C.H.A.I.N. REPORT

CHAIN

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Interpersonal Violence and Negative Health Behaviors

Barbara Bennet
Peter Messeri

Columbia University
Mailman School of Public Health
In collaboration with Medical and Health Research Association of New York, the NYC Department of Health and Mental Hygiene, the Westchester Department of Health, and the NY Health & Human Services HIV Planning Council

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CHAIN Project

Peter Messeri, PhD . . . . . Principal Investigator
Angela Aidala, PhD . . . . . Co-Investigator
Gunjeong Lee, PhD Co-Investigator
Daniel Schluter, PhD . . . . . Co-Investigator
Barbara Bennet, MPH . . . . . Field Director
Sara Berk, MPH . . . . . Data Manager
Lauren Jewell . . . . . Office Manager & Research Assistant
Evelyn Chodhury, Dave Hunter . . . . . Data Editors
Sandra Smartt . . . . . Administrator

Interviewers: Nathaniel Cavalletto, Jeanne Campbell, Sofia Luyando, Phyllis Moorer, David Norman, Connie Pun, Rose Rivera, Elizabeth Romero, Sonia Severe and Gloria Thomas

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Introduction

The term interpersonal violence, IPV, refers to the occurrence of physical or sexual assault perpetrated by one or more individuals on another (3,5,10,12). The World Health Organization defines interpersonal violence as violence that is not intended to further the aims of any formally defined group or cause. It is the use of force or power, which may be threatened or actual, that has a high likelihood of resulting in death, injury, physical or psychological harm or deprivation (5,11). Interpersonal violence includes childhood encounters as well as adult violent experiences; however, for this paper IPV is limited to physical assault as an adult which was perpetrated by a partner or non partner

Exposure to interpersonal violence is often coupled with negative health consequences such as poor mental and physical health, substance abuse, homelessness and increased risk of STDs[4 5 6 12]. The effects of these and other unfavorable health outcomes associated with violence are often intensified for people living with HIV/AIDS (7, 11, 20). The association between HIV risk and the experience of interpersonal violence, adult IPV, has been well documented in the last 15 years of the AIDS epidemic (1,2,3,7, 30,32). According to recent CDC literature, women who experience both sexual and physical violence are significantly more likely to contract a sexually transmitted disease including HIV (5). There exists an abundant literature to support the concept that physical or sexual assault increases an individual's risk for HIV infection through a number of indirect routes such as drug use and sexual risk behaviors (1,7,10 36). El-Bassel and colleagues examined the use of illicit drugs and the prevalence of IPV among women clients in a methadone maintenance clinic(42). They concluded that the relationship existing between adult IPV and HIV infection appears to be deeply entangled with other factors such as illicit drug use and poor mental health status(8,10,19,20).

As adult IPV emerges as a global health concern, researchers have expanded IPV studies to include men as victims of IPV(5, 12, 31,32,41). Feldman and Diaz (2006), Greenwood et al. (2002) and Relf et al. (2004) present evidence linking adult IPV among men who have sex with men to increased sexual risk behaviors and decreased self efficacy.

Research has so far not throughly investigated the impact of IPV on health care. HIV+ adults invariably contend with complicated medical treatments and demanding medication regimes such as highly active anti-retroviral treatment (HAART) . Adult IPV might exacerbate the complications in adhering to rigid drug therapies. Recent research suggests an association among adult IPV, medication regimes and patient provider relations (8,33,36). Other research indicated the pathways leading to non-adherence to HIV medications are affected by these variables and others namely physical functioning and appropriate medical care (9,28,20, 39). Investigations involving IPV and health care suggest that women with a history of abuse characterize their relationship with providers as less satisfactory than women without a history of abuse (8,33,36). Cohen and colleagues(2004) assert that a history of violence and illicit drug use decrease the likelihood of using HIV medications such as HAART, and increase the likelihood of dissatisfaction with medical care.

The coexistence of interpersonal violence and HIV infection suggests an intricate multi-factor relationship, which may influence negative health outcomes and poor health behaviors. Research suggests that the occurrence of adult IPV may adversely affect HIV care through

continuing mental health problems, increased vulnerability to illicit drug use and heightened sensitivity factors impeding access to medical care. This paper assesses the prevalence of adult interpersonal violence in the CHAIN cohorts, both New York City and Tri-County. Secondly, this study examines the relationships between adult IPV and poor health care as measured by reduced access to HIV appropriate medical care and non-adherence to HIV medications. Based on our literature review, poor mental health, illicit drug use and expressed barriers to care are investigated as intervening variables in the pathway between adult IPV, appropriate HIV medical care. and adherence to medications([4,8,17, 26, 31]).

