

VIOLENT INJURIES AMONG WOMEN IN AN URBAN AREA

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ABSTRACT

Background Although the rate of death from injuries due to violent acts is much higher among black women than among white women in the United States, little is known about the nature and correlates of violent injuries among black women living in urban areas.

Methods In this case-control study conducted at three emergency departments in one inner-city community (in west Philadelphia), we studied 405 adolescent girls and women who had been intentionally injured and 520 adolescent girls and women (control subjects) who had health problems not related to violent injury. Data were collected by conducting standardized interviews with use of questionnaires and by screening urine for illicit drugs. Individual logistic-regression models were constructed to identify factors associated with violent injuries inflicted by partners and those inflicted by persons other than the partners of the victims.

Results The male partners of the injured women were much more likely than the male partners of control subjects to use cocaine (odds ratio, 4.4; 95 percent confidence interval, 2.3 to 8.4) and to have been arrested in the past (odds ratio, 3.1; 95 percent confidence interval, 1.8 to 5.2). Fifty-three percent of violent injuries to the women had been perpetrated by persons other than their partners. Women's use of illicit drugs and alcohol abuse were factors associated with both violence on the part of partners and violence on the part of other persons. Neighborhood characteristics, including low median income, a high rate of change of residence, and poor education, were independently associated with the risk of violent injuries among women.

Conclusions Women in this urban, low-income community face violence from both partners and other persons. Substance abuse, particularly cocaine use, is a significant correlate of violent injuries. Standard Census data may help identify neighborhoods where women are at high risk for such violence and that would benefit from community-level interventions. (N Engl J Med 1999;341:1899-905.)

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RATES of homicide are nearly four times as high among black American women as they are among white American women, yet little is known about the nature or causes of violence perpetrated against black American women.¹⁻⁵ Most studies of violence against women have focused on domestic abuse and have not examined the full range of violence that women experience.⁵⁻⁹ In this

report, we present the results of a case-control study of violent injuries in a population of women living in an urban, low-income community.

METHODS**Study Design**

The study subjects were adolescent girls and women 16 to 45 years old who resided in the target community in west Philadelphia and who sought care at the emergency department of one of the following urban hospitals: the Hospital of the University of Pennsylvania, the Presbyterian Medical Center of the University of Pennsylvania, or the Misericordia Hospital Division of Mercy Catholic Medical Center. These emergency departments were selected on the basis of our previous finding that 90 percent of women from this community who sought care for violent injuries were treated at one of them.¹⁰⁻¹² Trained personnel used standardized methods of recruitment and of interviewing and administering questionnaires to enrolled subjects. Urine specimens were collected to screen for the presence of illicit drugs.

Women were considered to have been intentionally injured if they reported to emergency department staff or study personnel that their reason for seeking care was a violence-related injury. A violence-related injury was defined as any physical pain or damage that had been intentionally inflicted by another person. Control subjects were randomly selected from among women seen at the same emergency departments for health problems not involving a violence-related injury. The first eligible woman who sought care after randomly selected, predetermined times was recruited to participate as a member of the control group. Interviewers screened women who were potentially eligible control subjects for violence-related health problems and then classified them as intentionally injured if they reported seeking care because of an intentional injury. The frequency with which controls were recruited was matched, according to the site of emergency care, to the frequency with which intentionally injured women presented. The most common presenting problems among control subjects were abdominal pain, unintentional injuries, respiratory symptoms, and pregnancy-related problems.

A total of 505 women who sought care for violence-related injuries were identified from October 14, 1996, through October 15, 1997. Forty-eight women were excluded from participation in the study, for the following reasons: departure before being seen by emergency department staff (23 women), acute psychosis or cognitive impairment (21), a language barrier (2), and police custody in the emergency department that precluded a confidential interview (2). Of the 457 eligible women, 405 (89 percent) participated, 33 (7 percent) declined to participate, and 19 (4 percent) had incom-

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plete interviews. Of the 405 women who participated, 6 were identified by screening potential control subjects during initial enrollment. Seventeen of the 405 women sought care more than once during the study period; only the results of the interview conducted at the first presentation are included in this report.

