

A Critical Review of HIV-Related Interventions for Women Prisoners in the United States

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This article reviews the literature on HIV-related interventions for U.S. women prisoners, with a focus on identifying strategies that enabled women to practice safer sex, reduce drug use, and to avoid recidivism. A comprehensive search indicated that only nine such interventions were evaluated in professional journals between 1994 and 2009. These interventions involved behavioral programs for women at risk for HIV and discharge planning for women releasees who were either infected with or at risk for HIV. Four interventions for incarcerated women achieved successful outcomes regarding self-empowerment and safer sex skills; 3 prison-release interventions resulted in less recidivism if not reduced HIV risk. Each intervention was nominally women-centered, with prison-release programs lacking protocols that were designed specifically for women. Based on evidence that women-centered interventions were desirable for this population, such interventions should be given high priority in criminal justice policy and care provision during the HIV epidemic.

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The prison population in the United States has increased exponentially since the 1980s. While women comprise only 7% of U.S. inmates, they are being incarcerated at a higher rate than men and are more than twice as likely to be infected with HIV (Havens et al., 2009; National Minority AIDS Council [NMAC],

2003; Vlahov et al., 1991). Most HIV-infected women prisoners come from low-income, minority communities and, like men, are likely to have been convicted of drug-related offenses (Kim et al., 1997). It is widely recognized that most of these women were infected before being incarcerated and that risk factors for both incarceration and HIV include high-risk partners (Centers for Disease Control and Prevention [CDC], 2008; Zack, 2007), involvement in drug networks (O'Leary & Martins, 2000), and domestic violence (Lichtenstein, 2005). While women's own drug use is often assumed to be a major co-factor for both HIV and incarceration, Talvi (2007) reported that most women offenders are arrested because "they couldn't or wouldn't snitch on boyfriends, husbands, friends, or casual acquaintances" (p. 7). The relational nature of women's offending suggests that HIV interventions for women prisoners need to consider gender-specific factors to be optimally effective.

Review of the Literature

This article reviews prison-based interventions for U.S. women that were published in scholarly journals

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over a 15-year period from 1994 to 2009; we could find no articles published before 1994. In particular, we address intervention outcomes, the degree to which the interventions were tailored to women's needs and circumstances, and whether they addressed relational structures at the intrapsychic, interpersonal, community, and/or macro-social levels. Interventions typically fall into two categories: behavioral programs for women at risk of HIV, and discharge planning for women releasees who are either infected with HIV or whose previous drug use has placed them at risk for HIV. Although HIV-related interventions have been reviewed in the scientific literature, such reviews generally include both men and women in venues such as sexually transmitted disease (STD) or HIV clinics, prisons, or drug-treatment facilities. Few review articles have analyzed HIV-related interventions for women, and even fewer have addressed interventions for women prisoners. In short, although HIV-related interventions do exist in various settings, there is a dearth of published data on interventions that are exclusively for women prisoners or attuned to distinctions in their psychosocial needs. We address this lacuna by reviewing the published literature and other sources on interventions for women prisoners and by analyzing the degree to which these interventions have considered women's relational context. The review is conducted against a backdrop of two inter-related events—historically high incarceration rates for U.S. women and disproportionately high HIV prevalence among women inmates (Logan, Cole, & Leukefeld, 2002).

For this review, "intervention" is defined as any program that is designed to reduce HIV risk among women prisoners or to provide discharge planning for women who have HIV or who are at risk of HIV because of previous drug use. References to relational factors throughout this article center on Miller's (1986) theory on the new psychology of women. This theory proposes that, compared to men, women are more likely to be relationship-centered than individualistic, to seek and maintain bonds with others, and to avoid conflict in personal relationships. Logan et al. (2002) cite a body of research on bonding mechanisms such as conflict avoidance that can lead to HIV risk if women are reluctant to broach topics such as condom use or infidelity with intimate partners. The

authors recommended gender-specific HIV interventions for women that were "relational" in nature because they would address the dynamics of heterosexual relationships. In our article, we use this term to refer to (a) gender-specific behavioral interventions for women prisoners that aim to foster self-empowerment, decision-making, and communication skills with sexual partners, and (b) discharge planning that is tailored to women prisoners and that provides social support for releasees and their families.

Do Women Need Targeted Interventions?

