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## Feasibility of an HIV/STI risk reduction program for incarcerated women who have experienced interpersonal violence

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### Abstract

HIV and other sexually transmitted infections (STIs) and interpersonal violence (IV; e.g., childhood abuse, partner violence, and rape) victimization are significant and interconnected public health problems facing incarcerated women. We adapted a best-evidence HIV prevention intervention for women (the Women's CoOp) to address sexual safety among incarcerated women with histories of interpersonal violence victimization. The standard Women's CoOp teaches safe sex, substance use harm reduction, and violence prevention information and skills needed to empower women to make more intentional decisions about their safety. We also incorporated strategies to increase affect management, social support, and access to community resources. This resulted in the first trauma-focused HIV prevention intervention for women that directly addresses the sequelae of IV (such as affect dysregulation in sexual situations) within the context of HIV harm reduction. This manuscript describes the rationale, feasibility, acceptability, and pre-post outcomes of this intervention among 14 women nearing release from prison in two state prison systems. Assessments took place at baseline, prior to release, and at 2, 5, and 8 months after release. The intervention overall and each of its components were feasible and acceptable. Participants' number of unprotected sexual occasions, posttraumatic stress disorder symptoms, and depressive symptoms decreased significantly from baseline to post-release. Effectiveness obtaining resources increased significantly from baseline to post-release. Because pre-post measurements of outcomes are confounded with incarceration and subsequent release in this

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preliminary study, a randomized controlled trial is needed to establish the efficacy of this tailored intervention.

### Keywords

prisoners; women; safe sex; HIV; physical abuse; sexual abuse

HIV and other sexually transmitted infections (STIs) and interpersonal violence (IV) are significant and interconnected public health problems facing incarcerated women. Female inmates in the United States have much higher rates of HIV and other STIs than do male inmates or non-justice-involved women (Hammett & Drachman-Jones, 2006). In fact, about 50% of incarcerated women self-report STI history (Clarke et al., 2006; Hale et al., 2009). HIV/STI risk among women prisoners is a public health concern because they typically serve short prison sentences and then return to the community and engage in behaviors that put themselves and others at risk, including trading sex, using condoms inconsistently, having sex under the influence of alcohol and drugs, and having high-risk or multiple partners (Harris et al., 2003). The majority of incarcerated women also report IV experiences (e.g., childhood abuse, partner violence, and rape). Between 60 to 75% of incarcerated women report exposure to IV in *adulthood* prior to incarceration and most (66 to 90%) incarcerated women report histories of *childhood* physical or sexual abuse (Browne, Miller, & Maguin, 1999; Zlotnick, 1999).

IV and HIV/STIs are connected in several ways. IV places women at increased risk for HIV/STI infection (Arriola, Loudon, Doldren, & Fortenberry, 2005; Campbell et al., 2008; Maman, 2000). For example, female victims of child abuse (Wilson & Widom, 2008) and women who were beaten by the husbands or boyfriends (Davile & Brackley, 1999) are significantly more likely to become infected by HIV than are female controls. IV is also a barrier to safe sex (El-Bassel et al., 2005; Morrill et al., 1996; Phillips et al., 2014; Wingood & DiClemente, 1997). IV compromises a women's perceived ability to engage in safer sexual practices (Gupta, Whelan, & Allendorf, 2003; Mittal, Senn, & Carey, 2013) and limits her success in negotiating with her partner for condom use (Teitelman et al., 2008). Furthermore, IV increases risk for mental health difficulties, particularly substance use disorders, posttraumatic stress disorder (PTSD), and major depressive disorder (Duncan et al., 1996; Golding, 1999; Kendler, 2000; Kessler, 1995), which are associated with HIV risk-taking behaviors in women (Blumberg & Dickey, 2003; El-Bassel et al., 2001; Klein, Elifson, & Sterk, 2008; Ramsey, Bell, & Engler, 2010). Hence, a preventive intervention that targets both IV and HIV/STI risk behaviors could be of great benefit to incarcerated women to curb the spread of sexually transmitted infections.

In order for gender-specific interventions for women to be effective, researchers have urged that it is "imperative" that HIV risk prevention interventions with women address victimization (Logan, Cole, & Leukefeld, 2002). A few small feasibility studies (e.g., Davila et al., 2008; Enriquez et al., 2010) have described interventions that provide information about partner violence in the context of HIV prevention for non justice-involved women. One large study recruited women who were judged to be *at risk* for HIV and partner

violence by virtue of being justice involved (i.e., recently incarcerated, or on parole or probation; Weir et al., 2009). Participants were randomized to one of three conditions: (1) a HIV/STI counseling and testing alone control, (2) HIV/STI counseling and testing plus 12 sessions of motivational interviewing (MI) focused on HIV/STI risk, or (3) HIV/STI counseling and testing plus 12 sessions of MI focused on reducing both HIV/STI and partner violence risk. Both MI intervention conditions resulted in significant decreases in HIV/STI risk behaviors relative to the control condition, but there were no differences among any of the conditions in partner violence experiences (Weir et al.). The Weir et al. intervention helped women create plans for reducing partner violence risk, but did not address the effects of IV more generally (including childhood and all forms of adult victimization) on women's ability to negotiate safe sex. Furthermore, no previous study of which we are aware (including Weir et al.) has used a sample of women selected for violence exposure.

In order to answer the call for more gender and trauma-responsive HIV prevention interventions for incarcerated women, our project recruited only women with IV history and directly addressed the effects of IV on women's ability to negotiate safe sex. The intervention included explicit discussion and skill-building about sexual decision-making after one has experienced violence. We targeted intervention components (affect management skills, skills to improve social relationships and resources, re-entry specific information) that address IV-related psychopathology and social impairment in sexual decision-making during re-entry and integrated them into the Women's CoOp HIV prevention intervention (Wechsberg, Lam, Zule, & Bobashev, 2004). We chose the Women's CoOp because it has been shown to be effective in reducing risky sex for other high-risk populations of women, including poor female substance users and sex workers (Wechsberg et al., 2004; 2006; 2010; 2010b) and was found to be a best evidence HIV prevention intervention the Centers of Disease Control (Lyles et al 2007). Furthermore, because it has been effective with other disenfranchised and vulnerable women, it seemed like a good fit for incarcerated women, who are stigmatized, marginalized, and encounter multiple instrumental and psychological barriers to accessing resources. The Women's CoOp also improves other outcomes relevant to incarcerated women, including drug use, alcohol use, employment status, homelessness, and victimization (Wechsberg et al., 2004; 2006; 2010).

