Gender-Specific Correlates of Incarceration Among Marginally Housed Individuals in San Francisco

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Objectives. We assessed how different patterns of housing instability affect incarceration and whether correlates of incarceration are gender specific.

Methods. We used multivariate logistic regression to assess associations between patterns of housing instability and recent jail stays among a reproducible sample of 1175 marginally housed adults in San Francisco, California.

Results. Over the previous year, 71% of men and 21% of women in the sample reported jail stays. Among women, long-term single-room occupancy hotel stays (>90 days) were protective for incarceration. Stays in the street were associated with incarceration among both genders, but among men, short-term (i.e., ≤90 days) street stays were associated with the highest odds of incarceration, and among women, long-term street stays were most correlated with incarceration. Sex trade increased the odds of incarceration among men only; recent drug use was associated with incarceration among both genders.

Conclusions. Correlates of incarceration differed by gender, and patterns of housing instability differentially affected incarceration for men and women. Policies to improve housing options and drug treatment for the urban poor are critical to breaking the cycle of incarceration and homelessness and improving health outcomes. (*Am J Public Health.* 2009;99:1459–1463. doi:10.2105/AJPH.2008.141655)

Incarceration rates in the United States have more than quadrupled over the past 3 decades and have increased more rapidly among women than among men.[1–3] Urban poor individuals are at especially high risk for incarceration. A strong body of literature shows bidirectional associations between homelessness and both jail and prison stays in that homelessness is a catalyst for incarceration and incarceration precipitates homelessness by disrupting social networks and employment opportunities.[4–13]

Incarceration has public health consequences other than decreased housing and employment options; individuals who have been incarcerated in jails or prisons have higher rates of substance abuse, victimization, mental illness, chronic diseases, tuberculosis, HCV, HIV, and other sexually transmitted diseases (STDs) when compared with other low-income individuals.[7,13–26] Among people with HIV, incarceration is associated with worse antiretroviral adherence and worse HIV clinical outcomes than among nonincarcerated individuals.[27,28] Prison and jail stays are also associated with increased risk of needle sharing, unsafe sexual behavior, and drug overdose, which compounds the negative health consequences associated with incarceration.[29–32] Finally, incarceration is associated with high mortality rates compared with the general population, particularly within the first 2 weeks after release.[32]

In view of the many adverse public health effects of incarceration, it is critical to better understand its correlates. Although we have previously reported that correlates of homelessness differ between men and women,[33] few data indicate whether correlates of incarceration vary by biological sex. This is particularly important because the reasons people are incarcerated in the first place seem to be gender specific (i.e., men are arrested more frequently for nearly every offense category other than prostitution, running away from home, and embezzlement)[34] and also because women and men living on the street may experience different vulnerabilities and may have different survival strategies.

Another important gap in the literature is that although links between homelessness and incarceration are well established, little is known about whether specific patterns of housing instability are differentially associated with incarceration. We therefore set out to assess gender-specific associations between patterns of homelessness and jail stays among low-income men and women in San Francisco, California.

METHODS

A mobile outreach team of 3 men and 4 women recruited a reproducible sample of homeless and marginally housed adults living in San Francisco from August 2003 to April 2004. Recruitment sites included all large homeless shelters (n=8), free-food programs providing meals to more than 100 people per day (n=8), and a random sample of low-income hotels in 3 neighborhoods of the city (n=16) selected with a probability proportional to size. Individuals were recruited through the use of a systematic sampling design at each site. All individuals visiting recruitment sites were invited to participate in the study. A unique identifier was used to distinguish each participant and prevent duplicate responses.

Eight trained interviewers administered a standardized questionnaire that assessed demographics, incarceration history, drug and alcohol use, sexual behaviors, and health services utilization. Participants also were tested for HIV and reimbursed $15 for their participation.

The outcome of this study was recent incarceration. Given that prison stays are often initiated from jail, including both may have had the potential to capture the same legal process twice; only including prison would have failed to capture less serious crimes and would potentially underestimate the effect of study factors. We therefore defined incarceration as spending 1 or more nights in jail during the previous 12 months.

