Perpetration of partner violence and HIV risk behaviour among young men in the rural Eastern Cape, South Africa

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Objectives: To examine associations between the perpetration of intimate partner violence and HIV risk behaviour among young men in rural South Africa.

Design: An analysis of baseline data from men enrolling in a randomized controlled trial of the behavioural intervention, *Stepping Stones*.

Methods: Structured interviews with 1275 sexually experienced men aged 15–26 years from 70 villages in the rural Eastern Cape. Participants were asked about the type, frequency, and timing of violence against female partners, as well as a range of questions about HIV risk behaviours.

Results: A total of 31.8% of men reported the perpetration of physical or sexual violence against female main partners. Perpetration was correlated with higher numbers of past year and lifetime sexual partners, more recent intercourse, and a greater likelihood of reporting casual sex partners, problematic substance use, sexual assault of non-partners, and transactional sex. Men who reported both physical and sexual violence against a partner, perpetration both before and within the past 12 months, or more than one episode of perpetration reported significantly higher levels of HIV risk behaviour than men who reported less severe or less frequent perpetration of violence.

Conclusion: Young men who perpetrate partner violence engage in significantly higher levels of HIV risk behaviour than non-perpetrators, and more severe violence is associated with higher levels of risky behaviour. HIV prevention interventions must explicitly address the links between the perpetration of intimate partner violence and HIV risk behaviour among men, as well as the underlying gender and power dynamics that contribute to both.   © 2006 Lippincott Williams & Wilkins

Introduction

Gender-based violence is increasingly cited as a critical element in the continued spread of the HIV pandemic [1–9], and research with women suggests that intimate partner violence (IPV) is indeed an important risk factor for HIV infection. Research from the USA has consistently shown that experience of IPV may lead to

increased HIV risk behaviour [10–15], whereas studies conducted in Tanzania, Rwanda and South Africa have found that HIV-positive women were more likely than HIV-negative women to report a history of physical or sexual abuse [6,7,9,16]. A study in South Africa found that women who had experienced IPV were more likely to be HIV positive even after controlling for a range of associated risky behaviours (adjusted odds ratio 1.48; 95% confidence interval 1.15, 1.89) [9]. This finding suggests that experiencing IPV may be an independent risk factor for acquiring HIV infection among women. One possible explanation for the association is that men who perpetrate partner violence are more likely than other men to engage in HIV risk behaviours and as a result are more likely to be HIV positive.

A small number of studies support this hypothesis. Research on men who rape has consistently found that they have more sexual partners [17–19] and are younger at first sex [17,19]. Research among working men in Cape Town [20], married men in India [21], and men in methadone maintenance in New York [22] has found that men who report perpetrating partner violence are more likely to have concurrent sexual partnerships. Men in methadone maintenance who abused their partners were also more likely to report unprotected anal sex and sex with a drug-injecting partner [22], whereas abusive men in India were more likely to report unplanned pregnancies among their wives and have sexually transmitted disease symptoms [19]. However, measures of sexual risk used in individual studies to date have generally been limited, as has the ability to establish the temporal relationship between acts of IPV perpetration and incidents of HIV risk behaviour [20–22]. No study has yet attempted to examine whether the increasing severity of IPV perpetration correlates with increased levels of risky behaviour.

We drew on data from young Xhosa men participating in the baseline phase of an HIV prevention trial in the rural Eastern Cape province of South Africa [23] to explore associations between the self-reported perpetration of IPV and HIV risk behaviour. We focused on behaviours with a demonstrated association with HIV infection in South Africa: the number of sexual partners [9,24–26] having casual sexual partners [9,27], time since last sex [16], and participation in transactional sex [28,29]. We also included risk factors for these behaviours: alcohol and drug use [28] and the rape of women who are not main partners [19,30]. Condom use was not included as an outcome because of its inconsistent relationship with gender-based violence in previous work in South Africa [8,9]. We explored whether observed associations between violence and HIV risk behaviour vary by the type, duration, and frequency of IPV perpetration.