Three review articles on non-prison HIV prevention interventions support the premise that programs for women are more effective if they are gender-specific and targeted to women's needs. First, Exner, Seal, and Ehrhardt's (1997) review of interventions in mixed settings demonstrated that two thirds of women-only interventions had positive effects on sexual risk behavior. Conversely, only one study involving men and women indicated significantly reduced sexual risk in a relational-skills intervention, prompting the authors to conclude that, "Gender specificity appears to increase the likelihood of obtaining positive intervention effects" (p. 116). Second, Prendergast, Urada, and Podus (2001) identified how mixed-gender sessions in drug treatment programs resulted in little improvement while gender-specific sessions were associated with sexual risk reduction for women. Third, Morrill, Mastroleni, and Leibel (1998) indicated that gender-specific interventions were more advantageous for women, particularly if instructional materials related to women's lives and experiences. Morrill et al. (1998) advocated interventions that reflected the lived reality of women's sexual and family relationships and critiqued the frequent use of HIV-related intervention models and theories that were either designed for gay men or focused on risk reduction in individual rather than relational terms.

The need for gender-based interventions is also supported by statistical evidence. In analyzing data from CDC surveillance reports, Quinn and Overbaugh (2005) found that an astonishing 80% of women with HIV infection had been infected by their sexual partners. Most troubling was that women who

were very young, who took birth control pills, or who were pregnant were at highest risk of HIV. Injection drug use accounted for only 19% of cases. However, [Brown and Weissman \(1994\)](#) identified how even this risk factor was likely to occur in the context of sexual relationships because drug-injecting women often shared needles with intimate partners. Women are also at risk of acquiring HIV through unprotected sex with these partners ([Celentano, Latimore, & Mehta, 2008](#); [Kral et al., 2001](#); [Strathdee & Sherman, 2003](#)). Interventions clearly are needed in which women understand the relational nature of HIV risk and the desirability of self-efficacy, communication skills, and condom use.

Other risk factors for women are gendered as well. [Logan et al. \(2002\)](#) and [Morrill et al. \(1998\)](#) reported independently how women from high-risk communities were likely to have been sexually abused and to lack assertive power in intimate relationships. At the structural level, these communities are often characterized by gender inequality that privileges men's sexuality and by male-dominated drug networks that are profoundly sexist and violent. Such communities have sex ratio imbalances that give men access to multiple female partners ([Logan et al., 2002](#); [O'Leary & Wingood, 2000](#)). [Rosenberg and Malow \(2009\)](#) noted that women in such situations were not merely at high risk of HIV, but required interventions that were tailored to "the *hardness* of their lives, specifically the hardness of women's situations and disparities in norms and institutional structures that may prevent access to the intervention or interfere with making use of it" (p. 74). The principal legacy of public health and preventive medicine was a historical record showing that "adequate nutrition, clean water, a sense of individual agency, and freedom from violence and social disarray are some of the touchstones of historical declines in infectious disease incidence and mortality" (p. 74). These sociostructural factors are particularly salient for African American women who are disproportionately afflicted both by HIV and incarceration ([CDC, 2008](#); [Bureau of Justice Statistics, 2009](#)). Nevertheless, like [Morrill et al. \(1998\)](#), [Logan et al. \(2002\)](#) contended that HIV prevention interventions typically focus on individual behavior without regard to the gender-relational and sociocultural contexts in which such behavior occurs.

Do Women Prisoners Need Targeted Interventions?

The statistics on HIV in incarcerated women are alarming—women inmates are 15 times more likely than nonincarcerated women to be infected with HIV ([De Groot & Cu Uvin, 2005](#)). In 1996, the HIV rate for incarcerated women was 23 times the national rate, compared to six times the national rate for all prisoners ([Dean-Gaitor & Fleming, 1999](#)). Some states have reported HIV rates as high as 41% among women prisoners (e.g., Washington, DC; [NMAC, 2003](#)). In all cases, these rates were considerably higher than for men. Women prisoners are more likely to be infected with HIV than male prisoners for two important reasons: (a) they tend to have poorer social and family relationships, and (b) they are more likely than men to have a history of victimization and to be incarcerated for drug-related crimes ([Havens et al., 2009](#)). These factors have important implications for the health and well-being of women prisoners who engaged in risky activities before being arrested.

Following [Logan et al. \(2002\)](#), we contend that incarceration provides a unique opportunity to intervene at a critical juncture in the lives of women who often lack social capital, self-empowerment, or social support systems. Postrelease programs are needed for similar reasons, especially for drug-using women who lack financial or emotional support after leaving jail or prison. [Chandler, Fletcher, and Volkow \(2009\)](#) found that drug treatment for released prisoners was often successful in community settings and was essential for successful re-entry. Thus, prison-release programs are important for women who need access to drug treatment, social support services, and (in the case of women with HIV) continuity of care.