Covariates for this study were either binary variables or categorized by natural breaks in the data distribution. Long-term stays for living on the street, in a homeless shelter, or in a single-room occupancy hotel were defined as longer than 90 days (not necessarily consecutive), whereas short-term stays in the same location were defined as 1 to 90 days (not necessarily consecutive). Additional covariates included age (above the median vs at or below it), race (White vs non-White), education (less than high school vs a high school diploma or more), monthly income (above the median vs at or below it), living with any minor children, HIV status, exchanging sex for money or drugs during the previous 12 months, use of mental health services in the previous 12 months, use of stimulants (i.e., powder cocaine, crack cocaine, or methamphetamines) during the previous 30 days, heroin injection during the previous 30 days, and heavy drinking during the previous 30 days defined in accordance with the National Institute on Alcohol Abuse and Alcoholism's definition of risky drinking (more than 2 drinks per day for men or 1 drink per day for women).[35]

Odds ratios (ORs) and confidence intervals (CIs) quantified associations between recent jail time and covariates. As recommended by Hosmer and Lemeshow,[36] variables considered for adjusted analysis were those with a P value of .25 or less in bivariate analysis; those retained in the final model had an adjusted P value of .05 or less. To consider potential differential effects by sex, analyses were restricted by sex. Because of small sample sizes in some analyses, penalized likelihood estimation was used.[37,38] Data were analyzed with SAS version 9.1 (SAS Institute Inc, Cary, NC).

RESULTS

Among 1614 individuals available at the selected venues at the time of recruitment, 1213 participants completed a baseline questionnaire (75%). Thirty-eight transgender individuals were excluded from the current analysis. Among the remaining 1175 participants, 514 were recruited from single-room occupancy hotels, 324 from free-meal programs, and 337 from homeless shelters. Seventy-eight percent (n=919) were biological males, and 22% were biological females (n=256). The median age was 44.6 years for women and 46.3 years for men. Seventy-three percent of the women and 67% of the men were non-White, and 70% of the women and 73% of the men had graduated high school (Table 1). Recent drug use was reported by 38% of the women and 46% of the men. With regard to housing stability, 90% of the participants reported sleeping on the street or in a homeless shelter during the past year. Long-term shelter stays were reported by 24% of both men and women, long-term street stays were reported by 11% of the women and 19% of the men, and long-term single-room

TABLE 1—Characteristics of Homeless and Marginally Housed Persons: San Francisco, CA, August 2003–April 2004

	Males		Females	
	Not Jailed in Previous 12 Mo	Jailed in Previous 12 Mo	Not Jailed in Previous 12 Mo	Jailed in Previous 12 Mo
Age, y, no. (%)				
<30	44 (6.8)	27 (10.2)	19 (9.6)	9 (16.4)
30–39	120 (18.5)	57 (21.4)	35 (17.8)	10 (18.2)
40–49	242 (37.4)	103 (38.7)	93 (47.2)	28 (50.9)
≥50	242 (37.4)	79 (29.7)	50 (25.4)	8 (14.6)
Race, no. (%)				
White	220 (34.2)	91 (34.3)	52 (26.4)	17 (31.5)
Black	279 (43.4)	112 (42.3)	107 (54.3)	25 (46.3)
Latino	47 (7.3)	22 (8.3)	11 (5.6)	4 (7.4)
Pacific Islander	11 (1.7)	2 (0.8)	4 (2.0)	1 (1.9)
Other	86 (13.4)	38 (14.3)	23 (11.7)	7 (13.0)
Less than high school, no. (%)	165 (25.5)	83 (31.2)	61 (31.0)	15 (27.8)
Median monthly income, $, no. (interquartile range)	700 (378–872)	578 (310–914)	680 (398–860)	537 (240–860)
Nights spent in a shelter in past y, no. (%)				
1–90	138 (21.3)	66 (24.9)	41 (20.8)	15 (27.3)
>90	162 (25.0)	57 (21.5)	45 (22.8)	15 (27.3)
Nights spent on the street in past y, no. (%)				
1–90	81 (12.5)	54 (20.4)	24 (12.2)	10 (18.2)
>90	105 (16.2)	69 (26.0)	14 (7.11)	14 (25.5)
Nights spent in a single-room occupancy hotel in past y, no. (%)				
1–90	113 (17.5)	67 (25.3)	22 (11.2)	18 (32.7)
>90	314 (48.5)	96 (36.2)	91 (46.4)	13 (23.6)
HIV positive, no. (%)	106 (16.4)	32 (12.0)	19 (9.6)	5 (9.1)
Lying down >3 days because of poor health, no. (%)	163 (25.2)	62 (23.3)	63 (32.0)	16 (29.1)
Recent mental health treatment	159 (29.9)	80 (37.7)	65 (36.1)	19 (40.4)
Substance use in past 30 d, no. (%)				
Stimulants	231 (36.0)	162 (61.6)	53 (27.0)	34 (61.8)
Heroin	46 (7.1)	55 (21.0)	16 (8.1)	18 (32.7)
Heavy alcohol use	96 (14.8)	59 (22.2)	26 (13.2)	15 (27.3)
Any sex trade, past 12 mo, no. (%)	53 (8.6)	56 (21.9)	22 (11.7)	16 (30.2)
Living with any children, no. (%)	8 (1.2)	4 (1.5)	28 (14.2)	2 (3.7)

