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How Qualitative Methods Contribute to Intervention Adaptation: An HIV Risk Reduction Example

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Abstract:

This paper describes how to use qualitative data for adapting an existing behavioral intervention to a new population using a specific illustration: the adaptation of the Women's Co-op HIV intervention to the needs of women prisoners who have experienced interpersonal violence. We describe and illustrate how we conducted each step in the adaptation process, including: 1) choosing a well-matched intervention to adapt; 2) setting specific goals for the adaptation; 3) writing a focus group agenda that will collect the data you need for the adaptation; 4) recruiting participants and conducting the focus groups; 5) using debriefs to assess the data as you gather it; 6) coding; 7) analysis; 8) using the qualitative data to guide the intervention adaptation; 9) conducting additional groups and make final revisions; 10) pilot testing the intervention. These steps provide an effective model for how to collect and analyze qualitative data that supports behavioral intervention development.

Keywords: qualitative methods, intervention adaptation, incarcerated women, interpersonal violence

As recently as the late 1990s, journals began publishing articles which justified the need for qualitative data in health services research, or explained why qualitative research methods could be complementary additions to quantitative research (for example, Pope & Mays, 1995; Sofaer, 1999). Two decades later, qualitative research has become expected and is normative in many health research fields. Journals like this one provide outlets for effective presentation and exploration of qualitative research. Even principally quantitative journals now also provide guidelines for qualitative research (Choudhuri, Glauser, & Peregoy, 2004; Frieze, 2008; Neale & West, 2015), and policy for its publication (Dworkin, 2012).

Although qualitative methods are now well established, and are an expected step in intervention development, there are few specific examples of how to execute or adapt them to the context of behavioral health intervention development and design. This article provides a methodological description of how this can be accomplished. There are many valuable examples that provide overviews of the entire intervention adaptation process (Latham et al., 2010; Latham et al., 2012; Wingood & DiClemente, 2008), we, however, specifically focus on the steps and methods of qualitative inquiry.

The usual conventions for publishing qualitative results include a brief methodological paragraph succinctly describing the rigor of qualitative methods used in the analysis process. These conventions might result in a brief paragraph like this one:

> **Methods**: Four focus groups were conducted with 21 women incarcerated in the Northeastern United States. Focus Groups were semi-structured but open-ended. Experienced facilitators led the groups using an agenda that identified key topic areas and probes for discussion. Focus groups were audio-recorded, transcribed

verbatim and independently coded by three analysts. Participant comments were coded for content related to key themes needed to adapt the Women's CoOp Intervention, including: the role that interpersonal violence, incarceration, affect dysregulation and poor social support (all common sequelae of interpersonal violence) play in decision making. Codes were reviewed and compared and then entered into NVivo 8 Qualitative data analysis software. A thematic analysis was performed and a summary written. The summary documents, along with the NVivo codes, were used when the team met to adapt the intervention material to this new population.

In reality, however, this paragraph represents ten discrete steps, some of which are not described in the paragraph above. For example, it does not describe prior work to conceptualize the ultimate goal of the intervention, nor what areas of the chosen intervention required adaptation, or how the qualitative data informed those changes. Using one of our behavioral intervention adaptation projects as an example (R34 MH094188; Johnson et al., 2015; Kuo et al., 2013; Peabody et al., 2014), this paper illustrates in detail the process of how qualitative methods and data were used to adapt an existing intervention for a new target population. To illustrate these steps, we provide background to the context in which the research was conducted, describe details of qualitative data collection and analysis, and illustrate how that data was used in the adapted intervention.

Background: Evaluating the need for an adapted intervention

Although efficacious intervention models may exist for one population, transporting models to a new population without assessing for adaptation needs may result in non-response

and non-engagement. The efficacy of interventions transported from one population and context to another without adaptation is likely to be altered by a myriad of socio-demographic, cultural, and contextual variables. For example, unique characteristics of the population and context might include differential risk factors for a particular outcome, socio-economic or demographic differences poverty, race and ethnicity, gender, age, and language, etc. Adaptations may be possible to maintain efficacy of interventions designed for one population and transported for use in another population. In our study, we worked with a highly efficacious model for HIV prevention for women (W. M. Wechsberg, Browne, Ellerson, & Zule, 2010; W. M. Wechsberg, Lam, Zule, & Bobashev, 2004; W. M. Wechsberg, Luseno, Kline, Browne, & Zule, 2010). Yet this existing efficacious intervention model had not been tested among incarcerated women, who may have specific experiences and needs. This sub-population of women have a set of characteristics that might result in non-response to the original intervention.