A total of 606 women were identified as potentially eligible controls. Twenty-nine women were excluded, for the following reasons: acute psychosis or cognitive impairment (17 women), departure from the emergency department before being seen (11), and a language barrier (1). Of the 577 women who were eligible to be control subjects, 520 (90 percent) participated, 46 (8 percent) declined to participate, and 11 (2 percent) had incomplete questionnaires. Three subjects originally recruited and enrolled as controls sought care for violence-related injuries at a later date and are included only as intentionally injured women in this report.

The study protocol was approved by the institutional review committee at each hospital, and all the subjects gave their written informed consent. The interviewers conducted extensive counseling sessions with the injured women after the interviews were completed.

Quality-Control Measures

A trained medical-records abstractor regularly reviewed samples of emergency department logs to make certain that all potentially eligible women whose chief reason for seeking care was a violence-related injury were identified and that the protocol was followed for the selection of potential control subjects.

Collection of Data

Variables were grouped into the following prespecified categories: circumstances of the event, sociodemographic factors, medical and reproductive history, personal and social contacts, financial support, psychosocial factors, alcohol and substance use, previous experience with violence or exposure to the criminal-justice system, characteristics of partners, and characteristics of the neighborhood.

With regard to the circumstances of the event, intentionally injured women were asked what they considered to be the cause of the incident and whether other persons were present. They also were asked about the type of weapon used (if any), any involvement of the criminal-justice system, and any use by the perpetrator of alcohol or drugs at the time.

The questionnaire included a question about race; women were classified according to their response to this question. Information was also obtained on the women's marital status, education, and employment status. Women were queried about their medical and reproductive history, psychiatric history, and current use of medications. With regard to personal and social contacts, women were asked about the frequency of personal visits and telephone conversations as well as their level of satisfaction with the frequency of social interactions. They were also asked about the number of persons with whom they lived and their relationships to them. Information about previous contact with health, mental health, social-service, and criminal-justice agencies was obtained. Women's financial support was assessed by means of questions about support from friends, family members, and partners and government assistance.

Among psychosocial factors, self-esteem was measured with use of a 10-item scale developed by Rosenberg.¹³ Correlation between the results on testing and retesting is high with this scale ($r=0.85$), as are convergent validity and predictive validity.¹⁴ Current depressive symptoms were evaluated with the depression scale of the Center for Epidemiologic Studies.^{15,16} Subjects rated 20 items related to depressed mood on a scale from 0 (symptom not present) to 4 (present most of the time). Scores higher than 16 were considered to indicate seriously depressed mood.

Alcohol and substance use was assessed by asking women about the frequency with which they used alcohol or illicit drugs and about prior treatment for drug or alcohol abuse. The TWEAK test, a validated, sensitive screening instrument used to assess tolerance of alcohol, worry about alcohol, use of alcohol as an eye-opener,

amnesia after consumption of alcohol, and attempts to cut down on alcohol use,^{17,18} was administered. It includes five items, each assigned either one or two points; a score of three or more points is considered to indicate problems with drinking.

Previous experience with violence or the criminal-justice system was assessed by requesting information about previous arrests and contact with the police. Women were also asked about previous episodes of violence, rape, and childhood sexual abuse and about whether as children they had witnessed abuse of a parent. Violence was defined as violent physical acts (such as hitting, kicking, and stabbing) performed intentionally by another person. Verbal abuse was not assessed.

Information obtained about each woman's current or most recent partner included the duration of the relationship; the frequency of contact (including cohabitation); and the partner's age, race, education, sex, use of alcohol or illicit drugs, carrying of weapons, previous arrests or imprisonment, employment status, and history of assaultive behavior. Women were also asked whether their intimate partners had experienced child abuse or as children had witnessed abuse of a parent. Information about the women's neighborhoods was obtained from 1990 Census data and was recorded at the level of the census-block group for each of the study participants.

Laboratory Analysis

Urine samples were assigned individual code numbers and transported to the toxicology laboratory of the Hospital of the University of Pennsylvania. Fluorescence polarization immunoassays (TDx analyzer, Abbott, Abbott Park, Ill.) were performed on batches of 5 to 15 specimens. Two open-label control specimens (one positive and one negative) and one blinded control specimen were included in each batch.

