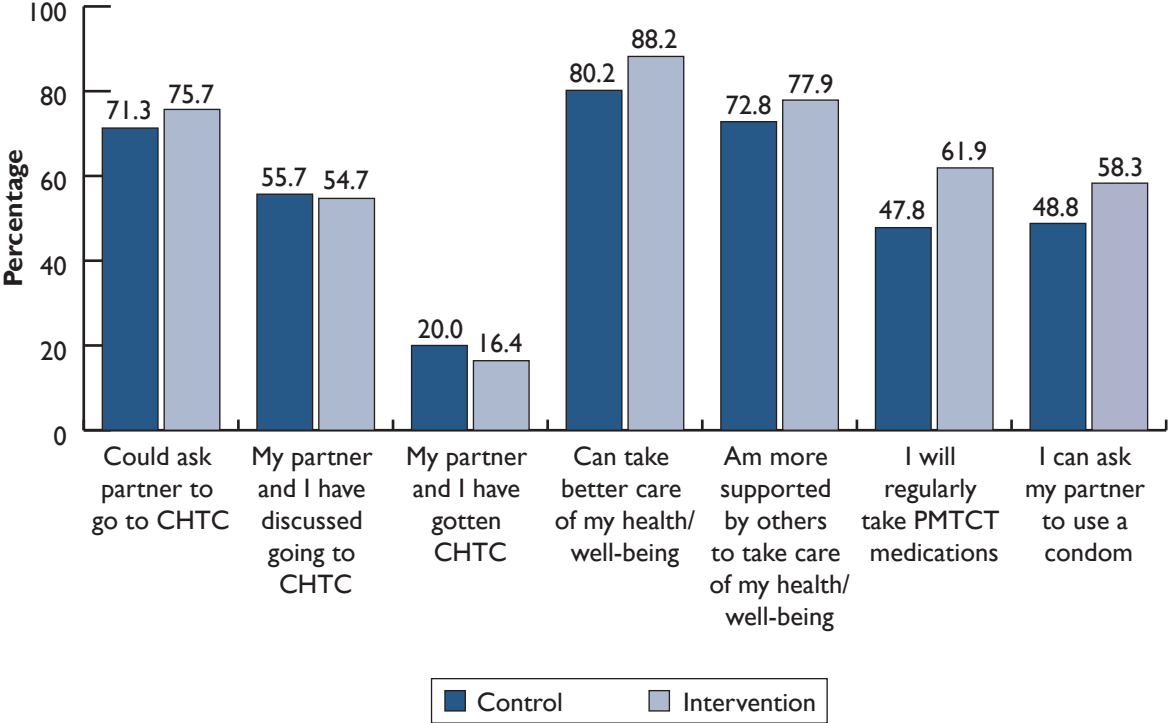
Table 8 Experiences of IPV since Round 1 interview (reported at Round 2)

	Total sample N = 688 N (%)	Control N = 351 N (%)	Intervention N = 337 N (%)	P-value
Emotional IPV since last interview				
No	470 (87.9)	234 (87.6)	236 (88.1)	0.90
Yes	65 (12.1)	33 (12.4)	32 (11.9)	
Physical IPV since last interview				
No	505 (94.4)	252 (94.4)	253 (94.4)	1.0
Yes	30 (5.6)	15 (5.6)	15 (5.6)	
Sexual IPV since last interview				
No	512 (95.7)	251 (94.0)	261 (97.4)	0.058
Yes	23 (4.3)	16 (6.0)	7 (2.6)	
Physical or sexual IPV since last interview				
No	489 (91.4)	241 (90.3)	248 (92.5)	0.36
Yes, physical or sexual IPV	46 (8.6)	26 (9.7)	20 (7.5)	
Any type of IPV (emotional, physical, or sexual) since last interview				
No	442 (82.6)	217 (81.3)	225 (84.0)	0.43
Yes	93 (17.4)	50 (18.7)	43 (16.0)	

We also examined whether there were differences in exposure to violence in the time since the intervention among women who reported experiencing violence from an intimate partner at Round 1 (rather than all women, as shown in Table 8). Results show that there are no differences in exposure to violence among IPV-positive women in the time between receiving the intervention and the follow-up assessment (mean 4.4 weeks, range: 6 days to 24 weeks) (Appendix B, Table B-5).

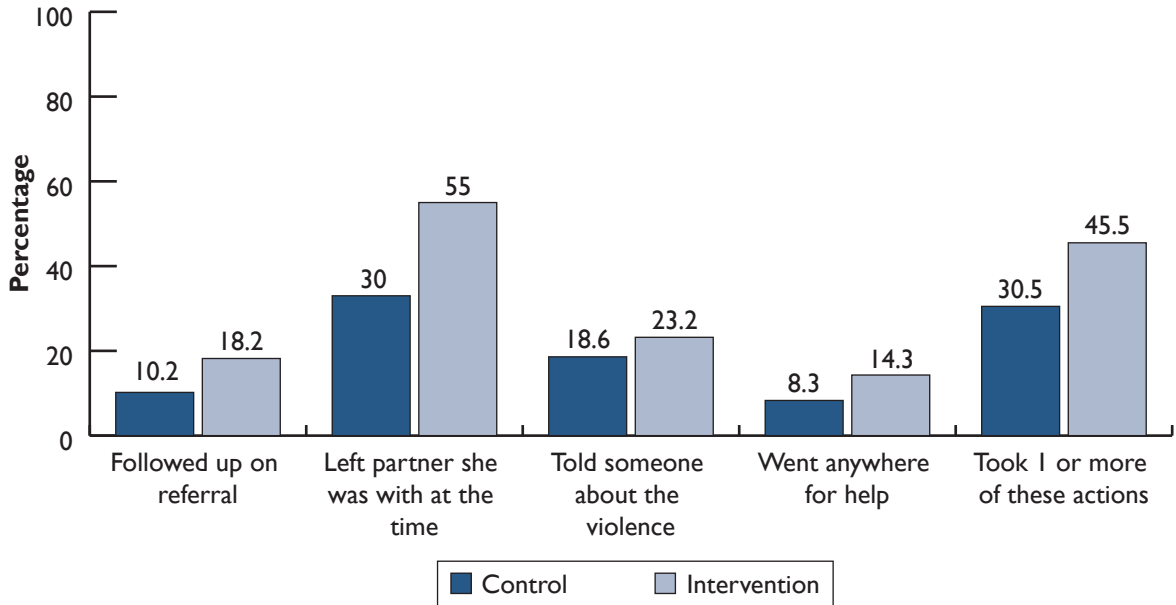
While our sample was not powered to detect changes in behavior related to HIV care and prevention, nor prevention or treatment of IPV, and the length of second follow-up was too short to observe changes in such behavioral indicators, we conducted exploratory analyses to assess whether there were differences among women experiencing IPV. For indicators related to couples HTS, general health, PMTCT, and condom use there were no statistically significant differences (Figure 1 and Appendix B, Table B-6). However, with the exception of couples HTS (CHTS)-related agency and behaviors, the proportion of women reporting a beneficial intent or behavior was consistently higher among women in the intervention group than the control group. Most differences were not large, with the exception of PMTCT, where the proportion of women reporting that they strongly agreed that they would adhere to the regimen was 62 percent in the intervention compared to 48 percent in the control group; a 14 percentage point difference. The sample was not powered to detect a change among HIV-positive respondents, so this difference was not significant.

