

## Sexual Violence Inside Prisons: Rates of Victimization

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**ABSTRACT** *People in prison are exposed to and experience sexual violence inside prisons, further exposing them to communicable diseases and trauma. The consequences of sexual violence follow the individual into the community upon release. This paper estimates the prevalence of sexual victimization within a state prison system. A total of 6,964 men and 564 women participated in a survey administered using audio-CASI. Weighted estimates of prevalence were constructed by gender and facility size. Rates of sexual victimization varied significantly by gender, age, perpetrator, question wording, and facility. Rates of inmate-on-inmate sexual victimization in the previous 6 months were highest for female inmates (212 per 1,000), more than four times higher than male rates (43 per 1,000). Abusive sexual conduct was more likely between inmates and between staff and inmates than nonconsensual sexual acts. Sexual violence inside prison is an urgent public health issue needing targeted interventions to prevent and ameliorate its health and social consequences, which spatially concentrate in poor inner-city areas where these individuals ultimately return.*

**KEYWORDS** *Inmate sexual assault, Prison rape, Staff-on-inmate sexual assault.*

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### INTRODUCTION

Prison is a violent place. One type of violence that is often attributed to prison settings is sexual victimization.<sup>1,2</sup> Sexual victimization includes a range of behaviors from sexually abusive conduct to nonconsensual sexual assaults<sup>3</sup> and has a variety of severe public health consequences.<sup>4</sup> Rape provides an opportunity for spreading sexually transmitted diseases,<sup>5</sup> a matter of particular concern in prisons, where HIV infection rates are higher than in the general population. Sexual victimization can foment rage, leading to future violence either inside or outside prison,<sup>6,7</sup> as well as depression and acts of self violence, such as drug use or suicidal ideation and gestures.<sup>5,8,9</sup>

Lawsuits by former prisoners who experienced rape and sexual abuse behind bars compelled Human Rights Watch to investigate the issue; they obtained testimony from over 200 prisoners in 37 states and published their findings in a graphic account of the reality of rape in prison.<sup>10</sup> This report, entitled “No Escape:

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Male Rape in Prison,” was the primary impetus for Congress to pass legislation called The Prison Rape Elimination Act (PREA) of 2003,<sup>11</sup> which was structured to measure the rate of sexual assault inside state prisons as well as to develop interventions for treating those who were raped and preventing future incidents of sexual victimization. The current study was funded as part of the PREA and was designed to measure the prevalence of sexual victimization inside a statewide prison system.

Research suggests that rates of sexual victimization in prison may be as high as 41% or as low as less than 1%.<sup>12</sup> A recent meta-analysis estimates a conservative “average” prevalence estimate of prison sexual assault at 1.9%.<sup>12</sup> While the estimated rate of victimization varies significantly across studies, the characteristics of the victims reported in these studies are more similar. First, rates of sexual coercion are higher than rates of sexual assault or rape, independent of gender.<sup>13–17</sup> More specifically, unwanted and sexually suggestive touching of breasts, genitals, or buttocks is more typical inside prison than the act of rape itself. Second, in the vast majority of studies, male facilities have been found to have higher rates of sexual assault compared to female facilities.<sup>15–18</sup> Yet the perpetrators of sexual assaults against female inmates, compared to male inmates, are less likely to involve staff. Third, younger inmates are at greater risk of sexual victimization, particularly if they are new arrivals to a facility and are serving their first convictions.<sup>13–15,20</sup> This may explain in part why rates of sexual victimizations vary across facilities within the same prison system. Facilities with a younger population would be expected to have higher rates of victimization than those facilities with a more mature and acculturated prison population. Fourth, inmate-on-inmate sexual victimization has an interracial bias, with victims most likely being White and sexual aggressors most likely being Black.<sup>2,21</sup> This interracial pattern of victimization has been attributed to revenge for historical oppression<sup>20</sup> and the reversal of racial dominance inside prison.<sup>2</sup>

