Prison Rape: A Critical Review of the Literature

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National Institute of Justice

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EXECUTIVE SUMMARY

Prison Rape: A Critical Review of the Literature – Executive Summary

This executive summary covers the highlights of the report *Prison Rape: A Critical Review of the Literature*, which analyzes obstacles and problems that must be overcome to effectively measure sexual assault at the facility level. Each bold heading in this summary refers to the same bold heading contained in the larger report.

Federal Legislation. The Prison Rape Elimination Act of 2003 calls for research and policy changes to minimize sexual victimization of incarcerated juveniles and adults. The Act also calls for a zero tolerance policy; national standards for the detection, prevention, reduction, and punishment of prison rape; collection of data on incidence; and development of a system to hold prison officials accountable. Also, the Bureau of Justice Statistics is to design a methodology to assess the prevalence of prison sexual assault and monitor adult prisons, jails, and juvenile facilities. In the findings section of the public law, there is a claim from unnamed experts that a conservative estimate of victimization suggests that 13 percent of inmates in the United States have been sexually assaulted.

Defining Sexual Victimization – Prevalence and Incidence. Research should distinguish various levels of sexual victimization from completed rapes to other forms of sexual coercion. Any measurement process will have to distinguish between the prevalence and incidence of the events. Prevalence refers to the number of people in a given population who have ever had a sexual assault experience. Incidence refers to the number of new cases. This distinction is important, because prevalence can be high, but the number of new cases is low due to some kind of intervention or enforcement of policy.

Prison Rape Literature. Aside from one study conducted by the Bureau of Justice Statistics (BJS) in 1997, all other studies conducted in the United States included fewer than 50 prisons in total. In 2000, BJS reported there were 1,668 federal and state prisons. There has also been one study of sexual victimization in a jail system. In 1999, the Bureau of Justice Statistics reported there were 3,365 jails in the United States.

Studies Involving Primarily Men, or Men and Women. Studies by Struckman-Johnson, Struckman-Johnson, Rucker, Bumby, and Donaldson (1996), Struckman-Johnson and Struckman-Johnson (2000), Davis (1968), Nacci and Kane (1982, 1983, 1984), Saum, Surratt, Inciardi, and Bennet (1995), Tewksbury (1989), Maitland and Sluder (1998), Wooden and Parker (1982), Lockwood (1980), Toch (1977), Hensley, Tewksbury, and Castle (2003), Carroll (1977), Chonco (1989), Moss, Hosford, and Anderson (1979), Butler, Donovan, Levy, and Kaldor (2002), Fuller and Orsagh (1977), Butler and Milner (2003), Forst, Fagan, and Vivona (1989), and the Bureau of Justice Statistics (1997) reported on primarily male samples, or a combination of female and male samples. The Butler and Milner and Butler et al., studies were conducted as part of a larger health assessment in the prison system in New South Wales, Australia. Details of each of these studies are covered in the full report.

Studies Involving Exclusively Women – Coerced Sex among Women. Struckman-Johnson and Struckman-Johnson (2002), and Alarid (2000) reported on exclusively female samples. These studies are reviewed in detail in the full report. There is also a great deal of research on consensual sex among women that is mentioned, but not reviewed in the report.

U.S. National Probability Sample of Rape during Incarceration. The only attempt at a U.S. national probability sample of adults in state and federal prisons was conducted by BJS in 1997. In that study, 0.45 percent of men and 0.35 percent of women prisoners reported they had experienced an attempted or completed rape during a previous incarceration.

U.S. National Probability Sample of Forced Sexual Activity among Youth in Juvenile Facilities. There has also been a national probability sample of youth living in juvenile facilities because they are accused or convicted of a crime. The Survey of Youth in Residential Placement (SYRP) was sponsored by the Office of Juvenile Justice and Delinquency Prevention. Over 7,000 juveniles participated (75 percent response rate) and detailed questions about forced sex were asked. The results will be released soon.

Summary of Prison Rape Estimation Studies. Aside from the New South Wales and BJS studies, most other research papers report survey return rates of 50 percent or less. Many response rates are 25 percent or lower. The prevalence estimates in this research range from 0 to 40 percent. When the data are limited to definitions that involve primarily assault or a completed sexual victimization, most of the prevalences were 2 percent or less typically referring to the entire period of incarceration. When forms of sexual pressure are included, these estimates increase to an upper limit of about 21 percent or less except for a couple of prisons. National and system probability samples which are designed to give an estimate of victimization for the entire jurisdiction, reported sexual victimization rates of 2 percent or less. There are few incident studies, and these have little, or no, information on how to construct an appropriate denominator to get a percentage or rate. A "back of the envelope" estimate places this at no more than 2 percent in a given year, based primarily on the one jail system study conducted in the 1960's and as low as 0.69 percent based on one prison study. Women's victimization percentages appear to be lower than men's.

These studies use different methods to establish the level of victimization (questionnaires, interviews, informants, administrative records); they use different questions, and they use different time frames. Definitions vary widely from rape to sexual pressure. Some of these estimates rely on self-reported victimizations, while others are based on the perceptions of inmates and staff on the overall level of victimization in the prison. These latter estimates always appear higher than self reports, and it is unclear what these latter estimates mean since there is no presumption that inmates or staff actually witness all of the sexual assaults they claim are occurring. Most studies fail to report how long the sexual assault victim has been in prison making it difficult to compare prisons across jurisdictions, due to the likelihood of different exposure periods.

A Meta-analysis of Prison Sexual Assault Studies

In an effort to get a summary estimate of the level of sexual victimization, a meta-analysis was conducted to provide a calculation of an average estimate over all of the studies, even though any single study may not meet conventional levels of statistical significance. Results of the meta-analysis indicate an average prison lifetime sexual assault prevalence of 1.91 percent. This means that 1.91 percent of inmates have experienced a sexual victimization over a lifetime of incarceration. This estimate is based primarily on studies which report completed victimizations, although it incorporates some studies which also include serious attempts of sexual assault and one study that includes sexual pressure.

Social Desirability of Responses and the Nature of Sensitive Questions. Prison sexual assault surveys are similar to surveys conducted in the community eliciting information on other sensitive behaviors. Survey participants tend to underreport behaviors that are perceived to be against society's norms (socially undesirable), that invade privacy, and that may be disclosed to third parties despite precautions by researchers to protect confidentiality.

Study Procedures and the Problem of Selection Bias. There are often very low response rates in these studies and researchers usually do not report differences between those that choose to be surveyed and those refusing. Nor do any of the research reports make adjustments to the victimization estimates based on differences in characteristics of the respondents. Such adjustments could easily change the level of sexual victimization, either to a higher or lower percentage.

Recall and Telescoping. Most of the surveys conducted among inmates ask respondents to recall events since their initial incarceration. With such long periods of recall, it is likely respondents forget details or telescope events by placing them in a more recent time frame than they actually occurred. Most studies do not use techniques to help inmates place the time of an event in context of other life events. This is particularly important if a researcher wants to establish a prevalence rate that may refer to a given incarceration or specific time frame.

Interview Modes. To date, most of the studies have used either interviews or paper and pencil self-administered questionnaires to record events. New methods are now available that allow a respondent to answer questions through a computer assisted survey format (CASI), or one that also includes an audio version where instructions and questions are asked by the computer, and the respondent answers these questions directly into the computer using touch screens (audio-CASI). This latter technique has been used in other surveys of sensitive information (drug use, sexual behavior, legal abortions), and has been shown to elicit more reliable and higher incidence response rates. The computer intervention removes the shame and embarrassment of the interview setting, and helps to insure the confidentiality of the response. There is another methodology called randomized response that has also been used to insure confidentiality of response.

Neither method has been tried in the prison sexual victimization domain. The full report covers the use of these methods to measure other sensitive and stigmatized behavior, and evidence on the reliability and validity of these methods.

The Problem of Validity. Unlike some other assessments of sensitive and stigmatized behaviors such as sexual practices and legal abortions, there is no way to directly measure the veracity of the self-reported prison sexual victimization. We propose two models that use other information about drug use, the level of blood borne infectious disease, and the level of sexual victimization to try to establish the validity of the data at the individual or institution level, after a large scale survey has been conducted. This method will not provide an independent validity check on the actual proportion of sexual victimization. It will, however, provide some assurance that the relative ranking of prisons, from best to worst, has some validity.

Sample Size and Question Wording. If researchers are interested in completed or serious victimizations, and these are relatively rare, the sample sizes needed to establish the level of sexual assault in a particular prison will have to be fairly large and more costly than if the study were designed to measure the jurisdictional level of victimization.

Adjustments to the Prison Rape Estimates and the Ranking of Problematic Prisons. The legislation recognizes that to report the best and worst prisons, jails, and juvenile facilities with respect to their ranking on sexual victimization, there will have to be some adjustment in the rankings to "level the playing field." For example, it is unfair to compare prisons that contain different inmate security compositions. Adjusting the victimization rates to make prisons appear equivalent is a technically difficult problem. Since there are consequences to low rankings, the adjustments and resulting rankings will also be controversial.

Summary. The task framed by the Prison Elimination Act of 2003 presents problems of estimation, validity, and bias. The correctional setting amplifies the problems encountered when researchers measure sensitive and stigmatized behaviors in the community. Most of the literature has been concerned with adult prisons. While there are difficulties encountered in prisons, there will be additional problems in jails and juvenile facilities. Jails have high turnover rates. To get compliance from adolescents, in most jurisdictions you need the consent of their parents. While the task is a formidable one, it is worth the effort, even if prison rape is a relatively rare event. The data can be used to raise or allay concerns depending on the results of the jurisdiction. The survey results can be used to train staff and inmates. The data may lead to better classification of victims and assailants which will help to reduce the level of sexual assault. The American Correctional Association has already promulgated new standards that address prevention, detection, and records collection associated with sexual assault. Because there is no validity check on the outcomes, there will probably always be some controversy associated with the results of a facility-based estimate. The adjustments to the estimates required by the public law will probably amplify that controversy. Furthermore, there are critics of correctional administration and some researchers who argue that prison sex is part of a subculture of sexuality that is not commonly understood by most analysts doing

work in this domain. They argue that to fully understand the level of sexual victimization, one must first understand the language and subcultural definitions used by the confined. The data may also lead to a more objective understanding of the actual level of prison sexual victimization that will either support or invalidate the assumptions inherent in the Rape Elimination Act that make it appear prison rape is endemic in American correctional institutions. However, since there is no independent assessment of the validity of the self-reported incidents, there may well be dissatisfaction with the results of a national probability assessment regardless of the outcome.

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Prison Rape: A Critical Review of the Literature

Recent federal legislation has called for research and interventions to address the problem of prison rape. This paper critically reviews the published research on prison sexual victimization and places this research in the broader context of measuring sensitive and stigmatized behaviors. The paper is intended to offer substantive suggestions on the best ways to measure the prevalence and incidence of sexual victimization in prison, to explore problems that will be encountered in assessing and interpreting results of a national survey of prisons and jails, and to summarize the prior and current literature. While there are some similarities in measuring prison rape and sensitive behaviors in the community such as abortion, drug use, and homosexual behavior, the prison context also changes the nature of the measurement problem.