Figure 1 Exploratory analysis among women experiencing IPV in past 12 months (N = 241): CHTS, health, PMTCT, and condom use agency and behavior; control compared to intervention at 2nd follow-up



We also conducted exploratory analysis to examine changes in IPV-related outcomes. Figure 2 compares intervention and control group women who reported experiencing physical or sexual violence in the past 12 months. For all actions, the percent of women who took an action is higher in the intervention than control group, although no differences achieved statistical significance, likely due to insufficient power. The indicator “taking any of these actions,” however, approached significance (46 percent intervention vs. 31 percent control, $p = 0.073$). See Appendix Table B-7 for details.

Figure 2 Exploratory analysis among women experiencing physical or sexual violence (N = 145): Proportion who reported taking an action since the first follow up interview; control compared to intervention at 2nd follow-up

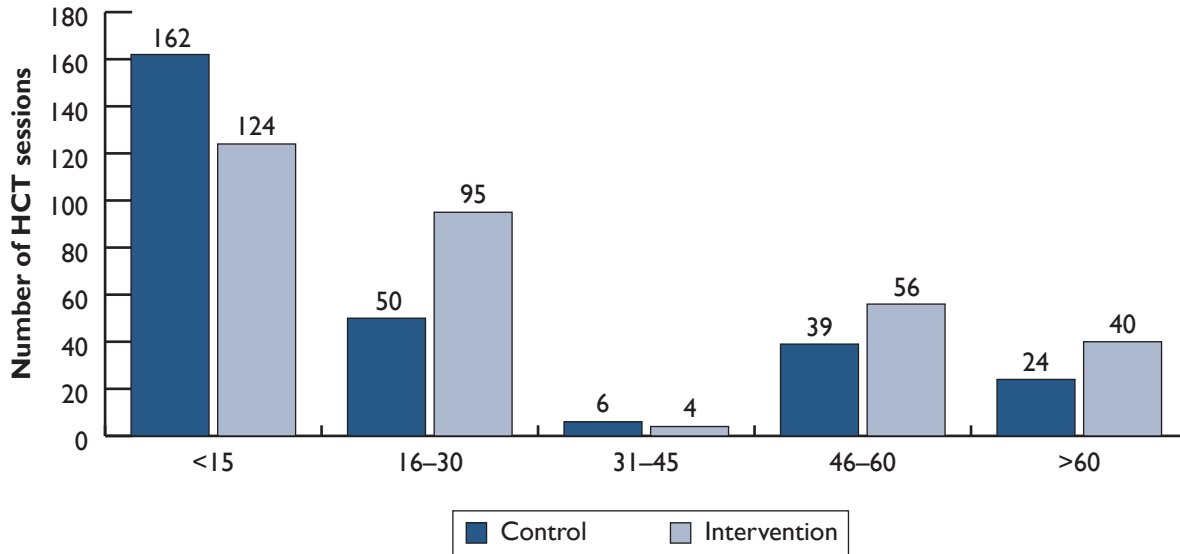


IMPLEMENTATION OF THE INTERVENTION

To gauge how this pilot intervention operated within KNH’s busy ANC clinic, we monitored the duration of the enhanced HTS session compared to standard HTS, reviewed the number of referrals to the GBV Centre from different KNH departments over time, and interviewed providers about their experience with the intervention.

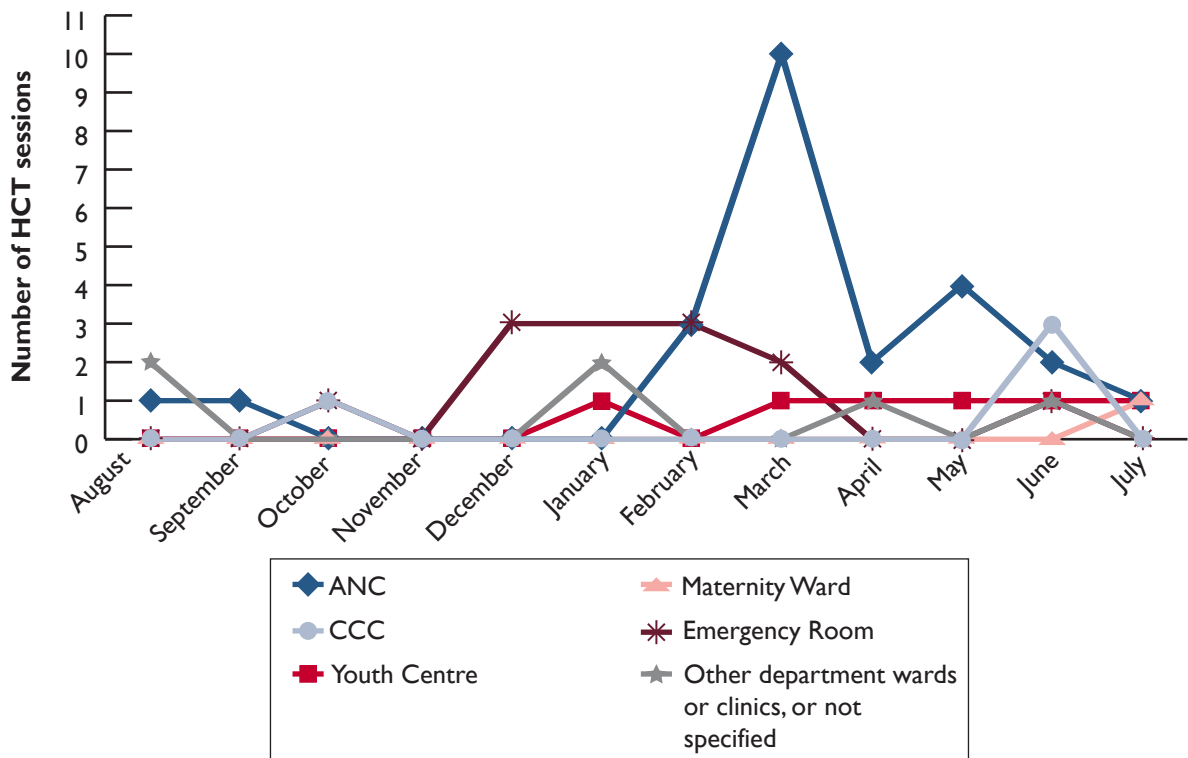
On average, it took providers six and a half minutes (6.6 minutes) longer to conduct the IPV enhanced HTS session than a standard care HTS session (22.7 minutes control vs. 29.3 minutes intervention). The most frequently occurring length of a counseling session (mode) was 10 minutes for both study groups. See Figure 3 for distribution.

