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Partner Relationships and HIV Risk Behaviors among Women Offenders†

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Abstract

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The HIV infection rate is increasing among women in general and for female inmates specifically (Maruschak 2004), which makes understanding the correlates of risky sexual behaviors critical for this population. Partner relationships, particularly the extent to which women perceive they have power within the relationship, may be important in modeling risk behaviors. Few studies have considered the association between relationship power and HIV risk behaviors among women offenders. This study examines women's perceptions of their relationships using the Sexual Relationship Power Scale (Pulerwitz, Gortmaker, & DeJong 2000) and NIDA's HIV Risk Behavior Assessment (NIDA 1995). Data were collected from female inmates in four prisons as part of the Reducing Risky Relationships for HIV protocol being conducted through the NIDA's Criminal Justice Drug Abuse Treatment Studies (CJ-DATS) cooperative agreement. Women reported whether they had engaged in five types of unprotected sex in the month prior to incarceration. Logistic regression models of the associations between relationship power and five types of unprotected sex revealed some support for the importance of power as a protective factor in reducing the odds of unprotected sexual behaviors. Implications and findings are presented to add to understanding of partner relationships and HIV risk behaviors.

Keywords

HIV risk behaviors; women offenders; relationship power; relational model

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Recent epidemiological data in the United States reveal that women are increasingly at risk of contracting the human immunodeficiency virus (HIV), with much of this risk being associated with unprotected heterosexual behaviors (CDC 2006). The increasing prevalence of HIV infection among women is particularly acute among substance-using female offenders (DeGroot & Cu Uvin 2005), suggesting a need for more research to understand the dynamics of HIV risk behaviors in this population. While intravenous drug use is a major risk factor for HIV transmission, substance-using women offenders are at additional risk if they engage in sexual risk behaviors in the context of their sexual relationships (Tortu et al. 1994). To date, there are few studies of substance-using women offenders that have sought to understand how the context of sexual relationships, particularly in terms of relationship power, may be associated with risky sexual behaviors. This research extends previous research on relationship power to women offenders, examining the relevance of relationship control and decision-making dominance in modeling risky sexual behaviors in the month prior to incarceration.

RELATIONSHIP POWER AND HIV RISK BEHAVIORS

Reducing the risk of HIV transmission for women has often focused on usage of the male latex condom, as this is the most effective method for reducing the likelihood of transmission via heterosexual contact (Harvey et al. 2006). Early models that focused on HIV prevention through condom use largely emphasized intrapersonal factors, including cognitive factors such as women's knowledge about HIV, their skills related to the use of condoms, and their attitudes toward using condoms (Harvey et al. 2006; Sanders-Philips 2002). These early models of prevention largely ignored two key issues. First, they generally did not rely on gender-specific theoretical approaches (Woolf & Maisto 2008). Second, early research often failed to take into account that condom usage (or lack thereof) occurs within a dyadic relationship in which male partners may possess more power than female partners (Logan, Cole & Leukefeld 2002; Amaro & Raj 2000; Wingood & DiClemente 1998).

More recently, there have been calls for research that considers HIV risk behaviors through the lens of gender and that examines how relationships are relevant in understanding women's health behaviors (Woolf & Maisto 2008; Pulerwitz et al. 2002; Amaro & Raj 2000; Pulerwitz, Gortmaker & DeJong 2000). From the perspective of the Relational Model, women's

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relationships can promote healthy choices when those relationships are supportive and positive (Covington & Surrey 1997; Finkelstein 1996; Finkelstein & Piedade 1993). One element of positive relationships for women is the extent to which they feel empowered within sexual partner relationships. Such power within relationships would be indicated by women having the ability to influence the behavior of her partner as well as having "say" in decisions that affect herself and her partner (Blanc 2001; Pulerwitz, Gortmaker & DeJong 2000). In the context of reducing risky sexual behaviors, it has been documented that when they have only limited power within sexual relationships, women are less able to successfully encourage their partners to use condoms (Wingood & DiClemente 2000).

