

BRIEF REPORT

Effect of Violence on Utilization of Services and Access to Care in Persons with HIV

David P. Eisenman, MD, MSHS, William E. Cunningham, MD, MPH, Sally Zierler, Dr PH, Terry T. Nakazono, MA, Martin F. Shapiro, MD, PhD, and the HCSUS Consortium

We analyzed the HIV Costs and Service Utilization Study data to determine the association of violence, assessed at baseline, with utilization of and access to health care at follow-up, among gay/bisexual male, heterosexual female, and heterosexual male HIV/AIDS patients. In multivariate analyses, male gay/bisexual violence victims had increased odds of reporting emergency department visits (odds ratio [OR], 1.74; 95% confidence interval [95% CI], 1.20 to 2.52), going without needed medical care because of expense (OR, 1.83; 95% CI, 1.06 to 3.18), and having poor ability to access medical specialists (OR, 1.96; 95% CI, 1.05 to 3.67). Further research is required to understand the association of violence with health care among gay/bisexual men with HIV/AIDS.

KEY WORDS: violence; HIV; AIDS; utilization; homosexual.
J GEN INTERN MED 2003;18:125–127.

Violence victimization may affect the health and health care of persons with HIV/AIDS.¹ In a national probability sample of adults with HIV/AIDS in primary care, nearly 21% of women, 12% of men who reported having sex with men, and 8% of remaining, presumably heterosexual, men reported physical violence victimization within an important relationship since HIV diagnosis.² Still, little is known about the relationship between violence victimization and HIV-related health care.

We analyzed data from the HIV Costs and Service Utilization Study (HCSUS) to determine the association of violence with health services utilization and self-reported access to health care among heterosexual women, heterosexual men, and gay/bisexual men. We hypothesized that the magnitude of these associations varies by sex-sexual

orientation subgroups (male gay/bisexual, female gay/bisexual, male heterosexual, and female heterosexual).

METHODS

The HCSUS cohort is a nationally representative probability sample of HIV-infected adults who made at least 1 visit to a nonmilitary, nonprison medical provider other than an emergency department (ED) in early 1996. Details of the multistage design are published elsewhere.^{3,4} Briefly, a random sample of patients receiving care from 145 HIV providers in 28 U.S. metropolitan areas and 51 providers in 25 U.S. rural areas were selected for interviews. Of 4,042 eligible subjects, 2,864 (71%) were interviewed at baseline. Of the 2,864 interviews, 91% were conducted face-to-face and 9% by telephone. First follow-up interviews were conducted from December, 1996 to July, 1997 with 2,466 respondents (86% of the baseline cohort).

Measurements

Violence victimization was assessed at the baseline interview by the question, "Since your HIV diagnosis, have you ever been physically hurt by your partner or someone important to you?" Responses were coded as "yes" or "no."

We constructed 4 measures of self-reported medical and mental health care utilization during the interval between baseline and follow-up. Self-reported health care utilization has previously been found to be accurately described in this population.⁵ Inadequate care was defined as fewer than 2 ambulatory visits per 6-month period, at least 1 hospitalization in the previous 6 months, and at least 1 ED visit that did not result in hospitalization in the previous 6 months. We chose 2 ambulatory visits in 6 months because 1 visit every 3 months is the upper limit of an acceptable interval for monitoring HIV/AIDS disease progression and treatment response.³ Although some hospitalizations and ED visits occur inevitably, higher hospitalization rates on average result from inadequate outpatient care, and persons with adequate ambulatory care typically avoid ED use in nonemergent situations.⁶ Participants were considered to have used outpatient mental health services if they reported a visit to a psychiatrist, psychologist, psychiatric social worker, psychiatric nurse, or marriage or family counselor, on an individual or family basis.