While these patterns of sexual victimization inform interventions to prevent such violence inside prisons, they do not reliably provide evidence on the prevalence of the problem, which was one of the major objectives of the PREA legislation. What is known is that the estimates of the prevalence of sexual victimization inside correctional settings are sensitive to methodology. Extant studies are based on different definitions of sexual victimization and diverse sampling designs. Estimates of the prevalence or incidence of sexual violence are extremely sensitive to methodology, with larger estimates derived from more specific questions about sexual victimization.<sup>22</sup> The current study provides more accurate estimates of the prevalence of sexual victimization within a prison population based on the following advantages:

1. *Representativeness*: Sample selection, differing facility types, and inmate levels of non-response severely limit the generalizability of published estimates. Previous studies have focused largely on a single prison and/or small numbers of inmates (less than 15% of the population).<sup>13,14,19–21,23–27</sup> Hensley et al.<sup>19</sup> employed a design in which 100 inmates were randomly selected from three facilities, with an average refusal rate of 42%. Struckman-Johnson et al.<sup>15,16</sup> sampled more facilities and had larger samples but had large (70%) non-response rates. Evidence also suggests that prison environments are heterogeneous and the management and operation of prisons, even with similar custody levels, affect inmates’ behavior differently.<sup>28</sup>

2. *Validity*: The phrasing of survey questions affects the extent to which victimization is uncovered. The wording of questions used in previous studies to elicit information about sexual victimization varies significantly, with some questions focusing on “being coerced to engage in a sex act or have sexual contact,” while others have used questions relying on labels such as “being raped or sexually assaulted.” Contemporary rape research has documented that questions using behavior and context specific terminology generally produce more valid responses.<sup>22,29–31</sup>
3. *Reliability*: Inquiring about sexual victimization invokes feelings of stigma and shame. Previous studies have relied on face-to-face interviewing or, more commonly, self-administered pencil and paper surveys to inquire about sexual victimization in prisons. The literature indicates that computer-assisted self-administered interviews (CASI), with audio added to assist with literacy problems, are the most reliable method for eliciting information about potentially stigmatizing behavior.<sup>12,32–39</sup>

To our knowledge, this study is the first to explore the prevalence of sexual victimization within a state prison system. It is also the first to use (1) a full population sampling design of approximately 20,000 inmates at 13 prisons; (2) multiple general and specific questions to measure sexual victimization; and (3) audio-CASI to administer the survey.

## METHODS

### Sampling

The current study's population was all inmates housed at 12 adult male prisons and one female prison operated by a single state ( $N = 22,231$ ). Excluded from this group were inmates younger than 18 or in administrative (pre-hearing) custody, detention, death row, a sex offender treatment facility, or otherwise too sick to participate in the survey. Also excluded were inmates residing in halfway houses or off-site at the time of the survey. In all, 19,788 inmates (89% of the entire population) were eligible to participate.

Respondents were sampled in one of two ways. In all facilities, inmates housed in the general population ( $n = 18,956$ ) were invited by the researchers to participate in a survey about the quality of life inside the prison. Response rates across all facilities ranged from 26 to 53%, with a mean response rate of 39% (SD: 0.068). Non-respondents at six facilities reported their reasons for not participating in the survey. The three most common reasons reported by 848 inmates declining participation were: “I believe nothing will ever change here”; “I am leaving here soon”; and “This is prison. Our quality of life doesn't matter.” Four facilities have specialized administrative segregation units, separating inmates with behavioral infractions from the general population. These individuals had limited movement privileges and could only be interviewed face-to-face in a secure but confidential setting. Of the 832 inmates housed in these units, 10% of the sample was invited to participate, and 100% agreed to complete the survey through a face-to-face interview.

A total of 6,964 men ( $\bar{x}$  age = 34.0) and 564 women aged 18 or older participated in the study ( $\bar{x}$  age = 35.5). Over two-thirds (67.4%) of the female

inmates were nonwhite while 80.5% of the males were nonwhite. These statistics are equivalent to the general prison population (67.3% of females are nonwhite with a mean age of 35.4, and 80.1% of the males are nonwhite with a mean age of 34.3). The percent Latino in the survey sample (9.1% female; 15.7% male) was similar to the population as a whole (10.1% female; 14.9% male).