Search and Retrieval Methods

Identification of Studies

Two methods were used to identify interventions in published scholarly literature. First, we conducted a search of the entire contents of a 13-year-old HIV

Listserv. The Listserv is kept by the second author (R.M.) and is distributed directly to about 5,000 researchers nationwide (http://www.apm.org/sigs/oap/#malow_listserv). Abstracts in the database were considered in scope if they examined behavioral, biological, or psychosocial dimensions of the epidemic, including contextual antecedents, individual risk factors, and prevention intervention designs. Resources included on-line databases (Medline, PsychInfo, PubMed, AIDSLINE, Web of Science, ERIC, EMBASE, Social Science Citation Index, Applied Social Sciences Index and Abstracts, Cochrane Library Controlled Clinical Trials Register, the National Research Register, and the Computer Retrieval of Information on Scientific Projects database), reviews, and other studies in the HIV prevention literature. Second, we performed hand searches of journals (*AIDS*, *AIDS and Behavior*, *AIDS Care*, *AIDS Education and Prevention*, *American Journal of Public Health*, *International Journal of STD and AIDS*, *Journal of Acquired Immune Deficiency Syndromes*, *Journal of the Association of Nurses in AIDS Care*, and *AIDS Patient Care and STDs*), and manuscripts and unpublished reports submitted by researchers.

All prison-related articles on HIV were reviewed on an initial basis, followed by a more detailed reading of relevant articles on HIV-related prison interventions. The references of the eligible articles were also searched, a process that was iterated until we failed to identify any new references. Furthermore, citations from earlier systematic reviews and meta-analyses were reviewed for possible references. Requests for relevant information were sent to researchers who were funded by National Institutes of Health; experts and agencies that could provide relevant materials were also contacted.

Inclusion and Exclusion Criteria

Three criteria were used to determine inclusion. Articles were included if they were (a) gender-specific, (b) had an evaluative component, and (c) described outcomes and results. Using these three criteria, a total of nine articles were selected from a total of 41 articles on HIV interventions. Articles, book chapters, reports, and conference papers were excluded if they did not present the results of the

intervention. This category consisted mostly of descriptive articles. Articles that provided updates on the same intervention without substantial change to methods or outcomes were also excluded from the final sample, although the original article was included as a base reference. The interventions were notable from one group that produced seven articles, all of which described the design or results of the same intervention. These articles did not offer any additional results on the interventions and thus were not included for analysis. Articles were excluded if they did not involve women who were either incarcerated or in discharge. Articles on prison-based drug treatment programs or discharge planning that did not specifically address HIV risk among women were also excluded, as were interventions for STDs more generally, for HIV testing alone, or for HIV-related interventions outside the United States. Both authors reviewed each article twice to determine eligibility for inclusion.

Results

Final Sample

Nine articles on behavioral interventions and discharge planning involved both HIV-infected and at-risk women prisoners. Seven of these articles were published in the 1990s and eight articles involved women with previous drug histories as a point of intervention. Only one intervention was conducted explicitly with women who were living with HIV. Eight interventions were for women whose HIV status was either not specified or considered irrelevant to the study.

HIV prevention interventions in prison. Five HIV prevention interventions were found for women prisoners that spanned a 14-year period from 1995 to 2009 (See [Table 1](#)). The most recent article was a work in progress, with the authors evaluating intervention protocols and implementation rather than intervention outcomes (Havens et al., 2009). Conversely, the first article to appear was a fully evaluated intervention by Magura, Kang, Shapiro, and O'Day (1995) for women prisoners at New York's central jail facility at Rikers Island. Despite

Table 1. Summary of HIV Prevention Interventions for Women Prisoners

Study	Sample Size	Comparison Group	Sites	Design/Purpose	Outcome Measures	Results
Magura, Kang, Shapiro, & O'Day (1995). "Rikers Health Advocacy Project"	<i>N</i> = 101	Yes	NY	Designed to reduce HIV risk. Consisted of baseline interview, followed by health education module and then evaluation. Comparison group did not receive health education.	Reduced drug use, and needle-sharing. More condom use and use of sterile needles. Fewer sexual partners.	After 7 months, the 2 groups reported no significant differences in drug use, condom use, multiple partners, or drug treatment.
El-Bassel, Ivanoff, Schilling, Borne, & Gilbert (1997) El-Bassel et al. (1995) "Project Worth"	<i>N</i> = 145	Yes	NY	Aimed to enhance coping and social support skills for women with recent drug use. Experimental design. Intervention group was compared to other inmates with access to standard HIV risk-reduction intervention.	Increased rates of safer sex, coping, risk awareness, perceived emotional support, sexual self-efficacy, and HIV knowledge.	At 1-month follow-up, intervention group had higher rates of safer sex, coping skills, and perceived emotional support compared to other inmates. No differences were identified between groups on risk awareness, sexual self-efficacy, or HIV knowledge.
St. Lawrence et al. (1997)	<i>N</i> = 90	Yes	MS	Compared 2 theory-based interventions to reduce HIV risk and to enhance communication and self-esteem: Social Cognitive Theory (SCT) vs. Gender Power Theory (GPT).	Increased condom use, communication skills, self-esteem, HIV knowledge, attitudes, and self-efficacy.	The SCT group showed better condom-use skills than the comparison group. The GPT group was more committed to change. Both groups showed improvements on all 6 outcome measures at 6-month follow-up.
Pomeroy, Kiam, & Abel (1999)	<i>N</i> = 87	Yes	TX	Designed to reduce HIV-related anxiety, depression, and trauma symptoms in HIV-infected and affected women. Pre- and post-test design to evaluate effectiveness of a social work program to reduce symptoms.	Reduced anxiety, depression, and trauma as measured by standardized psychological scales.	Significant differences between experimental and comparison groups for depression, anxiety, and trauma with experimental group scoring lower than comparisons on all 3 measures in post-tests at end of the intervention.

