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HIV assisted partner services among those with and without a history of intimate partner violence in Kenya

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Abstract

Background—HIV Assisted Partner Services (APS) are a notification and testing strategy for sex partners of HIV-infected index patients. This cluster-randomized controlled trial secondary data analysis investigated whether history of intimate partner violence (IPV) modified APS effectiveness and risk of relationship dissolution.

Setting—Eighteen HIV testing and counseling sites in Kenya randomized to provide immediate APS (intervention) or APS delayed for 6 weeks (control).

Methods—History of IPV was ascertained at study enrollment and defined as reporting ever experiencing physical or sexual IPV. Those reporting IPV in the month before enrollment were excluded. We tested whether history of IPV modified intervention effectiveness and risk of relationship dissolution using population-averaged Poisson and log-binomial generalized

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estimating equation (GEE) models. Exploratory analyses investigated associations between history of IPV and events that occurred after HIV diagnosis using log-binomial GEE models.

Results—The study enrolled 1119 index participants and 1286 partners. Among index participants, 81 (7%) had history of IPV. History of IPV did not modify APS effectiveness in testing, newly diagnosing, or linking partners to care. History of IPV did not modify the association between receiving immediate APS and relationship dissolution during the study.

Conclusion—Among participants who had not experienced IPV in the last month but had experienced IPV in their lifetimes, our results suggest that APS is an effective and safe partner notification strategy in Kenya. As APS is scaled up in different contexts, these data support including those reporting past IPV and closely monitoring adverse events.

Keywords

HIV; Assisted Partner Services; Partner Notification; Africa; Intimate Partner Violence

Introduction

In working towards ending the AIDS epidemic, it is critical to get HIV-infected individuals in care and virally suppressed to improve their own health and prevent the infection of others. Assisted Partner Services (APS), also called provider referral, involve a health care professional actively helping those newly diagnosed with HIV ("index patients") to notify and provide testing and linkage to care services to partners; this is in contrast to passive referral, which leaves index patients responsible for notifying their partners on their own. APS has been found to be more effective than passive referral in identifying and testing partners of HIV-infected index patients in high and low-resource settings.[1–7] Of the estimated 1.2 million people living with HIV in Kenya, approximately 53% are unaware of their HIV-positive status.[8,9] In Kenya, passive referral is the standard of care, and targeted prevention strategies are needed to increase the proportion of those living with HIV who know their status.

An estimated 41% of ever-married women and 11% of ever-married men aged 15-49 in Kenya have experienced physical or sexual violence from a partner in their lifetimes.[10] Before implementing APS as a national HIV prevention strategy in Kenya, it will be important to understand the impact and safety of APS among those who have experienced IPV. In sub-Saharan Africa, HIV partner services studies have reported very few incidences of social harms occurring throughout the course of research.[5,7,11] None of these studies looked at the impact of having a history of IPV on the effectiveness or safety of HIV partner services.

Understanding the effectiveness and risk of social harms associated with APS among those who have experienced IPV will help inform decisions about how best to notify partners of HIV exposure in that vulnerable population. Partners of those reporting IPV may be less likely to seek HIV and sexually transmitted infection (STI) testing than partners of those who do not report IPV.[12,13] A history of IPV has been found to be associated with experiencing negative consequences upon disclosure of a positive HIV test result to a

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partner.[14] This study determined whether history of IPV modifies the effectiveness and risk of relationship dissolution associated with HIV APS in Kenya.

Methods

Analyses were performed using data from a multicenter cluster-randomized controlled trial of APS in Kenya that enrolled HIV-positive index participants from August 2013 to 2015. Detailed protocol and methods have been published.[6,19] Briefly, 18 HIV testing and counseling sites were randomized to receive immediate APS (intervention) or APS delayed for 6 weeks (control). To be eligible for the study, index participants had to be at least 18 years old, be able to give informed consent, test HIV-positive at one of the study sites, not be enrolled in HIV care, and be willing to provide information on at least one sex partner from the preceding 3 years. Index participants were excluded if they were pregnant or had experienced IPV in the month before study screening due to ethical and safety considerations. Sex partners of index participants were eligible for the study if they were at least 18 years old and able to provide informed consent. Institutional review boards at Kenyatta National Hospital and the University of Washington approved the study, and all participants provided written informed consent.