### Procedures

The surveys were conducted at the female facility during the first week of June 2005 and at male facilities from June through August of 2005. The survey was administered using audio-CASI and was available in English and Spanish. Inmates responded to a computer-administered questionnaire by using a mouse and following audio instructions delivered via headphones. Thirty computer stations were available, and researchers were there to assist participants as needed. The English version of the CASI survey was generally completed within 60 min while the Spanish version took approximately 90 min. Of those participating in the survey, 112 men (1.6%) and 18 (3.2%) women were interviewed directly. The majority of these respondents (65%) were housed in administrative segregation. The other face-to-face interviews (35%) were conducted because participants were intimidated by the computer or were in the infirmary or specialized mental health unit. Five interviewers conducted the interviews, with the majority (61%) conducted by two interviewers. All interviewers were trained and followed a scripted protocol. Face-to-face interviews, conducted only in English, were completed in roughly 45 min.

### Variables and Measures

The questions regarding sexual victimization were adapted from the National Violence Against Women and Men Surveys<sup>40</sup> and appear in the [Appendix](#). Sexual violence was measured using two general questions for each type of perpetrator (inmate or staff member). The questions were “Have you been sexually assaulted by (an inmate or staff member) within the past 6 months?” and “Have you ever been sexually assaulted by (an inmate or staff member) on this bid [conviction]?” Ten additional questions about specific types of sexual victimization were used [e.g., during the past 6 months, has (another inmate or staff member) ever ... touched you, felt you or grabbed you in a way that you felt was sexually threatening or made you have sex by using force or threatening to harm you or someone close to you].

The specific sexual assault questions were clustered to reflect definitions of sexual violence developed by the National Center for Injury Prevention and Control.<sup>41</sup> Sexual violence was defined as *nonconsensual sexual acts*, which consisted of forced sex acts, including oral and anal sex, and *abusive sexual contacts*, which included intentional touching of specified areas of the body.<sup>3</sup> Seven of the specific questions involving penetration or sexual acts were included in the category for nonconsensual sexual acts [e.g., has (another inmate or staff member) ever...made you have oral sex by using force...]. Three questions were used to construct abusive sexual contacts [e.g., has (another inmate or staff member) ever touched you, felt you or grabbed you in a way that felt sexually threatening]. Inmates who responded affirmatively to any one of the ten questions were considered sexual victims. The survey did not ask questions about consensual sex between inmates or between staff and inmates.

*Six-month prevalence* of sexual victimization measures the number of people in the population experiencing sexual victimization within a 6-month period and is calculated using general and specific questions. *Bid-time prevalence* of sexual victimization measures the number of people in the population experiencing a sexual assault while incarcerated on the current conviction, which is based on the general question only.

### **Weights**

Weights were constructed to adjust the characteristics of the sampled population to the full population of inmates at each facility. A two-step weighting strategy was used.<sup>42</sup> The first step (relative weight) adjusted for the sampling design (i.e., the exclusion of some units within a facility, the variation in the probability of selection, and proportional representation by facility). The second step (post-stratification weight) adjusted the data on the basis of time at facility, race/ethnicity, and age. The final weight for each strata is the relative weight multiplied by the post-stratification weight.

*Analyses* Both weighted and unweighted analyses were conducted. As unweighted results are not dissimilar to weighted results, only weighted results are presented. Unless otherwise indicated, the significance level used to assess the validity of the null hypotheses is  $p < 0.05$ .

## **RESULTS**

### **Characteristics of Survey Respondents**

The characteristics of the sample, by gender, appear in Table 1. Female inmates participating in this study ( $n = 564$ ) had a mean age of 35.5 years and were mostly African American (56.5%). By contrast, male inmates ( $n = 6,964$ ) were a year younger on average (34.0) and were significantly more likely to be African American or Hispanic (63.7 and 15.7%, respectively). A greater percentage of males than females were serving life sentences (7.8% compared to 4.0%, respectively), and, on average, males had one additional year left on their current sentence than females (4.0 years compared to 2.8 years, respectively). On average, male inmates had served more time in prison since the age of 18 than females (8.1 years compared to 4.2 years, respectively). Female inmates, compared to their male counterparts, were significantly more likely to report having mental health problems (65.6 vs. 30.0%, respectively), a substance abuse disorder (43.3 vs. 27.1%, respectively), and a chronic physical condition (58.1 vs. 30.8%, respectively).