Fluorescence polarization immunoassays were conducted to test for the presence of benzoylcegonine, cannabinoids, amphetamine and methamphetamine, opiates, and methadone. Intraassay and interassay coefficients of variation of these tests range from 2 to 7 percent.¹⁹⁻²² We confirmed positive results with the gas chromatography-mass spectrometry procedures appropriate for each assay.¹⁹⁻²² Alcohol use was assessed with alcohol dehydrogenase-based reagents (Radiative Energy Attenuation, Abbott). This method has a limit of detection of 10 mg per deciliter and intraassay and interassay coefficients of variation with upper limits of 2.4 percent and 4.1 percent, respectively.²³

Statistical Analysis

One hundred eighty-seven intentionally injured women reported having been injured by a male partner; this group was compared with the 453 control subjects who currently or recently had a male partner and reported no violent injuries from that partner during the previous six months. Another five women reported violence perpetrated by a female partner, but their data are not included in the final analyses; only violence inflicted by male partners was analyzed. Two hundred thirteen intentionally injured women who reported violent injuries inflicted by persons other than their partners (acquaintances, family members, friends, or strangers) were compared with the entire control group (520 women). We controlled for the site of enrollment and the women's age and level of education.

Age was modeled as a continuous, categorical, or quadratic variable, and smoothed plots of the probabilities predicted by fitting a generalized additive model were examined to select the appropriate form for each final multivariable model.²⁴ Candidate variables were grouped into prespecified categories (as described above) for consideration in multivariable modeling.²⁵ Independent predictors from category-specific regression analyses were selected for each final multivariable model on the basis of statistical significance (indicated by P values of <0.05), after adjustment for the other factors.^{26,27} For variables that were highly correlated with one another (such as depression and low self-esteem), the variable with the strongest marginal association was included in the multivariable models. In the analysis of violence inflicted by partners, models were compared with and without factors related to previous exposure

to violence from a partner. The inclusion of measures of previous exposure to violence from partners did not influence the final set of independent risk factors.

RESULTS

Characteristics of the Women Injured by Partners

Of the 405 intentionally injured women, 187 (46 percent) had been injured by their current or most recent male partners. Most of these women (164 [88 percent]) had been beaten with their partners' fists or household objects; 22 (12 percent) had been stabbed; and 1 had been shot. The most common reasons reported for the violence were the partner's temper (65 women), his jealousy (57), or his drug or alcohol use (48). The majority of the women (64 percent) reported that this partner had behaved violently on at least one previous occasion. Most of the women (81 percent) described the perpetrator as a current, as opposed to past, partner.

Case-Control Analysis of the Women Injured by Partners

Characteristics of the male partners of the 187 intentionally injured women and those of the 453 controls with whom they were compared differed markedly (Table 1). Partners who inflicted violent injuries were more likely than nonabusive partners to have been arrested in the past, to use cocaine, and to have experienced abuse as a child.

Women who reported social isolation, low self-esteem, substance abuse, and previous exposure to violence were found to have an increased risk of violence from partners (Table 1). There was no difference in risk with respect to race: black women accounted for 89 percent of the intentionally injured women and 92 percent of the controls. Similarly high proportions of the intentionally injured women (48 percent) and controls (51 percent) reported having had one or more abusive partners in the past.

Cocaine or marijuana use among the women was correlated with the reported use of these drugs by their partners. When both subjects' and partners' characteristics were included in the multivariable models, only use of cocaine or marijuana by partners maintained a statistically significant association with violent injury to women. The final multivariable model shown in Table 2 includes both subjects' and partners' characteristics. Variables associated with a greatly increased risk of violent injury included the partner's use of drugs or alcohol, the partner's previous arrest, and the woman's social isolation and low self-esteem.