Note. Totals for individual variables do not always equal 919 for men and 256 for women because of missing data.

occupancy hotel stays were reported by 41% of the women and 45% of the men. Of the men, 71% had spent 1 or more nights in jail in the past year, and 21% of the women were similarly incarcerated. Fifteen percent of the women and 12% of the men reported exchanging sex for money during the previous 12 months.

Compared with persons with no street stays, the unadjusted odds of recent incarceration were more than 2 times higher for both women and men reporting short-term street stays, 2 times higher for men reporting long-term street stays, and 5 times higher for women reporting long-term street stays (Table 2). The unadjusted odds of incarceration were higher among women who reported short-term, single-room occupancy hotel stays and lower among both men and women who reported long-term, single-room occupancy hotel stays. Stimulant, heroin, and heavy alcohol use increased the odds of incarceration among both men and women, whereas associations between incarceration and recent mental health treatment were strongest among men. Recent sex trade increased the odds of incarceration at least 3-fold among both men and women, and HIV status was not associated with incarceration for men or women. Living with minor children was protective for women, and no association was seen between living with minor children and incarceration among men.

Noteworthy differences between men and women remained in adjusted analyses. First, single-room occupancy hotel stays (long-term and short-term) had no significant associations with incarceration for men. Conversely, among women, long-term, single-room occupancy hotel stays were negatively associated with incarceration (adjusted OR=0.3; 95% CI=0.1, 0.6), and there was a trend toward a significant positive association with short-term single-room occupancy hotel stays (adjusted OR=2.1; 95% CI=0.9, 5.1). Second, the high odds of incarceration among men reporting street stays were strongest among those reporting short-term street stays (adjusted OR=2.1; 95% CI=1.3, 3.4). This pattern was reversed for women (adjusted OR for long-term street stays=3.1; 95% CI=1.2, 7.9), and there was a trend toward a protective effect for short-term street stays after we adjusted for single-room occupancy hotel stays. In addition, recent mental health treatment was positively associated with incarceration among men but not women (adjusted OR for men=1.6; 95% CI=1.1, 2.2). Recent sex trade also was associated with incarceration for men only (adjusted OR=2.2; 95% CI=1.3, 3.6). Finally, recent stimulant use and heroin use was associated with incarceration among both men and women, and this effect was stronger among women.