Figure 3 Distribution of HIV counseling and testing sessions (N = 600) by duration, control (standard care, N = 281), and intervention (enhanced counseling, N = 319)



To see whether the pilot affected referrals to the GBV Centre, we counted referral forms submitted to the GBV Centre, and recorded the origins of the referral for a one-year period, beginning in August 2014 and ending in July 2015 (Figure 4). Note that intra-hospital referrals make up a relatively small proportion of the Centre’s client load as most clients at the GBV Centre come via informal or formal referrals from outside of KNH such as NGOs, shelters, friends, etc., or women simply come on their own (“self-referred”). Examining formal referrals originating from within the hospital (N = 54), we see that before the pilot, KNH’s ANC clinic, similar to most other departments, had few referrals to the hospital’s GBV Centre—two for the entire six-month period between August 2014 and January 2015. Only the emergency room tended to have relatively more. With the start of the intervention in February 2015, referrals from the ANC clinic increased, with the ANC clinic outperforming other departments most months between February and July 2015.

Figure 4 Origin of referrals to GBV Centre from various hospital departments (N = 54), monthly totals from 1 August 2014–31 July 2015



Providers' experience

Providers' commitment to addressing IPV, comfort discussing IPV, and belief that addressing it is the right thing to do, were apparent even before our pilot began. KNH had founded the GBV Centre in 2006 and incorporated IPV screening into their HTS counseling, with IPV included in the ANC client forms since 2011, so considerable awareness about IPV already existed. In pre-intervention interviews, some providers articulated their belief that discussions with ANC clients about IPV increased the likelihood that women would adhere to their HIV treatment regimen and thus decrease the chance of mother-to-child transmission. One provider told an anecdote of a client who was a survivor of IPV:

The violence will affect the way she adheres but if she gets help it will not affect because I had such a client she was positive and was undergoing the violence. Her issue was that the partner used to beat her and to abuse her physically when she asked for bus fare to come to the clinic. So you see at the end of the day if she doesn't get help to deal with the violence she won't be able to come to the clinic because she is being abused when she asks for money to come to the clinic and it will affect her overall outcome... so if we reach this woman and we help her in any way and even the partner it will improve the outcome of the PMTCT.

—Baseline, male nurse counselor,
7 years of experience as a healthcare provider

It was not simply a pragmatic, health matter to them, however. A number of provider interviews at baseline reflected strong compassion and commitment. At baseline, one provider—female community health nurse with 15 years of experience in the field—stated that she screened for IPV partly because “of the passion [she had] for these women who are like [her] and just to help them.”

The majority of providers also stated at baseline that they were comfortable screening and referring for IPV. Yet despite these positive perspectives, it was also clear that this did not always translate into actual provision of IPV screening and counseling. Even providers who said that they themselves had no problem asking about IPV, were concerned that they would make their clients uncomfortable. Many only asked women about violence in their lives if they saw obvious signs of abuse. Others were simply not comfortable with the process and did not screen regularly.

I don't feel comfortable cause, in fact I like want it to be a NO answer because if it is yes, I don't know how to handle it from there. If she tells me she is assaulted so? What next? Because I am not well equipped with the knowledge. I only know we refer to a center but before referring to our patient support center, I don't know how to go about it much there. But fortunately I have not come across any case to refer.

—Baseline, female registered community health nurse,
15 years of experience as a healthcare provider

All providers, even those who said they were comfortable screening and referring for IPV, expressed a desire during their pre-intervention interview for more training. They also noted the difficulty of spending enough time with the mother to delve into the screening questions.

Providers' overall response to the intervention was quite positive. In the endline interviews, the providers described how at first, even after the training, many were still not comfortable screening and providing IPV/power counseling. Some also found the counseling tools cumbersome in the beginning. However, as the intervention continued, and they became increasingly familiar with the content on the IPV/power cards and provider script, they were better able to incorporate the material into their sessions. We also reformatted the script into a small binder of half-page size laminated pages, after initial feedback that the full-size paper was too cumbersome. All of the providers reported that they grew more comfortable as their skills and exposure increased.

Through practice, providers gained confidence and grew more comfortable with the enhanced counseling. Only one provider, who was uncomfortable pre-intervention, continued to feel uncomfortable screening and referring at the time of the post-intervention interview and desired further training. The vast majority of providers spoke of their commitment to helping women who are IPV-positive. For some, their commitment increased over the course of the pilot as they began to realize how many women experienced violence and that they could help them.

I believe my commitment deepens with time the more I practice. Possibly because I have a passion for GBV because in counselling there are many things that you can possibly do: substance abuse, family planning therapy, many things, and I have always been passionate about GBV. I believe even working with these women it sort of fired that commitment and

I find myself even in our plot¹² wherever I see or hear people talk with misconceptions and myths I just tell them, “Now that is not the way things are solved.” I believe my commitment has gone overboard...(laughs) I just may become an advocate one of these days.

—Endline, GBVRC female counselor/psychologist,
4 years of experience as a healthcare provider

Providers’ reflections about specific intervention components emerged during the post-intervention interviews:

Counseling tools: Many providers found the scripts, used to facilitate the IPV/power counseling sessions, to be helpful. One provider stated:

Now you can even talk to them more, you inquire in-depth about what has been happening in their life. We were using that script to ask more questions and able to dig more and understand that this woman is really going through a problem. And even with the knowledge of the script, even if the mother is not in the study and you ask those questions—you may not use the script for the one who is not in the study—but since you have the knowledge at your fingertips, you just talk to them lightly so that you can understand that if the woman is telling the truth; whether she has been violated or not. The script made it a bit easier to dig deeper and ask for more information.