Key Findings:

- Compared to heterosexual men, men who have sex with men and women experienced higher prevalence of adult interpersonal violence, IPV (Table 1).
- IPV declined with increasing age but was unrelated to ethnicity, education, housing stability, or cohort.
- IPV was positively associated with poor mental health, current drug use, and perceived barriers to medical care (Table 1).
- Separating IPV by partner and non partner assault, women were significantly more likely to report IPV by a partner compared to heterosexual men and MSM. Prevalence of non-partner violence was similar across gender groups (Table 2).
- IPV is associated with nonadherence to medication, as is current drug use and poor mental health functioning. MSM were more likely to be adherent to medications as compared to women or heterosexual men. Neither current drug use or mental health functioning mediate the effects of IPV on medication. Expressed barriers to care was not associated with adherence to medications (Table 3).
- IPV is not associated with a likelihood of receiving adequate HIV medical care. Mental health, illicit drug use history and expressed barriers are also not associated with receiving adequate care (Table 4).

Methods:

The CHAIN study follows a cohort of randomly selected HIV+ adults in New York City and the three surrounding counties of Westchester, Rockland, and Putnam known as Tri-County Data are collected through in-person interviews that obtain in depth information on the cohort's physical and mental well being, in addition to the need for and use of health and social services. The data reported here were collected during the second round of interviews for the 2002 New York City and Tri-County cohorts

Measuring IPV

The round 2 CHAIN interview included questions regarding the lifetime prevalence of trauma, and questions about the experience of interpersonal violence These items were originally a component of the Client Diagnostic Questionnaire, or CDQ, which was developed by researchers at Columbia University and is available through the HRSA web site (18). Questions assessing a lifetime prevalence of assault by a partner and assault by a non partner were adapted for use in the CHAIN follow up interviews. See Appendix 1 for the exact questions used to measure adult IPV in this study.

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Two questions elicited information on IPV One question asked about adult physical assault by a partner and the other asked about adult physical assault by a non partner. Each item measured the prevalence of adult interpersonal violence. The measure of IPV exposure used in this study , combined types of assault into a single variable labeled "IPV" The rationale for combining these two items was that respondents may not accurately categorize a perpetrator as a partner or non partner therefore the effect of exposure would be reduced if the variables were kept separate. .

Other Independent variables

Gender and sexual behavior was divided into women, heterosexual men, and men who have sex with men, or MSM. The logic of this approach stems from the notion that MSM are at greater risk for experiencing adult IPV as compared heterosexual men. However, their risk of adult IPV is most likely less than that of women.

Housing stability was measured for the six months prior to interview. Respondents who indicated they were staying with friends, relatives or had stayed at least one night on the street, or in an SRO, or in jail/prison were categorized as being unstably housed.

Mental health wasmesaured using the Mental Health Component Summary Scale, or MCS, of the SF36. The MCS is a set of questions assessing present mental health, and it is a sub set of the MOS, or Medical Outcomes Scale (22). This is a nationally recognized scale consisting of a standardized set of questions that correlates with stages of disease (27,28). MCS was measured on a continuous scale, and the data are presented as both continuous and categorized for descriptive purposes. Scoring below 42 on the MCS is indicative of poor mental health. For analysis purposes, scores were divided into above and below 42.

Drug history Participants were considered to be current drug users if they self reported using either crack, cocaine, heroin, other opiates, amphetamines, tranquilizers, or some lesser known street drugs five or more times in the last six months. A past drug history was defined as using any of the aforementioned substances five or more time in their life, but not in the last six months.

Barriers to care were defined as a delay in or an avoidance of medical treatment in the last six months. Respondents were considered to have a barrier to care if they indicated they delayed or did not get the care they needed because of a logistical or staff related obstacle.

Health Care Outcomes

Appropriate medical care. Respondents were considered to receive medical care appropriate for HIV care if in the last six months s/he had at least one visit to a medical care provider and reported both a physical examination and complete blood work-up in last three months and visited the primary care provider at least twice in the last six months, if s/he was symptomatic or had an AIDS diagnosis.

Adherence to medications. Respondents currently taking HIV medications were categorized as non adherent if in the previous two days they were off schedule or missed any of their HIV pills, or if within the last six months they sometimes skip a medication dose or they forgot to take their pills.

Results

Interpersonal violence was reported by 36 percent of the combined Tri-County and 2002 NYC cohorts. Prevalence of interpersonal violence was similar between the two CHAIN cohorts with 36 percent of Tri-County Participants and 37 percent New York City participants reporting IPV. Consistent with the research literature IPV was much more prevalent among women than men and among MSM than among heterosexual men. Almost half of women in the CHAIN cohorts, report interpersonal violence (48%), compared to approximately one of every three men (32%) who have sex with men and one of every four (23%) heterosexual men. In addition to sexual orientation, age was the only other socio-demographic variable to exhibit systematic association with IPV. Prevalence of IPV declined with increasing age, decreasing from half of all respondents between the ages of 20 to 34 to 30 percent among those aged 50 and older.