(Continued)

Table 1. Summary of HIV Prevention Interventions for Women Prisoners (*Continued*)

Study	Sample Size	Comparison Group	Sites	Design/Purpose	Outcome Measures	Results
Havens et al. (2009) "RRR-HIV"	N = 162	No	RI CT DE KY	Randomized trial at 4 sites consisting of 5 sessions in prison and 1 community-based session. Aimed to reduce risky sexual relationship myths among women.	Successful implementation, for adherence, implementation, acceptability, and protocol fidelity between sites.	High degree of adherence to the protocol, implementation and retention across sites, rapport between interventionists and participants, and understanding the materials. Results of the intervention were unavailable.

Note. NY = New York; MS = Mississippi; TX = Texas; RI = Rhode Island; CT = Connecticut; DE = Delaware; KY = Kentucky.

ambitious goals to reduce HIV risk, drug use, and recidivism, the design was limited to four sessions on health education. No significant differences between the experimental group and other women inmates were identified, which the authors considered to be consistent with the results of earlier studies in prison and drug-treatment settings.

Three interventions were successful as measured by statistical differences in outcomes between experimental and comparison groups. Each intervention differed in scope, design, and purpose, although all used cognitive reframing and behavior modification in the design. The first study in this group (El-Bassel et al., 1995; see also El-Bassel, Ivanoff, Schilling, Borne, & Gilbert, 1997; Schilling et al., 1994) consisted of 16 theory-based sessions at the Rikers Island Correctional Facility followed by six "booster" sessions after release. Higher rates of safer-sex, perceived social support, and coping skills were reported for the intervention group compared to other women inmates. The second study (St. Lawrence et al., 1997) involved a six-session behavioral intervention using either an empowerment model or skills-enhancement model for two groups of women at a Mississippi prison. Protocols included a cognitive section on self-esteem and communication skills, and modules on safer sex skills and HIV knowledge. Goals for both arms of the intervention were successfully achieved at 6-month follow-up with almost a full complement (90%) of participants. The most recent intervention in this group was Pomeroy, Kiam, and Abel's (1999) 10 theory-based sessions at a Texas jail that sought to reduce psychological symptoms of trauma and to improve HIV knowledge. Trauma symptoms were evaluated in a post-test session with all three measures being significantly reduced in the intervention group compared to a matched group of women inmates. To summarize, all three of these theory-based interventions had successful outcomes as demonstrated by skills-building and social support during incarceration and after release (El-Bassel et al., 1995), reduced psychological symptoms in traumatized women who lacked prior experience of therapeutic or self-empowerment programs (Pomeroy et al., 1999), and self-empowerment and skills-building protocols that were directly related to women's lived experiences (St. Lawrence et al., 1997).

Discharge planning. Four prison-release interventions, conducted between 1997 and 2002, also qualified for our study. Three interventions were designed for women with a history of previous drug use (See Table 2). Only one intervention was for HIV-infected women and included referrals for HIV care (Kim et al., 1997). All four interventions sought to reduce recidivism through referrals for drug treatment, housing, and community support services upon release. Study outcomes were evaluated in these terms.

Two New York interventions used the “Health Link” design to facilitate re-entry. However, different outcomes were reported for each study at 1-year follow-up. In the baseline study, Freudenberg, Willets, Greene, and Richie (1998) achieved 35% retention at 12 months along with 21% lower recidivism for the experimental group versus the comparison group. Richie, Freudenberg, and Page (2001) described this intervention as a successful empowerment model to reduce drug use, HIV risk, and re-arrest among women releasees. However, the success of Health Link became less apparent over time. As described by Needels, James-Burdumy, and Burghardt (2005), the intervention had beneficial effects for reduced marijuana use (as measured by hair analysis). Use of hard drugs (e.g., methamphetamine, cocaine, heroin, methadone, phencyclidine) was not reduced as a result of the intervention. The post-test finding that the intervention group was actually more likely than comparisons to have unprotected sex and recidivism led the authors to conclude that “[there is little evidence that case management programs influence risky sexual behaviors or recidivism” (p. 431).