Received from the Division of General Internal Medicine and Health Services Research, Department of Medicine (DPE, WEC, MFS), and the Department of Health Services, School of Public Health (WEC, TTN), University of California–Los Angeles, Los Angeles, Calif; the Department of Community Health, Brown University (SZ), Providence, RI; and RAND, Health Sciences Program (DPE, MFS), Santa Monica, Calif.

Address correspondence and requests for reprints to Dr. Eisenman: Division of General Internal Medicine and Health Services Research, UCLA School of Medicine, 911 Broxton Plaza, Los Angeles, CA 90095-1736 (e-mail: deisenman@mednet.ucla.edu).

Study participants rated their agreement with the following statements on a Likert scale ranging from 1 (strongly agree) to 5 (strongly disagree): “Sometimes I go without the medical care I need because it is too expensive”; “I have easy access to the medical specialists I need”; and “I am able to get medical care whenever I need it.” We dichotomized all responses so that higher scores represent worse access to care (strongly agree/somewhat agree versus uncertain/somewhat disagree/strongly disagree). For easy access to medical specialists and able to get medical care when needed, we dichotomized strongly disagree/somewhat disagree = 1 versus uncertain/strongly agree/somewhat agree = 0 to observe the same scoring convention. Previous research supports the reliability and validity of these measures.⁷⁻⁹

Multivariable Models

We adjusted the analyses for possible confounders including: age, race/ethnicity, education, drug/alcohol dependence in the previous 12 months, insurance status, annual household income, time since HIV diagnosis, region of the United States (Northeast, South, Midwest, West), rural versus urban community (determined by size of the respondent’s metropolitan statistical area) and lowest CD4 count since baseline.^{10,11} We selected these variables because either they were confounding associations for violence and utilization in previous studies, or because of a priori theoretical judgment.

To estimate associations for violence within specified sex-sexual orientation subgroups, we constructed sex by sexual orientation categories for use in the multivariate analyses. Self-reported sexual orientation was categorized into gay/lesbian, heterosexual, bisexual, transsexual, asexual/celebrate, in transition, and other. We built sex-sexual orientation categories from these categories as follows: male heterosexuals (baseline $n = 518$; follow-up $n = 425$), male gay/bisexuals (baseline $n = 1,344$; follow-up $n = 1,190$), male asexual/celebrate (baseline $n = 117$; follow-up $n = 99$), male other/transsexual (baseline $n = 38$; follow-up $n = 32$), female heterosexuals (baseline $n = 704$; follow-up $n = 600$), female gay/bisexuals (baseline $n = 47$; follow-up $n = 38$), female asexual/celebrate (baseline $n = 88$; follow-up $n = 72$) and female other/transsexual (baseline $n = 8$; follow-up $n = 6$). Because the numbers for male asexual/celebrate, male transsexual, female gay/bisexuals and female asexual/celebrates were too small for multivariate analyses, we present results only for male gay/bisexual, male heterosexual, and female heterosexual subpopulations.

Statistical Analysis

Participants with and without a positive response to the violence victimization item were compared across subgroups defined by the independent variables using χ^2 analyses for the dichotomous outcomes. The corresponding odds ratios (ORs) and 95% confidence intervals (95% CIs)

were calculated to assess the magnitude and significance of these bivariate associations. Next, we used multiple logistic regression models to evaluate the relationship of violence (measured at baseline) to the outcome variables at the follow-up interview. OR and 95% CI were computed for each independent variable and are presented for the full model. All analyses were weighted to be representative of the national population under HIV care. We used the survey functions of STATA 7.0 (Stata Corp., College Station, Tex).

RESULTS

The associations of violence with utilization and access differed across the sex-sexual orientation subgroups. Male gay/bisexuals were affected across the most outcomes. In this group, violence victimization increased the odds of an ED visit without hospitalization (OR, 1.74; 95% CI, 1.20 to 2.52), going without needed medical care because of expense (OR, 1.83; 95% CI, 1.06 to 3.18), and poor ability to access medical specialists (OR, 1.96; 95% CI, 1.05 to 3.67) (Table 1). In contrast, both male and female heterosexual victims compared to nonvictims of violence had greater odds of using mental health services (OR, 2.23; 95% CI, 1.07 to 4.64 for men and OR, 2.94; 95% CI, 1.47 to 5.92 for women).