Urine samples were obtained from 81 percent of the women who had been injured by an intimate partner and 83 percent of the controls with whom they were compared. Positive results on tests for cocaine (odds ratio, 2.6; 95 percent confidence interval, 1.2 to 5.3) and alcohol (odds ratio, 5.9; 95 percent confidence interval, 2.1 to 16.5) were independently associated with an increased risk of violence from an inti-

TABLE 1. COMPARISON OF WOMEN INJURED BY MALE PARTNERS WITH CONTROL SUBJECTS WHO REPORTED NO INJURY FROM PARTNERS.*

VARIABLE	INJURED WOMEN (N=187)	CONTROL SUBJECTS (N=453)	ODDS RATIO (95% CI)
	no. (%)		
Sociodemographic factors			
Education			
Less than high school	75 (40)	147 (32)	2.1 (1.3-3.5)
High school	82 (44)	185 (41)	1.8 (1.1-2.9)
More than high school	30 (16)	121 (27)	1.0
Separated or divorced in past year	35 (19)	44 (10)	2.2 (1.3-3.6)
Medical and reproductive history			
Takes psychotropic medication	19 (10)	18 (4)	2.7 (1.3-5.5)
Had emotional problems in past 6 mo	92 (50)	133 (30)	2.4 (1.7-3.5)
Personal and social contacts			
No. of people who can be counted on			
0	35 (19)	31 (7)	1.0
1	31 (17)	55 (12)	0.5 (0.3-1.0)
≥2	120 (65)	367 (81)	0.3 (0.2-0.5)
Telephone contacts more than once daily	98 (52)	319 (71)	0.5 (0.3-0.7)
Lives with partner	121 (66)	190 (44)	2.4 (1.7-3.5)
Financial support			
Has someone's help	88 (48)	279 (62)	0.6 (0.4-0.8)
Psychosocial factor			
Low self-esteem†	99 (54)	105 (24)	3.6 (2.5-5.3)
Alcohol or drug use			
Used cocaine in past 6 mo	48 (26)	41 (9)	3.1 (1.9-5.0)
Has problems with drinking‡	39 (22)	43 (10)	2.7 (1.6-4.5)
Previous experience with violence or criminal justice			
Raped	45 (24)	54 (12)	2.6 (1.6-4.1)
Assaulted by a partner while pregnant	57 (31)	55 (12)	3.1 (2.0-4.7)
Sexually abused as a child	42 (23)	56 (12)	2.0 (1.3-3.1)
Characteristics of partner			
Used cocaine in past	69 (40)	35 (8)	7.6 (4.7-12.5)
Ever arrested	101 (58)	89 (21)	5.2 (3.5-7.8)
Abused as a child			
Yes	63 (34)	57 (13)	4.6 (3.0-7.2)
Not known	42 (23)	53 (12)	3.1 (1.9-5.0)
No	78 (43)	321 (74)	1.0
Carries a weapon	53 (31)	70 (17)	2.1 (1.4-3.2)
Characteristics of neighborhood§			
≥50% of adults have less than high-school education	44 (24)	75 (17)	1.7 (1.1-2.6)

*Results are based on category-specific analyses. The variables listed were selected from those that were statistically significant after adjustment for age, education, site of emergency department care, and other variables in the category in question. Because of missing data, the number of women for some variables is not the total number of subjects; percentages shown are based on the numbers of women with available data. CI denotes confidence interval. All the variables were screened to evaluate whether the estimated effects differed according to the site of emergency department care. Interactions with the site of emergency department care were detected for three variables: "lives with children," "partner should cut down on drinking," and "partner carries weapon."

†A score of less than 30 on Rosenberg's scale¹³ was considered to indicate low self-esteem.

‡A score of 3 or higher on the TWEAK test^{17,18} (see the Methods section) was considered to indicate problems with drinking.

§These results are based on 1990 U.S. Census data at the census-block level.