Pulerwitz and colleagues (2002, 2000) developed the Sexual Relationship Power Scale (SRPS) in order to measure the perceptions of women about the distribution of power within their intimate relationships. While offering an overall measure of women's power in these relationships, the SRPS can also be divided into the two subscales of Relationship Control and Decision-Making Dominance. In large part, the Relationship Control measure focuses on the degree to which the woman's partner controls her behavior, such as what she wears or with whom she socializes, as well as measuring how elements of fear related to conflict and potential violence affect the relationship. Conceptually, when male partners engage in these types of controlling behaviors, a woman's power would be considered low within that relationship. Decision-Making Dominance frames power in terms of the amount of say that each partner has in a variety of decisions, including social and sexual activities. Women would be considered to have low Decision-Making Dominance if their male partners generally have more influence in making decisions. Pulerwitz and colleagues (2002, 2000) found that, in a sample of women recruited from a community health clinic, both Relationship Control and Decision-Making Dominance were associated with consistent condom use, such that women reporting higher levels of these elements of power were more likely to report consistent use of condoms.

An additional dimension that may be relevant in facilitating or impeding safer sexual practices is the type of partner relationship, particularly in terms of monogamy and commitment. Interestingly, women who were not in committed relationships reported more condom use when compared to women in committed relationships (Schilling et al. 1991). One study found that women who were not involved in a monogamous relationship were 11 times more likely to maintain safe sexual behavior compared to women in committed relationships (Morrill et al. 1996). Thus, the context of a monogamous, committed relationship can create a comfortable environment where a woman "feels safe" with her partner and perceives that she is a lower risk of acquiring sexually transmitted infections (STIs; Harvey et al. 2006). Furthermore, she may perceive that unprotected sex is a sign of trust that enhances the relationship (Morrill et al. 1996) or that her partner would perceive her to be unfaithful if she asks him to use a condom (Woolf & Maisto 2008; Wingood & DiClemente 1998). For some women, the desire to avoid conflict associated with asking a partner to use condoms may outweigh the potential long-term risks to health (Logan, Cole & Leukefeld 2002). Consequently, different types of sexual relationships may have variable influences on increasing HIV risk behaviors.

WOMEN OFFENDERS, DRUG USE, AND HIV RISK BEHAVIORS

Women represent the fastest growing group of U.S. prisoners, with much of this growth attributable to incarceration for drug-related offenses (Henderson 1998). By the end of 2005, more than 107,500 women were incarcerated in federal and state prisons (Harrison & Beck 2006). Data from the Bureau of Justice Statistics indicate that female prisoners are more likely to be incarcerated for drug crimes (29%) than males (19%; Harrison & Beck 2006). About half of incarcerated women were under the influence of alcohol and/or other drugs at the time of their offense (Greenfeld & Snell 1999/2000).

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Incarcerated women are disproportionately affected by HIV and sexually transmitted infections (STIs). The HIV infection rate among women offenders is about fifteen times higher than among women in the general U.S. population (De Groot & Cu Uvin 2005). HIV is increasingly prevalent among incarcerated women, particularly when compared to incarcerated men. At year-end in 2003, 2.8% of female prisoners were HIV positive compared to only 1.9% of male inmates (Harrison & Beck 2006). Incarcerated women also often report histories of STIs including gonorrhea, chlamydia, human papillomavirus, and herpes simplex (Ross & Lawrence 1998).

Since a higher proportion of female prisoners are incarcerated for drug crimes than male prisoners (Harrison & Beck 2006), drug use behaviors that increase risks for HIV are especially troublesome for women. Sex exchange, in which women engage in sexual activities in order to receive money, drugs and/or gifts has been identified as an increased risk factor for HIV among female offenders (Cotton-Oldenburg et al. 1997). Other consistently reported behaviors that increase a female offender's risk for HIV include sharing drug injection equipment, engaging in unprotected sex with drug-injecting partners, having sex with multiple partners, reporting a history of a diagnosed STI, inconsistently using condoms with multiple sex partners, and using alcohol and other noninjection drugs (Clarke et al. 2006; Cotton-Oldenburg et al. 1999; Hankins et al. 1994).

Given these risk factors and the serious health consequences of HIV and other STIs, a better understanding of factors associated with HIV risk behaviors among women offenders is important. One approach to studying risk behaviors among women offenders is to consider the role of relationships, particularly risky ones, in contributing to female criminality and drug use. Research suggests that incarcerated women report greater family and social relationship problems relative to incarcerated men (Peters et al. 1997; Sheridan 1996). Women offenders may also have complicated histories of emotional, sexual, and/or physical abuse, which may be related to their criminal activities (Bond & Semaan 1996; Sheridan 1996). The literature stresses the importance of relationships to women and how relationships with unequal power dynamics can increase the likelihood of a woman's risky behaviors, including unprotected sexual and drug use behaviors (Staton-Tindall et al. 2007; Miller & Neaigus 2001; Covington 1998). On the other hand, others have shown that supportive social networks and positive relationships are critical for women's psychological development, both in terms of shaping women's thinking patterns and influencing women's behavior (Gilligan 1993; Miller 1976).