We adapted the Women's CoOp intervention in three ways to meet the needs of our target population. First, we included affect management skills. Affect dysregulation (i.e., impulsivity, reactivity, dissociation, avoidance) is a salient feature in the lives of women with IV (Herman, 1992; van der Kolk et al., 1996; Kuo et al., in press) and appears to present significant challenges to their safe sex behaviors (Becker-Lausen, 1995; Sterk, 2006). For example, avoidant behaviors may compromise women's ability to assess risk, to successfully negotiate condom use, and to engage in self protective behaviors. Second, we incorporated skills to improve social relationships and resources, broadly defined as instrumental and emotional personal support and ability to utilize formal (e.g., treatment) and informal resources to meet one's needs. Positive social support has been found to be important for HIV prevention for women (El-Bassel et al., 1997; van Empelen et al., 2003), for reducing IV and its mental health sequelae (Coker et al., 2002; Mitchell & Hudson, 1983; Van-Wyk, 2003), and for successful community re-entry after incarceration (Benda,

2005; Parsons & Warner-Robbins, 2002). We conducted one set of focus groups (Kuo et al., 2013; Peabody et al., in press) to outline barriers and facilitators to safe sex at re-entry to the community from prison, and then incorporated population-specific details and narratives into the intervention. After all intervention components were integrated, we conducted a second set of focus groups to assess the acceptability of the draft intervention and made changes based on the feedback.

The paper reports on the rationale for the intervention and its feasibility, acceptability, and pre-post outcomes in an initial small feasibility trial of 14 women receiving the intervention prior to prison release, with follow-up assessments at 2, 5, and 8 months post-release. In addition to feasibility and acceptability, longitudinal outcomes included unprotected vaginal or anal sex occasions with a male partner (given that these present the greatest risk of HIV and STI transmission for women; *primary*); interpersonal violence episodes, symptoms of PTSD and depression, and drug using/drinking days (*secondary*); and affect management and social support (including effectiveness obtaining resources) (*tertiary*).

## Method

### Participants

Participants were 14 sentenced female volunteers from three women's state prisons in two Northeastern States who were: (1) 18 years of age or older; (2) reported having experienced lifetime IV based on a “yes” response to at least one item on the Physical and Sexual Assault Experiences subscales of the Trauma History Questionnaire (Greene, 1995); (3) had at least one unprotected vaginal or anal sexual occasion with a male partner within the 90 days prior to incarceration ascertained with the Timeline Followback (TLFB; Stein, Anderson, Charuvastra, Friedmann, 2001); and (4) expected to be released in the next 6–14 weeks (to allow us to examine the effects of the intervention during community re-entry).

Participants were recruited by reviewing release dates at each prison facility. Study research assistants met individually with women with upcoming release dates for screening. Screening and informed consent took place privately, and emphasized that there were no legal and minimal financial (US\$30 for completed follow-up assessments) incentives for participation. The consent form, which was read aloud, emphasized the voluntary nature of study participation and was clear about the purpose and content of the intervention (e.g., safe sex information, male and female condom use skills, violence prevention). The study obtained a Certificate of Confidentiality to protect the confidentiality of study data. We emphasized to participants that study data were confidential and would not be shared with parole and probation officers, family members, or any others who were not study staff. The study had institutional ethics review board approval and followed ethical guidelines for research with prisoners.

### Intervention, Interventionists, and Intervention Fidelity

The Women's CoOp promotes personalized safe sex, substance use harm reduction, and violence prevention skills within an empowerment theory framework (Wechsberg, 1998). This structured psychoeducational intervention works to empower women by providing

information and personalized skills that will increase their awareness, help them not give their power away through alcohol and drug use, and be active decision-makers in sexual situations. It involves extensive practice of relevant negotiation and empowerment skills, including male and female condom use skills, through role-playing and rehearsal. Although the facts and activities presented are highly scripted, the tone of the intervention is engaging, personalized, and uses ample doses of praise, encouragement, validation, and humor. The intention is to create a safe, affirming space for women to engage as active participants in discussions and skills practice for their own sexual safety. The Women's Prison CoOp tested in this open trial expands on these areas to include detailed information on IV and mental health difficulties related to IV, strategies to build affect regulation skills and social support/access to community resources, and role plays and rehearsal to improve affect management.

The Women's Prison CoOp consisted of five 90-minute small group sessions, two individual sessions lasting approximately 45–60 minutes each (one during incarceration and one within 4 weeks after prison release), and a safe sex kit given to women as they left prison. Session 1 provided participants with “facts and myths” of HIV, STIs, and IV, how certain sex behaviors can increase HIV risk, and the importance of HIV testing. Session 2 had participants practice correct male and female condom use with penis and vagina anatomical models. This session also teaches women sexual negotiation skills as well as ways to make condoms “fun and sexy” to increase likelihood that they will be appealing to both women and potentially violent partners. Session 3 addresses the intersection of drugs, violence and sexual safety. Specifically, women discuss how using alcohol and drugs before or during sex can negatively affect sexual decision-making and take away women's power in sexual situations, making it more difficult for women to remember to use a condom, to use it correctly, or to protect themselves from violence or other risks. It explains how the mental health difficulties (depressive symptoms, PTSD symptoms, numbing, and impulsive acting out) resulting from violence can contribute to sexual risk behaviors. Participants then have in vivo practice in affect management skills (e.g., grounding techniques to reduce dissociation) so that they can make conscious choices rather than relying on automatized reactions in sexual situations. In Session 4, participants discuss relationship power and then participate in role plays to practice communication and negotiation skills in general and then more specifically with male partners (including potentially violent partners) about condom use. Session 5 presents sexual assault and intimate partner violence risk reduction strategies and helps women identify their key sober non-violent supports, as this can reduce both incidence and mental health consequences of victimization. This session concludes with a group discussion on self-care and other ways in which women can empower themselves.

During the pre-release individual session, which took place after the group sessions ended but prior to prison release, women and interventionists collaboratively developed personalized risk-reduction plans that addressed alcohol and other drug use, condom use, violence, and social supports. They reviewed women's discharge plans and relevant community resources (e.g., hotlines and shelters for intimate partner violence, free HIV testing sites, substance use and mental health treatment referrals). Study staff met women as they were released from prison and gave them “safe sex kits,” which included male and female condoms, information sheets on how to use them, hygiene kits, finger cots, mini lubes, keychain whistles, dental dams, and a booklet reviewing safe sex information and

community resources. In the individual post-release session (conducted as close to release as possible, but always within 4 weeks of release), women and interventionists reviewed the personalized risk-reduction plan to identify and problem-solve barriers to implementing it; interventionists provided referrals to substance use and mental health treatment and other community resources as needed.