### **Bid-Time Prevalence Rates**

Prevalence estimates are based on the reporting of any sexual victimization while serving time on the current sentence at any facility within the statewide system. Bid-time prevalence rates are calculated using responses from the general assault question and are delineated by perpetrator (inmate-on-inmate and staff-on-inmate). The prevalence rate for inmate-on-inmate sexual assault was two times higher for inmates in female facilities than male facilities (39 per 1,000 vs. 16 per 1,000, with 95% CI 28–50 vs. 13–19), and the comparable staff-on-inmate rate is 1.6 times higher (53 per 1,000 vs. 34 per 1,000, with 95% CI 41–68 vs. 30–38). Rates of reported sexual assault by staff were higher than assaults by inmates for both

**TABLE 1. Characteristics of survey respondents, inmates in statewide correctional system, by gender, 2005**

	Female ( <i>n</i> = 564)	Male ( <i>n</i> = 6,964)
Age*, <i>y</i>		
Mean (SD)	35.5 (6.8)	34.0 (7.9)
Race*, %		
White	32.6	19.5
Black	56.5	63.7
Other	10.9	16.8
Ethnicity, %		
Latino*	9.1	15.7
Incarceration characteristics		
Time at current facility, mean (SD)	2.3 (3.4)	2.5 (4.5)
Life sentence*, %	4.0	7.8
Time left on current sentence <sup>a</sup> *, mean (SD)	2.8 (5.4)	4.0 (5.7)
Time incarcerated from age 18*, mean (SD)	4.2 (3.7)	8.1 (7.1)
Clinical characteristics, %		
Mental health problem*	65.6	30.0
Substance abuse*	43.3	27.1
Head trauma	6.6	7.5
Chronic physical condition*	58.1	30.8

All estimates are weighted. Mean differences were tested using *t*-tests and differences in percentages were tested using chi-square.

<sup>a</sup>Time left on current sentence excludes those with a life sentence.

\*Statistically significant difference ( $p < 0.05$ ).

female and male inmates but still within the range of a rare event. Inmates aged 25 or younger, compared to inmates older than 25, were significantly more likely to report a sexual assault during incarceration by a staff member (54 per 1,000 vs. 30 per 1,000, with 95% CI 43–65 vs. 26–34).

### Six-Month Prevalence Rates

The proportion of inmates reporting an incident of sexual victimization within the 6-month period varied by the way the survey question was worded. The prevalence rates for both inmate-on-inmate and staff-on-inmate sexual victimization were lower for the (general) question that referred to an incident of “sexual assault,” compared to the (specific) questions describing specific types of sexual misconduct for both female and male inmates (females: 23 vs. 210 per 1,000 (inmate-on-inmate), 25 vs. 75 per 1,000 (staff-on-inmate); males: 16 vs. 38 per 1,000 (inmate-on-inmate), 26 vs. 69 per 1,000 (staff-on-inmate)). There were, however, unduplicated positive responses to the general and specific questions of sexual victimization (i.e., individuals may have responded ‘yes’ to the general question but ‘no’ to the specific questions, ‘no’ to the general question but ‘yes’ to the specific questions, or ‘yes’ to both the general and specific questions). Unduplicated positive responses to both questions, when combined, yielded slightly higher incidence rates for inmate-on-inmate and staff-on-inmate sexual victimization than those based solely on the specific questions for both female (212 vs. 210 per 1,000; 76 vs. 75 per 1,000, respectively) and male (43 vs. 38 per 1,000; 76 vs. 69 per 1,000, respectively) inmates. For this reason, in this section we report unduplicated 6-month prevalence rates based on the combined responses to the general and specific questions.