For example, incarcerated women report extraordinarily high rates of lifetime interpersonal violence (IV; defined as physical or sexual assault or abuse) victimization and risky sex (Browne, Miller, & Maguin, 1999): 60 to 75% of incarcerated women report exposure to IV in adulthood prior to incarceration, and 66 to 90% of incarcerated women report histories of childhood physical or sexual abuse (Browne, et al., 1999; C Zlotnick, 1999). They also have elevated rates of HIV and sexually transmitted infections (STI); and are likely to engage in behavior which places them and others at risk of HIV and STI exposure upon release from prison (Datta et al., 2007; Gottlieb et al., 2008; Hammett, 2006, 2009; Hammett & Drachman-Jones, 2006; Maruschak & Beavers, 2009; McQuillan & Kruszon-Moran, 2008). Interpersonal violence increases women's likelihood of contracting HIV and other sexually transmitted infections (STIs). Prospective studies have indicated that women with histories of child abuse are more

likely to have had an STI, and are twice as likely as those without child abuse to be HIV positive (Wilson & Widom, 2008). In addition IV indirectly increases HIV/STI risk through compromised ability to negotiate safe sex (Gupta, Whelan, & Allendorf, 2003; Kalichman, Williams, Cherry, Belcher, & Nachimson, 1998), increased likelihood of substance use and sex work (Beadnell, Baker, Morrison, & Knox, 2000; W. M. Wechsberg, Browne, et al., 2010); and the increased mental health symptoms (i.e., of posttraumatic stress disorder) that have been linked to HIV risk-taking behaviors (Hutton et al., 2001; Klein, Elifson, & Sterk, 2008).

Given that the majority of incarcerated women have experienced IV, and that IV and HIV/STI risk behaviors have a dual and linked presence in the lives of incarcerated women, an intervention directly addressing IV and HIV risk was identified as a priority. To meet this need, an existing evidence-based HIV prevention intervention for other high-risk women (primarily out-of-treatment female substance users) was adapted to address the needs of incarcerated women with IV.

Qualitative steps for intervention adaptation

Step 1. Identify an existing intervention appropriate for adaptation

Key elements: the intervention you are adapting should be (a) effective, (b) use a relevant theoretical perspective, and (c) contain elements that meet, or can be adapted to, the needs of the new target population.

This project adapted the Women's CoOp, a psychoeducational, woman-focused HIV prevention intervention developed for out-of-treatment African American crack cocaine-using women in the United States (W. M. Wechsberg, et al., 2004; Wechsberg, 1998). It is considered by the CDC to

be a best-evidence HIV prevention intervention (Lyles et al., 2007). This particular intervention was chosen for adaptation to the needs of our target population (incarcerated women with IV) because it has been found to be effective for reducing sex risk, substance use, and victimization among other high-risk women (W. M. Wechsberg, Browne, et al., 2010; W. M. Wechsberg et al., 2013; W. M. Wechsberg et al., 2012; W. M. Wechsberg, et al., 2004; W. M. Wechsberg, Luseno, & Ellerson, 2008; W. M. Wechsberg et al., 2008; W. M. Wechsberg, Luseno, et al., 2010; W. M. Wechsberg et al., 2011), who, like our target population, are stigmatized, marginalized, and encounter multiple instrumental and psychological barriers to accessing resources. The intervention's feminist theoretical perspective and woman-centric approach of teaching personalized HIV prevention and sexual negotiation skills was relevant for women involved with substance use and/or sex work, as are many incarcerated women. In particular, empowerment models, like those used in the Women's CoOp, have been recommended for women with IV (Dutton, 1992), and fit with our clinical experience of the needs of women in prison. In sum, we chose to start with the Women's CoOp intervention because it was effective in related populations, had an appropriate theoretical frame, and its key components appeared to be a good fit for the needs of our target population.

Step 2. Set specific goals for the adaptation

Key elements: a) identify specific skills or behaviors relevant for the target population; b) consider what you need to know about the cultural context or experiential background of that population. Specifically, consider what information is needed in order to develop new content for the target population.