Three interventionists each ran one intervention group of 4–5 women. Interventionists included an MSW health education worker and discharge planner within the prison, and a MPH student. The interventionists received two days of training with a booster day just prior to the start of the study, conducted primarily by Dr. Wechsberg with assistance from Drs. Zlotnick and Johnson. This was followed by another day of training by Dr. Zlotnick once we had finalized the intervention. Dr. Zlotnick reviewed the audio recorded sessions throughout the study and provided weekly group supervision of approximately 45 minutes to the interventionists. Dr. Wechsberg reviewed taped sessions of each of the interventionists and also provided feedback. A trained rater rated intervention adherence (e.g., all session components delivered following the scripted session outlines) and competence (e.g., engages women in discussion, praise, warmth, caring) for a randomly selected 20% of the group sessions and ~10% of the individual sessions.

In addition, participants were free to attend prison and community substance use and mental health treatment and other available classes. Some standard sex and health education was available on a very limited basis at the prison facilities, but it was informational, rather than skills-based, and primarily explained disease transmission and prevention processes. It did not use an empowerment model, train women in male and female condom use and negotiation skills, address affect regulation and access to resources, address the effects of mental health and substance use problems on sexual safety, discuss sexual safety in the context of a history of interpersonal violence victimization, or provide any post-release care or resources.

## Assessments

The study was an open, unblinded, feasibility trial of the Women's Prison CoOp intervention among women prisoners with lifetime IV who were approaching community re-entry. Our targeted sample size for this initial feasibility trial was up to 15; we recruited 14 women who attended the intervention in 3 groups (one at each state women's prison). Assessments were delivered by trained research assistants with bachelor's degrees in public health fields and training and ongoing supervision in study assessment measures. Assessments took place at study intake (in prison), 6–7 weeks later after the group intervention was completed (prior to release), and then at 2, 5, and 8 months after release. Post-release study assessments took place in the community at locations that were safe, private, and convenient for participants.

**Feasibility and acceptability** measures included study recruitment and refusal rates, intervention attendance, ability of the interventionists to deliver the intervention adherently and competently, rates of intervention completion (attending at least 5 of the 7 scheduled group and individual sessions) and drop-out, and participant satisfaction as measured by the 8-item Client Satisfaction Questionnaire-Revised (CSQ-8-R; Larsen, 1979). An End of Intervention Questionnaire (EIQ) was also administered to provide information on the



perceived helpfulness and appropriateness of each intervention component. Finally, individual exit interviews with participants provided additional information about women's comfort with and perceived helpfulness of intervention components; detailed notes were taken at each exit interview. CSQ-8-R, EIQ, and exit interviews were administered at 2 months after prison release.

**Primary outcome**—The primary outcome was unprotected vaginal or anal sexual occasions (USOs) with male partners. This information was obtained from the Timeline Followback (TLFB; Sobell, 1980). The TLFB is a calendar assisted structured interview that provides a way to cue memory so that accurate recall is enhanced for event-level data. The TLFB has been used to assess sexual risk-taking (Stein et al., 2001) with excellent reliability and validity (Stein, Charuvastra, Anderson, Sobota, Friedmann, 2002). At baseline and follow-up interviews, a detailed, partner-by-partner assessment of sexual behaviors and condom use was made for each of the participant's sexual partners. We also used the (TLFB) to assess pre-incarceration and post-release drug use and drinking days (a secondary outcome). The baseline TLFB assessed USOs and substance use during the 90 days prior to incarceration. Post-release TLFB administrations assessed USOs and substance use since release or since the previous follow-up. The TLFB was not used to assess sexual behavior or substance use during incarceration, as this information is unreliable.

Other **secondary outcomes** (in addition to substance use) included IV and symptoms of PTSD and depression. The Trauma History Questionnaire (THQ; Greene, 1995), a 24-item self-report measure, was used to assess lifetime history of traumatic events (at intake) to establish study eligibility and to assess for trauma exposure between follow-up assessments. We also added the following IV questions that were tracked on the TLFB calendars for each TLFB timeframe: (1) “How many times have you been physically assaulted (pushed, kicked, beaten or assaulted with a weapon, choked, had something thrown at you)?” (2) “How many times has someone forced you into unwanted sexual contact (such as rape, sexual assault, inappropriate touching)?” (3) “How many times has someone threatened or coerced you into unwanted sex or other sexual contact (e.g., threatening to hurt you, report you to child protective services, etc.)?” We also used the self-report Revised Conflict Tactic Scale (CTS2; Straus, 1996) to assess partner violence and abuse (including verbal abuse) within a woman's sexual relationships (including main, casual, and trading relationships with both men and women); every woman reported at least one such relationship. Baseline CTS2 scores assessed violence and abuse incidents in the year prior to the baseline assessment (which included time outside prison and time in prison for most women). Follow-up scores reflect partner violence incidents since the previous assessment. It was possible for CTS2 scores to change while women were still incarcerated because the CTS2 assesses some positive relationship behaviors as well as verbal abuse (altercations and threats) which could take place by phone. Past-week PTSD symptoms were measured at all assessments using the Davidson Trauma Scale (DTS; Davidson et al., 1997), a widely used 17-item self-report measure. We used the Quick Inventory of Depressive Symptomatology self-report (QIDS-SR; Rush, 2003) to assess past-week depressive symptoms at all assessments.

**Tertiary outcomes** were theorized mediators, and were measured at all assessments. Affect management was measured using the Distress Tolerance Scale (Simons, 2005), a 15-item

self report measure that assesses perceived ability to tolerate emotional distress, including ability to regulate negative affect. Two dimensions of social support were measured. The 12-item Multidimensional Scale of Perceived Social Support (MSPSS; Zimet, Powell, Farley, Werkman, & Berkoff, 1990) assessed general emotional support. An adapted Effectiveness in Obtaining Resources Scale (EOR; Sullivan, 1999) assess respondents' effectiveness in obtaining resources in 16 areas: housing, education, transportation, employment, legal assistance, health care for the woman, physical health, mental health, substance use recovery, personal safety/partner violence, children's health, social support, financial issues, material goods and services, child care, and any other issue of importance to the woman for herself or for her children.

## Analyses

Data were double entered with discrepancy resolution. Feasibility and acceptability data are presented descriptively. There is no ideal way for dealing with count variables (e.g., USOs, substance using days) with only a few cases ( $n = 14$ ), over several time points. Therefore, count variables (USOs and substance using days; see Table 1) were transformed with square-root transformations. Continuous variables (listed in Table 2) and transformed count variables were then analyzed using two sets of paired t-tests. We compared 2-month post-release scores (which took place after all intervention sessions were completed) to baseline scores, expecting significant differences for all outcomes. We then compared 8-month post-release scores (which took place at our final follow-up) to 2-month post-release scores, expecting no differences for outcomes (i.e., expecting intervention gains to be maintained).