**TABLE 2. Six-month prevalence of sexual victimization in statewide correctional system, by gender, 2005; rates per 1,000 and 95% confidence intervals**

	Female ( <i>n</i> = 564) rate per 1,000 inmates <sup>a</sup> (95% CI)	Male ( <i>n</i> = 6,964) rate per 1,000 inmates <sup>a</sup> (95% CI)
<b>Inmate-on-inmate sexual victimization</b>		
Any incidents*	212 (188–237)	43 (39–47)
Any abusive sexual contact*	201 (178–224)	35 (31–38)
Any nonconsensual sex acts*	32 (23–42)	15 (12–17)
<b>Staff-on-inmate sexual victimization</b>		
Any incidents	76 (62–91)	76 (70–81)
Any abusive sexual contact	66 (52–80)	66 (61–71)
Any nonconsensual sex acts	17 (10–25)	19 (16–21)

<sup>a</sup>The estimates of 'Rate per 1,000 inmates' are based on weighted valid numbers.

\*Statistically significant difference between males and females ( $p < 0.05$ ).

Table 2 provides estimates of weighted 6-month prevalence rates of sexual violence in a statewide prison system by gender based on the number of inmates in the sample who reported experiencing sexual victimization in the 6-month period preceding data collection. Gender-based incidence rates per 1,000 inmates are distinguished for two general categories of perpetrators (inmate-on-inmate and staff-on-inmate) and are further broken down by two types of sexual violence: abusive sexual contacts and nonconsensual sexual acts.

Prevalence rates were highest for female inmates, with 21.2% (212 per 1,000) reporting an incident of some type of inmate-on-inmate sexual victimization in the previous 6 months. This rate was four and a half times higher than that estimated for male inmates (4.3%). Incidents of abusive sexual contact contributed most of the difference in inmate-on-inmate prevalence rates by gender. Female inmates were roughly six times more likely to report an incident of abusive sexual contact than their male counterparts (20.1 vs. 3.5%), while only being twice as likely to report an incident of a nonconsensual sex act (3.2 vs. 1.5%, respectively). There were no statistically significant differences between males and females in rates of experiencing staff-on-inmate sexual violence. While female inmates were more likely to be sexually victimized by other inmates than by staff (21.2 vs. 7.6%), male inmates were more likely to report an incident of sexual victimization perpetrated by staff (7.6 vs. 4.3%).

Table 3 displays male prevalence rates for inmate-on-inmate and staff-on-inmate sexual victimization by facility size, categorized by inmate population (up to 1,100 inmates, 1,101–1,900 inmates, and more than 1,901 inmates). Prevalence rates vary by facility, ranging from 30 to 64 per 1,000 for inmate-on-inmate sexual victimization and 37 to 118 per 1,000 for staff-on-inmate sexual victimization. No discernible pattern exists by size of facility. Independent of facility size, staff-on-inmate rates of sexual victimization were higher than inmate-on-inmate rates and were significantly higher for four of these facilities (#5,6,10,11).

As can be seen in Table 4, abusive sexual conduct perpetrated by both inmates and staff was more common than nonconsensual sexual acts. Between inmates, the rates of abusive sexual conduct were 1.2 to 7 times higher than rates of non-consensual sexual acts. The variation in 6-month prevalence rates for staff-on-inmate abusive sexual conduct compared to nonconsensual sexual acts was also

**TABLE 3. Six-month prevalence of sexual victimization reported by male respondents in statewide correctional system, 2005,  $n = 6,964$ ; rates per 1,000 and 95% confidence intervals**

	Inmate-on-inmate rate per 1,000 inmates <sup>a</sup> (95% CI)	Staff-on-inmate rate per 1,000 inmates <sup>a</sup> (95% CI)
General question ( $n = 6,736$ )	16 (13–18)	26 (23–29)
Specific question ( $n = 6,821$ )	38 (34–41)	69 (64–75)
Combined questions ( $n = 6,824$ )	43 (39–47)	76 (70–81)
Facilities with populations to 1,100		
1	64 (45–82)	69 (50–90)
2	47 (21–68)	64 (38–94)
3	31 (10–52)	42 (21–68)
Facilities with populations from 1,101 to 1,900		
4	49 (31–67)	71 (50–94)
5	38 (23–52)	118 (91–146)
6	38 (22–56)	84 (61–104)
Facilities with populations over 1,901		
7	50 (34–68)	90 (66–112)
8	52 (39–65)	74 (60–88)
9	32 (23–42)	47 (35–57)
10	41 (33–49)	82 (71–93)
11	46 (28–62)	116 (94–138)
12	30 (19–39)	37 (27–49)

<sup>a</sup>The estimates of ‘rate per 1,000 inmates’ are based on weighted valid numbers.

higher, with abusive sexual conduct more than 1.8 to 10.9 times higher than nonconsensual sexual acts. As in Table 3, no discernible pattern exists by size of facility.