TABLE 2. MULTIVARIABLE ANALYSIS OF FACTORS ASSOCIATED WITH A RISK OF VIOLENT INJURY FROM MALE PARTNERS.*

VARIABLE	ADJUSTED ODDS RATIO (95% CI)
Characteristics of woman	
Separated or divorced in past year	2.6 (1.2–5.6)
One or more medical illnesses	0.5 (0.3–0.8)
No. of people who can be counted on	
0	2.4 (1.2–4.9)
1	1.7 (0.9–3.3)
≥2	1.0
Lives with partner	1.9 (1.2–3.0)
Low self-esteem†	1.8 (1.1–3.1)
Assaulted by a partner while pregnant	2.2 (1.2–4.1)
Characteristics of partner	
Used cocaine in past	4.4 (2.3–8.4)
Should cut down on drinking	2.1 (1.3–3.4)
Ever arrested	3.1 (1.8–5.2)
Abused as a child	
Yes	2.3 (1.2–4.3)
Not known	4.1 (2.0–8.4)
No	1.0
Duration of relationship with partner	
≤1 yr	0.7 (0.3–1.8)
>1–10 yr	1.8 (0.8–4.1)
>10 yr	1.0
Characteristics of neighborhood	
≥50% of adults have less than high-school education	1.8 (1.0–3.2)

*Odds ratios were based on unconditional logistic-regression models, with adjustment for age, education, site of emergency department care, and all the other variables shown in this table. CI denotes confidence interval.

†A score of less than 30 on Rosenberg's scale¹³ was considered to indicate low self-esteem.

mate partner, after adjustment for the variables shown in Table 2.

Characteristics of the Women Injured by Persons Other Than Partners

A total of 213 women had been injured by persons other than their partners. Of these injuries, 44 percent had been inflicted by women, 43 percent by men, and 13 percent by both men and women. In most cases (68 percent), the injury had been inflicted by only one person. Forty-four percent of the violent acts involved acquaintances or neighbors, 21 percent involved family members, 24 percent involved strangers, and 11 percent involved friends. Of the women who had been injured by such persons, 26 percent had been stabbed, 1 percent shot, and 73 percent beaten with fists or other objects. The majority of the violent acts (57 percent) had occurred outdoors. In most cases (87 percent), witnesses had been present.

Case-Control Analysis of the Women Injured by Persons Other Than Partners

After adjustment for age, education, and site of emergency department care, major factors associated with an increased risk of violence from a person oth-

er than the woman's partner were psychological factors (use of psychotropic medication or depressed mood), alcohol or drug use, and characteristics of the neighborhood (low levels of education and low income) (Table 3). Women who had been injured by a person other than their partners did not differ significantly from controls with respect to social isolation, history of rape, or sexual abuse as a child. The majority of both the intentionally injured women (54 percent) and the controls (56 percent) reported having had an abusive intimate partner in the past. When the two groups of intentionally injured women were compared directly, women who had been injured by their partners had significantly higher levels of depression and lower self-esteem, according to their scores on standardized scales, than women who had been injured by other persons (data not shown).

Table 4 shows the final multivariable model for violent injuries inflicted by persons other than the women's partners. Variables that were independently associated with a greatly increased risk of injury included younger age, use of psychotropic medication, higher frequency of social encounters, and use of marijuana. Characteristics of the neighborhood that were associated with an increased risk of injury from a person other than a partner included a high rate of change of residence and low median income.

Results of the toxicologic tests of urine were available for 78 percent of the women who had been injured by a person other than a partner and 83 percent of the controls. The presence of cocaine (odds ratio, 2.7; 95 percent confidence interval, 1.6 to 4.6), the presence of marijuana (odds ratio, 2.0; 95 percent confidence interval, 1.3 to 3.1), and the presence of alcohol (odds ratio, 5.4; 95 percent confidence interval, 2.2 to 12.8) were independently associated with the risk of injuries inflicted by persons other than intimate partners.

DISCUSSION

In this urban, low-income community, women face violence in many aspects of their lives, both within intimate relationships and in encounters with family members, acquaintances, and other persons. Violence perpetrated by strangers constituted a small part of the violence faced by women in this community.