The CHAIN cohort reported roughly equal rates of partner and non partner IPV (see Table 2). Women are over twice as likely as men to report partner IPV. In contrast there are minimal differences in rates of non-partner IPV.

All three of the variables proposed to mediate the relationship between IPV and health care outcomes were statistically significant in the hypothesized directionin cross tab analysis. Persons reporting IPV were more likely to have poor mental health functioning, be a current drug user and to report experiencing a barrier to receiving medical services (Table 1).

Tables 3 and 4 report results of a logistic regression analysis to explore the relationship between IPV and the two health care outcomes: appropriate HIV care and adherence to antiretroviral medications. IPV is strongly associated with reduced medication adherence however, it is not associated with access to appropriate HIV medical care. The effects of IPV remain largely unaltered after we add to the equations the proposed mediating factors of mental health functioning, drug use history and expressed barriers to care.

Table 1. Prevalence of adult interpersonal violence by socio demographics

	Total Sample column percentages		**% Experienced IPV** row percentages	
	n	**%**	**n**	**%**
	802	**100%**	**292**	**36%**
IPV risk				
Female	367	46%	177	48%***
Male	286	36%	67	23%
MSM	149	19%	48	32%
Age group				
20 - 34 years	55	7%	27	49%**
35- 49 year	474	59%	183	38%
50 years +	276	34%	82	30%
Ethnicity				
Black	412	51%	140	34%
White	108	13%	42	39%
Latino	270	34%	103	38%
Other	12	2%	7	58%
Educational level				
Less than high school	319	40%	123	39%
High school or higher	486	60%	169	35%
Housing stability				
Stable housing	699	87%	255	36%
Unstable or doubled-up	106	13%	37	35%
Mental health score				
42 and above	374	46%	105	28%
below 42	431	54%	187	43%***
Drug use history				
never	202	25%	64	32%
past	420	52%	150	36%
current	183	23%	78	43%+
Expressed barriers to care				
yes	96	12%	50	34%
no	709	88%	242	52%**
Cohort				
NYC	490	61%	180	37%
Tri-County	315	39%	112	36%

Note: + p<.10 *p<.05 ** p<.001 *** p<.000

Table 2. Adult IPV

	IPV by a partner row percentages		IPV by non partner row percentages	
	n	**%**	**n**	**%**
TOTAL SAMPLE	**203**	**25%**	**172**	**22%**
Gender				
Female	149	40%***	86	23%
Heterosexual male	54	9%	53	19%
MSM	29	19%	35	23%

Note: + p<.10 *p<.05 ** p<.001 *** p<.000

Table 3. Predictors of adherence to medications

	Model 1		Model 2		Model 3	
n=619	**OR**	**95% CI**	**OR**	**95% CI**	**OR**	**95% CI**
IPV	**.48****	(.356 -.763)	**.53****	(.358 -. 771)	**.58***	(.349 - .964)
Expressed barriers to care			.833	(.478 - 1.45)	.826	(.473 - 1.44)
MCS			**1.03****	(1.01 -1.04)	**1.03****	(1.01 - 1.04)
Past drug use			.952	(.603 - 1.5)	.94	(.594 -1.48)
Current drug use			**.61***	(.353 -1.5)	**.6**+	(.349 - 1.04)
IPV& gender					1.05	(.488 -2.25)
Heterosexual men	.93	(.616 -1.4)	1.1	(.689 - 1.74)	1.16	(.702 - 1.92)
MSM	1.46	(.848 -2.54)	**1.6** *	(.1 - 2.59)	**1.8**+	(.971 -3.32)
Age	1.27	(.924 -1.75)	1.24	(.89 - 1.72)	1.24	(.89 - 1.72)
Black	.78	(.456 -1.33)	.754	(.434- 1.31)	.75	(.431 - 1.31)
Latino	1.06	(.596 -1.9)	1.08	(.636 - 2.17)	1.07	(.586 -1.96)
Educational level	1.23	(.873 -1.86)	1.37	(.93 - 2.03)	1.37	(.926 - 2.02)