Two Rhode Island interventions reported successful outcomes on continuity of care, social support, and recidivism. The Kim et al. (1997) intervention provided links to medical appointments, drug treatment, and social services for releasees with HIV. The women were 50% less likely than uninfected comparisons to be re-arrested after 12 months, leading the authors to conclude that the experimental group had benefited from coordinated access to medical care, drug rehabilitation, and housing. The Vigilante et al. (1999) intervention focused on mostly uninfected women with previous drug use and provided access to social support, drug-treatment, and medical services on release. At the 1-year

follow-up, the women were 24% less likely than the comparison group to return to prison within 3 months and 12% less likely to be re-arrested. HIV-related outcomes in terms of drug use, condom use, partner sharing, or needle sharing were not discussed. However, the authors did suggest that recidivism was associated with HIV risk because the women who reoffended were 77% less likely than nonrecidivists to use condoms and were 15% more likely to use cocaine.

Women-only interventions: Purpose and outcomes. Gender-specific protocols were more common in prison interventions than re-entry programs (See Table 3). The Magura et al. (1995) study was the least theoretical of the behavioral interventions and lacked woman-centered protocols or language (e.g., the term “self-empowerment” was not used). This intervention did not achieve its stated goals, perhaps because of design limitations (e.g., only four sessions for three major outcomes) that had a limited focus on women’s specific needs for HIV prevention. In contrast, the three successful behavioral interventions explicitly used health behavior theories and women-centered protocols for HIV risk reduction in the context of sexual relationships.

St. Lawrence et al. (1997) exemplified this woman-centered approach by comparing two theory-based protocols for differences in knowledge, self-empowerment, negotiation skills, and commitment to change. Each protocol had positive outcomes in relation to self-efficacy, condom use, and communication skills, leading these authors to conclude that open-ended discussions in egalitarian formats could be as successful as more structured, skills-based training for women at risk of HIV. Relational skills were also the focus of El-Bassel et al.’s (1995) intervention in which women with drug histories were taught strategies for self-assertiveness, sexual communication, and avoiding abuse. Three of the four goals involving self-empowerment (safer sex, improved coping, and improved emotional support) were successfully met, although outcomes for the fourth goal—self-efficacy—were similar for both the experimental and comparison groups. The intervention was designed to be woman-friendly, with releasees being provided with team support through six booster sessions over a period of 6 months. Third,

Table 2. Summary of Prison Release Interventions for At-Risk and HIV-Infected Women Prisoners

Study	Sample Size	Control Group	Site (state)	Design/Purpose	Outcome Measures	Results
Kim et al. (1997) "Prison Release"	<i>N</i> = 41	Yes	RI	<i>HIV-positive women.</i> Designed to link women to medical care, financial assistance, substance abuse treatment, family support, sex abuse counseling, and housing after release.	Reduced recidivism, improved access to medical care and housing, and decrease in drug use.	Women were successfully linked to housing, financial assistance, and medical and drug rehabilitation. A 12-month evaluation indicated 50% lower recidivism for the intervention group compared to other inmates. Retention in the program was 95%.
Freudenberg, Willets, Greene, & Richie ^a (1998) "Health Link"	<i>N</i> = 193	Yes	NY	<i>At-risk and infected women.</i> Designed to reduce recidivism and drug use through case management and discharge planning.	Reduced re-arrest, drug use, improved health status, less dependency.	Initial evaluation indicated 46% retention at 6 months and 35% retention at 12 months. Re-arrest rate was 21% lower than for other inmates.
Vigilante et al. ^b (1999) "WHPPP"	<i>N</i> = 78	Yes	RI	<i>HIV-uninfected women.</i> Aimed to reduce recidivism and HIV risk. Prerelease planning with physician and social worker; discharge plan. Postrelease care by same physician and social worker; also outreach worker for indefinite period of time.	Reduced re-arrest, drug use, and HIV risk as indicated by fewer drug arrests.	Lower recidivism rates than other inmates at 3-month and 12-month intervals (12%). HIV risk behavior reduced, but results were inferred from lower arrest rates for drug use and prostitution rather than from actual HIV measures.
Needels, James-Burdumy, & Burghardt ^a (2005) "Health Link"	<i>N</i> = 704	Yes	NY	<i>At-risk and infected women.</i> Purpose was to determine if continuity of care from prison to community had a positive effect on HIV risk, drug use, and re-arrest rates. Linked prisoners to community services through case management after release.	Reduced re-arrest, drug use, and HIV risk as determined by more condom use and fewer partners.	At 12-month follow-up, weak beneficial effects on soft drug use and use of drug-treatment programs. No positive effect on partner reduction, hard drug use, condom use, or recidivism compared to other prisoners.