First, we review the findings and goals of The Prison Rape Elimination Act of 2003 ("The Prison Rape Elimination Act of 2003," 2003(c)(3) Data Adjustments). The second section of this paper discusses definitions of incidence and prevalence. Part of the confusion that arises in representing the quantity and rate of prison and jail rape is that different authors have used different definitions. The next section reviews the current literature on estimating the amount of prison and jail victimization. There have been very few attempts to measure sexual victimization in prison. Only the Bureau of Justice Statistics (BJS) has attempted to study this topic using a national probability sample in the United States, although the Bureau of Prisons conducted a national probability sample of prisons under its jurisdiction (Nacci & Kane, 1982, 1983, 1984). There has also been a health survey conducted among inmates confined in New South Wales, Australia that included sexual victimization, and was designed as a probability sample for that jurisdiction (Butler & Milner, 2003). It is only with such a sample that we can ever attempt to understand the scope of the problem. We summarize the level of sexual victimization by

reporting the results of a meta-analysis. The measurement problems for these surveys are formidable given the stigmatization associated with sexual victimization, as well as the fact that many of the previous attempts to measure victimization have resulted in large unit non-response. This is the term of art used by survey statisticians when individuals refuse to participate in the survey. This should be distinguished from item non-response which refers to questions that respondents either intentionally or inadvertently fail to answer. We elaborate on these problems in the paper. In the subsequent section, we review some of the literature on different modes that have been used to elicit reporting of stigmatized behavior in different national probability sample surveys that have been used to study sensitive behavior such as illicit drug use, abortions, and homosexuality. In the following section on validity, there is a discussion of possible ways to assess whether the self report data gathered from the surveys can be compared to some objective measures to give us greater confidence in the veracity of the survey data. We then briefly cover the problem of question wording, and relate it to whether the sample sizes will be large enough to detect sexual victimization at the facility level. In the section on institution adjustments, we review recent research that directly addresses the problem outlined in the legislation. The Act requires the prisons to be rank ordered so that the institutions with the best and worst levels of sexual victimization will be highlighted, but recognizes this requires a "level playing field." Certain types of prisons will have higher victimization rates because of their security status, other dimensions of institutional operations, and the type and composition of the inmates. In the last section of this paper, we summarize the problems and issues.

Federal Legislation

In the findings section of The Prison Rape Elimination Act of 2003 ("The Prison Rape Elimination Act of 2003," 2003), the public law states that “Insufficient research has been conducted and insufficient data reported on the extent of prison rape.” (p. 2). The findings section of this bill also asserts that according to conservative estimates of experts, nearly 13 percent of the inmates in the United States have been sexually assaulted in prison. Under current levels of imprisonment, this would imply that about 200,000 inmates now in prison have been sexually assaulted. The findings also assert that prison staff are unprepared by their training to “…prevent, report, or treat sexual assaults.”; that prison rape goes unreported; that prison rape contributes to the transmission of infectious diseases such as HIV, tuberculosis, hepatitis B and C; that rape victims pose a public safety problem because they are more likely to commit crime; that the interracial nature of sexual assault causes racial tensions both in prison and in the community; that rape exacerbates violence within prison; that members of the public and government are largely unaware of the epidemic proportions of prison rape and the daily horror of rape victims; that victims of prison rape are less likely to successfully reintegrate into their communities upon release from prison; that the high levels of prison rape violates prisoner’s rights under the Cruel and Unusual Punishment clause of the Eighth Amendment of the U. S. Constitution; and that prison rape undermines other government efforts to promote public health, public safety, salutary race relations, and economic sufficiency.

To address these issues the Act calls for a zero-tolerance standard; an effort to make this a top priority in every prison system, national standards for the detection, prevention, reduction,

and punishment of prison rape; increased data on the incidence; standardization of definitions for collecting data; a system that holds prison officials accountable to detect, prevent, and punish prison rape; and a reduction in the costs of prison rape on interstate commerce.

The Act acknowledges that when the results of the survey of sexual victimization are reported, the data must be adjusted so that prisons are judged on a level playing field. The legislation also allows the Bureau of Justice Statistics, the agency responsible for obtaining prison rape data, leeway in determining how rape should be defined, although clarifying language under the Definitions Section of the bill are quite explicit. Rape means "…the carnal knowledge, oral sodomy, sexual assault with an object, or sexual fondling of a person forcibly, or against that person's will (Sec.10.Definitions.(9)(A))." Fondling is defined as "…the touching of private body parts for the purpose of sexual gratification." (Sec.10.Definitions.(11))

Defining Sexual Victimization – Prevalence and Incidence

There are two distinct ways in which researchers characterize the extent to which some attribute is present in a population. These terms and concepts have been borrowed from the study of disease. Epidemiologists distinguish between *prevalence* and *incidence*. *Prevalence* is the total number within a population infected with a particular disease at a given point in time. As an example, a researcher may be interested in the number of inmates currently in our nation's prison infected with HIV. *Incidence* refers to new cases of a disease or other phenomenon in a specified period of time. Using the HIV example, researchers may try to estimate how many new cases of HIV infection have occurred within a calendar year. Prevalence rates or percentages are expressed as the number of cases of a disease present in a population at a particular time divided

by the total number of individuals in the population at that time. Incidence proportions are expressed as the number of new cases, divided by the number of individuals *at risk* during that time period.

Because most diseases have a limited duration, or they kill their host, incidence and prevalence rates can indicate very different pictures of the disease cycle. For example, If a disease has a long duration (such as HIV), and it was spread widely in 2002, even if the number of new cases has declined dramatically, there will still be a high prevalence in 2003. Conversely, a disease that is easily transmissible, but has a short duration may have a high incidence and low prevalence. Sometimes epidemiologists distinguish between *first* and *total incidence*. *First incidence* is the initial occurrence of an event such as the first occurrence of a cold, an accident, or a rape. There are of course some phenomena which can only have a first occurrence. There is no second incident of an HIV infection. *Total incidence* allows the individual to be counted more than once during some time frame. In a given year, if we count the number of rapes, and if someone is raped more than once that person is counted each time the assault occurs. Total incidence is also sometimes called the *attack rate*. There are actually comparable prevalence concepts. *Lifetime prevalence* is the number of people who have ever experienced an event. *Point prevalence* is the number of people who have experienced an event in a given time frame. Point and lifetime prevalence have both been used to characterize prison rape without explicitly recognizing the difference in meaning of the two statistics.

When these concepts are translated into areas of interest outside of disease, we must recognize that the phenomenon we are dealing with may not have a cycle of infection. This is the case with sexual victimization. Someone who has been raped will always have that attribute. Nonetheless it is still important to distinguish between incidence and prevalence for the same

reason it is important in the epidemiology of disease. A prevalence rate may be high at the same time the number of new cases (incidence) is declining, or equally compelling, prevalence may be low while incidence is increasing.

Incidence rates are bounded by a time frame. How many new cases have there been in one week, one month, one year? Prevalence rates of rape are not typically time bounded, but as indicated above they can be by collecting data to provide point prevalence. One could ask a sample from the current population of all prisoners whether they have ever been sexually assaulted in prison – the lifetime prevalence of sexual assault in prison. Or one could ask whether they have been sexually assaulted within there current period of incarceration – a point prevalence estimate, or as the legislation requires, whether they have been assaulted in the last year.

To compare incidence or prevalence over time or across populations, the statistics must be expressed as a proportion or a rate. Thus, one must have an appropriate denominator. In the case of prevalence, the denominator is the number occurring within the population during the reference time period. For example, one might interview every inmate in a county jail on a given day and the denominator is the number of prisoners in that jail. Incidence proportions or rates require that the analyst be able to count the potential number of people exposed to the risk of sexual assault. For a specific prison, if we were to count all instance of rapes occurring in calendar year 2002, we would have to start with everyone in that prison on January 1, 2002, and also count every new prisoner admitted to prison during that one year period. Every one of those inmates would be potential targets of a sexual assault during that time period.

One other distinction that should be clarified is the rate of victimization versus the rate of incidents. The former refers to the number of persons who have been victimized. The latter refers

to the number of times a sexual assault has occurred. If one person is raped 10 different times, then there will be a single victim and 10 sexual assaults.

In addition to the technicalities of measuring prevalence and incidence, researchers must establish a coherent, consistent definition of the phenomenon. In Table 1, we have recorded the different definitions of sexual victimization researchers have used along with other information on each study. There is language in the Prison Rape Elimination Act of 2003 that can also be used to guide definitions. The operational definitions should distinguish completed sexual assaults, from attempted victimizations, from pressure to engage in sex. We cover this issue in detail after the review of relevant research.

Prison Rape Literature

In this section, we review studies that have been conducted to ascertain the level of prison sexual victimization. The Bureau of Justice Statistics reported that there were 1,668 state and federal prisons in the United States in the year 2000 (Stephan & Karberg, 2003), and with the exception of one attempt at a national probability sample by BJS, the sexual victimization studies have been conducted in fewer than 40 – about 2.4 percent of all prisons in the U.S. While the Prison Rape Elimination Act calls for an assessment in jails as well, only Davis' (1968; 2000) study was conducted in a jail. In 1999, there were 3,365 jails operating in the United States (Stephan, 2001). The studies listed and described in this section are also summarized in Table 1.

Studies Involving Primarily Men, or Men and Women

Struckman-Johnson and Struckman-Johnson and Colleagues

Two of the studies cited most often by advocates of legislation and/or policy to reduce or eliminate prison rape were those conducted by Cindy and David Struckman-Johnson and their colleagues (Struckman-Johnson & Struckman-Johnson, 2000; Struckman-Johnson, Struckman-Johnson, Rucker, Bumby, & Donaldson, 1996).

The procedures used in both studies were quite similar. The first study was conducted in 1994 using inmates under the custody of the Nebraska Department of Corrections housed in four institutions. The second study was conducted in 7 prisons in the Midwest. The Midwestern states were not identified. In both studies, paper and pencil surveys were distributed (mailed or hand delivered) to the inmates who then completed them at their convenience. In the Nebraska study, the institutions were two maximum and one minimum security men's facility as well as one women's prison. In the "Midwest" study, all of the prisons housed male inmates. Many of these facilities had mixed custody responsibilities housing maximum, medium, and minimum security inmates in different housing units. There was also a long-term maximum security segregation facility and a minimum security facility included in the study. The total number of available participants in the first study was 1,801 inmates (1,708 men and 93 women) and 714 staff. In the second study, the total available sample was 7,032 male inmates and 1,936 security staff. The distribution of surveys was accompanied by informed consent forms. In the Nebraska study, 28.7 percent of the inmate surveys were returned and usable (n=516) and 37 percent of the staff surveys were returned and usable (n=264). In the Midwest study, 25 percent of the inmate (n=1,788) and 25 percent of the staff (n=475) surveys were returned and usable.

To obtain an estimate of the prevalence of sexual victimization, inmates were asked "In the prison you are in now, about what percentage of inmates do you think have been pressured or forced to have sexual contact against their will?" The choices available to the respondents were 0%, 1%, 5%, 10%, and then increments of 10% up to 100%. Both staff and inmates were asked to estimate this prevalence and inmate estimates averaged 19 percent. Staff estimates were, on average, 15 percent. This varied by facility. In men's maximum security facility A, the respective estimates were staff 19 percent, inmates 19 percent. In men's maximum facility B, the estimates were staff 16 percent, inmates 26 percent. In a men's minimum security facility, the estimates were staff 11 percent, inmates 16 percent. In the women's facility, the estimates were staff 8 percent, inmates 3 percent.

The key question in the 1996 study was "Since the time you have been in a Nebraska prison, has anyone ever pressured or forced you to have sexual contact (touching of genitals, oral, anal, or vaginal sex) against your will? A person could respond "yes," "no," or "not sure."

The estimate of victimization based on this question was 20 percent (104 out of 516 respondents). There were 3 women out of 42, or 7.1 percent and 101 men out of 474, or 21.3 percent who responded "yes." For inmates who answered "yes" to this question, a skip pattern probed about details of the victimization. These victim targets indicated they had experienced, on average, 9 episodes of pressured or forcible sex. Of the 101 men targeted, 51 percent were victims of anal sex; 8 percent were victims of oral sex. The perpetrator was described as a staff member 18 percent of the time; however, most of the time the perpetrator was an inmate. Of the three women, two had been fondled and one groped. There were 75 inmate victims who provided descriptions of their sexual coercion. Fifty five percent of these were completed anal, oral, or vaginal sex that was forced by one or more perpetrators. Five percent were pressured into

completed sexual victimization. The remaining were either incomplete sexual acts or involved only touching. Only 29 percent of the male victims said they disclosed the worst incident to staff at the institution. Based on data reported in Table 3 of their study, there were 76 men and one women who reported attempted or completed oral, vaginal, or anal sex. These data allow the construction of an estimate with sexual pressure excluded. Based on data in this table, 16 percent of the men and 0.23 percent of the women were sexually victimized. This is the number we use in our meta-analysis. The other cases were instances of sexual pressure or "unknown."