Note: + p<.10 *p<.05 ** p<.01 *** p<.000

Table 4. Predictors of appropriate HIV care

	Model 1		Model 2		Model 3	
n=790	**OR**	**95% CI**	**OR**	**95% CI**	**OR**	**95% CI**
IPV	.791	(.554 -1.13)	.813	(.567 - 1.6)	.769	(.472 - 1.25)
MCS			1	(.991 - 1.02)	1	(.991 - 1.02)
Expressed barriers to care			.93	(.552 - 1.56)	0.933	(.554 - 1.57)
Past drug use			1.06	(.691 - 1.63)	1.06	(.694 - 1.64)
Current drug use			.774	(.474 - 1.26)	.777	(.476 - 1.27)
IPV& gender					1.1	(.726 - 1.68)
Heterosexual men	.954	(.619 - 1.47)	.985	(.631 - 1.54)	.941	(.578 - 1.53)
MSM	.975	(. 634- 1.5)	1.	(.649 - 1.55)	.922	(.527 - 1.61)
Age	1.22	(.901 -1.66)	1.2	(.877 - 1.63)	1.2	(.878 - 1.63)
Black	1.07	(.636- 1.80)	1.06	(.627- 1.79)	1.07	(.63 - 1.8)
Latino	1.06	(.612 - 1.83)	1.07	(.617 - 1.85)	1.08	(.623 - .188)
Educational level	.932	(.654 - 1.33)	.958	(.669 - 1.37)	1.07	(.63 - .1.80)

Note: + p<.10 *p<.05 ** p<.001 *** p<.000

Discussion and Conclusion

HIV+ individuals endure a considerable number of obstacles that can impede access to appropriate care and adherence to medication regimes. The evidence from this study adds one more factor to that list, the experience of adult interpersonal violence. This study finds a high prevalence of adult IPV among both women and men. Consistent with earlier research literature, the study findings indicate that the experience of adult IPV has serious residual effects which resonate beyond the immediate health consequences resulting from the episode of violence itself. Specifically adult IPV is associated with poorer mental health, expressed barriers to medical care and to a lesser extent continuing substance use. Findings from this study are also consistent with recent research suggesting that IPV is linked to poorer patient-provider relationships ([8, 31]). Whether through these or other factors IPV is connected to decreased adherence to anitretroviral medications. However, our study indicates IPV does not affect access to appropriate care. The associations of adult IPV with decreased adherence to medications persist after controlling illicit drug use, mental health status and expressed barriers to care.

This study suggests that the impact of interpersonal violence among HIV+ adults is an independent factor influencing behaviors and perceived experiences with health care providers. Unlike past research on adult IPV, this study examined the prevalence of adult violence within a sample of men and women engaged in the health care system. Most investigations of adult IPV and health outcomes are conducted with women who may be at risk of experiencing some type of violence, for example sex workers or illicit drug users ([3,7,10,19,20,30,37,42]). Our logistic analyses did not demonstrate gender as significant contributor in predicting adherence to medications or receipt of appropriate care. However, consistent with other studies current illicit drug use was noted as a predictor in adherence, but not for receiving appropriate care. Considering that our

study sample and regression analyses included both men and women the results presented here are strongly suggestive that the impact of adult IPV is not restricted to gender. Furthermore, the purpose of this examination was not to differentiate between types of adult IPV, i.e., by a partner or non-partner. The goal of this paper was to demonstrate adult IPV's overall influence on health outcomes rather than to distinguish between types of IPV and their associations.

The variables of poor mental health, drug use history and perceived barriers to medical care are undoubtedly factors interceding in the pathway to better health among HIV+ adults ([7,8,9,10, 19, 20]). However, results from this study indicate they do not undermine the association of adult IPV with adherence to medications nor do they reduce access to appropriate care. Efforts put forth by service providers to manage the residual consequences of IPV would be ineffective without giving consideration to the unique circumstances that surround each case, such as mental health status, drug use, and cultural concerns. The concept of lasting effects makes identifying patients affected by adult IPV a more difficult endeavor, and it stresses the need for positive patient and provider encounters. Addressing the usual concerns for HIV+ populations from a policy perspective seems a daunting task, yet realizing that a past or present history of adult IPV may drastically reduce an individual's ability to adhere to HIV treatments, regardless of gender, should be a catalyst to seeing the larger picture. From a planning perspective the findings from this study underscore the need for implementation of a comprehensive IPV screening tool in health care settings which serve at risk or marginal populations such as the HIV+ community.

Appendix 1.

These questions assessing lifetime prevalence of assault and incidence in the last 12 months are taken from the Client Diagnostic Questionnaire, and adapted for the CHAIN Project. Information regarding the CDQ is available on the HRSA web site: http://hab.hrsa.gov/tools/topics/cdq.htm.

The questions presented below are segment of larger, in-depth CHAIN Project interview by conducted by trained research staff for Mailman School of Public Health under contract by Medical and Health Research Association and the New York city Department of Mental Health and Hygiene.

	Ever happen?		**Past 12 months?**	
	No	**Yes**	**No**	**Yes**
4. Physical assault or abuse in your adult life by your partner	**0**	**1**	**0**	**1**
5. Physical assault or abuse in your adult life by someone other than your partner	**0**	**1**	**0**	**1**

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