## Results

Thirty-six women were approached for study screening between July and October of 2012; 20 (55%) women expressed interest in study participation. The primary reason given for lack of interest at screening was being busy with other classes or work at the prison. Of the 20 who expressed interest in screening, 6 screened out due to not having unprotected vaginal or anal sex with a male partner in the 90 days prior to incarceration ( $n = 2$ ) and to releasing too soon, too late, or outside RI or MA ( $n = 4$ ). Follow-up rates for the 14 enrolled participants were 86% at the post-intervention assessment (2 women released earlier than expected), 93% at 2 months post-release, 86% at 5 months post-release, and 93% at 8 months post-release.

At baseline, the average age of the 14 enrolled participants was 35.6 (range 23–47). Three (21%) identified as African-American and two (17%) identified as Hispanic. Five (36%) were married or living with someone as if married. Half were employed prior to coming to prison; all made less than \$30,000 of legal income per year prior to prison, and ten (71%) made less than \$10,000 per year. At baseline, they had been incarcerated a median of 8 weeks (range 4–506); all but 2 had been incarcerated for less than a year. All but one woman reported prior convictions (range 1–30). A majority (9; 64%) met criteria for current PTSD as assessed by the SCID-IV (First, Spitzer, Gibbons, & Williams, 1996). Most ( $n = 13$ ; 93%) met SCID-IV criteria for dependence on at least one substance in the year before



incarceration, including alcohol (57%), cocaine (50%), opiates (21%), cannabis (14%), and sedatives/anxiolytics (7%).

### Feasibility and Acceptability

Treatment attendance was perfect (all group and both pre-release and post-release individual sessions attended) for 12 women; the other 2 were released from prison early (one after 3 group sessions and one after 4 group sessions) and did not complete the post-release individual session. Therefore, all women but the two who were released early were considered to be “treatment completers.” Overall satisfaction (CSQ-8-R total) scores ranged from 24–32 (mean 30, SD = 3.1) on an 8–32 scale. EIQ results indicated that, on a scale from 1 = very harmful to 7 = very much, participants found the intervention very helpful (6.9), said they learned useful skills overall (6.9), and said that the intervention was somewhat to very likely to help them practice safe sex and reduce chances of contracting HIV/STIs in the future (6.7).

**Intervention components**—Helpfulness of each intervention component was rated on an EIQ scale from 1 = very harmful to 7 = very helpful. Mean ratings for intervention components from most to least helpful were: Session 2: How to use male and female condoms and negotiating safe sex (6.9); Session 1: Information on HIV and STIs (6.8); Session 3: Drugs, alcohol, and violence and how to reduce your risk (6.8); individual meetings with the interventionists (6.8); Session 4: Communication skills (6.4); Session 5: Violence prevention (6.4). Written answers to the question “what did you like most about the intervention?” reflected having good teachers (n = 2), being listened to and having questions answered without being judged, being offered information in a way that felt genuinely helpful, not forced, the group discussions, the safe sex kit and resources, and information on managing relationships when angry, HIV testing and female condoms, STIs and what they look like, and learning many ways to protect oneself from harm.

**Feedback from exit interviews to refine the intervention**—When asked which specific discussion or activity in the group “had the most positive impact on you personally” during exit interviews, five women mentioned the graphic pictures of each STI, both to know what each disease looked like and because “*they make you want to use a condom.*” Three mentioned interpersonal support and power components of the intervention. Specifically, they mentioned (1) an exercise to identify potential community supports (“My support system is small, but it's very very strong. This exercise helped me feel more supported, like a safety net”); (2) information on partner violence; and (3) work on setting healthy boundaries (“How to take care of yourself. Learning that you are the most important and you have to look out for you, and how to manage manipulation and guilt in relationships.”) Two women mentioned statistics about how common STIs are and about “*what drugs do to you,*” and another two mentioned the female condom demonstrations as the most helpful. When asked about impactful events in individual sessions, participants said it was very helpful to have interventionists sit down and go through the study's community resource lists (e.g., STI testing, housing, substance use treatment, food, employment) with them individually, especially given that they experienced the counselors as non-judgmental, caring, and concerned about helping women find resources to address their needs. When we

asked each woman about her comfort level with and how helpful she found practice with the male and female models and condoms in prison, a few women said it was “awkward,” but that interventionists' humor helped. Most women felt these exercises were helpful for understanding how to use the female condom in particular, even if it was initially uncomfortable for some. Most participants said that they preferred the small-group format (3–5 women) over an individual format (“I like listening to other people's opinions in the group”) or a larger-group format. Most also felt that the number of intervention sessions was about right; however, a few would have liked more post-release individual sessions.

#### **Ability of study interventionists to deliver the intervention with fidelity—**

Interventionists' average general competence score (i.e., reflecting warmth, praise, caring, engaging women in conversation) for rated sessions was 5.3 on a 1–6 scale. Interventionists completed an average of 98% of rated intervention components, with a mean component competence (i.e., how well was the skill taught) of 5.7 on a 1–6 scale.

### **Pre-post and follow-up outcomes**

**Count outcomes (Table 1)**—USOs (per unincarcerated day) decreased significantly from baseline (which assessed the 90 days prior to the index incarceration) to the 2 month follow-up ( $t = -2.45$ ,  $df = 12$ ,  $p = .03$ ); these gains did not change significantly between the 2 month and the 8 month follow-ups ( $t = .33$ ,  $df = 11$ ,  $p = .75$ ; see Table 1). Substance using days (including drug using and drinking days per unincarcerated day) had a trend decrease from baseline to the 2 month follow-up ( $t = -2.15$ ,  $df = 12$ ,  $p = .053$ ), with no difference between the 2 month and 8 month follow-ups ( $t = .29$ ,  $df = 11$ ,  $p = .78$ ; see Table 2).

Of women reporting TLFB interpersonal violence (IV) data at each time point, 36% (4 of 11) had at least one IV experience as measured by the TLFB in the 90 days prior to the index incarceration, with 8% (1 of 12), 8% (1 of 12), and 33% (4 of 12) reporting at least one IV experience in the 2 or 3 month periods covered by the 2 month, 5 month, and 8 month follow-ups, respectively. As assessed by the THQ, most (12 of 14; 86%) had experienced lifetime physical violence or abuse at baseline; 4 of 13 (31%) had these experiences at any time during the 8-month post-release follow-up period. Most (11 of 14; 79%) had been victims of sexual violence or abuse (lifetime) at baseline; none (of 13) reported these experiences during the 8-month post-release follow-up period.