Understanding risky behaviors can be enhanced by the gender-specific Relational Model, which stresses the importance of relationships and how enhancing positive relationships can help substance-abusing women change their risky behaviors (Covington & Surrey 1997; Finkelstein 1996; Finkelstein & Piedade 1993). This model suggests that a woman's "sense of self" is closely tied to her relationships and affiliations (Surrey 1991; Miller 1976). The Relational Model has been used to understand relationships and social support in predicting positive decisions and treatment outcomes among women. For example, Hurdle (2001) proposed that positive relationships can influence positive decisions about health behaviors, open channels of communication about health, and increase a willingness to engage in preventative health practices.

A key dimension that may encourage substance-using women to make positive health decisions, such as not engaging in risky sexual behaviors, is relationship power within sexual partner relationships. Two elements of sexual partner relationships that may be important for drug-using female offenders are relationship power and partner type. Research in community samples suggests that women generally are less likely to engage in unprotected sex when they perceive themselves to be more empowered within their relationships (Pulerwitz et al. 2002; Pulerwitz, Gortmaker & DeJong 2000). There is evidence of similar dynamics for substance-

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using women. In two studies of women receiving methadone as treatment for opiate dependence, it was demonstrated that negotiating condom use and behavior change were related to sexual partner relationships (Schilling et al. 1993, 1991). Women reported less condom use if they were not comfortable in talking to their partners about safer sex and were willing to have sex if their partners refused to wear a condom (Schilling et al. 1991). These findings might be interpreted as being reflective of women lacking the power within their relationships to give voice to their concerns about the need for safer sex practices and to resist demands for sex without condoms. This type of theoretical approach that focuses on relationship power has not been extended to substance-using women offenders specifically, but given the Relational Model's assertions regarding the importance of relationships, it may have utility in explaining HIV risk behaviors in this population.

The second element relates to partner type, meaning the degree of commitment within the relationship. One study found that when compared to women in monogamous relationships, single drug-using women were 15 times more likely to report changing their sexual risk behaviors (Schilling et al. 1993). In part, this may reflect cognitive differences in how women perceive risks in the context of monogamous relationships. Women in committed relationships may believe that negotiating for safer sex practices will convey to the partner that she is unfaithful; this is one common "thinking myth" of women prisoners (Staton-Tindall et al. 2007). Another common perception is that by *not* using condoms, women are communicating to their partners that they are committed to and trust in the relationship.

The overall purpose of this study is to examine incarcerated women's perceptions about their sexual partner relationships and HIV risk behaviors before incarceration using the Sexual Relationship Power Scale (Pulerwitz, Gortmaker & DeJong 2000) and the Risk Behavioral Assessment (NIDA 1995). Specifically, Sexual Relationship Power, Relationship Control, and Decision-Making Dominance were examined for their associations with five behaviors in the 30 days prior to incarceration: (1) unprotected sex while high, (2) unprotected vaginal sex, (3) unprotected anal sex, (4) unprotected sex with someone who shot drugs, uses crack/cocaine, and/or uses methamphetamine, and (5) unprotected sex while trading sex for drugs, money, or gifts.

METHODS

Participants, Screening, and Data Collection

As part of the National Institute on Drug Abuse's Criminal Justice Drug Abuse Treatment Studies (CJ-DATS) cooperative agreement (Wexler & Fletcher 2007; Fletcher & Wexler 2005), data were collected from 304 female subjects who consented and entered the Reducing Risky Relationships for HIV protocol between March 2007 and April 2008. This protocol is a six-session intervention that seeks to use a gender-specific approach to target relationship "thinking myths" associated with HIV risk behaviors. Participants were recruited from one correctional facility in each of four states: Connecticut, Delaware, Kentucky, and Rhode Island. The project was reviewed by institutional review boards at the four participating institutions —University of Kentucky, Memorial Hospital of Rhode Island (Brown University-affiliated hospital), University of Connecticut, and the University of Delaware—as well as the CJ-DATS Cooperative Agreement Research Management Subcommittee.

For this protocol, incarcerated women with a history of at least weekly substance use were targeted for recruitment approximately six to eight weeks before their scheduled parole hearing or targeted prison release date. Based on a monthly roster generated by prison staff of potentially eligible inmates (i.e. women who were scheduled to meet with the parole board or to "serve out" the remainder of their sentences in the subsequent two months), research staff sent a letter to potential participants inviting them to a prison screening session.