History of IPV was assessed during the screening prior to enrollment. Index participants reported experiences of physical, emotional, or sexual violence from a partner in the past month or ever. Physical IPV included being physically hurt by a partner. Emotional IPV included being threatened, frightened, insulted, or treated badly by a partner. Sexual IPV included being forced by a partner to participate in sexual activities. If index participants experienced any of the 3 IPV types in the month before screening, they were excluded from the study and referred to IPV counseling and services. If they had ever experienced any type of IPV, but not in the past month, they were included in the study but monitored at 10, 20, and 30 days after enrollment for IPV events and referred for IPV counseling and services if they experienced any IPV events. Any potentially study-related IPV was reported to the study's safety committee. In this analysis, the subgroup of participants with a history of IPV includes only those who have experienced physical or sexual violence to remain consistent with the way IPV is customarily defined.[20]

The primary outcomes were the rates of partners tested, newly diagnosed, and linked to care per index participant, and these outcome definitions have been published.[6] The secondary outcome was relationship dissolution, and it was assessed during the standardized interview at the 6-week follow-up visit. At the 6-week follow-up visit, index participants were asked if they had experienced physical, emotional, or sexual IPV in the last month or ever.

Population-averaged Poisson models with exchangeable correlation structure were used to evaluate the associations between receiving immediate APS and rates of partner testing, new HIV diagnosis, and linkage to care per index participant. Incidence rate ratios were calculated for each outcome, stratified by history of IPV, and tests for interaction between APS arm and history of IPV used a 5% alpha level. Log-binomial generalized estimating equation (GEE) models, with exchangeable correlation structure and robust standard errors, were used to evaluate the association between receiving immediate APS and relationship

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dissolution. Estimates are presented as relative risks (RRs) and 95% confidence intervals (CIs) stratified by history of IPV, and a test for interaction between the APS arm and history of IPV used a 5% alpha level.

In exploratory analyses, we investigated the associations between having a history of IPV and events that occurred after HIV diagnosis using bivariable log-binomial GEE models, with exchangeable correlation structure and robust standard errors. All associations were stratified by sex and reported as RRs with 95% CIs. All analyses were conducted using Stata 13.0 (StataCorp, College Station, TX).

Results

Of the 1760 index participants approached by the study staff, 1183 were assessed for eligibility, and 1119 were enrolled into the study. Among those assessed for eligibility, 30 (3%) had experienced physical, sexual, or emotional IPV within the month before screening and were excluded from the study. Of the 1119 enrolled index participants, 963 (86%) returned for the 6-week follow-up visit. The study enrolled 1286 of the sex partners of the enrolled index participants. Demographic characteristics of index participants and sex partners are published.[6] Of the 1119 enrolled index participants, 81 (7%) had ever experienced physical or sexual IPV at baseline. Of those with a history of IPV, 69 (85%) were female and 12 (15%) were male.

Among female index participants, history of IPV was associated with younger age (p=0.028) and being single (p=0.060), and there were no significant differences in sexual behavior or economic characteristics between those with and without history of IPV. Among male index participants, history of IPV was associated with using a condom at last sex (p=0.023), and there were no significant differences in demographic, other sexual behavior, or economic characteristics between those with and without history of IPV.

There were no significant interactions between receiving immediate APS and history of IPV on the rates of partners tested (interaction p=0.775), partners newly diagnosed (interaction p=0.870), partners newly linked to care (interaction p=0.927), or risk of relationship dissolution (interaction p=0.791) (Table 1). Female index participants with a history of IPV were nearly 3 times as likely as those without a history of IPV to experience relationship dissolution during the study (RR 2.67, 95%CI 1.45, 4.90) (Table 2). Male index participants with a history of IPV were 4 times as likely as those without a history of IPV to experience relationship dissolution during the study (RR 4.18, 95%CI 1.52, 11.48).

Receiving APS was not associated with reporting physical or sexual IPV at the 6-week follow-up visit (5% in immediate arm vs. 3% in delayed arm; p=0.381). Of the reports of IPV during the study, the study staff determined that 2 events (1 in the Immediate APS study arm and 1 in the Delayed APS study arm) could possibly be related to study participation.

Discussion

In this cluster-randomized controlled trial of APS in Kenya that excluded those who experienced IPV in the month prior to enrollment, APS was effective in testing, newly

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diagnosing, and newly linking to care the sex partners of index participants with and without a history of IPV. APS was not associated with relationship dissolution during the study among those with or without a history of IPV. Unrelated to receiving APS, index participants with a history of IPV had higher rates of relationship dissolution during the study when compared to those without a history of IPV. Taken together, receiving APS did not increase risk of relationship dissolution, but those with a history of IPV may be at higher risk of relationship dissolution after HIV diagnosis.