**Continuous outcomes (Table 2)**—PTSD symptoms (DTS scores) decreased significantly from baseline to 2-month follow-up ( $t = -2.27$ ,  $df = 12$ ,  $p = .04$ ); gains were maintained from the 2 month to the 8 month follow-ups ( $t = -.62$ ,  $df = 11$ ,  $p = .55$ ; see Table 2). Depressive symptoms (QIDS-SR scores) followed the same pattern ( $t = -2.87$ ,  $df = 12$ ,  $p = .01$  for baseline to 2 month follow-up;  $t = .00$ ,  $df = 11$ ,  $p = 1.00$  for 2 month to 8 month follow-up). There was a trend ( $t = -1.97$ ,  $df = 2$ ,  $p = .07$ ) for distress tolerance (Distress Tolerance Scale scores) to improve from baseline to 2-month follow-up, with no difference between 2 month and 8 month follow-up ( $t = 1.04$ ,  $df = 10$ ,  $p = .32$ ). General emotional support (MSPSS scores) did not change over either time period. However, number of areas of need (as identified on the EOR) decreased significantly from intake to the 2 month follow-up ( $t = -3.58$ ,  $df = 12$ ,  $p = .004$ ; gains maintained from 2 month to 8 month follow-

up,  $t = .00$ ,  $df = 10$ ,  $p = 1.00$ ) and effectiveness of efforts to obtaining resources in areas of need increased significantly during this time period ( $t = 3.29$ ,  $df = 12$ ,  $p = .006$ ; effectiveness scores were similar at 5 months, but dropped by the 8 month follow-up relative to the 2 month,  $t = -2.3$ ,  $df = 10$ ,  $p = .047$ ).

Partner violence victimization and perpetration (assessed using the CTS-2 victimization and perpetration total scores) decreased significantly from baseline to the 2-month post-release follow-up ( $t = -3.51$ ,  $df = 12$ ,  $p = .004$  and  $t = -6.21$ ,  $df = 12$ ,  $p < .001$ , respectively). The fact that baseline scores reflected incidents over 12 months, and the 2-month post-release scores reflected incidents over only 2 months may explain the observed differences. However, comparisons between partner abuse episodes in the 6 weeks the intervention was taking place and the 2 months after it ended also showed trend-significant reductions in women's perpetration ( $t = -2.14$ ,  $df = 11$ ,  $p = .06$ ) and victimization scores ( $t = 1.97$ ,  $df = 11$ ,  $p = .08$ ), even though the latter time period was longer. Victimization and perpetration did not change significantly (i.e., remained lower) between the 2 month and the 8 month follow-up periods (which each reflected a 2–3 month window of time;  $t = .74$ ,  $df = 11$ ,  $p = .48$  for victimization and  $t = .74$ ,  $df = 11$ ,  $p = .47$  for perpetration).

## Discussion

Our enhancement of a brief, user-friendly, skills-building, gender-specific HIV prevention intervention (the Women's CoOp; Wechsberg et al., 2004) to include trauma-specific intervention components (skills to increase affect management and social support) represents the first trauma-focused HIV prevention intervention for women that directly addresses the sequelae of IV (such as affect dysregulation in sexual situations) within the context of HIV harm reduction and the first to be tested in incarcerated women; an underserved and high-impact population of women with their dual risk for HIV/STIs and IV. Results of this small uncontrolled pilot study of Women's Prison CoOp intervention among women prisoners with lifetime IV who were approaching community re-entry shows promise in that the intervention was feasible and acceptable. Participants' number of unprotected sexual occasions, PTSD symptoms, and depressive symptoms decreased significantly and effectiveness obtaining resources increased significantly from baseline to post-release, with trends toward a decrease in substance using days and IV victimization and perpetration and an increase in distress tolerance over this period. Women's level of general perceived emotional support (as measured by the MSPSS) did not change. Given that incarceration itself can produce temporary reductions in risky behavior (i.e., risky sex, substance use) immediately following release (Knudson, Staton-Tindall, Oser, Havens, & Leukefeld, 2014; Peabody et al., in press), a randomized controlled trial is needed to establish the efficacy of this tailored intervention. However, given that IV victimization and perpetration, distress tolerance, and access to resources often worsen (Johnson et al., in press; Kellett & Willging, 2011; Richie, 2001) as women are released to the community from prison, and PTSD and depressive symptoms stay roughly the same (Zlotnick, Johnson, & Najavits, 2009; Johnson & Zlotnick, 2012), the observed positive trends for these variables from within prison to after release in the current sample are encouraging.

When we asked participants about the most helpful aspects of the intervention, many of their responses were consistent with our theoretical approach of empowerment; a collaborative and non-confrontational approach with an emphasis on information, increasing access to resources, and skill building around self-care and safety planning skills. This finding supports the literature which indicates that an empowerment model is a beneficial approach for survivors of violence (Dutton, 1992). The most commonly mentioned personally impactful part of the group, however, was the graphic STI pictures we included to help women identify STIs and which women described as “helpful” but “horrifying.” This was unanticipated because negative messages have generally been found to ineffectual or even counter-productive in reducing risky behaviors (Albarracin et al., 2005).

Teaching male and female condom use skills in prisons can be challenging, because condoms and anatomical models are considered to be “contraband” and are not allowed in most prisons. Because most women were not familiar with the female condom, because female condoms in particular do not require women to negotiate with potentially violent partners, and because prison administrators were invested in helping women be physically and sexually safe after release, after discussion, we were allowed to bring female and male condoms and models into the prisons for intervention sessions under very tightly controlled circumstances. Because of the charged nature of these items in prison, some women found them more awkward than usual to work with in prison; however, most women found the condom demonstrations and practice to be helpful, especially for the female condom. As the trial went on, we learned ways to facilitate condom skills practice in the prisons that increased participants' level of comfort, including using humor, having the interventionists model the skills in group before having women try them, and adjusting the timing of the condom skills practice so the practices did not occur after discussing violence or while simultaneously practicing grounding skills, as this was triggering for some women. By the end of the trial, the condoms skills practice in the prison facilities was smooth, feasible, acceptable, and perceived as helpful by participants.

Strengths of this study include a high-risk, high-need population for HIV prevention interventions, a well-specified, manualized intervention with fidelity rating, and high intervention completion and study follow-up rates (86% at 8 months after prison release). However, this was a small ( $n = 14$ ) feasibility study. It lacked a control condition. Furthermore, the assessment of study outcomes was confounded with a potentially life changing event (an incarceration and subsequent release), meaning that there are many potential explanations for observed changes in women's behavior and distress other than participation in our intervention. Therefore, our pre-post outcome analyses should be interpreted with caution. Because of the small sample size, analyses examining maintenance of gains from 2 months to 8 months post-release only had the power to detect only large changes over time. Generalizability of our findings to women in prison in other parts of the country (with more diverse prison populations) is still unknown. However, results to date indicate that the intervention is feasible and acceptable and that a subsequent randomized, controlled trial (RCT) is warranted. If the Women's Prison CoOp (WPC) intervention is found to be efficacious in a subsequent RCT, we anticipate that it could have significant implications for HIV/STI prevention efforts for women prisoners with IV and potentially for

other women with IV, given that IV is highly prevalent among females and its enduring consequences can interfere with sexual safety.