In the 2000 study, the same key questions as indicated above were asked to establish estimates of sexual coercion. The overall victimization percentage was 21 and the facility by facility prevalence estimates appear in Table 1. They vary between 4 and 41 percent depending on facility, and whether the estimate was made by staff or inmates. In Table 1 of that study, the researchers list different categories of assaults based on rape, force, or pressure. Row 7 of the table calculates the percentage of inmates who reported a worst-case incident of rape for each of the 7 prisons. The weighted average prevalence for the 7 prisons is 7.6 percent. For this study, this is the result we use in our meta-analysis.

Other than Wooden and Parker (1982), the Struckman-Johnsons and their colleagues have recorded and reported the highest levels of sexual assault. This may be because the particular institutions they evaluated had high rates of assault, or it could be due to their particular methodology. In both of these studies, questionnaires were sent to the prisons and distributed by staff. Each inmate could mail the completed questionnaire back in a pre-addressed, postage paid envelope. This is probably not the most reliable way to collect these type of data. Inmates who participated in this study could have discussed the survey with each other before returning the questionnaire. Unfortunately, allowing inmates to fill out these self administered

questionnaires back in their cells, or at their convenience, also raises suspicions about collusion and lack of independence in filling out the answers, especially when one considers how low the response rates were in these studies. In a later section of this paper, we discuss in more detail the low levels of response for many of the studies reviewed in this paper.

The Davis Report on Philadelphia Jails in 1968

Alan J. Davis, a Chief Assistant District Attorney conducted an investigation of the Philadelphia Jail system as a result of allegations of widespread sexual victimization (Davis, 1968). Davis, along with the cooperation of the Philadelphia police interviewed 3,304 inmates, and 562 employees. These investigators took 130 written statements and 45 polygraph tests. The investigation lasted from June 1, 1966 though July 31, 1968. A sample of about 5 percent of the approximately 60,000 inmates passing through the system during this time period was identified for participation. Of the 3,304 interviewed inmates, 97 victims were identified, or 2.9 percent. Since some of these inmates were repeatedly victimized. There were actually 156 separate assaults involving 176 aggressors. Interviews were conducted during a two week period, July 15, to July 31, 1968 in three separate Philadelphia facilities. There were also 561 staff interviews in these three institutions.

Davis expresses his findings sometimes as if they were incidence rates and sometimes as if they were prevalence rates. The 97 documented victims represent a prevalence rate of 2.9 percent of the total number of inmates interviewed. Thus, we can see, of the inmates in the Philadelphia jail system in this time period, 2.9 percent had a documented sexual victimization at some point in their jail experience. Later in the report, Davis discusses the reluctance of inmates

to talk about a sexual victimization. He makes a back-of-the-envelope estimate, and conjectures that there were 2,000 sexual assaults in a 26 month time frame. This would yield an incident rate of about 3.3 percent (2,000/60,000) although this estimate includes repeated victimizations of the some of the same inmates. Therefore, this is an incidence estimate of sexual assaults, not sexual assault victims.

Lie detector tests were given to some victims and some assailants and certain staff informants. All but one of the 26 staff who was asked to take a polygraph test refused. Of the 48 inmates who were asked, 7 refused. Ten of the 41 inmates who submitted to a polygraph test showed indications of deception in their narration of the facts. This was the only study to attempt a validity check of self-reported sexual victimization.

According to Davis, the likelihood of being approached for sex or sexually assaulted in the Philadelphia Correctional System if you were small in stature was almost certain.

> Sexual assaults are epidemic in the Philadelphia Prison System. Virtually every slightly built young man committed by the courts is sexually approached within a day or two after his admission to prison. Many of these young men are overwhelmed and repeatedly "raped" by gangs of inmate aggressors. Others are compelled by the terrible threat of gang rape to seek protection by entering a "housekeeping" relationship with an individual tormentor. Only the toughest and more hardened young men – and those few so obviously frail that they are immediately locked up for their own protection – escape penetration of their bodies. (Davis: 17)

Davis goes on to recount narratives of sexual victimizations to sensitize the reader to the "raw, ugly, and chilling" (Davis: 18) nature of these assaults.

The facts that were gathered about sexual assault were documented by institutional records, polygraph examination, or other methods. Davis argues that the true victimization rate

was much higher than reported because inmates refused to cooperate in the investigation. Davis attributes this lack of cooperation to fear of retaliation, the shame associated with disclosure, and the mistrust of prison and criminal justice officials. Davis also argues that much of the putative consensual homosexual sex that occurred was actually a continuation of the victimization of intimidated inmates.

Nacci and Kane , 1982 – a Study of the Federal Bureau of Prisons

Nacci and Kane have several reports on a study of sexual victimization conducted within the Federal Bureau of Prisons (Nacci & Kane, 1982, 1983, 1984). This study was prompted as a result of an unusual number of homicides at one the Bureau's federal penitentiaries, and there was some evidence to indicate that many homicides were related to consensual and nonconsensual sexual activity.

This is one of the few studies on the topic with a sound approach to the sampling methodology in its attempt to draw a sample representative of all inmates under the custody of a jurisdiction. A two stage probability sample was used to first randomly select 17 prisons from the federal system, and then randomly select 330 inmates from those prisons proportional to the institution population. In addition, every correctional officer in each of the 17 prisons was eligible to complete a survey as well. The inmate survey, however, was an interview conducted by " an articulate, black ex-offender (Nacci & Kane, 1982: 2)." The inmate surveys contained over 300 items including questions of sexual victimization. Of the inmates contacted, 64 percent decided to volunteer for the interview. Given the sensitivity of the questions, this is a respectable response rate. In their 1982 paper, Nacci and Kane (1982), reported that the respondents were

similar to non respondents with the exception that there were more African Americans and fewer whites among the participants. The authors also reported high reliabilities for the survey items and a coherent structure to the items. Although the 1982 paper did not include any statistics to support those contentions, the authors mentioned they conducted factor, cluster, and reliability analyses of the data.

In their 1982 report, Nacci and Kane report a number of conclusions, but do not provide data or statistical evidence to support these assertions. Using the Kinsey study (Kinsey, Pomeroy, & Martin, 1948) as a baseline, they compare prisoner interview response to the sexual practices of men documented in the Kinsey study. Prisoners were less accepting about certain sexual practices than the Kinsey sample regarding mate swapping and homosexuality; however, the prisoner respondents were more accepting of sex before marriage, and "exotic" sexual practices than the Kinsey sample. A number of questions were asked about sexual behavior while in prison. Among the interviewees, 28 percent stated they had a homosexual experience some time in their lives; 25 percent had homosexual experiences as an adult; 12 percent had a homosexual experience in their current institution; 20 percent of inmates housed in the highest security levels claimed they had a homosexual experience in their current institution; 29 percent had been propositioned for sex in their current institution; 7 percent were "seduced" by inmates bearing gifts; 2 percent had taken money for performing sex; and 1.8 percent were in a long standing love relationship.

Victimization was evaluated by a response to a question about whether anyone had forced or attempted to use force to get the inmate to perform sex against his will. In response to this question, 9 percent had been targeted sometime in their prison career (state or federal

prisons), 2.0 percent were targeted in a federal prison, 0.6 percent had to perform an undesired sexual act in a federal prison, and 0.3 percent had been raped.

Saum, Surratt, Inciardi, and Bennet, 1995

Saum, Surratt, Inciardi, and Bennet (1995) conducted a study of sexual victimization in the Delaware prison system among inmates in a therapeutic community (TC) located in one of the state prisons. The authors claim that since the treatment staff had an excellent rapport with the inmates, this would promote more honest responding to sensitive questions. Of the 106 TC inmates who had been in the program 30 days or more, 101 volunteered to participate in an interview. The inmates were asked to respond to questions about sexual activity in prison that had occurred prior to their assignment to the TC. They were asked to report on sexual activities that they had witnessed, heard about, or participated in during the previous year of their current incarceration. There were about 1,350 inmates housed in this institution at the time, and the authors of this study made no attempt to show the extent to which TC inmates were representative of the entire population. While there was a high degree of cooperation among the TC inmates, it is not known what degree of cooperation the researchers would have gotten had they tried to interview a sample from the entire population.

About 51 percent of the inmates reported having heard about consensual sex in the prior year and 25 percent claimed to have witnessed consensual sex. Almost 60 percent of inmates had not heard about a rape occurring in the prior year, 3 percent said they had seen one rape and 1 percent had seen two rapes. When asked to estimate how often rape occurred, almost 30 percent

said once a month. When asked to report their own victimization, only one inmate reported being raped, while 5 inmates indicated there had been a rape attempt.

Tewksbury, 1989

Tewksbury (1989b) conducted a study in the Lebanon State Correctional Institution in Ohio. He was primarily interested in more generic sexual activities of inmates, but his self administered questionnaire (SAQ) also included items about coerced sexual behavior. He collected 150 surveys but does not report how many inmates were housed at this particular institution. He recruited inmates in many different ways and does not discuss any kind of sampling strategy. Because one of his recruiting strategies was to enlist inmates after a college program class, it is not surprising that 84 percent of the survey respondents were enrolled in a college program while only 19.5 percent of the inmate population was enrolled in a college program. The research sample also over-represented inmates who were white and those who were never married.

The SAQ included the item, "How many times have you been raped in this prison?' No one reported a rape. Another question asked about coerced sex, "While in this prison, how many times has another male tried to have sex with you using threats or force?" Among the respondents, 4.5 percent answered affirmatively and 7.4 percent of those inmates indicated this had happened one or more times. Inmates were also asked to make estimates of the percentage of inmates in this prison who had been sexually assaulted. Inmates estimated this number to be 14 percent.

Tewksbury (1989a) also wrote a second paper on this same sample in which his primary concern was an analysis of the fear of sexual assault. Taller inmates were less likely to perceive a threat; however, heavier inmates were more likely to fear a sexual assault. Whether or not the inmate's incarceration crime was violenct had no impact on perceived fear. Neither did the inmate's race, number of friends in the institution, or religion.

Maitland and Sluder 1996, 1998

Maitland and Sluder (1998) assessed all forms of victimization (assault, sexual assault, threats) in a Midwestern, medium security prison that had an average daily population of 1,100, and held primarily youthful inmates. They used a self administered questionnaire. Unfortunately they did not use probability sampling techniques in soliciting volunteers for their study. A total of 111 inmates completed a survey out of 150 who attended classes on the day of the study. Although they had a response rate of about 74 percent, there was little analysis to compare the student inmates to the remaining population. The two variables they report indicated their sample had the same racial composition as the overall population, but was somewhat younger. The SAQ included a victimization question, "During this sentence has anyone forced sexual activity on you? " Only 0.9 percent of the respondents said "yes." A second question asked whether "…anyone made sexual comments to you that made you feel uncomfortable (Maitland & Sluder, 1998: P. 63, Table 3)?" Of the 111 respondents, 16.2 percent answered yes to this question.

Maitland and Sluder also used the survey to measure the General Well-Being scale, an index to measure fear of victimization, a prison stress scale, indicators of social support, a scale assessing anomie, and gang affiliation. Administrative data were also collected including age,

race, height, weight, IQ, education level, marital status, number of incarcerations, number of times on probation, length of current sentence, and current offense. Maitland and Sluder report that they used these measures in bivariate analyses to distinguish victims from nonvictims. Since there were so few victims of forced sex, no statistical distinction could be made. Maitland and Sluder also reported that these variables did not distinguish between victims and nonvictims with respect to sexual comments either.

This study was also reported in a *Federal Probation* article (Maitland & Sluder, 1996). In that article, the General Well Being scale was considered the dependent variable and victimization and other covariates were the independent variables. In a multivariate analysis of the data, Maitland and Sluder found that the more an inmate was victimized, the lower his sense of general well being. The variable was a composite measure of all types of victimizations, and therefore, there was no independent test of sexual victimization, although victimization of any type would probably lower general well being.