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At the screening session, research staff described the study and obtained informed consent; this process assured inmates that deciding not to participate in the study would have no effect on their treatment or criminal justice status. Women completed a screener form, which was collected by research staff, and then watched an HIV awareness video. As the video was shown, research staff examined the forms to determine participant eligibility. Participant inclusion criteria were: (1) being scheduled to go before the parole board or complete the sentence within six weeks of the targeted recruitment date; (2) substance use at least weekly before prison; (3) at least 18 years of age; and (4) willingness to participate in the study. Study exclusion criteria were: (1) current (past month) psychotic features; (2) special parole or probation conditions that would prohibit participation in the protocol and (3) not being willing to participate in the intervention if randomized. Based on these criteria, potential participants were notified if they met study eligibility criteria.

The present study relies on data collected during a baseline interview, which were generally scheduled to occur in the week following the screening session. These structured face-to-face interviews were conducted by trained interviewers in the visitation room of the prison. Most interviews were completed in about two hours, for which participating women received a $20 honorarium.

Measures

The dependent variables of interest were drawn from the National Institute on Drug Abuse Risk Behavioral Assessment (NIDA 1995) and reflect sexual risk behaviors related to HIV transmission. Specifically, women were asked if they had engaged in risky sexual behaviors, defined as having sex without a condom, at least once in the 30 days prior to incarceration. The five behaviors measured were: (1) unprotected sex while high on drugs or alcohol; (2) unprotected sex with a partner who was using cocaine, methamphetamine or was an injection drug user (IDU); (3) unprotected sex while participating in sex exchange; (4) unprotected vaginal sex; or (5) unprotected anal sex. Each dichotomous measure was coded such that 1 indicated at least one occurrence of a particular behavior in the 30 days prior to incarceration, while 0 reflected no instances of that behavior in the 30 days prior to incarceration. The primary independent variable of interest was relationship power measured by the 23-item Sexual Relationship Power Scale (SRPS) (Pulerwitz et al. 2002; Pulerwitz, Gortmaker & DeJong 2000). The SRPS contains two subscales: 15 items measuring Relationship Control (RC) and eight indicators of Decision-Making Dominance (DMD). The scale developers assert that these subscales can be treated separately or combined into an overall measure of Relationship Power (Pulerwitz et al. 2002; Pulerwitz, Gortmaker & DeJong 2000). Our analyses consider the associations of the overall SRPS scale as well as the two subscales with risky sexual behaviors. These scales range from 0 to 4, with higher values indicating that the woman has greater power in the relationship. Our data indicate a high level of reliability for the overall SRPS scale (Cronbach's $\alpha = .93$) as well as the RC ($\alpha = .92$) and DMD ($\alpha = .83$) subscales. As suggested by Pulerwitz and colleagues (2002), the total SRPS scores were also split into three evenly divided categories or tertiles, such that women with scores in the highest tertile were considered to have greater Relationship Power.

In addition, demographic characteristics and measures of drug use were used to profile the sample. Demographic characteristics included race/ethnicity (categorized as White, African American, Hispanic, and other), marital status (married/cohabitating, never married, and separated/divorced/widowed), employment status prior to incarceration (full-time, part-time, and unemployed), education (less than high school degree or at least a high school degree), and living situation prior to incarceration (in own home, in other's home, homeless or in shelter, or other). Daily substance use prior to incarceration included seven substances: alcohol, marijuana, crack, cocaine, heroin, prescription opiates, and methamphetamine.

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Statistical Analyses

To examine bivariate associations between risky sexual behaviors (dichotomous variables) and relationship power (continuous scale), t-tests were used. To differentiate the independent associations between risky sexual behaviors and relationship power, we utilized logistic regression. A separate logistic regression model was developed for each of the five sex-risk behaviors. A step-wise method was then utilized in which the primary independent variables of interest, either Sexual Relationship Power or the two subscales of Relationship Control and Decision-Making Dominance, were first added to the model. Covariates (demographics and/or drug use indicators) were retained in the model if they were significantly associated with the outcome at the $p < 0.05$ level, or if it appeared they were potentially confounding the relationship between relationship power and risky sexual behaviors, as evidenced by changes in the standard errors for the relationship characteristic variable greater than 10%. All analyses were conducted in STATA, version 10.0 (College Station, TX).