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## References

- Albarracin D, Gillette JC, Earl AN, Glasman LR, Durantini MR, Ho M. A test of major assumptions about behavior change: A comprehensive look at the effects of passive and active HIV-prevention interventions since the beginning of the epidemic. *Psychological Bulletin*. 2005; 131(6):856–897. [PubMed: 16351327]
- Arriola KR, Loudon T, Doldren MA, Fortenberry RM. A meta-analysis of the relationship of child sexual abuse to HIV risk behavior among women. *Child Abuse and Neglect*. 2005; 29(6):725–746. [PubMed: 15979712]
- Becker-Lausen E, Sanders B, Chinsky JM. Mediation of abusive childhood experiences: Depression, dissociation, and negative life outcomes. *American Journal of Orthopsychiatry*. 1995; 65(4):560–573. [PubMed: 8561189]
- Benda BB. Gender differences in life-course theory of recidivism: a survival analysis. *International Journal of Offender Therapy and Comparative Criminology*. 2005; 49:325–342. [PubMed: 15851511]
- Blumberg SJ, Dickey WC. Prevalence of HIV risk behaviors, risk perceptions, and testing among US adults with mental disorders. *Journal of Acquired Immune Deficiency Syndrome*. 2003; 32(1):77–79.
- Browne A, Miller B, Maguin E. Prevalence and severity of lifetime physical and sexual victimization among incarcerated women. *International Journal of Law and Psychiatry*. 1999; 22(3–4):301–322. [PubMed: 10457926]
- Campbell JC, Baty ML, Ghandour RM, Stockman JK, Francisco L, Wagman J. The intersection of intimate partner violence against women and HIV/AIDS: a review. *Int J Inj Contr Saf Promot*. 2008; 15(4):221–231. [PubMed: 19051085]
- Clarke J, Hebert M, Rosengard C, Rose J, DaSilva K, Stein M. Reproductive Health Care and Family Planning Needs Among Incarcerated Women. *American Journal of Public Health*. 2006; 96:834–839. [PubMed: 16571701]
- Coker AL, Smith PH, Thompson MP, McKeown RE, Bethea L, Davis KE. Social support protects against negative effects of partner violence on mental health. *Journal of Women's Health and Gender-Based Medicine*. 2002; 11(5):465–476.
- Davidson J, Book S, Colket J, Tupler L, Roth S, David D, Hertzberg M, Mellman T, Beckham J, Smith R, Davison R, Katz R, Feldman M. Assessment of a new self-rating scale for post-traumatic stress disorder. *Psychological Medicine*. 1997; 27:153–160. [PubMed: 9122295]
- Davila YR, Bonilla E, Gonzalez-Ramirez D, Grinslade S, Villarruel AM. Pilot testing HIV and IPV prevention modules among Spanish-speaking Latinas. *Journal of the Association of Nurses in AIDS Care*. 2008; 19(3):219–224. [PubMed: 18457763]
- Davila YR, Brackley MH. Mexican and Mexican American women in a battered women's shelter: Barriers to condom negotiation for HIV/AIDS prevention. *Issues in Mental Health Nursing*. 1999; 20(4):333–355. [PubMed: 10624236]
- Duncan RD, Saunders BE, Kilpatrick DG, Hanson RF, Resnick HS. Childhood physical assault as a risk factor for PTSD, depression, and substance abuse: Findings from a national survey. *American Journal of Orthopsychiatry*. 1996; 66:437–448. [PubMed: 8827267]
- Dutton, M. *Empowering and healing the battered women. A model for assessment and intervention*. Springer; NY: 1992.

- El-Bassel N, Gilbert L, Wu E, Go H, Hill J. HIV and intimate partner violence among methadone-maintained women in New York City. *Social Science and Medicine*. 2005; 61:171–183. [PubMed: 15847970]
- El-Bassel N, Ivanoff A, Schilling RF, Borne D, Gilbert L. Skills building and social support enhancement to reduce HIV risk among women in jail. *Criminal Justice and Behavior*. 1997; 24(2):205–223.
- El-Bassel N, Simoni JM, Cooper DK, Gilbert L, Schilling RF. Sex trading and psychological distress among women on methadone. *Psychology of Addictive Behaviors*. 2001; 15(3):177–184. [PubMed: 11563794]
- Enriquez M, Cheng A, Kelly P, Witt J, Coker A, Kashubeck-West S. Development and feasibility of an HIV and IPV prevention intervention among low-income mothers receiving services in a Missouri day care center. *Violence Against Women*. 2010; 16(5):560–578. [PubMed: 20388931]
- First, M.; Spitzer, R.; Gibbon, M.; Williams, J. *Structured Clinical Interview for DSM-IV Axis I Disorders, Nonpatient Edition*. New York State Psychiatric Institute; New York: 1996.
- Golding JM. Intimate partner violence as a risk factor for mental disorders: A meta-analysis. *Journal of Family Violence*. 1999; 14(2):99–132.
- Greene, MB. Trauma History Questionnaire. In: Stamm, BH.; Varra, EM., editors. *Measurement of Stress, Trauma, and Adaptation*, Lutherville. Sidron Press; MD: 1995.
- Gupta, GR.; Whelan, D.; Allendorf, K. *Integrating Gender into HIV/AIDS Programmes: A Review Paper*. Thompson Press; India: 2003.
- Hale G, Oswalt K, Cropsey K, Villalobos G, Ivey S, Matthews C. The contraceptive needs of incarcerated women. *Journal of Womens Health (Larchmont)*. 2009; 18(8):1221–1226.
- Hammett TM, Drachman-Jones A. HIV/AIDS, sexually transmitted diseases, and incarceration among women: National and southern perspectives. *Sexually Transmitted Diseases*. 2006; 33(7 Suppl):S17–22. [PubMed: 16794551]
- Harris RM, Sharps PW, Allen K, Anderson EH, Soeken K, Rohatas A. The interrelationship between violence, HIV/AIDS, and drug use in incarcerated women. *Journal of the Association of nurses in AIDS care*. 2003; 14(1):27–40. [PubMed: 12585220]
- Herman JL. Complex PTSD: a syndrome in survivors of prolonged and repeated trauma. *Journal of Traumatic Stress*. 1992; 5:377–391.
- Johnson JE, Schonbrun YC, Peabody ME, Shefner RT, Fernandes KM, Rosen RK, Zlotnick C. Provider experiences with prison care and aftercare for women with co-occurring mental health and substance use disorders: Treatment, resource, and systems integration challenges. *Journal of Behavioral Health Services & Research*. in press. DOI 10.1007/s11414-014-9397-8.
- Johnson JE, Zlotnick C. Pilot study of treatment for major depression among women prisoners with substance use disorder. *Journal of Psychiatric Research*. 2012; 46(9):1174–1183. [PubMed: 22694906]
- Kellett NC, Willging CE. Pedagogy of individual choice and female reentry in the U.S. Southwest. *International Journal of Law and Psychiatry*. 2011; 34:256–263. [PubMed: 21864909]
- Richie BE. Challenges incarcerated women face as they return to their communities: Findings from life history interviews. *Crime and Delinquency*. 2001; 47:368–389.
- Kendler K, Bulik C, Silberg J, Hettima J, Myers J, Prescott C. Childhood sexual abuse and adult psychiatric and substance use disorders in women. An epidemiological and cotwin control analysis. *Archives of General Psychiatry*. 2000; 57:953–959. [PubMed: 11015813]
- Kessler R, Sonnega A, Bromet E, Hughes M, Nelson C. Posttraumatic stress disorder in the National Comorbidity Survey. *Archives of General Psychiatry*. 1995; 52:1048–1060. [PubMed: 7492257]
- Klein H, Elifson KW, Sterk CE. Depression and HIV risk behavior practices among at risk women. *Women and Health*. 2008; 48(2):167–188. [PubMed: 19042215]
- Knudson, HK.; Staton-Tindall, M.; Oser, CB.; Havens, JR.; Leukefeld, CG. Reducing risky relationships: A multisite randomized trial of a prison-based intervention for reducing HIV sexual risk behaviors among women with a history of drug use. *AIDS Care: Psychological and Socio-medical Aspects of AIDS/HIV*. 2014. <http://dx.doi.org/10.1080/09540121.2013.878779>