TABLE 2—Correlates of Recent Nights in Jail Among Homeless and Marginally Housed Persons: San Francisco, CA, August 2003–April 2004

	Males		Females	
	OR (95% CI)	Adjusted OR (95% CI)	OR (95% CI)	Adjusted OR (95% CI)
Median age	0.8 (0.6, 1.1)	. . .	0.6 (0.3, 1.0)	. . .
White race	1.0 (0.7, 1.4)	. . .	1.3 (0.7, 2.4)	. . .
Less than high school	1.3 (1.0, 1.8)	. . .	0.8 (0.4, 1.6)	. . .
Median monthly income	0.8 (0.6, 1.1)	. . .	0.8 (0.4, 1.4)	. . .
Nights spent in a shelter, past y				
0 (Ref)	1.00	. . .	1.00	. . .
1–90	1.2 (0.8, 1.7)	. . .	1.6 (0.8, 3.4)	. . .
>90	0.9 (0.6, 1.2)	. . .	1.5 (0.7, 3.1)	. . .
Nights spent on the street, past y				
0 (Ref)	1.00	1.00	1.00	1.00
1–90	2.2 (1.5, 3.2)	2.1 (1.3, 3.4)	2.2 (0.9, 4.8)	0.8 (0.3, 2.0)
>90	2.1 (1.5, 3.1)	1.5 (1.0, 2.4)	5.0 (2.2, 11.6)	3.1 (1.2, 7.9)
Nights spent in a single-room occupancy hotel, past y				
0 (Ref)	1.00	. . .	1.00	1.00
1–90	1.3 (0.9, 1.9)	. . .	2.8 (1.3, 6.0)	2.1 (0.9, 5.1)
>90	0.7 (0.5, 0.9)	. . .	0.5 (0.2, 1.0)	0.3 (0.1, 0.6)
HIV positive	0.7 (0.5, 1.1)	. . .	1.0 (0.3, 2.5)	. . .
Recent mental health treatment	1.5 (1.0, 2.0)	1.6 (1.1, 2.2)	1.2 (0.6, 2.3)	. . .
Substance use, past 30 d				
Stimulants	2.8 (2.1, 3.8)	2.5 (1.7, 3.6)	4.3 (2.3, 8.1)	4.0 (1.9, 8.7)
Heroin	3.5 (2.3, 5.3)	3.1 (1.8, 5.2)	5.4 (2.6, 11.6)	4.7 (1.9, 12.3)
Heavy alcohol use	1.5 (1.0, 2.0)	. . .	2.3 (1.2, 4.4)	. . .
Any sex trade participation, past 12 mo	3.0 (2.0, 4.5)	2.2 (1.3, 3.6)	3.3 (1.6, 6.7)	. . .
Living with any children	1.3 (0.4, 4.0)	. . .	0.3 (0.1, 0.9)	. . .

Note. OR = odds ratio; CI = confidence interval. Ellipses indicate no estimate was made; either a reference group or the variable did not remain in the multivariate model.

DISCUSSION

Consistent with previous literature, we found a very high prevalence of incarceration most notable among men, with 71% of the men and 21% of the women reporting at least 1 night in jail during the previous year. Moreover, we found that patterns of homelessness differentially influenced the odds of jail stays among women and men. Among women, longer-term street stays were associated with higher odds of incarceration, and longer-term single-room occupancy hotel stays were protective for incarceration. By contrast, among men, single-room occupancy hotel stays were not associated with incarceration, and short-term street stays were more strongly associated with incarceration than were long-term street stays.

Cycling on and off the streets may be part of a pattern of instability that places homeless men at greater risk for sex work, drug abuse, and subsequent incarceration. These findings also imply that being on the street and staying in single-room occupancy hotels may pose different risks for men and women,

depending on the length of stay, and should be considered in the design of more-effective housing options for the urban poor. For instance, efforts to keep women off the streets for a longer time by making single-room occupancy hotel rooms available for longer stays may help reduce their risk of incarceration.