RESULTS

Of the 304 women enrolled in the study, about two-thirds were White (68%) and had at least a high school education (65.1%) with a median age of 35 years (interquartile range [IQR]: 28.1, 41.5) (see Table 1). Almost half were never married (44.4%). In the six months before their incarceration, daily use of alcohol and other drugs was fairly common. About a third of the women reported daily use of crack (35.2%), about one-fourth reported daily use of marijuana (26.0%), alcohol (28.6%), and prescription opiates (25.3%), and less than 10% reported using either heroin (7.2%) or methamphetamine (6.3%). About 13.2% of the women indicated they had used cocaine on a daily basis in the six months prior to incarceration.

The prevalence of risky sexual behaviors was variable across the five indicators. In the 30 days prior to incarceration, 72.7% of women reported having sex without a condom while high and 77% reported unprotected vaginal sex. About half (46.7%) had sex without a condom with someone who was using cocaine and/or methamphetamine or was an IDU. Having sex without a condom in exchange for drugs, money or gifts was less prevalent (23%). About 14.1% reported having at least one instance of unprotected anal sex in the 30 days prior to incarceration.

The median overall score for the Sexual Relationship Power Scale (SRPS) was 2.7 (IQR: 2.2, 3.0) and the average was 2.60 (SD = 0.64). As suggested by the scale developers (Pulerwitz et al. 2000), women were also divided into tertiles according to their scores on the SRPS scale. The low tertile included scores on the SRPS that ranged from 1 to less than 2.46, the medium tertile represented scores of 2.46 to less than 2.90, and the high tertile included scores from 2.91 to 4.0. As would be expected, the medians for the two subscales were similar. The median score on the Relationship Control (RC) subscale was 2.75 (IQR: 2.3, 3.3) and 2.5 (IQR: 2.1, 3.1) for the Decision-Making Dominance (DMD) subscale. The averages for Relationship Control and Decision-Making Dominance were 2.74 (SD = 0.72) and 2.49 (SD = 0.72), respectively.

Initial analyses at the bivariate level indicated that the overall SRPS measure of Relationship Power, which combines the domains of Relationship Control and Decision-Making Dominance, was significantly associated with two of the five risk behaviors. For Relationship Power, women in the second and third tertiles were significantly less likely than women in the lowest tertile to have engaged in unprotected anal sex. In addition, women reporting greater Relationship Power were significantly less likely to have had unprotected sex with a person who was a cocaine user, methamphetamine user or IDU.

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Based on these initial findings, multivariate logistic regression models were estimated that included demographic and drug use variables that were associated with these behaviors. Overall Relationship Power continued to be significantly associated with reported unprotected anal sex (Table 2a) in the multivariate model after adjusting for daily crack use. Women in the second tertile were 57% less likely and women in the third tertile were 63% less likely than those in the lowest tertile to have reported unprotected anal sex, controlling for daily crack use. As seen in Table 2b, the odds of unprotected sex with a cocaine or methamphetamine user and/or IDU was 57% less likely among those in the highest tertile of Relationship Power relative to those in the lowest tertile (AOR: 0.43, 95% CI: 0.22, 0.82), adjusting for race and daily crack use.

The two subscales, Relationship Control and Dominance in Decision-Making, were then examined for their associations with each of the five risky sexual behaviors. In the bivariate analyses, Relationship Control in particular was strongly associated with participation in risky sexual activity. Women who had greater Relationship Control were significantly less likely to have unprotected vaginal sex, unprotected anal sex, unprotected sex while high, and unprotected sex with a cocaine, methamphetamine user or IDU. However, Decision-Making Dominance was not significantly associated with any of the risky sexual behaviors.

In the adjusted logistic regression models, Relationship Control continued to be significantly associated with three of the risky sexual behaviors (Table 3). A one-unit increase in Relationship Control was associated with a 35% decrease in the odds of women reporting unprotected vaginal sex in the 30 days prior to incarceration, controlling for age and race (Adjusted Odds Ratio [AOR]: 0.65, 95% Confidence Interval [CI]: 0.44, 0.97; see Table 3a). In addition, each unit increase in Relationship Control was associated with a 45% reduction in the odds that women reported unprotected anal sex, after adjusting for crack use (AOR: 0.55, 95% CI: 0.35, 0.88; see Table 3b). The odds of participation in unprotected sex with a cocaine or methamphetamine user and/or IDU were also significantly lower for women exhibiting greater relationship control (AOR: 0.60, 95% CI: 0.42, 0.87; see Table 3c), after adjusting for race and daily crack use. However, the association between Relationship Control and having unprotected sex while high was no longer significant once daily crack use was added to the model.