Wooden and Parker, 1982

Wooden and Parker (1982) investigated sexual behavior and victimization in a California medium security prison during 1979 and 1980. The prison held 2,500 inmates. This prison was used to house self-avowed homosexual and vulnerable inmates in single cells. The researchers distributed over 600 questionnaires to a random sample of inmates and received back 200. Of those, 14 percent claimed to have been the victim of sexual assault, although the definition also included pressure to engage in sexual activity. This is an unusually high level of sexual victimization in comparison to most studies, but may be explained by the question wording and

the unusual composition of the inmate population. The researchers also distributed a questionnaire and interviewed a targeted subpopulation of self-defined homosexuals. Employees were also interviewed. One of the researchers was serving a four-year sentence at the facility. The co-researcher participated in the study by distributing questionnaires and by participant observation.

The authors note in the introductory chapter to their book that this prison was atypical and may not represent a true picture of inmate behavior that would generalize to the California Department of Corrections population at that time. Although they also suggest that victimization may have been higher in maximum security prisons than the medium security prison in their study. The major problem with this study is that it was conducted in a prison in which a large number of homosexuals were placed and this could bias the results in favor of finding a victimization effect.

Lockwood, 1980

Lockwood (1980) studied sexual victimization in the New York State prison system in 1974 and 1975. The primary intent of his book, *Prison Sexual Violence,* was to describe the characteristics of sexual assault and sexual pressure by interviewing inmates and analyzing background data of 107 targets of sexual aggression and 45 sexual aggressors. Lockwood also conducted a small study of 89 randomly sampled offenders in two New York State prisons of which 15 percent refused to participate. Only 1 of the 76 respondents had been sexually assaulted while 28 percent had been the target of sexual pressure. While the rate of sexual victimization in the New York State Department of Corrections may be rare, when Lockwood focuses on the

actual incidents, over 1/3 of the 148 he analyzed involved violence. Most of the aggressors were black and the targets were white. There was no analysis of the representativeness of the sample.

Toch, 1977

Toch (1977) discusses victimization in the New York State prison system in his book *Living in Prison: The Ecology of Survival.* In the chapter on inmate victimization, he notes that the extreme form of victimization is rape, but that it is very rare in prisons. He reports that 28 percent of the inmates he interviewed were victimized. This is the same proportion as Lockwood's study, and it is not clear whether the two books cover the same sample. The characteristics about the incidents reported by Toch indicated that most of the victims were white and most of the aggressors were black. Aggressors had assault histories. There is no report of a rape and this is different from Lockwood's sample where he reported one sexual assault. Toch uses a lot of inmate narrative to characterize the social and cultural context of sexual aggression and the fear these incidents evoke in many of the threatened sexual targets. Because it is unclear whether the Toch data represent a new sample, his study was left out of summary Table 1.

Hensley, Tewksbury, and Castle, 2003

Hensley, Tewksbury, and Castle (2003) interviewed 174 Oklahoma inmates who agreed to participate in their study from a random sample of 300 (100 inmates each were randomly selected from a minimum, medium, and maximum security institution). Thus, the response rate was 58 percent. The study was conducted from August 1998 to May 1999. Whites were

underrepresented at each security level and Native Americans were overrepresented in the minimum security sample. There is no other assessment of sample representativeness. A 44-item interview instrument was used; however, the exact wording of the interview items does not appear in the journal article. The inmate was asked if he had been sexually threatened or sexually assaulted. Two of the inmates who reported they had been sexually threatened (13.8 percent of the sample) said that they had been raped (1.2 percent). The question appears to have been unbounded. Inmates were to indicate if they had ever experienced sexual victimization at any point in their current or any previous incarceration. The targets were more likely to be homosexual or bisexual than the remainder of the sample who were not sexually coerced. The targets were young (median age 18.5 years) and were approached, on average, 143 days after their incarceration.

Carroll, 1977

Carroll's (1977) study of Eastern Correctional Institution, a maximum security state prison of only 200 prisoners was more an ethnography than a systematic assessment of the level of sexual victimization. Carroll spent a 15-month period in 1970 and 1971 doing participant observation of the facility. He used unstructured interviews and many conversations to get some idea of the level of victimization and the antecedents of these actions. Carroll estimated there were 40 or more sexual assaults per year, but he does not say whether these were repeated or new victimizations. This translates into a one-year prevalence of 20 percent if these assaults involved different victims. Carroll states that he never observed an act of sexual victimization, and that these were informant reports that were not verified. If true, this would be the highest

estimate of sexual assault prevalence found in any study. Carroll's paper focuses on the interracial nature of the assaults (black on white) and the historical, social, and cultural antecedents of the prison setting that led to the asymmetrical racial nature of sexual predation in this prison. There is no way to know whether or not these social facts were unique, or whether his finding is spurious because it is based on exaggerations of informants.

Chonco, 1989

Chonco's (1989) study is a descriptive analysis of sexual assault in what was characterized as a pre-release center in a large Midwestern state. He interviewed 20 white, 19 black, and one Mexican-American inmate, each interview lasting one to one and a half hours. Chonco's main interest was to explain why African American inmates chose whites as their victims in a sexual assault. Various explanations have been offered based on cumulative discrimination, the rage resulting from psychological emasculation, the perception that whites are weak and sexually attractive, and the result of having been arrested, tried, convicted and confined in a white dominated criminal justice system. Since there are no estimates of victimization contained in this paper, it does not appear in Table 1. Chonco argues that perceived weakness and naivety, rather than race was a more salient factor leading toward victimization. He describes how potential targets are set up, probed, and tested prior to an assault. His informants claim that inmates were afraid to report assaults once they had occurred for fear of retaliation, and that correctional officers would only intervene if they had witnessed an attack.

Moss, Hosford, and Anderson, 1979

Moss, Hosford, and Anderson (1979) studied the characteristics of 12 individuals out of 1,100 at a federal correctional institution who were segregated for having raped other inmates. This data, had it included new admissions during the year would produce a one-year incidence rate. The rate is no higher than 1.1 percent (12/1,100). However, there would have been a sizable number of admissions during the year and the denominator should be larger than the number of inmates on a given day. While these authors used a discriminant analysis to compare rapists and a randomly selected group of non-rapists, the samples were so small that the results are not reliable. This is one of the few studies that used administrative records to isolate known aggressors. However, it is not clear when these inmates had committed their assault. The 1.1 percent is an upper bound of the one-year incidence estimate and the actual estimate is probably much lower since the denominator should be higher and these assaults may have occurred in previous years and in other institutions.

Fuller and Orsagh, 1977

In 1977, Fuller and Orsagh reported on a study of general victimization within ten institutions of the North Carolina prison system (Fuller & Orsagh, 1977). They used three sources of data. The first was based on administrative records collected from the 10 prisons in the last quarter of 1975. The second source was personal interviews with the superintendents of these institutions. The last source was a stratified sample of 400 inmates drawn from six of the prisons. The main purpose of the study was to assess overall levels of victimization, and to this end, the authors compared the three sources of information. For all types of victimization, the

administrative records indicated a 1.7 percent incidence, the superintendent interviews indicated a 3.4 percent incidence, and the inmate self-reports revealed a 5.8 percent incidence. There was one instance of rape according to the administrative records; however, the superintendents indicated there were 31 incidents of sexual assault in the last year. Fuller and Orsagh incorrectly computed the incident rate for the year as 31 incidents divided by the standing population of 4,495 inmates, or .69 percent. As we explained at the beginning of this paper, an incident rate must be based on the population at risk, and because prisons have many transfers the at-risk population consists of the standing population at the beginning of the year and all admissions during that year. There was no indication they had assessed sexual victimization with their inmate self-report method. It appears the definitions used in assessing the administrative records may have been a completed rape, while the administrators were estimating assaults. Furthermore, it is not clear what the superintendent's subjective estimate of inmate sexual victimization means. Was this a guess, speculation, or was it based on some alternative data source? While we have included this study in Table 1 as a study of incidence, we did not include it in the meta-analysis of prevalence we report on later in this paper.

Butler, Donovan, Levy, and Kaldor 2002; Butler and Milner, 2003

As part of a broader health survey, inmates in New South Wales, Australia were interviewed about sexual practices in 1996 and 2001. Data from 789 inmates collected in 1996 indicated that 2 percent of women and 2 percent of men had engaged in nonconsensual sex (Butler, Donovan, Levy, & Kaldor, 2002). The results reported from the 2001 survey were even lower (Butler et al., 2002; Butler & Milner, 2003). A cross-sectional random sample of inmates

stratified by age, sex, and Aboriginality was conducted. The sample represented 10 percent of the men and 34 percent of the women held in full-time custody. The survey was conducted by using nurses who were not assigned to a given facility to interview inmates. During this assessment, blood and urine samples were drawn, and in addition to health measures, a mental health assessment was also taken. This latter testing was done by psychology masters degree students. The response rate for the 2001 survey was 85 percent. The sample of men was 745 and for women it was 163. Within these groups, 0.4 percent of males and 1 percent of females reported nonconsensual sex within the last year. Inmates were also asked if they had ever been sexually harassed or threatened with sex by another inmate. The percentages responding affirmatively were almost equivalent for men, 4.6 percent, and women, 4.7 percent. The majority of these cases involved verbal harassment only. These same inmates also reported on sexual assaults of other inmates. Among women, 23 percent indicated this happened, while 15 percent of the men said that they were aware of sexual assaults of other men in the previous 12 months. This seems typical of studies which ask about personal victimization, as well as the perception of the extent to which sexual victimization occurs. The latter estimate is typically much larger than the disclosure of a personal victimization. These latter estimates are always higher than the self reports, and it is unclear what they mean since there is no presumption that inmates or employees actually witness all of the sexual assaults they claim are occurring. One might argue that victims are ashamed or fearful of reprisals. Or, one might surmise that estimates of someone else's victimization exaggerate the actual occurrence.

Forst, Fagan, and Vivona, 1989

The only published study on juvenile sexual victimization that we found was primarily designed to contrast the experience of youth in training schools as opposed to those who were sent to prison as a result of transferring the case to criminal court (Forst, Fagan, & Vivona, 1989). The sample was drawn from youth adjudicated for violent offenses in four urban juvenile courts. There was no description or statistical analysis on the extent to which this sample was representative of the violent juvenile population in these jurisdictions. There were 59 youth adjudicated in juvenile court who were subsequently sent to the traditional training school. These juveniles were, on average, 15.7 years old at the time of their offense. Training school participants in the study were interviewed when they were released. They had spent, on average, 2.9 years at the training school. There were 81 youth from these same jurisdictions who were transferred to criminal court, and who were sent to a state prison as a result of a conviction. This group averaged 16.1 years at the time of their offense. They were interviewed in prisons where they had served, on average, 1.8 years of a 29 year average sentence. All of the participants in the study were asked questions about staff assistance, case management services, the social climate of the facilities, and victimization experiences. For the purpose of this review, the important question was "Has anyone attempted to sexually attack you or rape you?" Among the training school sample, the prevalence was 1.7 percent, while the prevalence for the prison sample was 8.6 percent. Because this is a unique study of youth victimization, it is not included either in Table 1 or the meta-analysis we report later. It also suggests that youth may be particularly vulnerable in adult institutions.