- Kuo C, Johnson JE, Rosen R, Wechsberg W, Gobin R, Reddy MK, Peabody M, Zlotnick C. Emotional dysregulation and risky sex among incarcerated women with a history of interpersonal violence. *Women & Health*. 2013 DOI: 10.1080/03630242.2013.850143.
- Larsen D, Attkisson CC, Hargreaves WA, Nguyen TD. Assessment of client/patient satisfaction: Development of a general scale. *Evaluation and Program Planning*. 1979; 2:197–207. [PubMed: 10245370]
- Logan T, Cole J, Leukefeld C. Women, sex, and HIV: Social and contextual factors, meta-analysis of published interventions, and implications for practice and research. *Psychological Bulletin*. 2002; 128(6):851–885. [PubMed: 12405135]
- Lyles C, Kay L, Crepaz N, Herbst J, Passin W, Kim A, Rama S, Thadiparthi S, DeLuca J, Mullins M, HIV/AIDS Prevention Research Synthesis Team. Best-evidence interventions: findings from a systematic review of HIV behavioral interventions for US populations at high risk, 2000–2004. *American Journal of Public Health*. 2007; 97(1):133–143. [PubMed: 17138920]
- Maman S, Campbell J, Sweat MD, Gielen AC. The intersections of HIV and violence: Directions for future research and interventions. *Social Science and Medicine*. 2000; 50:459–478. [PubMed: 10641800]
- Mitchell RE, Hudson CA. Coping with domestic violence: Social support and psychological health among battered women. *American Journal of Community Psychology*. 1983; 11:629–654. [PubMed: 6666751]
- Mittal M, Senn TE, Carey MP. Fear of violence consequences and condom use among women attending an STD clinic. *Women & Health*. 2013; 53(8):795–807. [PubMed: 24215273]
- Morrill AC, Ickovics JR, Golubchikov VV, Beren SE, Rodin J. Safer sex: social and psychological predictors of behavioral maintenance and change among heterosexual women. *Journal of Consulting and Clinical Psychology*. 1996; 64(4):819–828. [PubMed: 8803373]
- O'Leary A. Social-cognitive theory mediators of behavior change in the National Institute of Mental Health Multisite HIV Prevention Trial. *Health Psychology*. 2001; 20(5):369–376. [PubMed: 11570651]
- Parsons ML, Warner-Robbins C. Factors that support women's successful transition to the community following jail/prison. *Health Care for Women International*. 2002; 23:6–18. [PubMed: 11822560]
- Peabody ME, Chuong A, Rosen R, Kuo C, Wechsberg W, Fernandes K, Zlotnick C, Johnson JE. Effects of incarceration on risky sex: Focus group data from two New England states. *Health and Justice*. in press.
- Phillips DY, Walsh B, Bullion JW, Reid PV, Bacon K, Okoro N. The intersection of intimate partner violence and HIV in U.S. Women: A review. *Journal of the Association of Nurses in AIDS Care*. 2014; 25(1 Suppl):S36–49. [PubMed: 24216338]
- Ramsey S, Bell KM, Engler PA. Human Immunodeficiency Virus risk behavior among female substance abusers. *Journal of Addictive Diseases*. 2010; 29:192–199.
- Rush A, Trivedi MH, Ibrahim HM, Carmody TJ, Arnow B, Klein DN, Markowitz JC, Ninan PT, Kornstein S, Manber R, Thase ME, Kocsis JH, Keller MB. The 16-item quick inventory of depressive symptomatology (QIDS), clinician rating (QIDS-C), and self-report (QIDS-SR): A psychometric evaluation in patients with chronic major depression. *Biological Psychiatry*. 2003; 54(5):573–583. [PubMed: 12946886]
- Simons JS, Gaher RM. The Distress Tolerance Scale: Development and validation of a self-report measure. *Motivation and Emotion*. 2005; 29(2):83–102.
- Sobell LC, Maisto SA, Sobell MB, Cooper AM. Reliability of alcohol abusers' self-reports of drinking behavior. *Behaviour Research and Therapy*. 1980; 17:157–160. [PubMed: 426744]
- Stein M, Anderson B, Charuvastra A, Friedmann PD. Alcohol use and sexual risk taking among hazardously drinking drug injectors who attend needle exchange. *Alcoholism: Clinical and Experimental Research*. 2001; 25(10):1487–1493.
- Stein M, Charuvastra A, Anderson B, Sobota M, Friedmann PD. Alcohol and HIV risk taking among intravenous drug users. *Addictive Behaviors*. 2002; 27(5):727–736. [PubMed: 12201380]
- Sterk CE, Theall KP, Elifson KW. The impact of emotional distress on HIV risk reduction among women. *Substance Use & Misuse*. 2006; 41:157–173. [PubMed: 16393740]