In contrast to the United States and Kenyan studies that found abusive partners to be less likely to cooperate in HIV/STI testing and treatment, our study results suggest that partners of those with a history of IPV are no more or less likely than those without a history of IPV to get tested and linked to care after being notified of HIV exposure.[12,13] Our finding of an association between history of IPV and relationship dissolution is consistent with the results of another study that found that a history of IPV was associated with negative consequences upon HIV disclosure, such as relationship dissolution.[14] While those with a history of IPV may be at an increased risk of relationship dissolution as a result of HIV status disclosure, our study found that this risk was similar for those who received and did not receive immediate APS. This finding was also consistent with the results of other studies that did not find an increased risk of social harms as a result of partner notification.[5,7,11,21–23] The counseling that the notified partner received from the health advisor may have contributed to APS not exacerbating the risk of relationship dissolution among those with a history of IPV. In addition, the index participant's identity was kept confidential and those with a history of IPV were monitored for IPV events at 10, 20, and 30 days after enrollment, which may have helped to avoid negative consequences of disclosure.

While receiving APS was not associated with reporting physical or sexual violence at the 6-week follow-up visit, there were limitations in our measurement of IPV at follow-up. Participants may have failed to disclose a history of IPV at baseline and reported their history at follow-up instead, and it is not clear if those who reported ever experiencing IPV at follow-up were reporting IPV that occurred during or before the study. The inability to determine the timing of some of the reported IPV prevented this analysis from investigating incident IPV as a social harm outcome in the main analyses. Study participants were asked one question about each type of IPV (physical, emotional, and sexual) at enrollment and follow-up, and respondents may be more likely to disclose IPV if asked about specific acts of violence separately while provided with multiple opportunities to disclose history of IPV.[24] Another limitation was that index patients who experienced IPV within a month of enrollment were excluded from the study, which may not make our results generalizable to those at highest risk for IPV. In addition, this study did not collect data on whether the perpetrator of IPV was a current or past partner. Taking these limitations into consideration, the small number of IPV events that were possibly study related indicates that APS was safe among study-eligible participants.

Among participants who had not experienced IPV in the last month but had experienced IPV in their lifetimes, our results suggest that APS is an effective and safe partner notification strategy in Kenya. As APS is scaled up in different contexts, these data support including those reporting past IPV and closely monitoring adverse events and positive outcomes.

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Table 1

Association between receiving immediate APS and various outcomes, by history of IPV status

Outcomes	History of IPV RR (95% CI)	No History of IPV RR (95% CI)	Interaction p value[1]
Partner testing	4.49 (1.89, 10.65)	5.12 (4.01, 6.53)	0.775
Partner new diagnosis	7.48 (0.96, 58.41)	8.93 (5.22, 15.28)	0.870
Partner new linkage to care	5.23 (0.64, 42.54)	4.74 (3.01, 7.47)	0.927
Relationship dissolution	1.35 (0.53, 3.44)	1.52 (0.95, 2.45)	0.791

[1] Interaction between receiving immediate APS and having a history of IPV on the various outcomes.

APS, assisted partner services; IPV, intimate partner violence; RR, relative risk

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Table 2

Associations between having a history of IPV and notification, relationship, and clinical outcomes, stratified by sex

	History of IPV		No History of IPV		RR	
Outcomes	**#/total**	**(%)**	**#/total**	**(%)**	**(95% CI)**	**p value**
Female Index Participants						
Notification Information (by 6-week follow-up)						
Notified partner(s) on own	21/59	(35.6)	276/538	(51.3)	0.76 (0.55, 1.05)	0.100
Relationship Outcomes (by 6-week follow-up)						
Relationship dissolution	12/59	(20.3)	37/538	(6.9)	2.67 (1.45, 4.90)	0.002
Clinical Outcomes (by enrollment or follow-up visits)						
Linked to Care	60/69	(87.0)	541/621	(87.1)	1.00 (0.89, 1.12)	0.991
On ART	33/69	(47.8)	283/621	(45.6)	1.08 (0.84, 1.38)	0.550
Male Index Participants						
Notification Information (by 6-week follow-up)						
Notified partner(s) on own	8/9	(88.9)	254/357	(71.2)	1.26 (0.99, 1.61)	0.062
Relationship Outcomes (by 6-week follow-up)						
Relationship dissolution	2/9	(22.2)	19/357	(5.3)	4.18 (1.52, 11.48)	0.006
Clinical Outcomes (by enrollment or follow-up visits)						
Linked to Care	9/12	(75.0)	367/417	(88.0)	0.85 (0.61, 1.20)	0.356
On ART	8/12	(66.7)	219/417	(52.5)	1.27 (0.89, 1.80)	0.192

IPV, intimate partner violence; RR, relative risk; ART, antiretroviral therapy