Note. NY = New York; TX = Texas; RI = Rhode Island.

a. These articles reviewed outcomes of the Health Link program at the Rikers Island Correctional Facility in New York. The first article provided preliminary results (see also Richie, Freudenberg, & Page, 2001). The second article provided more comprehensive data on the study proper.

b. See also Farley et al. (2000), Flanigan et al., (1996), Mitty, Holmes, Spaulding, Flanigan, & Page (1998), Rich et al. (2001), Skolnick (1998), and Zaller et al. (2008) on this intervention for men and women prisoners in Rhode Island.

Table 3. Gender-Based Interventions for Women Prisoners

Type of Intervention	Women-Centered Design	Theory	Type	Effect on Outcomes
HIV Prevention Magura, Kang, Shapiro, & O'Day (1995)	Four sessions addressed special vulnerabilities of drug-using women.	None stated	Educational	No stated effect; Unsuccessful
El-Bassel, Ivanoff, Schilling, Borne, & Gilbert (1997) El-Bassel et al. (1995)	Twenty-two sessions on avoiding abusive relationships, assertiveness training, and negotiating safer sex. Broad-spectrum curriculum (e.g., workbooks, group sessions, and resource manual).	Social-Cognitive, Health Beliefs, Problem Solving, Social Support, & Network Enhancement.	Skills building, Educational, Attitudinal, Empowerment.	Improved relational skills (e.g., coping, emotional support, and negotiating safer sex) through woman-centered program.
St. Lawrence et al. (1997)	Six sessions involving dyads, modeling, and skills building in sex and drug refusal, partner negotiation, and sexual negotiation for Group 1; 6 open-ended discussions on self-empowerment in high risk contexts for Group 2.	Gender Power, Social-Cognitive	Empowerment, Reframing, Skills building	Improved relational skills for both groups through shared learning and women-centered skills building (Group 1) and through self-empowerment techniques (Group 2).
Pomeroy, Kiam, & Abel (1999)	Ten sessions consisting of didactic and supportive components for coping, confidence- and trust-building, decision-making, communication skills, planning, parenting, relationship building, and HIV-related information.	Cognitive-Behavioral, Task-Centered	Educational, Skills building, Planning	Significant improvements in relational skills, coping, and perceptions of self-empowerment, but effectiveness in the natural world was not measured.
Havens et al. (2009)	Six sessions for relational intervention involving "myth-busting" in personal relationships. The myths included <i>having sex without protection will strengthen my relationship</i> , and; <i>I only feel worthwhile if I am in a relationship.</i> "	Miller's Relational Model	Skills building, Empowerment, Relational myth-busting	Effects were not reported from this preliminary study

(Continued)

Table 3. Gender-Based Interventions for Women Prisoners (*Continued*)

Type of Intervention	Women-Centered Design	Theory	Type	Effect on Outcomes
Prison Release Kim et al. (1997)	Standardized intervention for men and women in the Rhode Island state prison, with no gender-specific protocols for either male or female releasees.	N/A	Continuity of care and social services	The purpose and outcomes of the intervention were neither gendered nor relational. The social support component might have been beneficial for HIV-infected women.
Freudenberg, Willets, Greene, & Richie (1998)	No gender-based components other than an exclusive focus on high-risk women releasees.	N/A	Continuity of care and social services	Reduced recidivism and risky sex for target group was due to living in a highly structured setting that fit the needs of high-risk women releasees.
Vigilante et al. (1999)	Tailored to high-risk women with history of prostitution and commercial sex work. Relationship-building with physician and social worker, and with peer counselor who accompanied releasees to appointments.	N/A	Case management and social services	Despite goals for relationship-building, 1-year gains were modest (12% less recidivism than comparison group). Follow-up was sporadic; high turnover rate among peer educators; lack of theoretical model might be a factor.
Needels, James-Burdumy, & Burghardt (2005)	Specifically designed for self-empowerment through group meetings and case management. However, the target population included both men and women, and the intervention did not use gender-specific protocols or leaders.	N/A	Continuity of care and social services	Lack of overall success might be related to lack of gender-specific protocols as well as to large <i>N</i> , broad goals, and limited postrelease contact.