Women who had been injured by a partner tended to be socially isolated, to have low self-esteem, and to have few sources of social or financial support. As compared with control subjects who had not experienced violence from a partner, they were more likely to have been sexually abused as children, raped as adults, or assaulted while pregnant. These characteristics are consistent with a portrait of women who have a long history of victimization, little control over their lives, and few resources.^{28,29}

In the final multivariable analysis of violent injuries inflicted by male partners, the risk of violence was most

TABLE 3. COMPARISON OF WOMEN INJURED BY PERSONS OTHER THAN THE WOMEN'S PARTNERS WITH ALL CONTROL SUBJECTS.*

VARIABLE	INJURED WOMEN (N=213)	CONTROL SUBJECTS (N=520)	ODDS RATIO (95% CI)
Sociodemographic factor			
Age (yr)	27.5±8	30.0±8	0.8 (0.8–0.9)
	no. (%)		
Medical and reproductive history			
One or more medical illnesses	78 (37)	255 (49)	0.6 (0.5–0.9)
Use of psychotropic medication	17 (8)	24 (5)	2.3 (1.1–4.5)
Personal and social contacts			
No. of social visits/wk			
0	54 (26)	150 (29)	1.0
1 or 2	51 (24)	165 (32)	0.8 (0.5–1.3)
≥3	106 (50)	200 (39)	1.5 (1.0–2.2)
Satisfaction with no. of visits with friends			
Would like to see friends more often	59 (29)	131 (26)	1.4 (0.9–2.0)
Would like to see friends less often	57 (28)	94 (18)	1.9 (1.3–2.9)
No. of visits is about right	91 (44)	288 (56)	1.0
Lives with adults other than partner	69 (33)	104 (20)	1.7 (1.2–2.5)
Psychosocial factor			
Depressed mood†	132 (62)	238 (46)	1.9 (1.4–2.7)
Alcohol or drug use			
Used marijuana in past 6 mo	101 (47)	155 (30)	2.1 (1.5–2.9)
Has problems with drinking‡	43 (20)	59 (12)	2.5 (1.5–3.9)
Previous experience with violence or criminal justice			
Arrested in past 6 mo	16 (8)	19 (4)	2.0 (1.0–4.1)
Characteristics of neighborhood§			
≥40% of population has moved in previous 5 yr	64 (31)	110 (21)	1.6 (1.1–2.3)
≥50% of adults have less than high-school education	51 (25)	83 (16)	1.9 (1.2–2.8)
Median annual family income <\$15,000	74 (36)	126 (25)	1.8 (1.2–2.6)

*Results are based on category-specific analyses. The variables listed were selected from those that were statistically significant after adjustment for age, education, site of emergency department care, and other variables in the category in question. Because of missing data, the number of women for some variables is not the total number of subjects; percentages shown are based on the numbers of women with available data. CI denotes confidence interval. All variables were screened to evaluate whether the estimated effects differed according to the site of emergency department care; interactions with the site of emergency department care were detected for one variable: "Has lived at current address for more than one year." Plus-minus values are means ±SD.

†A score above 16 on the Center for Epidemiologic Studies depression scale^{15,16} was considered to indicate a depressed mood.

‡A score of 3 or higher on the TWEAK instrument^{17,18} (see the Methods section) was considered to indicate problems with drinking.

§These results are based on 1990 U.S. Census data at the census-block level.

strongly associated with characteristics of the partners, particularly use of cocaine and previous arrests. Many of the characteristics of the abused women themselves (such as depression and social isolation) have been identified as consequences of ongoing abuse.²⁸⁻³² In contrast, the characteristics of abusive partners appear to indicate that they may have a history of assaultive behavior. Notably, the violent acts rarely involved the use of guns, a pattern consistent with a national survey of domestic violence.⁴

The correlates of violent injuries inflicted by persons other than the women's partners both resembled and differed in important respects from those of violent injuries inflicted by partners. No associations were detected between injuries inflicted by nonintimate persons and social isolation, a history of rape,

or exposure to violence as a child. However, drug abuse, particularly cocaine use, by the women and by male partners was a major predictor in both groups. Although it is widely believed that the "crack" cocaine epidemic has ended, cocaine use remains a tremendously important problem in low-income, urban communities.

A number of injuries from persons other than partners were inflicted by women.^{33,34} Anderson has observed that young women in low-income, urban communities have begun to adopt what he describes as the "code of the street."³⁵ This code emphasizes the commanding of respect through aggressive posturing and the use of violence to resolve disputes.