—Endline, female community mobilizer, 7 years of experience in the field

As the providers used the scripts, they became increasingly comfortable with them and were able to move through them more naturally and quickly. Providers reported that many clients were happy to receive the IPV/ power card and felt supported. It provided good information and some clients said that they would share it with others in their community. Some providers were unaware that there was an IPV/ power card, while one provider was aware of the card but did not use it. For all the counseling tools, a challenge was that they were in English. Some clients did not understand English so translating to Swahili fell on the provider, slowing the process considerably.

Referrals: It was helpful to have an IPV counselor based in the ANC clinic, so if a provider needed to refer a client the provider could just take them to the counselor instead of telling the client to go alone to another part of the hospital.

[It was] accessible...because supposing you are sending a mother from here to the Gender Based Violence Centre...that distance...she might not go. But here, it is near...when she finishes with the doctor, you just tell her there is a counselor who I want you to talk to, just come in here. It was easy for us in that way. And the time factor...you know these mothers come very early and yet we hold them here for long but for those ones with problems; we cannot help it. But with the counselor being here, it was saving time for the client...she did not have to go all the way to mental health.¹³ So they would just sit here and talk here.

—Endline, female ANC nurse, 35 years of experience in the field

¹²“Plot” refers to a compound with many houses / flats for separate families. Typically there is one gate to the compound, a common water source, laundry area, etc.

¹³GBVRC was located in the Mental Health department of KNH.

Clients were not getting lost—or at least they got lost less frequently than before the intervention—because they were told exactly where to go or were escorted there directly. The presence of someone who escorted clients to the IPV counselor in the ANC clinic and followed up with them, made providers feel more comfortable.

Provider support group meetings: Most providers attended the support group meetings. All who attended thought that the meetings were helpful and wanted them to continue. Many providers spoke of how it was empowering to share and talk through how to deal with difficult clients.

[The meetings] helped those of us who were seeing clients because after seeing so many clients and hearing about all the forms of trauma they have experienced, most of us were feeling traumatized from what we were hearing. It was somehow eating into us. But as we sat in those support groups and we were able to share out what we did, how we did it, and why we did it, and as we shared about it and talked even about how we felt when we handled those conditions, and we got encouragement from other counselors, it helped us.

—Endline, female nurse midwife/psychologist,
22 years of experience in the field

Duration: Providers' main criticism was the longer time required to conduct the enhanced counseling. It created delays in the system, frustrating clients who were tired of being at the hospital for so long. Providers also felt the effects of extra time. One noted explicitly that they are supposed to see a certain number of clients each day and if they do not meet their targets they will have problems with management. Many providers reported shortening the intervention sometimes—mostly by compressing the content, as opposed to leaving out some issues entirely. Only one provider mentioned that they did not implement the intervention with a few clients due to time pressure. Some said that if they were to continue, they would need to have a decreased client load. Nonetheless, even providers who felt that implementing the intervention took too much time felt it was worthwhile. The majority of providers stated that they would continue to provide IPV/power counseling in conjunction with HTS because it addresses many of the factors that contribute to increased HIV risk. One recommended that providers should stick to a basic IPV/power minimum and then refer clients who needed more time to an IPV counselor who would be permanently stationed in the ANC clinic.

Overall, helping their clients deal with their problems was gratifying to providers. Indeed, providers stated that having the skills to address IPV and power made them better at their jobs. The vast majority of providers stated that women responded positively and were helped by the intervention. Women were able to receive emotional and psychological support, gain knowledge about what constitutes IPV, and were empowered to act on their own behalf.

CONCLUSION AND RECOMMENDATIONS

Achieving the 90-90-90 treatment targets—90 percent of people living with HIV know their status, 90 percent of people who know their HIV-positive status are accessing treatment, and 90 percent of people on ART have suppressed viral loads—will entail far more than expansion of clinical services. Truly impressive gains in ART use in the past five years—coverage leaped in East and Southern Africa from 24 percent in 2010 to 54 percent in 2015, for example (UNAIDS 2016)—demonstrate what concerted international efforts can achieve. Moving forward, however, we are challenged to also provide access for underserved populations and implement test and treat guidelines. We will not get to 90-90-90 without also reaching those who are more vulnerable. PEPFAR, UNAIDS, and others recognize this and consequently include attention to structural factors such as gender inequality and gender-based violence in their strategies.

Intimate partner violence matters not only because of its high prevalence—IPV is estimated to affect one in three women globally (WHO et al. 2013)—but because of its deleterious effects all along the prevention, treatment, and care continuum. It is linked with HIV infection—women who experience IPV are more likely to acquire HIV than women who do not experience IPV (Li et al. 2014). Indeed, in this study prevalence of HIV was twice as high among women who experienced IPV in the past year compared to those who did not experience IPV. Not only is HIV prevalence higher among women experiencing IPV, but these same women are less likely to link to treatment and care. IPV is associated with lower ART use, lower ART adherence (Hatcher et al. 2015), and lower PMTCT adherence (Hampanda 2016). Experience of intimate partner violence also makes viral suppression less likely (Hatcher et al. 2015).

While preventing violence from happening in the first place is a clear priority, we must also figure out how best to reach and support those women who are experiencing violence. A multi-sector response is necessary, but what are the implications for HTS in particular? HTS has a role to play—a role it must play—to support women’s dignity and rights and to ensure that we are not losing the substantial number of women experiencing IPV in the testing and treatment cascade. One particularly opportune time might be HTS during women’s ANC visits, for multiple reasons. Some studies suggest that women screened for IPV in ANC settings (versus other health care settings) are more likely to disclose violence to their providers (O’Doherty et al. 2015); HIV testing is encouraged during ANC and provides one-on-one private counseling between the woman and provider; and uptake and adherence to PMTCT is critical during and after pregnancy.

A common response to IPV in health settings is to screen and refer. However, research suggests that women are not always ready or do not always want to disclose IPV to their provider when screened (Spangaro et al. 2010; O’Doherty et al. 2015). Moreover, even when they do disclose, few women follow up on IPV referrals (O’Doherty et al. 2015; Arango et al. 2014), for reasons including that they may not be ready yet to take up a referral, or that they do not perceive the problem as serious enough to warrant

a referral (Klevens et al. 2012; O’Doherty et al. 2015). Researchers note the limited evidence available and have called for further studies to assess approaches for screening, particularly in low/middle-income countries (O’Doherty et al. 2015; Arango et al. 2014).