## DISCUSSION

Considerable anecdotal and empirical speculation exists about the extent to which inmates are at risk for sexual victimization inside prisons. Methodological limitations, ranging from biased sampling designs and survey methodology to selective definitions of sexual victimization and perpetrators, have led to extreme equivocation in the extant literature. The PREA legislation directed attention to the potential problem of sexual victimization inside American prisons and provided the means to rigorously estimate its rate of occurrence. This study, part of the PREA initiative, measured sexual victimization inside a prison system for a single state using state-of-the-art methodology that minimized common problems limiting generalizability, validity, and reliability.

Several limitations are noteworthy. The first concerns sample bias. Our samples ranged from 26 to 53% of the general population among 13 facilities. This representation of the inmate population is significant in absolute number but may not generalize to the full population. While we tested for non-representativeness in terms of age, race/ethnicity, and length of incarceration and adjusted for any deviations in the weighting strategy, the characteristics that predict variation in sexual victimization may not be fully represented by these attributes. To the extent that inmates who have characteristics that make them targets for sexual victimization were systematically over- or under-represented in our samples, the



**TABLE 4. Six-month prevalence of sexual victimization in statewide male correctional system grouped by population size, 2005,  $n = 6,964$ ; rates per 1,000 and 95% confidence intervals**

	Inmate-on-inmate rate per 1,000 inmates <sup>a</sup> (95% CI)		Staff-on-inmate rate per 1,000 inmates <sup>a</sup> (95% CI)	
	Abusive sexual conduct	Nonconsensual sexual acts	Abusive sexual conduct	Nonconsensual sexual acts
Facilities with populations from 500 to 1,100				
1	53 (34–72)	21 (10–32)	61 (43–80)	13 (5–24)
2	43 (21–60)	8 (0–21)	52 (30–17)	
3	31 (10–52)	26 (10–47)	42 (21–68)	26 (10–47)
Facilities with populations from 1,101 to 1,900				
4	37 (21–53)	18 (7–31)	50 (31–69)	26 (13–39)
5	29 (17–41)	16 (7–26)	109 (82–133)	31 (19–43)
6	31 (18–41)	25 (10–38)	69 (48–89)	22 (10–33)
Facilities with populations over 1,901				
7	38 (22–52)	8 (2–16)	87 (64–109)	8 (2–14)
8	43 (32–55)	32 (21–43)	65 (51–78)	22 (14–31)
9	24 (17–33)	5 (2–10)	36 (27–47)	20 (11–27)
10	34 (27–42)	14 (9–18)	70 (60–80)	22 (16–28)
11	42 (26–60)	6 (0–14)	106 (84–126)	14 (6–22)
12	21 (13–28)	7 (3–13)	28 (19–38)	13 (6–19)

<sup>a</sup>The estimates of 'rate per 1,000 inmates' are based on weighted valid numbers.

rates reported herein would either, respectively, over- or underestimate sexual victimization within these facilities. One way to account for such uncertainty is to estimate confidence intervals. The reported confidence intervals around each of the estimated rates in this study provide a reasonable (95%) approximation of the range of variation in rates of sexual victimization.