Studies Involving Exclusively Women -- Coerced Sex among Women

Although there have been only a handful of studies on sexual victimization of men, there are even fewer studies regarding women. Most of the research on women's sexuality in prison has been on consensual behavior (Ford, 1929; Giallombardo, 1966; Greer, 2000; Halleck & Hersko, 1962; Heffernan, 1972; Hensley, Tewksbury, & Wright, ; Mitchell, 1969; Nelson, 1974; Otis, 1913; Owen, 1998; Propper, 1978; Propper, 1981; Propper, 1982; Selling, 1931; Ward & Kassenbaum, 1964, 1965). In some of this research, there is an indication of subtle coercion and cooptation, the fuzzy gray area between consensual and coerced sex inside of prison. In addition to the study of one women's prison cited in Struckman-Johnson et al., (Struckman-Johnson et al., 1996), in which 3 of 42 women (7 percent) were either groped or fondled, Struckman-Johnson and Struckman-Johnson (2002) report on 3 additional women's prisons. This was actually data collected at the same time these researchers were collecting information in 7 male prisons. The same procedures were employed and the same questions elicited the victimization results. As depicted in Table 1, women inmates responded to the question "Since the time you have been in a Nebraska prison, has anyone ever pressured or forced you to have sexual contact (touching of genitals, oral, anal, or vaginal sex) against your will?" (Responses were "yes," "no," or "not sure"). In institution 1, 27 percent responded yes; in institution 2, 9 percent reported affirmatively; and in institution 3, the "yes" response was 8 percent. The worst incident resulting in a rape occurred among 5 percent of the women in the first institution; however, there were no reported rapes in the second or third prisons. When asked to estimate how many women were forced or pressured into sex in their current facility, the institution percentages were 21, 11, and 13. There was no information on the representativeness of these three samples.

As reported above in the Butler and Milner study in New South Wales (Butler & Milner, 2003), 1 percent of the women reported nonconsensual sex within the last year. In another study,

Alarid (2000) used letters from an inmate in a southern jail/prison system who kept in weekly contact with her. Excerpts from these letters indicated that sexual assaults that did occur were rarely reported. Secondly, the inmate informer asserts that most women capitulate to sex through pressure, and it appeared that rape was not very common.

U. S. National Probability Sample of Rape during Adult Incarceration

In the 1997 Survey of Inmates in State Correctional Facilities (Bureau of Justice Statistics, 1997), there were several questions about sexual victimization prior to the current incarceration. If inmates indicated there had been sexual contact against their will, they were asked a series of questions including whether or not they were raped and whether the incident took place while incarcerated. To establish this prevalence, one has to be able to compute, the proportion of the sample with a prior incarceration to get an appropriate denominator. In fact, 55.1 percent of the sample had a prior incarceration. With the appropriate denominator, 0.45 percent of males and 0.35 percent of females reported a completed rape in a prior incarceration. This information was elicited in the BJS survey by an interviewer. To minimize the potential sensitivity of the question in the context of the current prison term, inmates were asked about incidents prior to their current incarceration. These data represent population estimates of the entire prison system at the time of this survey. There were 1,409 State prisons included in the sample design. The sample was conducted in two stages. In the first stage, 275 prisons were sampled. In the second stage, inmates were sampled. The 13 largest male and 17 largest female prisons were sampled with certainty. The remaining prisons were stratified by region, facility

type (confinement and community based), security level, and size of the population. A total of 14,285 prisoners were interviewed in the state survey with a 92.5 percent response rate.

U.S. National Probability Sample of Forced Sexual Activity among Youth in Juvenile Facilities

The Prison Rape Elimination Act also calls for investigation of sexual victimization of youth. There has already been a great deal of work sponsored by the Office of Juvenile Justice and Delinquency Prevention (OJJDP). The Survey of Youth in Residential Placement (SYRP) is a 10 percent national probability sample of youth, ages 10 to 20, living in juvenile facilities because they are accused or convicted of a crime (Office of Juvenile Justice and Delinquency Prevention, 2004). OJJDP insured that SYRP was designed to address a variety of issues involving youth in these facilities including their needs, services, safety, health, security, accountability, and expectations for the future. SYRP was developed as an audio-computer assisted survey instrument (audio-CASI). We discuss the merits of this survey methodology later in this paper. More than 7,000 juveniles were interviewed, and the response rate was 75 percent. The administrators of the survey took precautions to insure confidentiality.

The SYRP approach to eliciting information on sexual victimization was to start with a global question, "Since you have been in this facility, has anyone forced you to engage in sexual activity." If the answer was "Yes," then the victim was asked "How many times has this happened? Please enter a number" and "Who did this to you?" with possible responses "Another

resident that I know," "Another resident that I don't know," "A staff member of the facility," "Someone else." Respondents could choose more than one assailant type. Youth were also asked whether a weapon was used during the threat, and if so, what type of weapon. The victim was also asked, "Did this person put any part of their body inside you?" For each incident, victims were also asked about injuries, medical care, whether the incident was reported to a staff member, counselor, teacher, or someone else who could help them. Finally, they were asked if anything had been done to stop this from happening again. When the data are made available, the SYRP results will give the first insight into the prevalence of sexual victimization among youth in juvenile placement.

Summary of the Prison Rape Estimation Studies

Putting aside the one national probability sample conducted by BJS and the one conducted by the Corrections Health Service in New South Wales, the other studies represent only a fraction of the incarcerated adult male and female population. Most of the studies have extremely poor (less than 50 percent) response rates. When non-response is high, there is typically little or no effort to compare the respondents to the non-respondents, and no effort to do post survey adjustments to the responses using stratification procedures. There is no effort to gain an understanding of why inmates are not responding. Are they embarrassed? Are they afraid of retaliation? Are respondents trying to embarrass the prison administrators? There is no study which compares survey modes in an effort to understand the best method to collect these sensitive and stigmatized data.

For every researcher, there is a difference in the definition of victimization. What does sexual pressure mean? To make sense of the problem researchers will have to provide more definitive operational definitions of rape. Recalling each incident may be difficult for someone who has been serially raped; however, for each occurrence a prisoner should be asked to characterize precisely the victimization. The survey should include: the nature of a completed assault, the extent of injuries, the nature of an attempted, but uncompleted assault and associated injuries, the nature of pressure (threat, intimidation, and constant invitation), the number of assailants, and characteristics of the event (place, time, setting).

When we limit the studies to those that focus on assault or completed assault, the range is from 0 to 16 percent, although most of the prevalence estimates (typically lifetime prevalence) are 2 percent or less. When forms of pressure are included, the lifetime prevalence is 21 percent or less, although in at least one institution the result was 40 percent. The few studies that include incident information do not report enough information to construct a good denominator, or do not indicate the time frame of the estimate. "Back of the envelope" incident estimates are typically less than 2 percent, but this number is even less certain than the prevalence estimates. Carroll's study indicated a high level of incidence, but was based on only a few informants. Women's prevalence of sexual victimization appears to be lower than men's, but there have only been a few studies. To meet the legislative requirements, the Bureau of Justice Statistics must produce one-year prevalence rates, and these are rarely, if ever, reported. Few studies indicate the amount of time the prevalence covers. A prison lifetime exposure may mean 5 years in some jurisdictions and 10 years in others. Exposure is crucial to our understanding of the nature of the problem if we are to make reasonable comparisons among prisons and jurisdictions.

Meta-analysis of Prison Sexual Assault Studies

To provide a summary estimate of sexual assault, the prison lifetime prevalence estimates were analyzed with meta-analysis methods (Lipsey & Wilson, 2000; Rosenthal, 1994; Shadish & Haddock, 1994). The Wooden and Parker estimate that was included in this analysis was based on sexual pressure, the only result reported in their study. The other estimates are based on either a completed rape, or serious sexual assault, although some of the question wordings are vague. The average effect size was first computed assuming a fixed effects model. In Figure 1, the individual study proportions and their 95 percent confidence intervals are represented. The prevalence for women is shown in red. The men's prevalence is depicted in black. Some of the confidence intervals span 0 and by themselves those studies should not be considered statistically significant. These statistical tests rarely appear in the original studies. Under the assumption of a fixed effects model, the average effect size is weighted by the inverse variance estimates. Using proportions, this yields an average weighted estimate of .00448 (0.5 percent), with a standard error of .000427, and 95 percent confidence intervals of .00364 to .00532. To ascertain whether the assumption of a fixed effects model was appropriate, a homogeneity test statistic, Q, was computed. The test statistic was Q=372.62, df =18. Since Q is distributed approximately as χ^2, this high value indicated that these studies failed the homogeneity test, and a fixed effects assumption was inappropriate. The average effect size was re-computed using an estimate of the between studies variance in addition to the within studies variance. The method of moments estimate of the between studies variance was used (Lipsey & Wilson, 2000: 119). The recalculation of the weighted average of prevalence yielded an estimate of .0191(1.91 percent), a standard error of .00277, with 95 percent confidence intervals of .0137 to .0246. This is a

statistically significant effect. By definition, this is the most conservative estimate that could be calculated from the available studies. If we included sexual assault estimates from studies that used definitions of sexual pressure, this result would have been higher. The heterogeneity in effect sizes indicates that there are factors that might explain the variability between studies – possibly composition of the population, definitions of sexual assault, survey methods, and rates of unit nonresponse. However, because there are so many problems with the individual studies, we focus instead on reviewing these problems, and suggest ways to improve future estimates, rather than explore the different factors that account for the heterogeneity. In the next several sections of this report, some of the major obstacles inherent in this research are reviewed and discussed.

Social Desirability Responses and the Nature of Sensitive Questions

Tourangeau, Rips, and Rasinski (2000) discuss the self report of sensitive behaviors in their text entitled *The Psychology of Survey Response*. They identify three important psychological dimensions to question sensitivity, social (un)desirability of the response, the intrusiveness of the inquiry, and the perception of disclosure to third parties. As these authors note, "Sensitive questions ask, in effect, whether we have violated [certain] norms.(Tourangeau et al., 2000: 257)" If respondents are concerned enough about representing themselves in a positive manner, they may distort their responses. Intrusive questions invade privacy. Respondents may be unwilling to disclose simply because they perceive their privacy has been violated. Third party disclosure is an additional dimension to the sensitivity of a question. This is especially true in a prison or other criminal justice setting where admission to any kind of sexual

behavior is a rule violation, if not a crime. As discussed later in this paper, the influence of social (un)desirability may be reduced by different modes of administering surveys.

Study Procedures and the Problem of Sample Selection Bias

Because there were such low response rates by both staff and inmates in many of these studies, it is incumbent upon the researchers to demonstrate that their returned samples were representative of the inmate population. There must be some accounting of the possibility of selection bias, namely that inmates and staff who returned the surveys may have over- or under-represented the incidence and prevalence of sexual victimization.

This is especially important when the topic is such a sensitive one. Returning to the Struckman-Johnson studies, in the Nebraska study, Struckman-Johnson and Struckman-Johnson compared the characteristics of the inmates who returned the surveys to the total inmate population using age, race, most severe crime type, most severe crime, and minimum sentence in years. The researchers assert that the returned survey sample was similar to the inmate population at these facilities on age, most severe crime (murder, sex offense, aggravated assault, robbery, drug related), minimum sentences, and average time in prison. The authors noted differences in most severe crime type (against persons, drug-related, against property, public order) and race. The returned survey sample had a higher proportion of whites than the inmates in the Nebraska facilities, and the returned sample also had a higher proportion of offenders who committed crimes against persons than other inmates in those facilities. The authors reported these differences and similarities without conducting statistical tests. The data also indicate that the return sample had an older age composition than the inmate population in those facilities and

possibly longer sentences. Longer sentences would increase the risk period of sexual assault. There was no attempt in the second study to assess the degree to which the returned survey sample was representative of the extant inmate population in the 7 facilities at the time of the study.

The fact that the characteristics of the sample of inmates returning the surveys were different than the characteristics of the inmate population at that time is a major flaw in the first study. The second study also raises questions of validity since no attempt was made to assess the representativeness of the sample. Because of such a low unit response rate, and a lack of information to compare the survey and population characteristics, it is impossible to know how to adjust the victimization estimates to make them valid estimates of the actual level of victimization. Are the survey respondents more likely or less likely to report sexual victimization than the prisoners who chose not to return the surveys? On the one hand, it may be that inmates who chose not to return the surveys were more likely to be sexual victims and were fearful of reprisals, or were ashamed to admit to the assault. On the other hand, inmates who did return the surveys may have been more inclined to embarrass the administration by claiming or exaggerating unwanted sexual approaches. This is also a problem with many of the other studies reported in this literature.