Methods

Between 2002 and 2003 we recruited 1396 men aged 15–26 years into a randomized controlled trial [23] to evaluate the *Stepping Stones* HIV prevention programme [31,32]. Participants were volunteers from 70 villages near Mthatha in the rural Eastern Cape and were mostly recruited through secondary schools [23]. We present data from 1275 men who reported having sex at least once. We dropped from the analysis 83 men who had never had sex, 25 who provided no information on whether they had had sex, and 13 who provided incomplete information on the perpetration of IPV.

Face-to-face interviews using a structured questionnaire were administered in Xhosa by young male fieldworkers. Participants were asked about a range of demographic factors including age, education, earning money, and household socioeconomic status. Alcohol use was measured using the AUDIT; a score of 8 of higher was considered indicative of a problem [33]. Illicit drug use was assessed by asking participants whether they had ever used marijuana, mandrax, injectable drugs, substances that were sniffed, or other substances. Several questions established timing, condom use, and partner type at last sex. Six questions established past year and lifetime numbers of main girlfriends, *khwapheni* (hidden partners concurrent with main partners), and women with whom the respondent had sex only once [23,34]. Men reporting either *khwapheni* or once-offs were considered to have casual partners. Transactional sex was defined as giving or receiving a range of material goods or cash to or from a *khwapheni* or once-off partner [28]. Rape or attempted rape of a woman who was not a girlfriend was measured with five behaviourally specific questions [19,23].

Intimate partner violence

The perpetration of physical or sexual violence against a man's current or ex-girlfriend was assessed using an adaptation of the World Health Organization violence against women instrument [35]. Six items on physical violence were covered: pushed, shoved, slapped, hit with fist, kicked, beaten up, strangled, burnt, hurt/threatened with a weapon, and throwing something that could hurt her. Four sexual violence items asked about physically forcing a girlfriend to have sex when she did not want it, frightening her into having sex, and forcing her to have oral sex or anal sex. All questions were asked both for the past year and 'before the past year', and participants were asked to indicate whether the behaviour happened never, once, a few times, or many times. Men who only responded 'once' to all queries about frequency were classified as perpetrating violence only once because even men who endorsed multiple items could have perpetrated only one multifaceted event.

Ethical approval for the study was given by the University of Pretoria. Written informed consent was given by

participants before formal registration in the study and the first interview.

Statistical analysis

The study was a stratified, two stage survey with villages sampled from predefined strata based on geographical characteristics and participants clustered within villages [23]. Descriptive data analysis was carried out using the svy commands in Stata 9 (Stata Corp., College Station, Texas, USA) to compute standard errors. Descriptive statistics were first calculated for all variables; and two-way associations were determined between categories of IPV perpetration and each of the measures of HIV risk behaviour.

To examine in detail whether a history of perpetrating IPV predicted recent risk behaviour, we constructed multiple regression models for the number of female partners in the past 12 months, time since last sex and having a casual partner in the past year. These time frames and variables were chosen to minimize recall bias and increase our ability to examine temporal relationships between perpetration and risk behaviour. We modelled each outcome with respect to type, temporality, and frequency of IPV perpetration. Each was treated as a categorical variable and used no IPV perpetration as the referent group. Multivariable models were generally constructed using xt commands in Stata, which adjust for clusters as latent variables within the model.

The number of partners in the past 12 months, as count data, was modelled using xtpoisson to compute incidence rate ratios. Because of the non-normal distribution of time since last sex, we created a categorical variable representing quartiles of the distribution and performed ordinal regression using gllamm with link(ologit) [36]. Having a past year casual partner was modelled using xtlogit.