DISCUSSION

Problematic relationships can be common among female offenders. For example, incarcerated women reported more family and social relationship problems than incarcerated males (Peters et al. 1997; Sheridan 1996). Studies have documented how relationships within social networks can influence risky sexual and drug use behaviors among female substance users (Miller & Neaigus 2001). Using the Relational Model (Finkelstein 1996; Finkelstein & Piedade 1993) that a woman's "sense of self" is closely tied to her relationships and affiliations (Surrey 1991; Miller 1976), disempowering intimate relationships may be particularly harmful for the well-being of women. Previous research has considered relationship power in the context of community samples (Pulerwitz et al. 2002; Pulerwitz, Gortmaker & DeJong 2000), but there has not been research on relationship power conducted with women offenders who are incarcerated. It was unknown whether the nature of sexual partner relationships, particularly in terms of the distribution of power between women and their partners in those relationships, were related to risky sexual behaviors among women offenders.

This research makes several contributions to the existing literature. First, we measured the prevalence of multiple types of risky sexual behaviors among substance-using women offenders in the month prior to their incarceration. One strength of this research was that both measures that were specific to substance-using women (e.g. unprotected sex while "high" and

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unprotected sex in exchange for drugs, money, or gifts) and more general measures (e.g. unprotected vaginal sex and unprotected anal sex) were included. The prevalence of any unprotected vaginal sex was quite high (about 77%), although not particularly different from the general population. Data from a large US sample indicated that 81.3% of adults reported not using a condom during their most recent sexual encounter (Anderson 2003). Given that the sample focused on substance-using women, it was not surprising that the majority of participants reported at least one instance of unprotected sex while high in the month before they entered prison. It should be noted that reducing risky sexual behaviors that occur in the context of drug use points to the potential health benefits that may be gained by delivering drug treatment services to incarcerated women.

The major substantive contribution of this research was the extension of the theoretical perspective of relationship power to the experience of substance-using women offenders. We examined the associations between perceived power in sexual partner relationships and risky sexual behaviors in the month before women entered prison. Initially we considered the overall measure of Relationship Power, which was negatively associated with the odds of unprotected anal sex and unprotected sex with a user of cocaine, methamphetamine and/or intravenous drugs in the multivariate models. Considering the Relationship Control and Decision-Making Dominance subscales, which had been combined in the overall measure, revealed several important findings. First, Decision-Making Dominance was not associated with any of the five risky sexual behaviors. This lack of significant findings is important because it suggests that the significant findings for the overall measure of Relationship Power were likely driven by Relationship Control rather than Decision-Making Dominance. In addition, the importance of power for risky sexual behaviors may have been attenuated by the inclusion of the nonsignificant Decision-Making Dominance items. Some support for this line of reasoning may be found in the results indicating that the dimension of Relationship Control was associated with four of the five risk behaviors compared to overall Relationship Power being associated with only two behaviors in the bivariate analyses.

Relationship Control was a significant covariate in three of the multivariate models. Specifically, women reporting that they had more control in their sexual partner relationship were significantly less like to engage in any unprotected vaginal sex, unprotected anal sex, and unprotected sex with a user of stimulants (e.g. cocaine, methamphetamine) or intravenous drugs. Reductions in the odds of these behaviors are important for several reasons. First, the association of Relationship Control with unprotected vaginal sex is particularly important given the high base-rate of this risky behavior in this population. In addition to reducing risks of HIV and STI transmission, reducing the prevalence of unprotected vaginal sex may also reduce the risk of unintentional pregnancy. The association for unprotected anal sex is important from a public health perspective because this activity has higher odds of HIV and STI transmission than unprotected vaginal sex if the partner has one of these infections (Gross et al. 2000; Nicolosi et al. 1994). Finally, a partner who uses stimulants or intravenous drugs is at increased risk of having contracted HIV, so unprotected sexual contact with these individuals pose additional health risks for women.

When the association of Relationship Control and “unprotected sex while high” was explored, Relationship Control was no longer associated when crack use was added into the model, indicating that crack use may mediate the relationship between Relationship Power and unprotected sex while high. This finding is in accordance with previous studies in which crack use was significantly associated with participating in HIV risk behaviors (McCoy et al. 2004; Edlin et al. 1994).

Of the five risky sexual behaviors, the only behavior for which there was no evidence of association with Relationship Power was unprotected sex in exchange for money, drugs, or

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gifts. Neither the overall measure of Relationship Power nor the subscales were associated with this particular type of risky sexual behavior, which was reported by about one-quarter of the women in the study. This is potentially disconcerting in that women who are trading sex are likely at higher risk for HIV and other STIs (Tortu et al. 1998). On some level, it may be the case that Relationship Power is less relevant for these transactional sexual encounters that occur during what might be viewed as a brief, temporary association between two people rather than an ongoing relationship.