Ever since the original Kinsey study (Kinsey et al., 1948), it has been widely reported that about 10 percent of the U. S. male population has homosexual preferences. This was the percentage among the men participating in the Kinsey interviews of sexual practices. Only one scientific national survey has ever been conducted of sexual practices among 18 to 59 year olds living in the U. S., and that study found that only 2 percent of the male respondents reported homosexual preferences (Michael, Gagnon, Laumann, & Kolata, 1994). In this case, the Kinsey

method of soliciting interviewees increased the likelihood that they would get homosexual respondents. Other well publicized but non-scientific sexual practice surveys have also led to confusion about the rate of homosexuality in the United States. The Hite Report, the Redbook survey, and the Masters and Johnson study were all well publicized, but highly unscientific approaches to soliciting information on the estimates of sexual practices (Hite, 1976; Masters & Johnson, 1966; Sadd, 1975). It is unknown how the methods of eliciting a sample affected the estimate of prison sexual victimization in the studies reviewed in this paper.

Catania et al., (Catania, Gibson, Chitwood, & Coates, 1990) reviewed some of the methodological problems in AIDS research that resulted from selection bias in the kinds of people volunteering to participate in sex research. The authors referred to this selection artifact as participation bias. Catania et al., hypothesize that if people refuse to participate because of stigmatization, then the participants represent a less risky population and the level of HIV transmission will be overestimated. If nonparticipation is the result of someone being less committed to participate because he or she does not practice risky behavior, then the biased estimate will over-represent the possible risk of HIV transmission. One solution to this problem is to study the reasons people will not respond. Clearly, the challenge for researchers in prison sexual victimization is to preclude, if possible, low response rates. If there is high unit non-response, then researchers must assess the extent to which their samples represent the population being studied.

Recall and Telescoping

One of the problems in asking respondents to recall events in the past, even abhorrent events, is that they tend to forget or to telescope those events. Forgetting would lead to the underreporting of past sexual assaults. Telescoping is the phenomena that occurs when a person recalls an event but misplaces it in a different time period than it actually happened. In studies of household expenditures, lengthening the recall period from one month to even three months can cause telescoping (Neter & Waksberg, 1964) where respondents are more likely to recollect current expenditures that actually occurred at an earlier time frame. This is an example of forward telescoping. While a vicious, brutal sexual attack may be a vivid memory, questions about pressured or co-opted sex may be more problematic. Sudman and Bradburn (1973) have found that some procedures that reduce telescoping increase forgetting, while other procedures do the opposite. While calendar methods have been shown to aid the dating of past events, survey research methodologists argue that questions should be bounded within recent time frames (Converse & Presser, 1986).

Interview Modes

Recent work on modes of interviewing indicate that self administered questionnaires are better at eliciting sensitive behavior than interviews, and that new computer assisted techniques may further increase the reporting of these behaviors.

<u>Interviewer versus Self-Administered Questionnaires</u>

Many of the researchers conducting sexual assault studies argue that a major strength of their anonymous self-administered survey methodology is that it eliminates face-to-face interviews which suppress the self reporting of sexual victimization because this information is sensitive (stigmatized). A National Academy of Sciences study asked survey respondents their preferences for types of surveys (National Academy of Sciences, 1979). Respondents to this survey said they preferred the interview to self administered mail-in surveys, or telephone surveys. Interviews were preferred because they are more personal; they allow the interviewee to ask clarifying questions; and people feel it is a more trusting situation. In many situations, researchers have combined methods to elicit sensitive information. In the only study of sexual practices that has involved a national probability sample of the United States (Michael et al., 1994), respondents were interviewed for about an hour and a half. The most sensitive questions about sexual practices were elicited by asking respondents at that point in the interview to answer the questions by filling out a self administered questionnaire, and sealing the answers in an envelope.

There has also been published work on designing the best interviewing techniques to elicit information on human sexuality. Catania (1999) has reviewed and summarized this work. In his synthesis, he finds that there are two key variables that pose a threat to distortions of presentation of self in an interview, threat to self esteem and emotional distress. In his article he reviews factors associated with the respondent, the interviewer, the task, and the context that may minimize threats to self esteem and distress.

There have been a number of recent studies comparing different modes of interview techniques comparing self-reported responses concerning sensitive information. Aquilino (1994) is typical of a number of investigations comparing interviewer versus self administered

questionnaires (SAQs) for sensitive data. In this study, Aquilino also investigated the response patterns for a telephone interview. This mode was the least sensitive. Respondents were asked to provide information on alcohol and illegal drug use. The more sensitive the type of question, the more likely the SAQ mode elicited higher use rates. The mode effects were larger for African-Americans than they were for white respondents. Jones and Forrest (1992) investigated the self reporting of abortions. In this study, independent estimates of abortions reported by clinics to the Alan Guttmacher Institute showed that self reporting of abortion was underreported on the National Survey of Family Growth, the National Surveys of Young Women, and the National Longitudinal Surveys of Work Experience of Youth. Jones and Forrest (1992) found that SAQs could be used to increase the reporting accuracy of abortion. Turner et al., (Turner, Lessler, & Devore, 1992) also found that self-administered questionnaire items elicited higher self-reported drug use than an interviewer mode.

Computer Assisted Interviews and Self-Administered Surveys

Recent work has been conducted on video- and audio-computer assisted self-interviewing (video-CASI, audio-CASI) as a mode of surveying to tap into sensitive information. Audio-CASI includes both video and audio components. Respondents sit in front of a computer after receiving training, and respond to questions in privacy.

Williams et al., (2000) compared audio-CASI to face-to-face interviewing in eliciting drug and sexual behavior at 10 sites recruiting participants from an HIV risk reduction study that targeted drug offenders. These were self-reported heroin or cocaine users (later confirmed by urinalysis). Every respondent was interviewed a second time within 48-72 hours of the first

interview. This allowed the researchers to use a crossover design in which ¼ of the respondents were interviewed with the audio-CASI mode twice, ¼ were interviewed face-to-face twice, ¼ crossed over from audio-CASI to face-to-face, and ¼ crossed over from face-to-face to audio-CASI. This is a very powerful and sensitive experimental design. Urinalysis tests confirmed the validity of the self-reported drug use. Eighty percent of the self-report and lab test results agreed. When complex questions about number of times of drug use were compared, the face-to-face interview produced higher reported risky behaviors. When the questions were more straightforward, the two response modes produced similar estimates. The authors argue that highly trained interviewers may be necessary to guide a respondent through difficult types of responses. In this study, however, they were able to use a validity check to confirm the accuracy of self-reported drug use.

Newman, DesJarlais, Turner, Gribble, Cooley, and Paone (2002) compared audio-computer assisted self-interviewing (audio-CASI) with face to face interviews probing risky behaviors among participants in a needle exchange program. They found that using the audio-CASI system increased the reporting of risky behaviors such as whether they were HIV positive, or had rented or sold their works (needles and injection paraphernalia) in the last 30 days. However, questions that had "emotional stress" content had higher self-report outcomes for the face-to-face method. Newman et al., reasoned that such questions require an empathetic listener to elicit such responses.

DesJarlais et al., (1999) also found that audio-CASI elicited higher response percentages of sensitive questions. The sample was also composed of needle injecting users who were exchanging their works and were approached about participating in an interview. There were 724 audio-CASI and 757 face-to-face interviews. As an example of the differences in response rates,

audio-CASI interviewees reported having sex with a same sex partner in the 30 days prior to the interview 10 percent of the time. Face-to-face respondents reported such behavior 5 percent of the time.

Similar underreporting in face-to-face interviews as compared to audio-CASI has been demonstrated by other authors in a population of people who have a low risk for AIDS (Miller, Gribble, Mazade, & Turner, 1998; Turner, Forsyth, & O'Reilly, 1998; C. F. Turner, L. Ku et al., 1998). For example, Turner et al., (C. F. Turner, L. Ku et al., 1998) demonstrated that audio-CASI increases reporting above self-administered questionnaires (SAQ's) in an administration of the 1995 National Survey of Adolescent Males (NSAM). The stigmatized behaviors involved HIV-risk behaviors, drug use, and interpersonal violence among 15 to 19 year old men. Previously, sensitive questions were asked by having respondents fill out a paper questionnaire, and then sealing the responses in an envelope so that the interviewer could not see the answers. When the two modes were compared, SAQ versus audio-CASI, there were much higher response percentages to stigmatized questions about male-male sexual encounters among the audio-CASI interviewed youth. For example, youth were more likely to admit to anal and oral intercourse with another male when interviewed with audio-CASI. The overall male-male sex percentages were 1.5 percent with the SAQ modality and 5.5 percent with the audio-CASI method. Even telephone administered audio-CASI seems to elicit higher reporting rates than a normal telephone interviews.

Tourangeau and Smith (1998) summarized research comparing six modes of data collection methods for sensitive behaviors: paper and pencil personal interviews (PAPI), paper and pencil self administered questionnaires (SAQs), Walkman-administered questionnaires (ASAQ), computer assisted personal interviews (CAPI), computer assisted self-administered

interviews (CASI), and audio computer assisted self-administered interviews (audio-CASI or abbreviated as ACASI). As these authors point out, the major hypothesis guiding most of the literature on sensitive topics such as self reported drug use and sexual behavior is that there is deliberate misreporting. They review a great deal of research to show that SAQs have higher reporting rates of sensitive behaviors than personal interviews in studies of illicit drug use, sexual behavior, alcohol consumption, and abortion reporting. Tourangeau and Smith also reviewed mode research they conducted on the National Survey of Family Growth. This survey addresses issues involving pregnancy, contraception, fetal and infant deaths including abortions, sexually transmitted diseases, and infertility. The study was intended to examine different modes to improve the reliability and accuracy of the survey responses. The modality experiment had five variables: whether the questionnaire began with items about medical conditions or pregnancies; whether the interviewer was a NORC employee or nurse; whether the interview was done inside or outside the respondent's home; whether the interviewer asked questions, or the questions were self-administered; and whether the data were collected by paper or computer. Thus, the data were measured with CAPI, PAPI, CASI, and SAQ techniques.

When asked to report about their sex partners, women who completed self administered questionnaires reported more sex partners than women who responded to an interviewer. This was true whether the period of time was one year or lifetime. The computer assisted self administration method (CASI) elicited the highest number of reported sex partners in the past year and past five years. There were no differences in the reporting of lifetime drug use, although the researchers suggest that mode effects are more likely with shorter time horizons. Item non-response was higher for self-administration, and lower for computer administration, although the

lowest proportion of questions answered was 94.6 percent for the SAQ. The CAPI proportion was 99.2 percent.

In a second experiment, these authors reported the modes effects of CAPI, CASI, and ACASI on sensitive questions about drug use and sexual practices. ACASI produced the highest reported one-year, five-year, and lifetime number of sex partners for men and women. As is typically the case, there was a sex difference in the number of reported sex partners -- men reporting more than women. ACASI also elicited the highest level of reported drug use. This second study is reported in detail in Tourangeau and Smith (1996). Table 5 in the study shows ratios of reporting of sensitive behaviors comparing ACASI to CAPI and CASI to CAPI. The ratio of ACASI to CAPI is always above 1.00, with two exceptions, over 17 sensitive items. For example, the percentage reporting anal sex was 4.21 times higher for ACASI than for CAPI. ACASI proportions were often higher then CASI proportions. For example, among respondents reporting use of cocaine in the past year, the percentage for ACASI respondents was 5.4, while for CAPI it was 1.9, and for CASI it was 2.6. Item context also affected how women and men responded to the questions regardless of whether the interview mode was ACASI, CASI, or CAPI. The authors conclude that ACASI methods increase the level of sensitive item reporting by increasing the legitimacy of the context, and by increasing privacy, thus lowering embarrassment and the normative features of an interview setting.