Although the spirit of the original intervention (empowerment through skills, knowledge, and support), and many of the specific sexual safety skills taught (female condom use, male condom use, not giving up power by being under the influence of alcohol or drugs in sexual and/or potentially dangerous situations) were relevant for our target population, additional population-specific content and adaptations were needed in three areas:

- Understanding how a history of IV might increase HIV risk behavior so that intervention materials could provide specific HIV risk reduction strategies for women with this history.
- Tailoring HIV risk reduction content to the needs of women who have experienced IV and are being released from incarceration, including developing new content to teach affect regulation skills and skills for developing social support.
- Incorporating the voices of women from the target population to make the intervention contextually grounded and relevant to them.

Focus group data was collected to specifically provide background and context for the development of this needed additional content.

Step 3. Design the qualitative agenda to collect information needed

Key elements: a) the research team must have appropriate expertise; b) all team members should review both the original intervention and the adaptation goals; c) identify 3-4 key research questions to ask the participants; d) use these to draft, and then revise, the agenda.

The agenda used to guide the focus groups was developed in an ongoing consultation between the Women's CoOp designer (WW), the study principal investigators, who specialize in working

with incarcerated women with a history of IV (JJ and CZ), a medical anthropologist with expertise in qualitative data collection and analysis (RKR), and a public health scientist (CK). Before the first meeting, each had acquired a detailed understanding of the existing intervention materials, and as a team there was a strong consensus that certain areas would be essential for adapting the intervention. We knew, for example, that we wanted to ask about women's experiences with safe sex, their attitudes about what (if anything) put them at risk for HIV, and their opinions and attitudes about condom use. These topics all related directly to intervention content about empowering women to effectively employ HIV prevention practices during community re-entry from prison. We also knew that we needed to understand how being in prison specifically shaped those attitudes and practices and how the challenges of community re-integration post-incarceration also shaped risk experiences. In addition, we wanted to know how interpersonal violence exposure might impact these same situations.

The focus group agenda was crafted over three meetings and repeated review of each agenda iteration. We included introduction and framing statements about confidentiality and a caution that no one needed to talk about their specific experiences, but could talk about "women in prison" or in general if they were more comfortable doing so.

Our first agenda drafts were very long, as there is much to learn about this population. Because we needed to conduct the group within a 60-90 minute time frame, however, we prioritized what we needed to know specifically for intervention content adaptation and creation. Ultimately, questions covered three main categories: women's HIV risk behaviors and understanding of HIV risk (for example: "how can women protect themselves from HIV? What makes it hard for women leaving prison to do that"); condom use (for example: "How and when do women talk

with partners about using condoms? Are condoms sexy? Can you make them sexy?"); and the role that IV plays in negotiating safe sex (for example: "How does any of this [i.e. condom use] change when a women thinks her partner might be violent?"). We asked about each of these safe sex topics in the specific context of reentry into their communities and into their sexual relationships upon release from prison.

Step 4. Recruit and enroll participants, conduct the focus groups

Key elements: a) Find participants who represent your target population; b) staff groups with well-trained facilitators and note takers; c) discuss confidentiality and privacy as part of the consent process.

Our inclusion criteria for the focus groups were the same as those for the subsequent treatment study, so that focus group answers would be relevant to our target population. We recruited incarcerated women over the age of 18 who reported a history of physical or sexual abuse, who had at least one unprotected sexual encounter with a male partner in the 90 days prior to incarceration, and who were willing and able to participate in a focus group during the scheduled day and time. Women were recruited from the same sites that we planned to use in the actual intervention trial: four women's prisons (minimum and medium security facilities) in two states. In those facilities, 25 participants were recruited and 21 attended focus groups. The mean age was 35 years and the majority (80%) was non-Hispanic white. Many had a history of prior incarcerations as well as prior releases from prison along with previous re-entry experiences. Recruitment was aided by having co-investigators with experience working with the target population in the prison systems.

Focus groups were led by clinical psychologists with many years of experience working with incarcerated women (JJ and CZ), and a doctoral level public health scientist with experience working with vulnerable HIV affected populations from low-income settings (CK). Two of these three facilitators led each focus group, with one primarily asking the questions and the co-facilitator confirming that key agenda items were covered. In addition, a bachelor's level research assistant was present to help coordinate logistics and take notes.

Group facilitators worked to be respectful, positive, and appreciative of participants' presence and contributions, and to emphasize confidentiality and non-judgment (including that there were no "right" or "wrong" answers to our question). Participants were asked to keep contents of focus groups confidential and reminded that study staff would guard their privacy. Facilitators also made sure that participants were aware that we could not guarantee participants would respect one another's privacy, even though we asked them do to so. Participants were told they could decline to answer any questions that they did not want to answer. Finally, questions were phrased in the third, rather than the second person: "what do women do/think" rather than "what do you do/think", in order to further emphasize that generalized answers rather than specific stories and details were appropriate, and that women could answer in general terms if desired to protect their privacy.