With these challenges and opportunities in mind, we tested a pilot intervention that sought to provide all women, regardless of whether they screened positive for IPV, with basic information and resources about IPV and power inequalities in relationships during post-test HIV counseling in Kenyatta National Hospital’s ANC clinic.

IPV/power-enhanced HTS counseling significantly increased the proportion of women who were screened for IPV as well as the proportion of women who disclosed IPV to their HTS counselor. Referral outcomes, in terms of the percent of women reporting receipt of a referral for IPV services (among women who disclosed experiencing IPV to their provider), and following up on that referral (among those receiving a referral), were not significantly different between intervention and standard care groups. Despite lack of statistical significance, however, a greater number of women received referrals as well as followed-up/intended to follow-up on referrals in the intervention relative to the control group.

There is also evidence that the intervention increased women’s knowledge about IPV and IPV services, but not attitudes toward domestic violence. Women in the intervention group scored on average 0.16 points higher on a 6-point knowledge index relative to those in the control group (Adj. $\beta = 0.16$, $p = 0.049$). As anticipated, the relatively short intervention was not enough to significantly shift attitudes toward wife beating, although the lower proportion of women in the intervention arm compared to women in the control arm agreeing with one or more reasons justifying wife beating at Round 1 approached significance.

The percent of women who perceived meaningful support from the HTS session was significantly higher among women in the intervention than in the control group across a range of indicators and across both follow-up surveys. This was true for the following three groups: (1) all women, (2) women who experienced IPV, and (3) women who either experienced IPV or who were in a low power position in their relationship. Generalized linear mixed models show a strong intervention effect while adjusting for potential confounders: women in the intervention relative to the control group had nearly 20 times the odds of reporting that talking with the provider made a positive difference (AOR 19.8, $p < 0.0001$).

While this pilot study was not powered to assess effects among HIV-positive and IPV-positive subgroups on indicators related to HIV care and prevention or IPV prevention and treatment, we performed exploratory analysis to examine potential differences. Our preliminary analyses show that for several indicators the proportion of IPV-positive women reporting beneficial behavior change or intent was higher in the intervention relative to the control group (none were significant statistically). This was true for women reporting being better able to take care of their health/well-being, being supported by others to take care of their health/well-being, intending to regularly take PMTCT medications, and intending to ask their partner to use a condom. Intent and behavior regarding CHTS suggests women in the intervention were more cautious than women in the control group, with smaller proportions of women in the intervention reporting discussing CHTS or going to CHTS compared to women in the control (again differences were not significant).

Similarly, among women who experienced physical or sexual violence, the percentage of women in the intervention who took some sort of action was higher—though not significantly so—in the intervention

than the control group on all individual indicators we looked at: following up on their referral, leaving an abusive partner, telling someone about the violence, or going anywhere for help. Notably, despite insufficient power to detect such effects in this sub-population, the difference between intervention and control groups in terms of percentage of women taking any action approached significance: 46 percent of women in the intervention vs. 31 percent of women in the control reported taking one or more actions to address the violence in their lives ($p = 0.073$).

The intervention did not appear to have any unintended harmful effects. Most important, there was no indication that violence increased. Women in the intervention group were no more likely than women in the control group to report exposure to violence since their HTS session (i.e., at second follow-up). No women in the intervention group reported that they were embarrassed about or afraid that someone would find the IPV/power card that they were given by providers.

The percentage of women who disclosed violence to their provider was not ideal—about a third of IPV-positive women disclosed IPV to their provider in the intervention group compared to less than 10 percent in the control group (32 percent vs. 7 percent, $p < 0.0001$)—but 32 percent is higher than rates reported in other studies (O’Doherty et al. 2015; Undie et al. 2016). As with other studies, the number of women who followed up on IPV referrals was disappointingly low. The small number of women who followed up on referrals partially reflects the fact that providers referred only about half of the women who disclosed violence, due mostly to women not wanting a referral. Specifically, in the intervention arm 34 women disclosed violence; providers referred 19 of them, and 12 women followed-up or intended to follow-up on the referral. Again, these figures echo those found in other studies (O’Doherty et al. 2015). These findings raise several points:

First, they suggest that providing some minimal IPV/power counseling to all women—not just screening, and not just to those who disclose violence—may be warranted in settings such as HTS and ANC. Per responses to the survey, recent IPV in this sample affected a full third (35 percent, $N = 241$) of ANC clients, but only a third of these women in the intervention arm—and a much smaller percent in the control arm—disclosed violence to the provider. Thus in many instances ($N = 73$ in the intervention arm and $N = 125$ in the control arm) the provider did not know that the woman was experiencing violence. In the intervention arm, however, these women still received important information about IPV and meaningful social support.

Second, the issue of time to implement the intervention is not inconsequential. The enhanced HTS took longer—on average 6.5 minutes longer—than standard HTS to implement. How do we balance this trade-off in the context of limited resources? This is a point we will further explore with KNH.

Third, the intervention included stationing an additional staff person—a dedicated GBV counselor—in the ANC clinic to make follow up on IPV referrals easier for women. Findings from this study suggest that while it was helpful for some women, for the majority it was not necessary or not needed or desired at the time. Whether a dedicated IPV counselor should be included in the intervention package or not is a question for further research, as it is not an insignificant cost and carries with it sustainability questions. Although this study suggests that most of the positive effects were obtained by the provider training and tools, rather than the dedicated counselor, having a legitimate place for providers to refer to is important, and there may be benefits that build over time as a dedicated counselor becomes known as a confidential support to women experiencing IPV. In the KNH setting, even without a dedicated counselor in the

ANC clinic, KNH still has its GBV Centre to which women could be referred. When testing such interventions in other settings the presence and proximity of a referral destination would also need to be considered when deciding whether to include or test this element.

Fourth, it is a reminder that referrals and referral follow-up are not the only beneficial outcomes we should be aspiring to. Women reported a range of other actions—including leaving their partner—that will positively affect their health and well-being. Taking a perspective that considers a range of positive responses—via verbal and written reminders for clients that there are resources and support available, regardless of what a woman chooses to do at the particular moment she is receiving the information, is one way to do this. Moreover, the provision of social support to women experiencing IPV has been linked with improved physical and mental health outcomes (Coker et al. 2003; Kamimura et al. 2013). The fact that this pilot intervention significantly increased women’s reports of receiving meaningful support is thus an important intermediate outcome.