DISCUSSION

This is the first study to report on differences in access and use of HIV-related care among physically victimized and nonvictimized men and women with HIV/AIDS. A previous study in 50 HIV-infected women reported increased ambulatory care and emergency department visits associated with a lifetime history of physical or sexual abuse.¹ These 2 studies are not directly comparable given the differences in the predictor variable.

Associations of violence with poorer access to health care were strongest among gay/bisexual men. In the absence of other studies with which to compare or to inform our findings, we speculate that this finding could have appeared more strongly in this subgroup because of 1) differences in expectations of care leading to differences in meaning for “access to health care” across subgroups¹²; 2) fears of homosexual activities being disclosed to a health care provider by a coercive partner, to the extent that the victimizer was a partner; and 3) unidentified confounding by factors associated differently with gay/bisexual men than the other subgroups. We did not find an association between violence victimization and use of ambulatory medical services. It is possible that male gay/bisexual violence victims are receiving adequate numbers of ambulatory medical visits but using more ED visits and reporting poorer access because the complexity of their needs is not being adequately addressed during those ambulatory visits.

Our study has several limitations. Our predictor and dependent variables were based on self-report. Violence victimization may have been under-reported due to the simplicity of the single-item measure. Last, we don’t know why violence was associated with utilization.

Table 1. Adjusted Odds Ratios of the Effect of Violence on Utilization of Medical Services and Access to Care, by Sex-Sexual Orientation Subgroup*

	Adjusted Odds Ratio (95% CI) of Outcome Among Violence Victims Compared to Non-victims		
	Male Gay/Bisexual (N = 1,177 [†])	Male Heterosexual (N = 406 [†])	Female Heterosexual (N = 589 [†])
Utilization of services among victims relative to non-victims			
<2 Ambulatory visits in past 6 mo	0.81 (0.45 to 1.47)	1.27 (0.57 to 2.82)	1.45 (0.69 to 3.02)
>1 Emergency department visit in past 6 mo	1.74 (1.20 to 2.52) [‡]	0.60 (0.28 to 1.27)	1.66 (0.96 to 2.86)
>1 Hospitalization in past 6 mo	0.90 (0.52 to 1.56)	2.74 (0.96 to 7.85)	1.06 (0.52 to 2.20)
Any outpatient mental health visit in past 6 mo	1.32 (0.94 to 1.86)	2.23 (1.07 to 4.64) [‡]	2.94 (1.47 to 5.92) [§]
Access to care among victims relative to non-victims			
Reports going without care because of expense	1.83 (1.06 to 3.18) [‡]	0.72 (0.29 to 1.79)	1.43 (0.91 to 2.25)
Reports access to medical specialists is poor	1.96 (1.05 to 3.67) [‡]	0.93 (0.32 to 2.68)	1.03 (0.47 to 2.28)
Reports ability to get medical care when needed is poor	2.81 (0.97 to 8.17)	0.26 (0.04 to 1.84)	0.82 (0.35 to 1.94)

* Values are adjusted odds ratios and 95% confidence intervals (95% CIs) in logistic regression models controlling for age, race/ethnicity, drug dependence or heavy drinker, education, insurance, income, region, urban/rural and lowest CD4 count.

[†] P < .05.

[‡] P < .005.

[§] P < .0001.

Gay/bisexual men had a significantly higher rate of response to the follow-up interview (89%) than heterosexual men (82%) and heterosexual women (85%) ($P = .03$). Gay/bisexual men who did respond to the follow-up interview compared to gay/bisexual men who did not respond to the follow-up interview were more often white (69% vs 59%; $P = .01$), and less likely to have drug/alcohol dependence in the previous 12 months (15% vs 25%; $P = .006$). It is unlikely that these differences biased our findings for the gay/bisexual male subgroup.