Turner and his colleagues (Charles F. Turner et al., 1998) have also reviewed the theory and evidence regarding the use of audio-CASI as a mode of response. Some of their work has already been covered in this section. Turner et al., argue that an interview creates a social interaction that introduces a social context to the collection of the data. Computer assisted self

administration has the advantage of removing this social context which may especially have implications for sensitive questions. They state that:

> By removing the requirement that respondents divulge sensitive, stigmatized, or counter normative behaviors to another human, CASI procedures may substantially reduce the extent to which response accuracy for such measurements is compromised by the social presence of the human interviewer. (Charles F. Turner et al., 1998: 457)

Audio features of CASI can reduce literacy problems, increase standardization of the presentation of questions, and provide for multilingual administration. Literacy is an important issue with an inmate population and may have been a problem with the self-administered questionnaires used by previous researchers conducting inmate sexual victimization studies. In this paper, Turner et al., report that audio-CASI increased the reporting of abortions in the NSFG above an interviewer administered questionnaire. In this study, a subset of the women who were interviewed was also asked to respond to the questionnaire by ACASI. Among sexually active females, age 15 to 44, an additional 4.5 percent reported having had one or more abortions in the ACASI mode. In this book chapter, Turner et al., also report on the results of ACASI in an administration of the NSAM. We have already reviewed that data showing men are much more likely to admit to homosexual sex using ACASI than a SAQ.

This literature supports the use of audio-CASI as a mode that overcomes literacy problems, and stigmatization, while still allowing the researcher control of the interview environment.

Randomized Response

Another technique for eliciting sensitive information from respondents is called randomized response (Fox & Tracy, 1986). To insure respondent anonymity, an interviewee is given two statements. The two statements can both be sensitive such as "I have had an abortion," or "I have never had an abortion." Or, one of the statements is innocuous such as "My birthday is in November." The "trick" behind this approach is that the respondent is asked to affirm/disconfirm either statement one or statement two based on a random draw from a procedure that determines which statement to answer. For example, the respondent may be given a box containing red and green marbles. If a red marble is chosen, he or she responds to the first statement. If a green marble is chosen, he or she responds to the second statement. Only the respondent knows the color marble that has been chosen, and, therefore only the respondent knows whether he or she answered the first or second statement. The underlying proportion can be imputed because the researcher knows the probability of choosing a red versus a green marble, and the researcher also knows that the probability that the individual's birthday occurs in November is $p=1/12$.

The success of the method relies on whether the respondent actually believes the choice of answering the statement is actually reliant on a random process. In Fox and Tracy's review of the research comparing randomized response and traditional methods, the two methods did not always yield different results. When the randomizing process was credible, the randomized response method indicated higher proportions of respondents admitting to sensitive questions. One of the drawbacks to this method is that it requires large samples, since the sampling variance of the estimator is increased by having the randomizing process. The variance of the estimate will always be larger than if a question were asked directly; however, the larger the probability

that the randomizing process chooses the sensitive question to be answered rather than the innocuous question, the smaller the variance of that estimator.

Lensvelt-Mulders and Hox (2000) conducted a meta-analysis of studies that compared randomized response (RR) methods to other survey techniques, and which included an external validity check to validate whether the RR methodology produced more accurate estimates of the underlying behavior. The sensitive topics in these studies involved cheating on university exams, admitting to bankruptcy, committing social security fraud, being arrested, driving under the influence of alcohol, and having a baby outside of marriage. There were only 7 such studies. In addition to several forms of RR methods, the survey methods included telephone interviewing, self administered questionnaires (SAQs), computer assisted self administered interviews (CASI), and face to face interviews. The randomized response technique showed the closest self reported estimate to the external validity criterion among all of the methods. However, there were so few studies and so many differences in the characteristics of the studies (populations sampled, the nature of the sensitive topics, and social desirability expectations) that Lensvelt-Mulders and Hox caution against drawing unalloyed conclusions from the meta-analysis results.

While randomized response techniques hold promise for investigating sensitive topics, they require a great deal of explanation, and they rely on the respondent's understanding of and trust in the method. Whether or not inmates have the literacy skills and trust to implement this method is unknown.

The Problem of Validity

Social scientists who measure behavioral and social phenomena try to build in validity checks of the measurements to insure that there is veridicality to the self-reported results. As indicated above, abortions are under-reported by women. Men probably over-report the number of their sexual partners, while women probably under-report them. In the case of abortion, the number of self-reported legal abortions has been compared to the number of actual abortions reported by clinics. In the case of sexual partners, in a given bounded population, the total number of heterosexual partners should be the same for men and women. Both of these social facts are validity checks on self-reported sensitive behaviors. Unfortunately, there is no validity check on prison sexual victimization. Clearly, if a rape is reported immediately after it happens, then a medical examination can determine the veracity of the report. However, if inmates exaggerate victimization or under-report it because of social undesirability, embarrassment or fear of retaliation, there are no validity checks to ascertain the veracity of the estimate. While Davis (1968) used a lie detector to interview some of his rape victims, this is not feasible in a large probability sample. Tourangeau, Rips, and Rasinski (2000) review other domains where validity checks on sensitive topics have been used and cite a number of studies that demonstrate that underreporting in surveys is common in the self-reporting of racist attitudes, illicit drugs, consumption of alcohol, smoking, certain types of income, crime victimization, and criminal behavior. Respondents tend to over report their voting behavior and their attendance at religious services. In all of these areas, researchers were able to use an independent measure, such as administrative records, to check the survey response against external validation data.

Validity will be an important issue when the Bureau of Justice Statistics reports its results. Administrative records cannot provide a validity check on the actual level of prison sexual victimization because many sexual assaults are not reported. However, institutions with

higher levels of administrative records indicating sexual assaults ought to have higher levels of self-reports as well. A second approach to validity would be to compare the self-report information to other administratively recorded information. Victimization should be related to age, build (slight), blood borne infectious disease, and possibly other indicators of victimization such as assault. If confidentiality procedures preclude matching survey responses with administrative records, a more imperfect approach to validity may be to examine the relationship to the institution levels of sexual assault to proxy measures of rape such as the level of blood borne infectious disease. Anal intercourse, especially, would be associated with potential increases in HIV infection, and other blood borne disease transmission. Because needle injection and homosexual behavior are also associated with these blood borne infections, data would have to be collected on random drug hit rates especially for narcotics as well as an assessment of reported homosexual behavior. One could speculate that in prisons where there are higher self-reported rates of anal rape, there should also be higher rates of blood borne infections, after controlling for self reported homosexuality and drug use rates. While this would not establish the precise estimate of rape victimization, it would at least provide an independent assessment of the validity of the ranking of prisons with respect to sexual victimization. This would, of course, be an imperfect measure, since blood borne infectious diseases depend on the level of the disease in the inmate population and because other public health precautions may be used to limit the spread of the infections including aggressive screening of the population. Nevertheless, it might be worthwhile to construct a model that predicts the level of these infectious diseases using the incidence of rape, the incidence of homosexual behavior, levels of random drug use (especially narcotics), and the prevalence of the infectious diseases in a particular institution if this data were available. To the extent the institution level of rape is a predictor of blood borne infectious

disease, this would bolster our confidence in the relational nature of the estimate, but not the actual level of prevalence or incidence. If the level of incidence of sexual assault is low, this approach will not yield very reliable information.

Sample Size and Question Wording

The wording of sexual victimization will also have consequences for the sample size. Since the legislation requires that individual prisons are to be identified, it will be important to have a sufficient sample to detect the true level of the problem. If completed sexual assaults are relatively rare (1 to 5 percent), then a much larger sample size will be required to detect this prison level estimate than would be needed if the detection of sexual pressure were more important. Since the Act calls for the investigation and reporting of sexual predation from rape to unwanted touching, the sample sizes will have to be sufficient to detect these levels with some degree of statistical confidence.

Adjustments to the Prison Rape Estimates and the Ranking of Problematic Prisons

As was noted earlier in this paper, Congress recognized that adjustments to the prison estimates had to be made to make fair comparisons among the prisons. The legislation indicated that the adjustments could include the mission, security level, size, and jurisdiction under which the prison operates. The legislation specifies:

> "In preparing the information specified in paragraph (2), the Attorney General shall use established statistical methods to adjust the data as necessary to account for differences among institutions in the

> representative sample, which are not related to the detection, prevention, reduction and punishment of prison rape, or which are outside the control of the State, prison, or prison system, in order to provide an accurate comparison among prisons. Such differences may include the mission, security level, size, and jurisdiction under which the prison operates. For each such adjustment made, the Attorney General shall identify and explain such adjustment in the report." ("The Prison Rape Elimination Act of 2003," 2003:SEC.4. (c) (3) Data Adjustments)

In a forthcoming book on prison performance, Gaes, Camp, Nelson, and Saylor (in press) present a framework for measuring what prisons do and techniques for comparing different prisons. In that book, Gaes et al., describe the difficulties of within-jurisdiction comparisons and the even greater difficulties in cross-jurisdiction contrasts. The fundamental problem, as suggested by the legislation's language, is that different prisons contain populations of inmates whose composition varies along dimensions that would be related to the level of sexual victimization. Secondly, there are characteristics of the prisons themselves such as security level, prison architecture, and inmate-to-staff ratios that have implications for the level of sexual victimization. Even the limited evidence, to date, suggests sexual victimization is more likely at the higher security level prisons (see Table 1). There are probably other characteristics of inmates as well that will be related to the level of sexual victimization such as their individual risk of violence, their history of assault (sexual and otherwise), and victim-related factors such as age, race, and physical size. To do these comparisons analysts will have to construct a three-level multilevel model that simultaneously measures characteristics of the inmates, prisons, and jurisdictions. Then prisons can be rank-ordered depending on the extent to which their model-based estimated levels of sexual victimization are higher or lower than what is predicted by the model. Examples of two-level hierarchical models (inmates and prison) can be found in studies by Camp and his colleagues (Camp, 1999; Camp, Gaes, Klein-Saffran, Daggett, & Saylor, 2002;

Camp, Gaes, Langan, & Saylor, 2003; Camp, Gaes, & Saylor, 2002; Camp, Saylor, & Harer, 1997; Camp, Saylor, & Wright, 1999). These models allow the analyst to compare prisons on a level playing field.

In several of Camp and colleagues studies, it was demonstrated that the raw, unadjusted rankings of a prison performance indicator, such as violent assault rates, gives a very different picture of prison quality than the adjusted rates. In say a ranking of 100 institutions, a prison can change rank dramatically when comparing the adjusted and unadjusted rates of victimization. This is going to be a particularly difficult problem for those analysts who are responsible for reporting the best and worst prisons, and defending that decision in a justifiable, transparent, and coherent manner. Since there are important consequences to the rankings, jurisdictions will vigorously challenge the methodology.

Summary

The task framed by the Prison Rape Elimination Act of 2003 presents substantial problems of estimation, validity, and bias. The estimation problems are caused by the fact that prison sexual victimization is a stigmatizing event. There is no independent validity check for the self-reported results making any estimate vulnerable to criticism. Furthermore, bias can result from the failure of either victims or non-victims to participate in the study, or if inmates and juveniles use the research as a way of leveraging their dissatisfaction with incarceration. All of the problems that researchers encounter when they measure stigmatized behaviors in the community are amplified by the prison setting. In addition, inmates may fear real or perceived threats of retaliation if they admit to forced or pressured sex. Any kind of sexual activity inside

of prison, other than sanctioned conjugal visits, violates prison rules. This may color inmates' attitudes toward reporting of sexual predation and sexual pressure. Although we did not review this literature, some work has been conducted on the attitudes of staff toward rape. This may partly define an institutional culture that may be one of the most important dimensions of the prison setting determining whether inmates engage in honest self-reporting (Eigenberg, 1989, 2002).

In this paper, we have concentrated on the problems of measurement primarily from the point of view of adult prisons. The legislation requires measurement in juvenile facilities and adult jails, which will raise other issues and logistical problems. Given the volume of turnover in jails, it may be difficult to get a good sample, especially of inmates who are admitted for a very short term or who are simply awaiting their bond hearing, and who may be released within hours of arrest or detention. Given their short length of stay, they may be the most vulnerable, especially if housed with sexually aggressive inmates. For juveniles, the informed consent process often requires a parent's approval which may be difficult to obtain. In addition, precautions will have to be taken, whether the respondent is an adult or juvenile, if the questioning about a victimization causes the person psychological and emotional distress. There are other ethical issues as well. If the victim reports a crime to an interviewer, such as a rape, he may be obligated to report that event to officials, especially if the respondent is a juvenile.