The second limitation concerns biased reporting. Audio-CASI, while the most reliable method for collecting information about activities or events that are shaming or stigmatizing, does not correct for bias motivated by revenge against custody officers or the prison system itself. Relations between inmates and custody staff are complex, often fraught with tension and hostility. This survey provided inmates with the rare opportunity to report anonymously on the conditions inside prison, including how they are treated by custody staff. To guard against false reporting, as part of the consent process, the importance of accurate reporting was discussed in terms of its impact on the legitimacy of the data and survey. We explained that misinformation was as useless as no information at all. As mentioned earlier, many of those who chose not to participate in the survey were antagonistic to the "system" or demoralized to the point of disinterest. Those who participated, by and large, deliberated over questions about their interactions with the custody staff. They frequently asked the research staff for assistance on how to answer questions about the custody staff when most were reasonable and fair but some were abusive and cruel. Their questions during the survey and the distributions of the responses to the questions are not suggestive of false reporting. Also, given that the survey instruments were read and completed in real time,

involved hundreds of questions, and were completed by hundreds of inmates per day over a 2 to 4 day period, systematic strategies for reporting against the facility were minimized. If there was systematic false reporting of events or behaviors by custody staff, we would have expected much higher and clustered rates, which were not detected in the data.

Overall, rates of sexual victimization were found to vary significantly by gender, age, perpetrator (inmate or staff), question wording, and facility. These rates also varied if delimited to nonconsensual sexual acts or abusive sexual conduct. On average, rates of sexual victimization were lowest for males, inmate-on-inmate victimizations, and nonconsensual sexual acts. Thus, studies focusing solely on inmate-on-inmate nonconsensual sexual acts (particularly, rape) in male prisons will provide very conservative estimates of sexual victimization overall. In our study, the percentage of the male inmate population experiencing such incidents over a 6-month period was 1.5%, on average, and at any point since incarcerated, 1.6%. For male prisons, the highest rate of sexual victimization (76 per 1,000) is associated with staff perpetrators.

These rates, based on averaging, mask considerable variation among prisons housing men. The literature clearly demonstrates that prison environments are heterogeneous.<sup>28,43</sup> Our research is consistent with this literature. An individual's risk of sexual victimization is not equivalent across prisons even within a single prison system. Depending on facility, a male inmate might be housed in a prison where the risk of inmate-on-inmate sexual victimization is as high as 6.4% or as low as 3.0%. Likewise, he might be in a facility where the risk of sexual victimization by a staff person ranges from 3.7 to 11.8%. More research is needed to identify the factors that predict variation in risk across male facilities. The literature suggests that violence levels inside prisons are associated with overcrowding, management style, and availability of programming,<sup>28,44,45</sup> but the definition of violence in prior research focused on physical violence, not sexual. This is an important area for future exploration.

Sexual victimization rates in the female facility were significantly higher than those for male facilities, especially with respect to abusive sexual contact between inmates. On average, 21.2% of female inmates reported experiencing some form of sexual victimization by other inmates, while 7.6% reported experiencing that behavior by staff. Nonconsensual sex acts were reported at considerably lower rates, with 3.2% of inmates reporting a sexual assault by an inmate over a 6-month period and 1.7% by a staff member. The percent of inmate-on-inmate rape is over ten times higher than rape rates of adult women in the total population, and the rate for staff perpetrated rape is almost six times higher. Compared to other studies of sexual violence in prisons, our estimate of prevalence (3.2%) is less than half of the 7.0% reported by Struckman-Johnson et al.<sup>15,16</sup> and roughly two-thirds of the 4.5% sexual coercion rate reported by Hensley et al.<sup>18</sup> In a subsequent study of three female facilities located in Midwestern states, the Struckman-Johnson team<sup>17</sup> estimated rates of sexual coercion of 8, 9, and 27%, with one-fifth of these events defined as "rape" and roughly half involving staff. The blending of types of perpetrator (inmate vs. staff) and the types of sexual victimization (rape or nonconsensual sex acts with abusive sexual contact) explains part of the variation in rates among these studies, along with the different sampling designs and methods for collecting responses. While it is customary to attribute violence to men, it may be that the rage that motivates violence and the desire to dominate that motivates rape are traversing the gender divide. Rates of aggravated assault, murder, and use

of weapons among arrested female juveniles increased dramatically between 1980 and 2003<sup>46</sup> and may be foreshadowing a change in the character of the female inmate. Both the variation and increased risk of sexual victimization that female inmates face and the rising violence among female offenders underscores the need for more research that includes female facilities. Sexual victimization in female prisons has been understudied, with only four published studies,<sup>15-18</sup> compared to well-over a dozen studies of male prisons.<sup>12</sup> Future research also needs to explore the profiles of sexual victims and sexual aggressors within male and female facilities to better understand why and in what ways sexual victimization varies within male and female facilities.