An additional unexpected finding was that marital status was not associated with any of the five sexual risk behaviors among these women offenders. The lack of significant differences was surprising because previous research had found that long-term committed relationships may actually be a risk factor (Schilling et al. 1993, 1991), since unprotected sex may be viewed as a symbol of trust in the relationship (Morrill et al. 1996). In part, this may be explained by the use of marital status rather than combining that measure with other indicators of relationship commitment. For example, within the category of “never married” women, there may be some who are in monogamous yet noncohabitating relationships, while others have multiple sexual partners. One cannot assume that the category of “married/cohabitating” only includes women in monogamous relationships. Finally, it may be the case that there simply were not enough married or cohabiting women to detect significant differences, as this group only represented about 15% of the sample.

The following limitations should be noted. First, study participants were not a random sample of incarcerated women. Although not randomly selected, all women who were eligible for release could have self-selected for participation since they were asked if they were interested in participating in the study. Additionally, these data are cross-sectional in nature, so causal relationships cannot be firmly established.

An additional and significant limitation is that this study used self-reported data, which may be influenced by biases related to recall and truthfulness. To some extent, the recall issue may be minimized by our reliance on any instance of the behaviors rather than asking participants to identify the number of times they engaged in the risky behavior in the month prior to incarceration. However, there are also potential issues of recall associated with the fact that the measurement of Relationship Power and risky sexual behaviors occurred just prior to release from prison and not during the usual functioning of the relationship itself. Furthermore, as the questions about sexual risk behaviors focus on very specific and potentially sensitive types of sexual activities, the possibility exists that some participants, who may be less comfortable discussing these sorts of issues, may underreport instances of risky sex. It is also unclear if individuals who are less willing to accurately report risky sexual behavior are likely to report more or less power in their relationship. While self-report data has been shown to be valid when compared to urinalysis for drug use (Del Boca & Noll 2000; Rutherford et al. 2000), it is more difficult to establish the validity of self-reported sexual behaviors because there are no biological markers that can be analyzed as in the case of drug testing. However, the validity of self-reported drug use measures, which focus on both a sensitive and illegal behavior, gives some hope that participants will be reasonably truthful in reporting any instances of these risky sexual behaviors.

There are many possible directions for future research both theoretically and methodologically. One possibility for addressing potential recall and truthfulness biases may be to investigate relationship dyads. By employing a paradigm in which both partners provide data, not only regarding their own perceptions and behaviors, but also those of their partner, it would be possible to investigate both consistencies and discrepancies in individual accounts of the relationship. This approach could allow greater insight into both individuals’ levels of engagement in the relationship and a more accurate assessment of the interpersonal dynamics

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unique to that dyad. Also, much of the research has only focused on the perspective of women, so adding the perspective of men may also yield important theoretical contributions to the literature.

Future research might also consider using a panel longitudinal design. By incorporating multiple waves of data collection, it may be possible to investigate whether women's attitudes toward intimate relationships and relationship power vary across the actual span of their engagement in the relationship. It may also be possible to better understand the types of variables that are associated with perceived power within intimate relationships. Furthermore, future research might simultaneously consider sexual partner relationships as well as other forms of social relationships. For example, participation in risky sexual behaviors may decrease as feelings of affiliation in other types of close relationships increase. Perhaps as needs for close affiliations are met by interactions outside of the intimate relationship (i.e., like those with family, children, or close friends), beliefs about the necessity or importance of the risky relationship change as do the individuals' perceptions of relationship power. Only by simultaneously considering a range of different types of social relationships might these patterns be fully understood.

Another area for future research is to better understand the associations between women's perceived power in relationships, self-esteem, and the need to belong. For example, diminishing levels of self-esteem may serve to motivate women to seek out affiliations regardless of the extent to which such affiliations may actually pose risks to women. For women experiencing negative affect and dysphoria brought on by negative life events such as addiction or incarceration (c.f. Baumeister & Leary 1995; Baumeister, Heatherton & Tice 1993; Baumeister & Tice 1990), affiliations, even risky ones, may hold the perceived possibility of emotional benefits to self-esteem. In this context, risky behaviors may be perceived by women as having symbolic value as methods for building trust in the relationship while gaining desired male approval and providing evidence of social desirability. For women in the present study, their impending incarceration may have provoked unstable feelings of self-worth and threatened their sense of stability within their intimate partner relationships because of the impending separation. Future research might consider a broader spectrum of psychological needs that may be fulfilled within the context of intimate relationships, such as needs for affiliation and self-esteem, and how impending incarceration may uniquely shift how these relationships function.