Pomeroy et al.'s (1999) study used women-centered techniques to reduce trauma, depression, and anxiety among women with violence histories, as well as to improve relational skills, coping, and self-empowerment. The results of the study were positive on all three psychological measures, while self-efficacy and relational skills were much improved. Pomeroy et al. (1999) attributed these outcomes to the women's motivation and acquired status as participants, in addition to the novelty of receiving therapeutic treatment for previously neglected symptoms.

Compared to the prison interventions, the community re-entry programs lacked women-centered designs or protocols. Several factors can help to explain this absence. First, while the prison interventions benefited from being both research-driven and conducted in a structured setting within prison walls, the re-entry programs involved the practical matter of case management and service delivery in the natural world. Not surprisingly, programmatic goals for discharge were framed and evaluated in terms of retention, drug treatment, and recidivism rather than HIV risk reduction through self-empowerment as an endpoint. Apart from the Needels et al. (2005) study that addressed both recidivism and HIV risk reduction in equal measure, the HIV components were less important in these discharge plans, were confounded by including both HIV-infected and uninfected women, or were only tenuously related to primary goals of staying "clean" and out of prison.

The prison-release programs also suffered from being embedded in larger prison release programs for both men and women. For example, while the two "Health Link" interventions (i.e., Freudenberg et al. 1998; Needels et al., 2005) used empowerment groups for building peer support and trusting relationships with caseworkers, neither intervention was designed to be gender-specific nor constructed in woman-centered terms. In a subsequent article, Ritchie et al. (2001) noted that the intervention was based on social empowerment and social capital theories, still without referencing how the program fit women's specific needs. The two Rhode Island interventions (i.e., Kim et al., 1997; Vigilante et al., 1999) followed a similar pattern by providing comprehensive social support to the releasees in non-gender-specific terms. However, the Kim et al. (1997) intervention with HIV-infected women was

more successful than Vigilante et al.'s (1999) larger intervention with uninfected women at the same prison, although both studies had logistical difficulties in maintaining contact with women who were "intrinsically difficult to follow once they return[ed] to the street" (Vigilante et al., 1999, p. 415). Whether theory-based or gender-specific interventions would have provided a more solid foundation for these interventions is unknown, but their absence suggests reliance on "one size fits all" re-entry programs for inmates.

Discussion

This review identified HIV-related interventions for U.S. women prisoners that had measurable outcomes and considerably more training or support services than were available in most prisons. Two basic types of interventions were identified: behavioral interventions with theory-based protocols designed to address the relational needs of women outside prison walls, and re-entry programs primarily designed to provide links to community services such as drug-treatment programs. HIV risk reduction was a stated goal for both types of intervention. However, while this goal was sought through curricula for condom use, communication skills, and self-efficacy in the behavioral interventions, the prison release programs sought to prevent drug use and recidivism as a means of achieving HIV risk reduction in the natural world. Both intervention types were designed for inmates who were living with HIV or at risk for HIV through drug use or other risk behaviors.

Several factors help to illustrate the main differences between prison-based and prison-release interventions. For example, while the prison-release interventions used a fairly standard design and were conducted by affiliated researchers in a single region of the United States, the behavioral interventions differed substantially in location, type of intervention, and researcher. The prison-release interventions focused on service provision, particularly drug treatment, for practical purposes. In contrast, the behavioral interventions determined which type of theory or program was best suited to women prisoners with particular needs (e.g., cognitive therapies for

traumatized women). These interventions also developed theoretical models that were useful for interventions among women in community settings. For example, St. Lawrence, Wilson, Eldridge, Brasfield, and O'Bannon (2001) compared three theoretical models for disadvantaged African American women in the community, including two theories from the prison study being reviewed here. The outcomes of that study indicated that theory-based and gender-specific interventions were indeed important for women. The results are supported by other literature, particularly in a meta-analysis of HIV interventions for African American women in which efficacy was shown to be enhanced when interventions were culture- and gender-specific (Crepaz et al., 2009). The positive findings of the Wyatt et al. (2004) intervention for improved medication adherence among abused women with HIV provided further support for the relevance of interventions that were both culturally specific and tailored to women's psycho-educational needs.

How important is it to offer HIV interventions to women prisoners? Bryan, Robbins, Ruiz, and O'Neill (2006), Jafa et al. (2009), Kantor (2006), and Springer and Altice (2007) contend that HIV prevention programs and antiretroviral prophylaxis should become a public health priority in order to reduce the burden of disease in the larger community. Jafa et al. (2009) argued that such interventions were custodial correction responsibilities and, in the case of HIV-infected prisoners, advocated for drug-resistance testing to help ensure appropriate prophylaxis for drug-resistant HIV strains. Nevertheless, it was clear that HIV-related interventions were lacking in the nation's jails and prisons, despite the extremely high rates of previous drug use and other risky behaviors among prisoners (Chandler et al., 2009). This was especially true for women, who represented a smaller proportion of the incarcerated population than men and whose programs, services, and facilities typically have been based on models for men (Moloney, van den Bergh, & Moller, 2009). The present review has provided a beginning point for considering how these interventions might be tailored for women whose HIV risk and actual seropositivity were disproportionately greater than for any other group (including male prisoners) in the United States (Havens et al., 2009; Vlahov et al., 1991).