From a public health perspective, the number of potential victims susceptible to HIV and other health and mental health consequences as a consequence of a sexual victimization inside prison is staggering. In 2003, there were 1,368,866 males being housed in federal and state prisons; extrapolating from our data, this would translate into almost 22,000 male inmates experiencing a forced sexual act, the comparable number for the 101,179 female inmates in federal and state prisons is over 3,200. The experience of unwanted sexual touching or forced sex and the concomitant fear of sexual victimization have nontrivial physical, emotional, and psychological implications for current and future behavior inside and outside prison.<sup>5</sup>

The vast majority of people in prison eventually return to the community. In general, they relocate to communities where they committed their crimes or where they have familial or interpersonal connections. Research clearly shows that relocation patterns after prison are not random. People leaving prison are more likely to return to socially disadvantaged urban communities, where rates of criminal behavior and drug use are high and opportunities for healthy and prosocial living are low.<sup>47-49</sup> To these communities, the victims of sexual violence arrive with elevated needs for physical and mental health treatment, furthering the spatial concentration of poor health.

Research on the risk of sexual victimization inside prison and its variation across facilities provides the rationale for studying the characteristics of the individual and the environment that elevate or lower risk levels in order to better classify inmates for placement and to alter environments inside prison to promote safe and humane prisons. It has been said that prisons are jungles, but this is a truism only if we fail to act rationally and humanely.

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## Appendix

### SURVEY QUESTIONS REGARDING SEXUAL VIOLENCE (MALE VERSION)

*General* sexual assault questions, INMATE:

- Have you been *sexually* assaulted by an *inmate* within the past 6 months here?
- Have you *ever* been *sexually* assaulted by an *inmate* on this bid?

*Specific* sexual violence questions\*, INMATE

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During the past 6 months, has another inmate ever...

1. Touched you, felt you, or grabbed you in a way that you felt was sexually threatening?
  2. Tried or succeeded in touching your genitals or sex organs?
  3. Tried or succeeded in getting you to touch someone else's genitals when you didn't want to?
  4. Made you have sex by using force or threatening to harm you or someone close to you?
  5. Made you have oral sex by using force or threat of force?
  6. Made you have anal sex by using force or threat of force?
  7. Put fingers or objects in your anus against your will or by using force or threat of force?
  8. Made you put fingers or objects in someone else's anus against your will or by using force or threats?
  9. Attempted to make you have oral or anal sex against your will but penetration did not occur?
  10. Required you to perform sexual acts as a way to protect yourself from future harm?
- 

*General* sexual assault questions, STAFF MEMBER:

- Have you been *sexually* assaulted by a *staff member* within the past 6 months here?
- Have you *ever* been *sexually* assaulted by a *staff member* on this bid?

*Specific* sexual violence questions\*, STAFF MEMBER

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During the past 6 months, has *staff member* ever...

1. Touched you, felt you, or grabbed you in a way that you felt was sexually threatening?
  2. Tried or succeeded in touching your genitals or sex organs?
  3. Tried or succeeded in getting you to touch someone else's genitals when you didn't want to?
  4. Made you have sex by using force or threatening to harm you or someone close to you?
  5. Made you have oral sex by using force or threat of force?
  6. Made you have anal sex by using force or threat of force?
  7. Put fingers or objects in your anus against your will or by using force or threat of force?
  8. Made you put fingers or objects in someone else's anus against your will or by using force or threats?
  9. Attempted to make you have oral or anal sex against your will but penetration did not occur?
  10. Required you to perform sexual acts as a way to protect yourself from future harm?
- 

\*Questions #1, 2, and 3 were combined to create a variable indicating an *abusive sexual contact*. Questions 4–10 were combined to create a variable indicating a *nonconsensual sexual act*.

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