We tested a range of potential confounders for inclusion in the models, including sociodemographics, sexual history, substance use, and the perpetration of sexual violence against a woman other than a girlfriend. Variables that altered the point estimate for any association between IPV and an outcome by 10% or more were considered to be significant confounders [37]; variables of theoretical importance were also retained. All multiple regression models thus adjusted for age, elapsed time since sexual debut, familial socioeconomic status, alcohol problems, and drug use. For time since last sex, we also adjusted for the presence of a current girlfriend.

Results

Participants ranged in age from 15 to 26 years, with a mean age of 19.2 years (Table 1). All men reported at least

Table 1. Sociodemographic and behavioural characteristics of 1275 sexually active men aged 15–26 years participating in the *Stepping Stones* HIV Prevention Study in the rural Eastern Cape, South Africa.

Variable	N	%
Demographics		
Age (range 15–26 years, mean 19.2)		
Under 18	370	29.0
18–20	696	54.6
21 and older	209	16.4
Currently has main girlfriend	1142	89.6
Had a main girlfriend in past 12 months	1237	96.0
10 or more years' education	570	44.7
Ever earned money	697	54.7
HIV positive	26	2.0
Perpetration of intimate partner violence		
No intimate partner violence perpetration	869	68.2
Any physical or sexual assault against a girlfriend	406	31.8
Lifetime IPV by type (of N = 406 with any)		
Physical partner violence only	292	71.9
Sexual partner violence only	46	11.3
Both physical and sexual partner violence	68	16.8
IPV by temporality (of N = 406 with any)		
Before past 12 months only	87	21.4
Within past 12 months only	194	47.8
Both before and within past 12 months	125	30.8
Lifetime IPV by frequency (of N = 406 with any)		
All perpetration classified as 'once'	179	44.1
Perpetration more than once	227	55.9
Prevalence of risky behaviour		
Casual partner (ever)	907	71.3
Casual partner (past year)	761	59.7
Transactional sex with casual partners	249	19.5
Alcohol problem (past year)	334	26.2
Illicit drug use (lifetime)	494	38.8
Non-IPV sexual assault	269	21.1

IPV, Intimate partner violence.

one girlfriend in their lifetime, and 96% had at least one girlfriend in the past year. No man was married or cohabiting.

Nearly a third (31.8%) of the men reported ever perpetrating IPV. Among these, 71.9% reported only physical violence, 11.3% reported only sexual violence, and 16.8% reported both types. Men who perpetrated both types of partner violence were more likely to report more than one incident (89.7%) than those reporting physical violence only (41.8%) and those reporting sexual violence only (54.4%). Similarly, those reporting both types of violence were more likely to report perpetration both before and within the past 12 months (73.5%) than those reporting physical violence only (23.0%) and those reporting sexual violence only (17.4%). Men reporting only past year violence (37.9%) and those reporting only previous violence (35.6%) were approximately equally likely to report more than one incident.

The majority of men (71.3%) reported at least one casual partner in their lifetime and 83.9% of these had at least one casual relationship in the past year. The men had been sexually active for a duration of 0–14 years [median 4.4, interquartile range (IQR) 2.9–6.4], and reported one to 105 lifetime female sexual partners (median 5, IQR 3–8),

and 0–31 past year partners (median 2, IQR 1–4). Time since last sex ranged from 0 days to over 6 years (median 14 days, IQR 5–60 days), with 38.1% reporting sex within the past week.

Table 2 shows two-way associations between continuous behavioural measures by type of IPV perpetration. Men who reported physical IPV alone or both physical and sexual IPV reported significantly more lifetime and past year partners and more recent intercourse than non-perpetrators. Men who reported both physical and sexual IPV reported more partners and more recent intercourse than all other men, whereas men who reported sexual IPV only did not differ from the physical violence only group on partner numbers, and reported less recent intercourse.