Fifth, an approach such as the one taken by this pilot appears to trickle outward and allows for what is sometimes a gradual process of disclosure. In the course of project monitoring, we learned that several women who were not part of the study came to the ANC clinic to see the IPV counselor because they had heard about it from other women who had participated. Also some women who were in the study and had not disclosed their IPV experience at first, returned later to say that they were in fact experiencing violence and would like to see the counselor. Unfortunately, beyond anecdotal reports, we did not capture this with our data collection. Perhaps repeating all or some of the intervention during multiple ANC visits would better reflect the fact that recognition and disclosure of violence can be a gradual process.

Sixth, this study suggests—though it was not powered to determine—that there are potentially positive health and behavioral benefits to including IPV/power in HTS counseling. A larger study, incorporating lessons from this pilot—such as extending provider training from one day to two—is warranted. The higher prevalence of HIV among IPV-positive women, coupled with IPV-positive women’s lower likelihood of linking to treatment, adhering to treatment protocols, and staying in care, suggest that such an intervention can contribute to achieving the 90-90-90 targets.

Finally, we note several limitations and considerations. The findings, while encouraging, and obtained with a rigorous randomized design, have limited generalizability. Our study population was urban, relatively older, and more highly educated than the general Kenyan population. Also, we note that KNH is an unusual hospital in terms of the pre-existing awareness and infrastructure for addressing IPV. Replicating this intervention in other settings would entail more upfront awareness raising and likely more work to establish referral linkages. While we sought to ensure that no spillover occurred between intervention and control groups, it is possible that some counselors, intentionally or not, provided all or part of the intervention to women in the control group. This could have led to an underestimation of the effect of the intervention.

Just as the findings generated questions for further study (above), the limitations also raise a number of questions. For example, would the study have seen higher numbers of referrals and follow up if it had been longer (both study length overall and length of the counseling intervention)? Or provided more training for staff? Would it have identified greater impact on health seeking behaviors if it had greater statistical power? Or if we had used a cluster randomized design that would have prevented spillover?

Nonetheless, the pilot intervention—using simple tools and provider training and support—demonstrated some significant positive intermediate effects, as well as encouraging exploratory results. It also found, as previous studies have, that trained providers find this work important from a health and compassion perspective and rewarding from a personal and professional perspective.

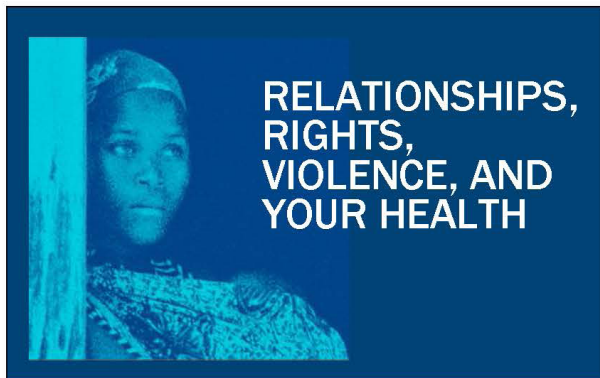
Given the high prevalence of IPV, and its significant association with adverse HIV and other health and development outcomes, including its effects on linkage to treatment, adherence, and retention, we hope these findings contribute to ongoing efforts in the field to meet 90-90-90 targets and refine and improve efforts to address IPV in HTS. With free maternal and child health care now available in all public facilities in Kenya, ANC services provide an important opportunity to do so.

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APPENDIX A



RELATIONSHIPS, RIGHTS, VIOLENCE, AND YOUR HEALTH

What you can do if you are being hurt, or if you feel powerless or afraid in your relationship

- Speak with a GBV counselor—just talking with someone can make a difference.
- Discuss with a counselor some ways that you could safely talk with your partner about HIV testing, couples HCT, and condom use
- Make a safety plan in case you suddenly need one, or get a referral to a safe shelter.
- If you don't want to or aren't ready to leave him, join a survivors' support group, attend services for couples, or connect your partner to programs for men that teach how to manage conflict without violence
- Join a women's group to empower you and open you to other pathways in your life
- Remember, **no one has the right to your body, it is your own**

Resources

You are not alone. There are people and services here and elsewhere in Nairobi that provide free and confidential help.

- Gender Based Violence Recovery Centre, Kenyatta National Hospital (Old Hospital Building)
Call: 0733 606 400 or 0722 829 501 Ext. 44101 or 43136
- Women's Rights Awareness Programme*
Mvuli Lane, off Thika Superhighway (next to Mathari Hospital)
Call: 0721367677 or 0722 252 939
* Provides safe shelter
- Nairobi Women's Hospital, Gender Violence Recovery Centre (Hurlingham Centre, Adams Arcade and Ongata Rongai)
Call: 0202 716 651
- Centre for Rights Education and Awareness
Chalbi Drive House No. 55, Lavington (off Issac Gathanju Road)
Call: +254 20 237 8271 or +254 720 357 664

Did you know?

- **1 out of every 4 women in Nairobi** has experienced physical or sexual violence by her male partner; many more have been in a relationship where her partner does not treat her well, for example, controlling her actions and controlling decisions that affect her.
- Being in relationships with men who are abusive or controlling makes it difficult for a woman to protect her health and well-being.
- This **increases a woman's risk for HIV, STIs, unintended pregnancy and other health problems**. It increases her baby's risk of poor health too.

How is my relationship? Think about:

- How is my partner's communication? Is he honest and open with me?
- Who is mostly responsible for making the decisions in my relationship? Does my partner value my opinions and respect my choices?
- Does my partner support my seeking health care, including contraception, and care for my pregnancy?
- How does my partner treat me? Is he respectful of me and kind to me?

If your relationship is good or has improved, the information on this card can help in case you are ever in a difficult situation in the future, or if you know a friend who needs help.

What types of worries do I have in my relationship? Think about:

- Does my partner grab me, push me, or physically hurt me?
- Does my partner make me have sex or do sexual things that I don't want to? Am I afraid to ask him to use condoms?
- Does my partner shame or humiliate me, threaten me, or make me feel afraid?
- Does he control where I go, who I talk to, what I do, or how I spend money?
- Am I afraid my partner would hurt me if I told him I had an STI or HIV and he needed to be tested too?



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FUTURES
WITHOUT VIOLENCE



Remember, you deserve to be safe and healthy!

Remember:

- You matter. **You have a right to be free from violence.**
- **You are not to blame** if you are experiencing any form of abuse.
- If your partner is violent, or even if he just acts a little intimidating or controlling, it makes it a lot harder for you to stay healthy.
- There are people here who can help you. The providers will not judge you and you have nothing to be ashamed of.
- We can help you come up with strategies, or connect you to services, to help keep yourself and your baby safe and healthy.