Some limitations of the present study should be mentioned. It was not possible to validate the infor-

TABLE 4. MULTIVARIABLE ANALYSIS OF FACTORS ASSOCIATED WITH A RISK OF VIOLENT INJURY BY PERSONS OTHER THAN THE WOMEN'S PARTNERS.*

VARIABLE	ADJUSTED ODDS RATIO (95% CI)
Age (per 5-yr increase)	0.9 (0.8–1.0)
One or more medical illnesses	0.5 (0.4–0.8)
Takes psychotropic medication	2.3 (1.1–4.9)
Has lived in current home >1 yr†	
Hospital 1	2.4 (1.2–4.9)
Hospital 2	0.9 (0.4–2.1)
Hospital 3	0.4 (0.3–0.8)
No. of social visits/wk	
0	1.0
1 or 2	0.8 (0.5–1.3)
≥3	1.8 (1.1–2.9)
Satisfaction with no. of visits with friends	
Would like to see friends more often	1.2 (0.8–1.9)
Would like to see friends less often	1.9 (1.2–3.0)
No. of visits is about right	1.0
Lives with partner	0.5 (0.3–0.8)
Depressed mood‡	1.8 (1.3–2.7)
Used marijuana in past 6 mo	2.0 (1.4–2.9)
Characteristics of neighborhood	
≥40% of population has moved in previous 5 yr	1.7 (1.1–2.7)
Median annual family income <\$15,000	1.8 (1.2–2.6)

*Odds ratios were based on unconditional logistic-regression models, with adjustment for education, site of emergency department care, and all the other variables shown in this table. CI denotes confidence interval.

†The association between the risk of injury and having lived in the current home for more than one year varied among the hospitals. Hospital-specific odds ratios and 95 percent confidence intervals are presented.

‡A score above 16 on the Center for Epidemiologic Studies depression scale^{15,16} was considered to indicate a depressed mood.

mation reported by the participants. The current injury could have prompted some women to remember previous episodes of violence or to feel reluctant to report past violence. It is notable that the majority of the women in this study reported having had an abusive partner in the past; this finding indicates that domestic violence is an extremely common problem. The lack of a difference between intentionally injured women and controls in this regard may imply that the individual characteristics of women are less important than those of their partners and their community. In addition, women who have been injured by partners may be more inclined than women in nonabusive relationships to report their partners' negative attributes. However, the characteristics of the partners that were identified as correlates in this investigation (previous arrest, drug use, and abuse as a child) are consistent with those identified in other studies of risk factors related to abusive partners.^{36,37}

The results of this study cannot be generalized to all women who experience violence or to women who do not seek care in an emergency department. How-

ever, we have previously documented that a high proportion of women in the community we studied (in west Philadelphia) seek emergency care for injuries.¹² Also, because we included women at all three local emergency departments, we believe that the intentionally injured women are representative of women in this community who seek care for violent injuries. The high rates of participation among both intentionally injured women and controls also minimized the possibility of selection bias.

Misclassification is a potential problem in all case-control studies. Women who were randomly selected as control subjects were carefully interviewed to ascertain whether they had health problems related to violence. Control subjects who reported violence inflicted by a partner in the previous six months were not included among the controls who were compared with the women injured by partners.

An advantage of this study was that it obtained information about acts of violence near the time they occurred. Most studies rely on prevalence surveys that obtain information on violent events in the past.^{4,5,38} It is likely that the severity of violent events may be minimized when their description is based on recollection of the distant past.

Violent injuries inflicted by persons who were not the women's partners constituted more than 50 percent of injuries due to violence. Clearly, women in this community face violence in the context of many relationships, and creating a safe environment is a tremendous challenge. Witnesses were present during nearly 90 percent of violent acts perpetrated by persons other than the women's partners, and the majority of events occurred outdoors, usually in a public place. Recent initiatives in several cities have created community policing and court systems that target public disorder in socially disorganized neighborhoods.^{39,40} These community programs provide assistance to victims, mandate alcohol-abuse and substance-abuse programs for offenders, sentence offenders to make restitution to the community, and create outreach and economic-development plans.^{39,40} Programs such as these may be important in reducing the street-related violence that takes such a heavy toll on women as well as men in poor urban communities.

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