As shown in Table 3, physical IPV alone was significantly associated with all dichotomously measured HIV risk behaviours assessed. Sexual IPV alone was significantly different from no IPV only for casual partners, alcohol problems, non-IPV sexual assault, and transactional sex, with point estimates comparable with or lower than physical IPV only for all outcomes except lifetime casual partners. Men who reported perpetrating both physical and sexual IPV were more likely than non-violent men to report all risk behaviours, and were significantly more likely than men reporting either physical or sexual IPV alone to report lifetime and past year casual partners, non-IPV sexual assault, and transactional sex.

Table 4 shows that all strategies for measuring IPV, type, temporality and frequency, reveal an association between IPV perpetration and past year sexual behaviour, with more severe IPV in all cases associated with higher levels of risk behaviour than less severe IPV. The perpetration of physical IPV alone was associated with greater numbers of female partners in the past year and more recent time since last sex, whereas the perpetration of sexual IPV alone was significantly associated only with past year partner numbers. However, men who reported perpetrating both physical and sexual IPV were more likely than men who reported no IPV to report all behaviours, and more likely than men who reported physical IPV alone to report higher numbers of past year partners and past year casual partners. Men who reported perpetrating

only before the past 12 months reported higher numbers of past year partners than non-perpetrators, whereas those who perpetrated only within the past 12 months reported higher partner numbers and more recent time since last sex. In contrast, men who reported longstanding and ongoing perpetration were more likely to report all behaviours, and also reported higher numbers of past year partners than men whose perpetration stopped or started in the past 12 months. Men who reported perpetrating IPV 'once' reported more recent intercourse than men reporting none, whereas men who reported perpetrating more than once were more likely than men reporting no IPV to report all behaviours, and more likely than men reporting 'once' to report more past year partners.

Discussion

We examined associations between the self-reported perpetration of IPV and HIV risk behaviour among 1275 sexually experienced young men enrolling in the *Stepping Stones* HIV prevention trial. We found that the perpetration of IPV was associated with higher numbers of lifetime and past year sexual partners, more recent intercourse, a greater likelihood of reporting casual sex partners both ever and in the past year, transactional sex, substance use, and a greater likelihood of reporting sexual violence against women other than girlfriends. Men who reported more severe IPV perpetration, as indicated by reporting both physical and sexual IPV, reporting IPV perpetration both before and within the past 12 months, or reporting more than one episode of IPV, reported significantly higher levels of HIV risk behaviour than men who reported less severe perpetration of violence. Our results lend clear support to the hypothesis that men who perpetrate IPV engage in higher levels of HIV risk behaviour than non-perpetrators, and suggest further that more severe violence is associated with higher levels of risky behaviour.

We found that men whose IPV perpetration ceased before the past year reported slightly higher levels of risky behaviour than men who reported no IPV, whereas men who had been violent within the past 12 months had generally higher levels of risky behaviour. Half of the

Table 2. Partner numbers and time since last sex by type of lifetime intimate partner violence perpetration among 1275 sexually active men aged 15–26 years participating in the *Stepping Stones* HIV Prevention Study in the rural Eastern Cape, South Africa.

Behavioural measure	No IPV (N = 869)		Physical IPV only (N = 242)		Sexual IPV only (N = 48)		Both physical and sexual IPV (N = 68)		Adjusted Wald test
	Mean	95% CI	Mean	95% CI	Mean	95% CI	Mean	95% CI	P value
Lifetime consensual partners	5.83	5.39, 6.28	8.08	6.84, 9.32	8.33	5.20, 11.5	10.6	8.63, 12.5	< 0.0001
Past year consensual partners	2.77	2.60, 2.94	3.64	3.17, 4.12	3.50	2.56, 4.44	5.34	4.62, 6.11	< 0.0001
Days since last sex	92.3	76.8, 107.8	47.7	33.3, 62.1	76.0	21.5, 130.6	46.9	9.9, 83.9	< 0.0001

CI, Confidence interval; IPV, intimate partner violence.

Table 3. Associations between lifetime intimate partner violence perpetration and dichotomously classified risk behaviours among 1275 sexually active men aged 15–26 years participating in the Stepping Stones HIV Prevention Study in the rural Eastern Cape, South Africa.