APPENDIX B

Table B-I Selective attrition by sample characteristics

	Total N = 688 N (%)	Retained N = 535 N (%)	Lost to follow-up N = 153 N (%)	P-value*
Age				
Mean (SD)	29 (± 5)	29 (± 5)	29 (± 6)	0.59
Age group				
15-19	11 (2)	7 (1)	4 (3)	0.35
20-24	112 (16)	83 (16)	29 (19)	
25-29	233 (34)	191 (36)	42 (28)	
30-34	204 (30)	157 (30)	47 (31)	
35-39	105 (15)	79 (15)	26 (17)	
40-45	18 (3)	15 (3)	3 (2)	
Education level				
Primary	122 (18)	90 (17)	32 (21)	0.28
Secondary	223 (33)	171 (32)	52 (34)	
College/university	340 (50)	273 (51)	67 (44)	
Marital status^a				
No	124 (18)	91 (17)	33 (22)	0.19
Yes	561 (82)	443 (83)	118 (78)	
HIV status				
Negative	566 (94)	448 (94)	118 (97)	0.27
Positive	34 (6)	30 (6)	4 (3)	
Food insecure				
No	632 (92)	494 (92)	138 (90)	0.40
Yes	56 (8)	41 (8)	15 (10)	
Ever IPV+				
No	423 (62)	327 (61)	96 (65)	0.45
Yes	258 (38)	206 (39)	52 (35)	
IPV+ past 12mo				
No	447 (65)	343 (64)	104 (68)	0.39
Yes	241 (35)	192 (36)	49 (32)	
Intervention group				
Control	351 (51)	267 (50)	84 (55)	0.31
Intervention	337 (49)	268 (50)	69 (45)	

^aMarried or living together; *P-value for Chi-square tests for percentage differences and two-sample t-test for mean differences.

Table B-2 IPV knowledge and attitudes among all women at Rounds 1 and 2

	Total sample R1 N = 688 R2 N = 535 N (%)	Control R1 N = 351 R2 N = 267 N (%)	Intervention R1 N = 337 R2 N = 268 N (%)	P-value
Women who experience IPV are at greater risk of HIV^a				
R1 - Mean (SD)	3.1 (±0.9)	3.0 (±0.9)	3.2 (±0.8)	0.003
R2 - Mean (SD)	3.1 (±0.8)	3.1 (±0.9)	3.1 (±0.8)	0.27
A woman can do nothing if experiencing IPV, she just has to live with it^a				
R1 - Mean (SD)	1.7 (±0.8)	1.8 (±0.8)	1.7 (±0.7)	0.14
R2 - Mean (SD)	1.7 (±0.7)	1.7 (±0.7)	1.7 (±0.7)	0.61
Women have legal right not to be subjected to IPV				
R1 –Yes	643 (95.7)	328 (95.3)	315 (96.0)	0.71
R2 –Yes	515 (96.4)	257 (96.6)	258 (96.3)	1.00
Woman can legally divorce husband due to cruel treatment				
R1 –Yes	637 (94.5)	325 (93.9)	312 (95.1)	0.61
R2 –Yes	511 (95.9)	255 (95.9)	256 (95.9)	1.00
Know of any organization that help women experiencing IPV				
R1 –Yes	365 (53.5)	190 (54.4)	175 (52.6)	0.65
R2 –Yes	360 (67.3)	181 (67.8)	179 (66.8)	0.85
Have heard of safe home				
R1 –Yes	86 (12.6)	46 (13.2)	40 (12.0)	0.73
R2 –Yes	130 (24.3)	69 (25.8)	61 (22.8)	0.42
Heard of GBV Center at KNH				
R1 –Yes	189 (27.7)	75 (21.5)	114 (34.2)	0.0002
R2 –Yes	370 (69.2)	160 (59.9)	210 (78.4)	< 0.0001
Attitudes toward wife beating^b				
R1 –Agrees with ≥ 1 reason	190 (28.2)	108 (31.1)	82 (25.1)	0.087
R2 –Agrees with ≥ 1 reason	107 (20.0)	58 (21.8)	49 (18.3)	0.33

^aMeasured on 4-pt Scale: 4 = Strongly agree; 3 = Agree; 2 = Disagree; 1 = Strongly disagree

^bAgrees with wife beating is justified for at least one of following reasons: if woman goes out without telling husband, neglects children, refuses sex, burns food.

Table B-3 IPV+ and/or low power women: Perceived intervention support, Rounds 1 and 2

	IPV+ and/or lower power women R1 N = 350 R2 N = 273 N (%)	Control R1 N = 192 R2 N = 145 N (%)	Intervention R1 N = 158 R2 N = 128N (%)	P-value
Talking with provider made positive difference^a				
Round 1				
No	285 (81.4)	178 (92.7)	107 (67.7)	< 0.0001
Yes- A lot	65 (18.6)	14 (7.3)	51 (32.3)	
Round 2				
No	218 (80.1)	124 (86.1)	94 (73.4)	0.01
Yes- A lot	54 (19.9)	20 (13.9)	34 (26.6)	
Learned new things about a woman's rights in her relationship^b				
Round 1				
No	7 (14.9)	3 (30.0)	4 (10.8)	0.15
Yes	40 (85.1)	7 (70.0)	33 (89.2)	
Round 2				
Mean (SD)	23 (+/- 1.1)	2.0 (+/- 1.0)	2.6 (+/- 1.1)	< 0.0001
Feel better able to take care of health than before visit^c				
Round 1				
Same	39 (11.1)	31 (16.1)	8 (5.1)	0.001
Better	311 (88.9)	161 (83.9)	150 (94.9)	
Round 2				
Same	15 (5.5)	8 (5.6)	7 (5.5)	1.0
Better	257 (94.5)	136 (94.4)	121 (94.5)	
Feel more confident in how deserve to be treated^c				
Round 1				
Same	92 (26.9)	72 (39.1)	20 (12.7)	< 0.0001
Better	250 (73.1)	112 (60.9)	138 (87.3)	
Round 2				
Same	62 (22.8)	42 (29.2)	20 (15.6)	0.009
Better	210 (77.2)	102 (70.8)	108 (84.4)	

^aResponse coded as “Yes a lot” vs. “A little,” “A fair amount,” or “Not at all”

^b4-point scale, 4 = “Yes a lot,” 1 = “Not at all”

^cResponse coded as “Better,” “Same,” or “Worse.” Note: No women responded “Worse.”