Further research is required to replicate and extend our findings. Establishing causality between violence victimization and access to and utilization of services may be complicated by the presence of psychiatric and medical disorders and other unmeasured life stressors. Furthermore, recent studies have reported an association between sexual victimization and HIV high-risk behavior. These studies, coupled with our results, suggest the need for more research to understand the relationship between violence victimization in gay/bisexual men and utilization and access to care and health outcomes.

The HIV Cost and Services Utilization Study is being conducted under cooperative agreement U-01HS08578 (M. F. Shapiro, PI; S. A. Bozzette, Co-PI) between RAND and the Agency for Health Care Policy and Research. Substantial additional funding for this cooperative agreement was provided by the Health Resources and Services Administration, the National Institute of Mental Health, the National Institute on Drug Abuse, and the National Institutes of Health Office of Research on Minority Health through the National Institute of Dental Research. Additional support was provided by Merck and Company, Inc., Glaxo-Wellcome, Inc., the National Institute on Aging, and the Office of the Assistant Secretary for Planning and Evaluation in the U.S. Department of Health and Human Services. Dr. Cunningham is a Doris Duke Charitable Foundation Clinical Scientist.

REFERENCES

- Liebschutz JM, Feinman G, Sullivan L, Stein M, Samet J. Physical and sexual abuse in women infected with the human immunodeficiency virus: increased illness and health care utilization. *Arch Intern Med.* 2000;160:1659-64.
- Zierler S, Cunningham WE, Andersen R, et al. Violence victimization after HIV infection in a US probability sample of adult patients in primary care. *Am J Public Health.* 2000;90:208-15.
- Shapiro MF, Morton SC, McCaffrey DF, et al. Variations in the care of HIV-infected adults in the United States: results from the HIV Cost and Services Utilization Study. *JAMA.* 1999;281:2305-15.
- Frankel MR, Shapiro MF, Duan N, et al. National probability samples in studies of low-prevalence diseases. Part II: Designing and implementing the HIV Cost and Services Utilization Study Sample Health Serv Res. 1999;34:969-92.
- Weissman JS, Levin K, Chasan-Taber S, Massagli MP, Seage GR III, Scampini L. The validity of self-reported health care utilization by AIDS patients. *AIDS.* 1996;10:775-83.
- O'Brien GM, Stein MD, Zierler S, Shapiro M, O'Sullivan P, Woolard R. Use of the ED as a regular source of care: associated factors beyond lack of health insurance. *Ann Emerg Med.* 1997;30:286-91.
- Cunningham WE, Hays RD, Williams KW, Beck KC, Dixon WJ, Shapiro MF. Access to medical care and health-related quality of life for low-income persons with symptomatic HIV. *Med Care.* 1995;33:739-54.
- Cunningham WE, Andersen RM, Katz MH, et al. The impact of competing needs for basic subsistence on access to medical care for persons with HIV receiving care in the United States. *Med Care.* 1999;37:1270-81.
- Cunningham WE, Hays RD, Ettl MK, et al. The prospective effect of access to medical care on health-related quality-of-life outcomes in patients with symptomatic HIV disease. *Med Care.* 1998;36:295-306.
- Cunningham WE, Rana HM, Shapiro MF, Hays RD. Reliability and validity of self-reported CD4 counts in persons hospitalized with HIV disease. *J Clin Epidemiol.* 1997;50:829-35.
- Kalichman SC, Rompa D, Cage M. Reliability and validity of self-reported CD4 lymphocyte counts and viral load test results in people living with HIV/AIDS. *Int J STD AIDS.* 2000;11:579-85.
- Hall JA, Dornan MC. Patient sociodemographic characteristics as predictors of satisfaction with medical care: a meta-analysis. *Soc Sci Med.* 1990;30:811-8.