Risky behaviour	No IPV (N = 869)			Physical IPV only (N = 292)			Sexual IPV only (N = 46)			Both physical and sexual IPV (N = 68)			Wald χ²
	N	%		N	%	OR (95% CI)	N	%	OR (95% CI)	N	%	OR (95% CI)	
Casual partner (ever)	581	67.1	Ref 1.00	220	75.3	1.50 (1.08, 2.09)	41	89.1	4.02 (1.61, 10.1)	65	95.6	10.6 (3.13, 36.1)	< 0.0001
Casual partner(past year)	481	55.4	1.00	191	65.4	1.52 (1.13, 2.04)	29	63.0	1.37 (0.70, 2.70)	60	88.2	6.03 (2.72, 13.4)	< 0.0001
Transactional sex	110	12.7	1.00	86	29.4	2.88 (2.04, 4.06)	13	28.3	2.71 (1.40, 5.26)	40	58.8	9.84 (5.65, 17.1)	< 0.0001
Alcohol problem (past year)	172	19.8	1.00	112	38.4	2.52 (1.85, 3.44)	16	34.8	2.16 (1.01, 4.64)	34	50.0	4.05 (2.49, 6.59)	< 0.0001
Illegal drug use (lifetime)	309	35.6	1.00	129	44.2	1.43 (1.08, 1.91)	19	41.3	1.28 (0.71, 2.29)	37	54.4	2.16 (1.22, 3.83)	< 0.0001
Non-IPV sexual assault	133	15.3	1.00	78	26.7	2.01 (1.46, 2.78)	13	28.3	2.18 (1.10, 4.31)	45	66.2	10.8 (6.22, 18.8)	< 0.0001

CI, Confidence interval; IPV, intimate partner violence; OR, odds ratio.

perpetrators reported their first episode of IPV within the past 12 months, suggesting both that the incidence of new perpetration among these young men is high, and also that higher levels of HIV risk behaviour correlate with the onset of perpetration. Our findings highlight the importance of early primary prevention of both violence and HIV risk taking among young men.

We found that men who reported only one incident of physical or sexual violence were not statistically different from non-perpetrators except in having more recent intercourse, but that men who reported multiple episodes were at consistently higher risk than men with no IPV perpetration, and modestly higher risk than men who reported only one incident. This latter finding lends further support to the hypothesis that the increasing severity and duration of IPV perpetration correlates with increasingly high levels of HIV risk behaviour, as well as affirming earlier South African research demonstrating that experience of a single episode of violence was not associated with increased HIV risk among women [9].

The HIV risk behaviour of men who disclosed sexual IPV without accompanying physical partner violence was not significantly different from that of non-perpetrators in multiple regression models except in past year partner numbers. Although this finding may be partly attributable to the relatively small number of men who reported only sexual violence, it is uncommon for sexual IPV to be perpetrated on its own [38]. This finding underlines the importance of looking at IPV in the context of HIV risk as a broader phenomenon than simply non-consensual sex within the context of a relationship. Research with women has also shown that measures of overall power balance in the relationship, beyond simply acts of violence, are associated with increased HIV risk [9,39].

Qualitative research with young South African men has suggested that high levels of IPV and risk-taking practices, including early sexual initiation, multiple partnering, and unprotected sexual activity, arise from common under-lying ideals of 'successful' masculinity in the dominant peer culture found among youth [40–44]. The clustering of violence perpetration with multiple HIV risk behaviours in our data provides some quantitative support for these qualitative observations. We do not suggest that all men subscribe to culturally dominant ideals of successful manhood, but rather that these practices co-occur in a predictable way and are likely to arise from similar underlying causes. This suggests that interventions to reduce HIV risk behaviours would be more successful if they were theoretically situated in approaches to influence the underlying constructions of masculinity that give meaning to such behaviours.