Because the study was cross-sectional, another possible interpretation of our findings is that housing options differ for men and women after release from jail. Even brief jail stays have been reported to result in homelessness for women because of diminished opportunities for employment following release from jail.[6] The limited availability of affordable long-term housing and employment options for both men and women likely contributes to the ongoing bidirectional associations between unstable housing and incarceration.[5,8,11,39,40]

In addition to the fact that length of time on the street or in single-room occupancy hotels influenced the odds of incarceration for both genders, it was noteworthy that the alternative category for each variable (i.e., short-term compared with long-term stays) had associations that showed a trend in the opposite direction among women. This suggests that studies that collapse housing status into a binary variable (e.g., slept on the street vs did not sleep on the street) may not find significant results because of this nonlinear association. It is also striking that the association for short-term street stays changed direction only after the analysis was adjusted for single-room occupancy hotel stays. Taken together, these findings illustrate the importance of recognizing housing status as a multifaceted, dynamic phenomenon among indigent women. Finally, note that associations between incarceration and homeless shelter stays did not reach a level of significance in our study. This may be a function of a more homogeneously poor study population or may imply that links between the 2 reported in previous studies were confounded by the influence of sleeping on the street.

Other important differences in the correlates of incarceration were found among men and women. As has been previously reported,[5,14,15,18] we found stimulant use and heroin use to be strongly associated with incarceration, but this effect was stronger among women, with use of either drug increasing the odds of incarceration by at least 4-fold. Lo et al.[41] similarly reported that female arrestees were more likely than were male arrestees to show cocaine dependence. Our findings and those of others highlight the importance of providing drug treatment to inmates with histories of drug abuse.

Risk for incarceration stems from many sources and reflects a complex process with overlapping and sometimes interacting layers. For example, lack of economic opportunities may set the stage for sex work and homelessness. These conditions in turn may drive women and men to self-medicate through illicit substance use. Habit-forming substances may place an even greater economic burden on individuals and place them at greater risk for incarceration. Integrated services that address the interplay between homelessness, drug and alcohol addictions, and lack of economic opportunities for both men and women are necessary to manage the multiple vulnerabilities faced by men and women living on the street.

Another important gender difference was that history of mental health treatment was associated with increased odds of incarceration among men but not among women. Kushel et al.[5] previously reported that history of psychiatric hospitalizations was independently associated with prison stays among the urban poor in San Francisco. Others have found that mental illness is a risk factor for both homelessness and incarceration[7,14,23] and that mental illness worsens the chances of securing stable housing after incarceration.[40] Our findings extend this previous research by suggesting that associations between incarceration and mental illness may be most pronounced for men. Again, because of the cross-sectional study design, another possible interpretation of this finding is that women are less able to access mental health treatment services following jail release. Larger longitudinal studies can help elucidate the complex interconnections and causal direction of associations among homelessness, incarceration, drug abuse, and mental illness and how they differ among men and women.

We have previously reported that greater length of homelessness was associated with sex exchange among women,[42] and other studies have reported strong links between sex exchange and incarceration.[43] In our study, we found that sex trade had strong positive associations with incarceration among both men and women in unadjusted analyses, but the effect remained in adjusted analyses for men only. This was an unexpected finding that may be explained by the ability of women to secure more consistent sexual clients, a need for men to be more overt in soliciting sex work, the smaller sample size for women compared with men, or another unmeasured factor. These associations warrant further investigation within indigent populations.

Findings of this study should be interpreted within the study's limitations: this study was cross-sectional, and the study sample had more than 3 times as many men as women. In summary, we found that correlates of incarceration are gender specific and that specific patterns of housing instability have different associations with incarceration according to gender. Our findings highlight the complex and multifaceted links between housing status, gender, and incarceration and the fact that treating housing status as a binary variable (homeless vs not homeless) does not adequately capture this complexity. Public policies designed to secure long-term housing options, drug treatment, and mental health care for the urban poor will be a critical step not only toward breaking the cycle of incarceration and homelessness but also toward improving health outcomes. ■

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Contributors

S.D. Weiser and T.B. Neilands contributed equally to the article. S.D. Weiser, T.B. Neilands, and E.D. Riley contributed substantially to the origination of the article, data analysis and interpretation, and drafting, editing, and critical revisions of the article. M.L. Comfort, S.E. Dilworth, J. Cohen, and J.P. Tulsky contributed substantially to data analysis and interpretation, review of relevant literature, and editing and critical revisions of the article.

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Human Participant Protection

All study procedures were approved by the human participants committee at University of California, San Francisco.

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