Step 5. Assess the data as you gather it: are you getting what you need?

Key elements: a) write debriefs immediately after each group; b) review these as a team to assess the data: Are you getting what you need for the adaptation? Are changes to agenda needed? Is the data saturated?

Immediately after each group, facilitators and note takers recorded, then wrote up, a semi-structured debrief, responding to the following questions to guide future focus groups and data analysis: 1) What went well? 2) What could have gone better? 3) Did we hear from everyone, or did some participants talk more than others? How did this shape the data that got collected? 4) Did we get through the agenda? If not, what didn't get covered? 5) Is there anything we want to ask in a different way next time? 6) What were the themes from this group? 7) Did we learn anything new? 8) Is there anything that we know because we were there that won't be captured in a written transcript? This kind of debrief is useful for assessing saturation on key data topics and embedding a reflexive assessment of facilitation styles and skills into the process.

Between groups the facilitators met with the qualitative analyst to review the debriefs and consider whether the agenda questions were effective, if they were eliciting a variety of experiences and responses, and whether any refinements to the questioning strategy were needed before proceeding with the next scheduled group. Small agenda refinements did take place between each group. This flexibility is a hallmark of qualitative research, but achieving it requires excellent communication between facilitators, data analysts and intervention experts; debriefs and group meetings are essential steps in this process.

Step 6. Coding the data

Key elements: a) transcribe and de-identify transcripts; b) draft an initial code book; c) have multiple coders use those codes to code several transcripts; d) revise codes and re-code transcripts as needed.

In our case, transcripts were de-identified and cleaned by research staff who listened to the audio recording while reading the transcript, to ensure effective and complete transcription. Concurrently, we developed a code book, or a coding structure, that represented the most important categories for making sense of the data. The first draft of the codes was developed from the interview agenda itself; a deductive code was created for each key question area: HIV risk, safe sex, Interpersonal Violence, how emotions affect sexual decision making, and prison-specific experiences, for example. The facilitators and the qualitative analyst used this preliminary set of deductive codes to each, independently, code one transcript. We then met together several times to compare and discuss our coding. During these meetings the coding structure underwent significant refinement as emergent data and new coding topics were identified. In this process we significantly expanded some of our coding topics. For example, our initial deductive code "interpersonal violence" only had two sub codes: "history of violence" and "violence in current relationships:

Interpersonal violence
- History of interpersonal violence
- Violence in current relationships

During our coding meetings, however, it became clear that a more finely defined set of codes was needed to capture participants' experiences. After our coding discussions, the original deductive codes were expanded with several inductive codes, so that the code book for IPV looked like this:

Interpersonal violence
- History of interpersonal violence
  - Physical
  - Sexual
- Violence in current relationships
  - Physical
  - Sexual

How IPV affects sexual decision making
    Trust issues
    Power and control in relationships

The revised codes were used on the remaining transcripts. Again, each coder worked independently, and then we met as a team to discuss and review all three sets of codes. Differences in our coding were reconciled. This oft-use phrase practically means that one of two things happened: either we agreed on the coding of a section of transcript, or we had different codes for the section. When our codes differed we discussed how and why that was so. Often in our discussions we elected to include the differing codes in our master transcript. Occasionally we would decide to add new codes to our codebook, often because the third or fourth transcript contained discussion of new content areas. When this happened, the previously coded transcripts were reviewed again to make sure they did not require any additional coding.

Because all data were coded by three of the investigators and the coding was reconciled ("consensus coding"), inter-rater reliability was not calculated. Checking inter-rater reliability can be useful in projects with large data sets where multiple coders each code different transcripts. To ensure fidelity in such a situation, a percentage of transcripts are double coded (that is, coded by more than one person) and the coding is compared to ensure and demonstrate fidelity. In our project, <u>all</u> of the transcripts were coded by three researchers. Further, we recognized that each coder brought distinct knowledge: a psychologist with experience working with incarcerated women, an anthropologist with experience adapting interventions using qualitative data, and social and behavioral scientist with experience in communities at high risk for HIV, each understandably interpret the data somewhat differently. When that happened we discussed the differences and, if necessary, added an explanatory note along with the codes into the qualitative software used to manage the data.

Step 7. Analyzing the coded data

Key elements: a) enter the codes into qualitative software; b) identify which codes are most needed for the adaptation; c) read those codes and d) write code summaries; e) review codes and summaries to identify important themes.