While the task of estimating the level of prison rape will be a formidable one, it may be worth the resources and the effort. Even if prison sexual assault were a relatively rare event, simply reading the accounts of sexual victimization in the Human Rights Watch report *No Escape* (2001) is enough to sensitize any reader to the suffering and degradation of the prison rape victim. Even if a national probability sample of selected prisons cannot precisely establish

the "true" level of sexual victimization, an analysis of the data could yield important information on the classification of potential victims, on the jurisdictions with the most problems, and the predicates of a sexual assault. This data could then be used to train staff and inmates on the potential for sexual pressure or assault. The data may also lead to a more objective understanding of the actual level of prison sexual victimization that will either support or invalidate the assumptions inherent in the Act that make it appear prison rape is endemic in American correctional institutions. However, since there is no independent assessment of the validity of the self-reported incidents, there may well be dissatisfaction with the results of a national probability assessment regardless of the outcome. Our meta-analysis implies, the lifetime prevalence may be much lower than 13 percent.

The legislation has already had an impact on correctional policy makers, even prior to the first estimate of sexual assault. During the January 10, 2003 Winter Meeting of the Standards Committee of the American Correctional Association, new standards were promulgated and approved that address some of the key concerns (Verdeyen, 2003). The new standards address vulnerability to sexual assault, investigation of threats or completed sexual assaults, identification of potential sexual aggressors, counseling of potentially vulnerable inmates, monitoring of potential aggressors, referral of sexual assault victims to a community facility for treatment and evidence gathering, protection of the victim from further assault, identification of designated staff (other than the point-of-contact officer) who may be contacted by a victim, and retention of records of the assault.

Although not covered as one of the topics in the body of this paper, it is also important to recognize the highly charged nature of this process. There are critics of prison administration and advocates of prison reform who have argued that prison homosexuality, sexual victimization, and

sexual predation are the norm rather than the exception inside of American prisons, jails, and juvenile facilities (Donaldson, 1993). Some of this literature, as well as the ethnographically oriented prison sex research, also focuses on sex roles that are quite different from "normal white middle class" sexual behavior. From this point of view, some inmates see the sodomy of another inmate as "normal" behavior that helps to establish a masculine identity. According to this point of view, there are masculine and feminine roles in the act of sodomy even when the act is occurring among same sex participants.

Furthermore, there are many nuances to aggressive and passive sexual behavior. There may be many gray areas in which inmates are co-opted or pressured into sex without physical threats or extortion. Vulnerable and desirable victims may be targets of sophisticated inmates who have learned to probe weaknesses and dependencies of unsophisticated, young, newly admitted prisoners. These critics also argue that there are sex roles that can only be understood from the point of view of the inmate subculture. This poses yet another dilemma for the estimation of prison sexual assault.

Whether one uses a self administered questionnaire, audio-CASI, or interviewer, there is still a social setting and subcultural difference that may have to be overcome to get at an understanding of prison sexual assault. This is a subculture of sexuality that may be different from the one familiar to most researchers doing work in this domain. The estimation of sexual victimization may well depend on a deeper understanding of the language and subcultural definitions used by inmates, but misunderstood by most researchers.

Table 1. Incidence and prevalence of sexual victimization reported in different studies

Study	Prevalence Estimate % (Pressure and/or assault)	Total Population	Sample	Number Participating	Percent Participation	Time Frame Bounded Y/N	Notes: Including the wording or source of either the prevalence or incidence estimate
Struckman-Johnson et al., 1996	**SAQ**						
Victim Reported Prevalence (All Institutions)	20%	1,801	1,801	516	28.7%	N	"Since the time you have been in a Nebraska prison, has anyone ever pressured or forced you to have sexual contact (touching of genitals, oral, anal, or vaginal sex) against your will?" (Responses were "yes," "no," or "not sure")
Men	21%			474			
Women	7%			42			
Completed Sexual Act (Men and Women)	**14.9%**						Further detail reported in the text of the study – completed or attempted sexual assault by inmates or staff – Table 3, excluded genital touching and unknown (16% men, .23% women)
Inmate Estimate of Population Prevalence		1,801	1,801	516	28.7%	N	"In the prison you are in now, about what percentage of inmates do you think have been pressured or forced to have sexual contact against their will?"
Men's Max. Sec. A	19%						
Men's Max. Sec. B	26%						
Men's Min. Sec.	16%						
Women's	7%						
Staff Estimate of Population Prevalence		714	714	264	37%	N	"In the prison you are in now, about what percentage of inmates do you think have been pressured or forced to have sexual contact against their will?"
Men's Max. Sec. A	19%						
Men's Max. Sec. B	16%						
Men's Min. Sec.	11%						
Women's	8%						
Struckman-Johnson et al., 2000	**SAQ**						
Victim Reported Prevalence (All Institutions)	21%	7,032	7,032	1,788	25.4%	N	"Since the time you have been in a Nebraska prison, has anyone ever pressured or forced you to have sexual contact (touching of genitals, oral, anal, or vaginal sex) against your will?" (Responses were "yes," "no," or "not sure")
Study	Estimate %	Total Population	Sample	Number Participating	Percent Participation	Time Frame Bounded Y/N	Notes Including the source of either the prevalence or incidence estimate
Inmate Estimate of Population Prevalence		7,032	7,032	1,788	25.4%	N	"In the prison you are in now, about what percentage of inmates do you think have been pressured or forced to have sexual contact against their will?"
Inst. 1	27%						
Inst. 2	41%						
Inst. 3	24%						

Study	Prevalence Estimate % (Pressure and/or assault)	Total Population	Sample	Number Participating	Percent Participation	Time Frame Bounded Y/N	Notes: Including the wording or source of either the prevalence or incidence estimate
Inst. 4	13%						
Inst. 5	17%						
Inst. 6	12%						
Inst. 7	7%						
Staff Estimate of Population Prevalence		1,936	1,936	475	24.5%	N	"In the prison you are in now, about what percentage of inmates do you think have been pressured or forced to have sexual contact against their will?"
Inst. 1	18%						
Inst. 2	29%						
Inst. 3	12%						
Inst. 4	18%						
Inst. 5	11%						
Inst. 6	4%						
Inst. 7	--						
Bounded Victimization Prevalence (All Institutions)	7 % over 26 to 30 months						"Since the time you have been in a Nebraska prison, has anyone ever pressured or forced you to have sexual contact (touching of genitals, oral, anal, or vaginal sex) against your will?" (Responses were "yes," "no," or "not sure") Responses were restricted to last 26 to 30 months.
Struckman-Johnson and Struckman Johnson, 2002	**SAQ**						
Inst 1. Women	27%			148	50%	Y	"Since the time you have been in a Nebraska prison, has anyone ever pressured or forced you to have sexual contact (touching of genitals, oral, anal, or vaginal sex) against your will?" (Responses were "yes," "no," or "not sure")
Inst 2. Women	9%			79	79%	Y	
Inst 3. Women	8%			36	36%	Y	
Inst 1. Women	**5%**			148	50%	Y	Worst case incident of rape in the current facility
Inst 2. Women	**0%**			79	79%	Y	
Inst 3. Women	**0%**			36	36%	Y	
Inst 1,2,3 Combined	**2.7%**			263	57%		Worst case incident of rape in the current facility – all facilities
Inst 1. Women	21%			148	50%	Y	"In the prison you are in now, about what percentage of inmates do you think have been pressured or forced to have sexual contact against their will?"
Inst 2. Women	11%			79	79%	Y	
Inst 3. Women	13%			36	36%	Y	
Davis, 1968	**Interview**						
Lifetime Prevalence	**2.9% Assault**	3,304	3,304	3,304	100%	N	The facts that were gathered about sexual assault were documents by institutional records, polygraph examination, or other methods of corroboration including interviews. There was no documentation of whether inmates refused to cooperate. Davis also reported a back-of-the-envelope incident rate of about 3 percent (2,000 sexual assaults involving 60,000 new commitments to the Philadelphia prison

Study	Prevalence Estimate % (Pressure and/or assault)	Total Population	Sample	Number Participating	Percent Participation	Time Frame Bounded Y/N	Notes: Including the wording or source of either the prevalence or incidence estimate
							system)
Nacci & Kane, 1982	**Interview**						
Bounded Prevalence (In 17 federal prisons)	**0.67% Assault**	~30,000	516	330	64%	Y Federal Prison	"The sample was intended to be representative of the entire federal inmate population. …if anyone had forced or attempted to force the inmate to perform sex against his will."
Saum, Surratt, Inciardi, & Bennet (1995)	**Interview**						
Lifetime Prevalence	**5.9%** **1 rape** 5 attempted rapes	~1,350	106	101	95.3%	N	Note: Only 106 TC inmates were asked of the total 1,350 inmates in the institution to participate. Only 5 TC inmates refused to be interviewed; however, there is no indication how representative these 101 inmates were of the entire prison population. The exact question was not described.
Lockwood 1980	**Interview**						
Lifetime Prevalence	**1.3% 1 rape** 28% pressured	2,225	89	76	85%	N	Informants and staff reported 1 or 2 sexual assaults a year
Wooden & Parker 1982	**SAQ**						
Prevalence in current institution	**14% Assault** 41% homosexuals 2% bisexuals 9% heterosexuals	2,500	600	200	33.3%	Y Current prison term	"I have been pressured into having sex against my will approximately __ times."
Tewksbury 1989	**SAQ**						
Prevalence in current Institution	**0% Assault** 4.5% -- threat not completed	Not Reported	No Sample	150	Cannot be Computed	Y	How many times have you been raped in this prison? While in this prison, how many times has another male tried to have sex with you using threats or force?
Maitland and Sluder, 1998	**SAQ**						
Prevalence during current sentence	**0.9% Forced Sex** 16.2% sexual comments that made them uncomfortable	1,100	150	111	74%	Y Current sentence	"During this sentence, has anyone forced sexual activity on you?" "During this sentence, has anyone made sexual comments to you that made you feel uncomfortable?"
Hensley, Tewksbury, and Castle, 2003	**Interview**						
Lifetime Prevalence	**1.2% Assault** 13.8 percent	Not Reported	300	174	58%	N	Not Reported
Carroll, 1977	**Informants**						
Incidents – 1 year	**40 sexual assaults per year**	200		21		Y one year	Carroll spent considerable time in the prison, and employed key informants to tell him the level of sexual victimization. Based on the reports of informants at a maximum security prison

Study	Prevalence Estimate % (Pressure and/or assault)	Total Population	Sample	Number Participating	Percent Participation	Time Frame Bounded Y/N	Notes: Including the wording or source of either the prevalence or incidence estimate
Moss, Hosford, and Anderson, 1979	**Administrative Records**						
Incident rate – 1 year	**1.1%** **12 rapes**	1,100					Tried to do a discriminant analysis of rapists and nonrapists; however, the samples were extremely small.
Butler , Donovan, Levy, and Kaldor, 2002	**Interview**						
Men	**2%**		789	789	Not reported	Y one year	The precise question was not described in this report. Non-consensual sex
Women	**2%**						The precise question was not described in this report. Non-consensual sex
Butler and Milner, 2003	**Interview**						.
Men	**0.4%**	7,160 men	876	745 men	85%	Y one year	The precise question was not described in this report. Non-consensual sex
Women	**1%**	514 women	192	163 women	85%	Y one year	The precise question was not described in this report. Non-consensual sex
Fuller and Orsagh, 1977	**Administrative Records and Superintendent Interview**						
Incidents – 1 year	**1 Adm. Records** **31 Sup. Interview** **0.69%**	4,495	4,495	4,495	100%	Y one year	The precise question asked of Superintendents of the 10 prisons was not reported in the study. The incident rate of 0.69 percent was incorrectly computed as the number of incidents (31) divided by the standing inmate population (4,495).

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Figure 1. Sexual Assault Victimization Prevalences (Effect Sizes)

and 95 Percent Confidence Intervals