Our analyses have some limitations. First, the low HIV prevalence among men in our study (2.0%) made it impossible to assess the association between IPV

Table 4. Multivariable regression models showing associations between perpetration of intimate partner violence and past year sexual behaviour among 1275 sexually active men aged 15–26 years participating in the *Stepping Stones* HIV Prevention Study in the rural Eastern Cape, South Africa.

Variable	N	No. of partners past 12 months[a,c] (Poisson regression)			Time since last sex[a,b,d] (ordinal regression)			Casual partners past 12 months[a] (logistic regression)		
		IRR	95% CI	Wald χ^2	OR	95% CI	Wald χ^2	AOR	95% CI	Wald χ^2
Perpetration of IPV by type (lifetime)										
IPV										
None	869	ref		< 0.00001	1.00	ref	0.0002	1.00	ref	0.0008
Physical IPV only	292	1.20	1.11, 1.29		1.67	1.29, 2.17		1.26	0.94, 1.69	
Sexual IPV only	46	1.18	1.01, 1.40		1.23	0.69, 2.19		1.18	0.62, 2.23	
Both physical and sexual IPV	68	1.67	1.49, 1.88		1.99	1.24, 3.21		4.63	2.15, 9.96	
Perpetration of IPV by temporality										
IPV										
None	869	ref		< 0.00001	1.00	ref	< 0.00001	1.00	ref	0.002
Before past 12 months only	87	1.13	1.00, 1.28		1.16	0.76, 1.78		1.23	0.76, 1.98	
Within past 12 months only	194	1.18	1.08, 1,29		1.95	1.44, 2.64		1.15	0.82, 1.61	
Both before and within past 12 months	125	1.54	1.40, 1.69		1.59	1.11, 2.30		2.86	1.74, 4.71	
Perpetration of IPV by frequency (lifetime)										
IPV										
None	869	ref		< 0.00001	1.00	ref	< 0.00001	1.00	ref	0.0006
One episode	179	1.03	0.94, 1.13		1.42	1.05, 1.93		1.09	0.77, 1.98	
More than one episode	227	1.48	1.36, 1.60		1.88	1.40, 2.51		1.92	1.36, 2.71	

AOR, Adjusted odds ratio; CI, Confidence interval; IPV, intimate partner violence; IRR, incidence rate ratio; OR, odds ratio.
[a]Adjusted for age, time since sexual debut, socioeconomic status, alcohol problems, and drug use.
[b]Adjusted for current relationship status.
[c]Multiplicative Poisson regression.
[d]Ordinal regression: categories defined by quartiles of the distribution (> 60 days, 15–60 days, 5–14 days, ≤ 4 days).

perpetration and HIV serostatus, a question that will need to be explored in future research. We are working with cross-sectionally collected data, in which our ability to gauge the temporal relationship between events is limited by both the participants' recall and the nature of the questions. The data are not based on a random sample of young men, but rather on men recruited largely through schools who have chosen to enrol in an HIV intervention programme, who may differ from other men in unknown ways. It is possible that potentially stigmatized variables were underreported in our face-to-face interviews, although we used locally developed and culturally sensitive methods to increase disclosure and minimize bias [23]. It is also possible that recall bias resulted in the underreporting of both violence perpetration and HIV risk behaviour before the past year, or that men who were more willing to disclose IPV perpetration were more willing also to disclose risky sexual behaviour. Nonetheless, a key strength of our work is the detailed measurement of violence and an extensively pretested and culturally tailored assessment of sexual behaviour that has allowed us to demonstrate the robustness of our results.

In conclusion, culturally tailored interventions addressing intersections of violence perpetration and high–risk sexual behaviour among young men in South Africa are urgently needed, and we propose that these interventions must specifically target not just individuals but engage communities in transformative dialogue around ideals of masculinity. Such dialogues are necessary to begin a process of real transformation and support interventions that will help men protect themselves and their partners from infection.

Acknowledgements

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