Once the transcripts were completely coded with our revised codes and entered into NVivo 8 qualitative data analysis software (QSR NVivo 8, 2009), we began the process of reviewing and summarizing the codes. We first identified which codes we felt would be most immediately useful for the adaptation process, then we reviewed all the transcript passages in that code in aggregate. This involved reading together all of the passages that related to each code. For example, we read all of the codes, and sub-codes, related to interpersonal violence, and RKR and CK wrote summaries of these codes. Our summaries identified the most commonly reported experiences, as well as the broad range of experiences within each topic. A summary was written for every code that was relevant to the intervention adaptation. It is through this summarizing process, often called "applied thematic analysis" (Braun & Clarke, 2006; Guest, MacQueen, & Namey, 2011) that raw transcript data, reorganized into topical codes, actually become the themes that can be reported as results and used in intervention design and adaptation. We used this procedure to create a master coding summary document that was shared with the team and reviewed by all before we met to adapt the intervention.

Through thematic analysis process, we learned many general principles and details that were invaluable in adapting the intervention. For example, we learned about the most salient motivators and obstacles to safe sex at community re-entry. Specifically, women were highly motivated to implement protective sexual behaviors (e.g., condom use, partner negotiation,

knowledge of self- and partner HIV status) at community release by 1) knowledge of their HIV status, which they gained in prison; 2) because they assumed that their sexual partners had been unfaithful during their incarceration; 3) because they had worked to become more physically and psychologically healthy while incarcerated and they were motivated to maintain their good health; and 4) because they wanted to be available and healthy for their families and children.

We also learned about the many factors which can make condom use and safer sex behavior a challenge upon re-entry. These include 1) the many practical challenges of re-entry including difficulty with housing, employment, and transport which could create dependence upon sexual partners; 2) substance use relapse; 3) lack of confidence in safe-sex negotiation; and 4) fear of losing partners (Peabody, et al., 2014). We also learned that a history of violent victimization can affect women's sense of control and empowerment over safe sexual decisions and lead to sexually risky behaviors upon release. In addition to desire and feelings of love and friendship, many women with IV also experience negative feelings during sex, and sometimes use drugs to tolerate these feelings. (Kuo, et al., 2013)

We identified strengths and gaps in women's HIV knowledge. For example, some women were very resourceful in finding ways to flatter partners or make condoms sexy to persuade partners to use male condoms (Kuo et al unpublished data), but few women knew how to find or use female condoms. Finally, we gained specific information about the ways in which some of our theorized mechanisms of intervention (e.g., empowerment, affect regulation, and social support) played out in sexual decision-making in our target population.

As a result of this analysis of the qualitative data, we better understood the specific contexts in which control and empowerment were particularly important, and we had material and direct

quotations available for use in the adaptation. We found two points to be particularly unique to for this population. Women who learn that they are HIV negative as a result of HIV/STI screening during incarceration can find that their negative status motivates them to want to remain free of HIV and to engage in HIV-preventive behaviors upon release. That fact, along with the knowledge that they have not been engaging in sexually risky behaviors while incarcerated, but that their sexual partners on the 'outside' might still be engaging in those behaviors, could motivate the reduction of HIV risk behaviors upon release. Our qualitative work had uncovered an unexpected, population-specific, content area to incorporate into the intervention.

8. Using the qualitative data in the intervention adaptation.

Key elements: a) team meetings to review code summaries and themes; b) match themes with existing intervention content and/or c) identify areas that require the development of new content; d) search the qualitative data for relevant participant experiences, examples and quotations, to help illustrate concepts in participants' own words.

In our case, the co-investigators met over a three-day period to begin the intervention adaptation. Prior to this meeting, each had reviewed the original intervention materials, and was familiar with the qualitative data, having read all four transcripts as well as the summary document. We also reviewed the outline of what was initially proposed to adapt from the Women's CoOp as part of the funded grant submission. As a group we reviewed the qualitative summary and identified which elements seemed particularly relevant to the needs of the incarcerated population and which fit the areas of the intervention that needed adaptation.