- Straus MA, Hamby SL, McCoy SB, Sugarman DB. The revised conflict tactic scales (CTS2). *Journal of Family Issues*. 1996; 17:283–316.
- Sullivan C, Bybee Di. Reducing violence using community-based advocacy for women with abusive partners. *Journal of Consulting and Clinical Psychology*. 1999; 67:43–53. [PubMed: 10028208]
- Teitelman AM, Ratcliffe SJ, Dichter ME, Sullivan CM. Recent and past intimate partner abuse and HIV risk among young women. *J Obstet Gynecol Neonatal Nurs*. 2008; 37(2):219–227.
- Van-Wyk JA, Benson Michael L, Fox Greer Litton, DeMaris Alfred. Detangling individual-, partner-, and community-level correlates of partner violence. *Crime and Delinquency*. 2003; 49(3):412–438.
- van der Kolk BA, Pelcovitz D, Roth S, Mandel FS, McFarlane A, Herman JL. Dissociation, somatization, and affect of dysregulation: The complexity of adaption to trauma. *Am J Psychiatry*. 1996; 153:83–93. [PubMed: 8659645]
- van Empelen P, Kok G, van Kesteren NM, van den Borne B, Bos AE, Schaalma HP. Effective methods to change sex-risk among drug users: a review of psychosocial interventions. *Social Science and Medicine*. 2003; 57(9):1593–1608. [PubMed: 12948569]
- Wechsberg WM. Facilitating empowerment for women substance abusers at risk for HIV. *Pharmacology Biochemistry and Behavior*. 1998; 61(1):158.
- Wechsberg, W.; Poulton, W.; Kline, T.; Ellerson, R.; Brown, F.; Zule, WA.; Jones, HE.; Myers, B.; Parry, C.; Jewkes, R. An evidence-based HIV prevention intervention for vulnerable women in South Africa: Findings and the need to scale-up. Paper presented at the 18th Annual AIDS Conference; Vienna, Austria. Jul. 2010
- Wechsberg WM, Lam WK, Zule WA, Bobashev G. Efficacy of a woman-focused intervention to reduce HIV risk and increase self-sufficiency among African American crack abusers. *American Journal of Public Health*. 2004; 94(7):1165–1173. [PubMed: 15226138]
- Wechsberg WM, Luseno WK, Kline TL, Browne FA, Zule WA. Preliminary Findings of an Adapted Evidence-Based Woman-Focused HIV Intervention on Condom Use and Negotiation Among At-Risk Women in Pretoria, South Africa. *Journal of Prevention and Intervention in the Community*. 2010b; 38(2):132–146. [PubMed: 20391060]
- Wechsberg WM, Luseno WK, Lam WK, Parry CD, Marojele NK. Substance use, sexual risk, and violence: HIV prevention intervention with sex workers in Pretoria. *AIDS and Behavior*. 2006; 10(2):131–137. [PubMed: 16482408]
- Weir BW, O'Brien K, Bard RS, Casciato CJ, Maher JE, Dent CW, Dougherty JA, Stark MJ. Reducing HIV and Partner Violence Risk Among Women with Criminal Justice System Involvement: A Randomized Controlled Trial of Two Motivational Interviewing-based Interventions. *AIDS Behavior*. 2009:509–522. [PubMed: 18636325]
- Wilson H, Widom C. An examination of risky sexual behavior and HIV in victims of child abuse and neglect: a 30-year follow-up. *Health Psychology*. 2008; 27(2):149–158. [PubMed: 18377133]
- Wingood GM, DiClemente RJ. The effects of an abusive primary partner on the condom use and sexual negotiation practices of African American women. *American Journal of Public Health*. 1997; 87(6):1016–1018. [PubMed: 9224187]
- Zimet GD, Powell SS, Farley GK, Werkman S, Berkoff KA. Psychometric characteristics of the Multidimensional Scale of Perceived Social Support. *Journal of Personality Assessment*. 1990; 55:610–617. [PubMed: 2280326]
- Zlotnick C. Antisocial personality disorder, affect dysregulation and childhood abuse among incarcerated women. *Journal of Personality Disorders*. 1999; 13(1):90–95. [PubMed: 10228930]
- Zlotnick C, Johnson JE, Najavits L. Randomized controlled pilot study of cognitive-behavioral therapy in a sample of incarcerated women with substance use disorder and PTSD. *Behavior Therapy*. 2009; 40(4):325–336. [PubMed: 19892078]

**Table 1**

Count outcomes per unincarcerated day in each follow-up period

	<b>Prior to prison median (SD) n = 14</b>	<b>2 months post-release median (SD) n = 13</b>	<b>5 months post-release median (SD) n = 12</b>	<b>8 months post-release median (SD) n=12</b>
Unprotected sexual occasions (TLFB)	.46 (.34)	.08 (.39)	.15 (.37)	.12 (.49)
Drug using/drinking days (TLFB)	.64 (.45)	.13 (.41)	.02 (.32)	.23 (.43)

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**Table 2**

## Continuous outcomes

	Intake (in prison) mean (SD) n = 14	Post-group (in prison) mean (SD) n = 12	2 months post- release mean (SD) n = 13	5 months post- release mean (SD) n = 12 <sup>b</sup>	8 months post- release mean (SD) n = 12 <sup>b</sup>
CTS2 partner violence					
Perpetration <sup>a</sup>	58 (28)	49 (32)	31 (16)	33 (11)	38 (31)
Victimization <sup>a</sup>	57 (31)	50 (33)	33 (17)	34 (18)	40 (35)
PTSD symptoms (DTS)	42 (30)	35 (27)	27 (25)	32 (34)	22 (34)
Depressive symptoms (QIDS)	10.3 (5.1)	8.3 (3.8)	7.5 (4.0)	9.8 (5.7)	8.1 (4.2)
Distress Tolerance Scale scores	32 (13)	33 (12)	40 (15)	30 (17)	36 (15)
Social support					
MSPSS	60 (19)	62 (15)	62 (16)	64 (17)	62 (18)
EOR unmet needs	8.4 (1.9)	7.3 (3.0)	6.5 (1.9)	6.4 (1.5)	6.7 (3.1)
EOR effectiveness in obtaining resources	2.4 (.8)	2.6 (.9)	3.1 (.7)	3.1 (.6)	2.8 (.6)

<sup>a</sup> Baseline scores reflect partner violence incidents in the year prior to the baseline assessment (which included time outside prison and time in prison for most women). Follow-up scores reflect partner violence incidents since the previous assessment.

<sup>b</sup> n = 11 for QIDS and DTS and EOR at 5 months and for the EOR at 8 months