Finally, future studies are needed to examine whether interventions can effectively help women develop stronger perceptions about their abilities to exert power within their sexual relationships, particularly in terms of negotiating with their partners about safer sex practices. The present study of baseline data was collected as part of a larger protocol that is considering whether an intervention delivered during incarceration can successfully address "thinking myths" about relationships that may be barriers to reducing risky sexual behaviors once women reenter their communities (Staton-Tindall et al. 2007). This intervention protocol offers the opportunity to even more clearly understand the influence of intimate partner relationships for women offenders, and if efficacy is demonstrated, may offer a method for reducing risks for this population.

Despite the limitations and need for future research, findings from this study have implications for women's relationships, high risk HIV-related behaviors, and ultimately HIV prevention. These findings support the idea that maintaining power in relationships, particularly control within sexual relationships, may be of high importance for women in avoiding high-risk sexual behaviors that could lead to a greater potential for HIV infection. Furthermore, these results support a growing body of literature which generally suggests that promoting beliefs that

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empower women to take greater ownership of their decisions in sexual relationships leads to better health choices and ultimately greater feelings of efficacy and self-worth.

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TABLE 1

Demographic and Drug Use Characteristics of the Sample (N = 304)

	N	%
Age, Median (Interquartile Range)	35 (28.1, 41.5)	
Race		
White	206	68.0
African American	75	24.8
Hispanic	4	1.3
Other	18	5.9
Marital Status		
Married/Cohabitating	45	14.8
Never Married	135	44.4
Separated/Divorced/Widowed	124	40.8
Employment		
Full-Time	89	29.4
Part-Time	50	16.5
Unemployed	164	54.1
Education		
No High School Degree	106	34.9
High School Education or Greater	198	65.1
Living Situation		
Living in Own Home	123	40.6
Living in Other’s Home	140	46.2
Homeless/Living in Shelter	18	5.9
Other	22	7.3
Daily Substance Use		
Alcohol	87	28.6
Marijuana	79	26.0
Crack	107	35.2
Cocaine	40	13.2
Heroin	22	7.2
Prescription Opiates	77	25.3
Methamphetamine	19	6.3

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TABLE 2

Multivariable Models of Risky Sexual Behaviors and Relationship Power

2a. Any Unprotected Anal Sex and Relationship Power

	Adjusted Odds Ratio	**95% Confidence Interval**
Relationship Power		
1st Tertile (Low)	1.00	---
2nd Tertile (Medium)	0.43	0.19, 0.96
3rd Tertile (High)	0.37	0.16, 0.85
Daily Crack Use	2.65	1.36, 5.16

2b. Any Unprotected Sex with User of Cocaine/Meth/IDU and Relationship Power

	Adjusted Odds Ratio	**95% Confidence Interval**
Relationship Power		
1st Tertile (Low)	1.00	---
2nd Tertile (Medium)	0.98	0.52, 1.85
3rd Tertile (High)	0.43	0.22, 0.82
Race		
White	1.00	---
African American	0.27	0.14, 0.52
Hispanic	0.23	0.02, 3.19
Other	0.46	0.14, 1.46
Daily Crack Use	8.79	4.83, 16.0

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TABLE 3

Multivariable Models of Risky Sexual Behaviors and Relationship Control

3a. Any Unprotected Vaginal Sex and Relationship Control

	Adjusted Odds Ratio	**95% Confidence Interval**
Relationship Control	0.65	0.44, 0.97
Age	0.97	0.94, 1.00
Race		
White	1.00	---
African American	0.61	0.33, 1.13
Hispanic	0.08	0.01, 0.88
Other	1.28	0.35, 4.69

3b. Any Unprotected Anal Sex and Relationship Control

	Adjusted Odds Ratio	**95% Confidence Interval**
Relationship Control	0.55	0.35, 0.88
Daily Crack Use	2.57	1.32, 4.99

3c. Any Unprotected Sex with User of Cocaine/Meth/IDU and Relationship Control

	Adjusted Odds Ratio	**95% Confidence Interval**
Relationship Control	0.60	0.42, 0.87
Daily Crack Use	8.13	4.51, 14.7
Race		
White	1.00	---
African American	0.27	0.13, 0.52
Hispanic	0.20	0.01, 3.71
Other	0.54	0.18, 1.64