In the book, *Public Health Behind Bars*, correctional health researcher Barry Zack (2007) lamented the lack of HIV-related preventive care and prevention services as a basic right for prisoners. While this theme has dominated the present discussion, it is worth noting that drug or HIV education is nominally (if sparsely) available in U.S. prisons. However, such efforts were likely to consist of self-help groups rather than evidence-based interventions (Chandler et al., 2009). The absence of evidence-based interventions was related, in part, to the logistical difficulties of gaining access to correctional facilities. Hogben and St. Lawrence (2000) wrote about challenges in gaining permission for such interventions, the heightened need to protect women's confidentiality in an environment characterized by surveillance and control, and the fact that "grant periods end and preclude continuous data collection and intervention by individual researchers" (p. 591). Nevertheless, prison offers a unique opportunity to provide therapeutic interventions for women inmates. Logan et al. (2002) observed that there is still a large gap between knowledge and action when it comes to interventions for women (i.e., much is known but little is put into action). We recommend the implementation of gender-specific, theory-based HIV interventions for women as an urgent matter. This task would not preclude gender tailoring in mixed-gender interventions, however, particularly because women-only interventions are not always feasible in prison or drug-treatment contexts that are populated mainly by men.

Limitations

The analysis for this review was based on published information about design, protocols, and outcomes of interventions for women prisoners. In some cases, the protocols thinly described how the term "women-centered" was operationalized in relation to study outcomes. Although impracticable for the present review, study manuals and other materials would have provided greater depth for analysis. The study was also limited by the small number of published interventions for review. While more interventions appeared in published literature than were reviewed here, most of these

articles involved descriptions of model programs rather than evaluations of outcomes (e.g., Mitty, Holmes, Spaulding, Flanigan, & Page, 1998; Morrill et al., 1998). Some of the excluded articles were works in progress or, in other cases, future intentions to publish the results of multi-year interventions did not materialize. Nevertheless, it is possible that interventions were missed despite the comprehensive search from multiple sources. One reason for caution relates to the CDC's listings of Evidenced-Based Interventions (DEBIs) that are designed to promote intervention efforts among community providers. While the CDC recently issued a funding announcement for Project START (the first DEBI for correctional settings), it is unknown if any of the DEBIs have actually involved women prisoners.

We acknowledge that many HIV-related interventions have been conducted in community settings with mixed gender groups. It was beyond the scope of the present review to include these interventions. However, their design, methods, and protocols should be considered for conceptual fit in formulating women-centered programs that are designed to reduce HIV risk and to provide discharge planning for prisoners. Finally, the review did not include HIV interventions that targeted women with a history of incarceration in postrelease community settings. This absence does not mean that community-based interventions with postrelease women are not relevant to this area of research but that we decided to limit our focus to prisons at the outset of the study. We recommend community-based interventions for postrelease women as part of the comprehensive *armamentarium* of interventions that seek to reduce both HIV risk and recidivism.

Conclusion

This is the first time that HIV-related interventions have been reviewed for women prisoners who are either incarcerated or being released into the community. Significant gaps were identified, including the small number of published studies, the limited success of prison-release programs, and the lack of gender-specific models that could be

replicated on a national scale. In reviewing this literature, we made the case for targeted HIV interventions that took account of women's relational contexts because, as noted by Zack (2007), "This context goes 'beyond the condom' and, indeed, 'beyond the body' to include the issues of gender power, economics, and community capacity" (p. 166). Despite considerable difficulties in achieving this goal, we conclude that interventions that do not take women's relational and social-contextual factors into account are likely to fail or will not be optimally successful in reducing HIV-related risks or sequelae for this vulnerable sector of the population.

Clinical Considerations

- HIV interventions for women prisoners should be tailored to their needs.
- Gender-specific interventions are more successful than interventions that are gender-neutral.
- Women prisoners benefit from interventions that address HIV prevention in terms of interactions and relationships with other people.
- Most women prisoners have suffered from sexual abuse and need psychological interventions that address women's victimization.
- Gender-specific self-empowerment strategies are required for safer sex practices that rely on persuading or convincing male partners to use condoms.

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