Table B-4 All women: Perceived intervention support, Rounds 1 and 2

	Total sample N = 688 N (%)	Control N = 351 N (%)	Intervention N = 337 N (%)	P-value
Talking with provider about power and women's rights made a positive difference^a				
Round 1				
A little/fair amount/not at all	539 (79.0)	320 (91.7)	219 (65.8)	< 0.0001
Yes—A lot	143 (21.0)	29 (8.3)	114 (34.2)	
Round 2				
A little/fair amount/not at all	416 (78.3)	230 (87.1)	186 (69.7)	< 0.0001
Yes—A lot	115 (21.7)	34 (12.9)	81 (30.3)	
Learned new things about a woman's rights in her relationship^b				
Round 2 ^c				
Mean (SD)	2.3 (±1.1)	2.0 (±1.0)	2.7 (±1.1)	< 0.0001
Feel better able to take care of health than before visit^d				
Round 1				
Same	60 (8.8)	47 (13.5)	13 (3.9)	< 0.0001
Better	622 (91.2)	302 (86.5)	320 (96.1)	
Round 2				
Same	20 (3.8)	11 (4.1)	9 (3.4)	0.66
Better	513 (96.2)	255 (95.9)	258 (96.6)	
Feel more confident in how deserve to be treated^d				
Round 1				
Same	167 (24.9)	130 (38.3)	37 (11.1)	< 0.0001
Better	504 (75.1)	209 (61.7)	295 (88.9)	
Round 2				
Same	100 (18.8)	70 (26.3)	30 (11.3)	< 0.0001
Better	432 (81.2)	196 (73.7)	236 (88.7)	

^a Response coded as “Yes a lot” vs. “A little,” “A fair amount,” or “Not at all”

^b Variable not comparable between R1 and R2; R2 data is displayed only

^c 4-point scale, 4 = “Yes a lot;” 1 = “Not at all”

^d Response coded as “Better,” “Same,” or “Worse.” Note: No women responded “Worse.”

Table B-5 Women who experienced IPV in last 12 months: Experiences of IPV since receiving HTS (as reported at Round 2)

	IPV+ past 12 months N = 241 N (%)	Control N = 134 N (%)	Intervention N = 107 N (%)	P-value
Emotional IPV since last interview				
No	139 (72.4)	72 (69.9)	67 (75.3)	0.42
Yes	53 (27.6)	31 (30.1)	22 (24.7)	
Physical IPV since last interview				
No	171 (89.1)	93 (90.3)	78 (87.6)	0.65
Yes	21 (10.9)	10 (9.7)	11 (12.4)	
Sexual IPV since last interview				
No	176 (91.7)	94 (91.3)	82 (92.1)	1.00
Yes	16 (8.3)	9 (8.7)	7 (7.9)	
Physical or sexual IPV since last interview				
No	161 (83.9)	88 (85.4)	73 (82.0)	0.56
Yes, physical or sexual IPV	31 (16.1)	15 (14.6)	16 (18.0)	
IPV+ since last interview (any type)				
No	124 (64.6)	65 (63.1)	59 (66.3)	0.65
Yes	68 (35.4)	38 (36.9)	30 (33.7)	

Table B-6 Exploratory analysis among women experiencing IPV: Agency and behaviors related to CHTS, health, PMTCT, and condom use (Round 2)

	Total IPV+ past 12 months N = 241 N (%)	Control N = 134 N (%)	Intervention N = 107 N (%)	P-value
Could ask partner to go to couples HTC				
Yes—A lot	115 (73.2)	62 (71.3)	53 (75.7)	0.59
Agree somewhat or disagree	42 (26.8)	25 (28.7)	17 (24.3)	
My partner and I have discussed going to CHTC				
Yes—A lot	90 (55.2)	49 (55.7)	41 (54.7)	1.00
Agree somewhat or disagree	73 (44.8)	39 (44.3)	34 (45.3)	
My partner and I have received CHTC				
Yes—A lot	30 (18.4)	18 (20.0)	12 (16.4)	0.69
Agree somewhat or disagree	133 (81.6)	72 (80.0)	61 (83.6)	
Can take better care of my health/well-being				
Yes—A lot	156 (83.9)	81 (80.2)	75 (88.2)	0.16
Agree somewhat or disagree	30 (16.1)	20 (19.8)	10 (11.8)	
Am more supported by others to take care of my health/well-being				
Yes—A lot	127 (75.1)	67 (72.8)	60 (77.9)	0.48
Agree somewhat or disagree	42 (24.9)	25 (27.2)	17 (22.1)	
I will regularly take PMTCT medications				
Yes—A lot	24 (54.5)	11 (47.8)	13 (61.9)	0.38
Agree somewhat or disagree	20 (45.5)	12 (52.2)	8 (38.1)	
I can ask my partner to use a condom				
Yes—A lot	76 (52.8)	41 (48.8)	35 (58.3)	0.31
Agree somewhat or disagree	68 (47.2)	43 (51.2)	25 (41.7)	

All indicators initially assessed on 5pt scale: 5 = Agree a lot, 4 = Agree somewhat, 3 = Neither agree nor disagree, 2 = Disagree somewhat, 1 = Disagree a lot, then dichotomized as indicated.

Table B-7 Exploratory analysis among women experiencing physical or sexual violence: Proportion who reported taking an action since the first follow up interview; control compared to intervention at 2nd follow-up

Variables	Total N = 145 N (%)	Control N = 79 N (%)	Intervention N = 66 N (%)	Chi-square p-value*
Followed up on referral				
No	98 (86.0)	53 (89.8)	45 (81.8)	0.163
Yes	16 (14.0)	6 (10.2)	10 (18.2)	
Left partner (p209)				
No	23 (57.5)	14 (70.0)	9 (45.0)	0.100
Yes	17 (42.5)	6 (30.0)	11 (55.0)	
Told someone (p910)				
No	91 (79.1)	48 (81.4)	43 (76.8)	0.354
Yes	24 (20.9)	11 (18.6)	13 (23.2)	
Went anywhere for help (p912)				
No	23 (88.5)	11 (91.7)	12 (85.7)	1.00
Yes	3 (11.5)	1 (8.3)	2 (14.3)	
Any of above^a				
No	71 (62.3)	41 (69.5)	30 (54.6)	0.073
Yes	43 (37.7)	18 (30.5)	25 (45.5)	

*Fishers exact test used when cell counts < 5.

^a“Any of above” means yes to any of following categories: followed up on referral, left partner, told someone, or went anywhere for help.

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