The adaptation process included a group review of the original Women's CoOp intervention materials during which we added content identified during the focus group analysis, along with quotes that illustrated the voices of incarcerated women. The intervention content was also rearranged into a new sequence deemed more relevant to this population. Throughout the process, the original designer of the intervention (WW) provided important guidance to ensure that core elements of the intervention were retained during the adaptation process. We used both the NVivo project, which managed all of the data and codes, and our written qualitative code summaries to retrieve useful quotations and examples, embedding these in the intervention materials to retain population specific "voices" and maximize acceptability to the target population. Illustrations 1 and 2 show slides with the adapted intervention content. Illustration 1 lists particular concerns raised during the focus groups: difficulty trusting, poor self-esteem and self-care and also illustrates each of those with participant quotes. Illustration 2 provides another example of how self-esteem and self-care are important to prevention and self-protection.

Our qualitative data analysis identified several important elements specific to our population which we added to the intervention. First, we confirmed emotional dysregulation to be a salient factor in HIV risk among incarcerated women with IV; this is also supported by the broader literature (Cavanaugh, Hansen, & Sullivan, 2010; Messman-Moore, Walsh, & DiLillo, 2010; Walsh, DiLillo, & Messman-Moore, 2012). Second, we expanded the intervention to include affect management skills by adding material from an empirically-based affect management group for trauma survivors (Caron Zlotnick et al., 1997). This included building skills to manage extreme affect such as grounding techniques to manage stress and stay aware within sexual situations. Finally, the material was modified to fit our intervention format, and relevant quotes from women in prison were added.

One example of new content designed specifically for women with a history of interpersonal violence is a slide which addresses dissociative states before and during sex, and skills to overcome dissociation to stay present to keep oneself safe. Illustration 3 shows this slide, on which "numbing" is defined *using a participant's own words* to make the concept relevant, credible, salient, and understandable. Other focus group quotes are used to illustrate the experiences that are related to "numbing", as well as how substance use can be involved in this process. Additionally, we included more interactive content (including role plays and games) in the intervention to engage our population of women. The scenarios for the role plays came from examples that the women in the focus groups provided about their particular situations.

Step 9. Additional focus groups and final revisions

Key elements: a) review the adapted intervention with participants; b) make any required final changes based on their feedback; c) prepare the materials for implementation.

After the intervention was drafted and edited by members of the research team, three additional focus groups were held with incarcerated women using the same inclusion criteria as our initial focus groups. In these groups we sought feedback on details of the newly adapted intervention, including formatting and design. These new participants highlighted sections they particularly liked, and identified things that were unclear or which could be improved. We also discussed the planned pilot test. We finalized the intervention and control content and, with the help of focus group participants, designed a logo for the study: it shows a woman bending prison bars – a reference to leaving prison – with sun rays behind her to suggest a hopeful future. As final revisions were taking place, we trained study counsellors to use the materials.

10. Pilot study: open trial

Key elements: the steps here may not be qualitative, however it is important to develop a plan that allows further adaptation based on feedback from participants who participate in the intervention.

Once the intervention adaptation was completed it was tested in an open trial consisting of five groups and two individual sessions; n = 14 women at 3 correctional facilities (Johnson, et al., 2015). Study counsellors conducted the intervention using the materials developed, and audio recorded them to be reviewed by CZ, who provided clinical supervision for the study. Groups were staggered in start times, so that small adjustments could be made, if needed, before the next group. While the majority of the pilot materials were not altered, some small changes were made during this step. For example, relevant stories from women enrolled in the open trial were added to illustrate successful use of intervention material. For instance, one woman told how she used the techniques we had taught her to stay "present" and to reduce her intense emotions when a man sitting next to her on a bus offered her free cocaine (she counted the beads on a bracelet). Another change was made based on feedback from the interventionists: we removed the practice exercise of putting a male condom on a model penis while using strategies to stay present because the interventionists reported that thinking about trauma in the context of developing safe sex skills overwhelmed some women. Other changes were less substantial and included adding more information on STIs, HIV testing and female condoms. Finally, we had originally presented the intervention materials as projected slides, but decided it was easier and preferable to the woman if they each had a hard copy of the session materials to keep (Johnson et al., 2015).

Discussion:

Although qualitative data is often gathered to adapt interventions, there are few examples that specifically detail how such adaptations are conducted. Existing examples, such as the ADAPT-IT model (Latham, et al., 2010; Latham, et al., 2012; Wingood & DiClemente, 2008) and projects SAFE and POWER (Fasula et al., 2013), provide overviews of the entire adaptation process. Here, however, we have specifically illustrated the key steps for using qualitative data to adapt an existing intervention; focusing on this process highlights the iterative nature of qualitative adaptation work.

Our focus groups deliberately explored key issues the researchers identified as relevant for this population, including how incarceration, interpersonal violence, affect dysregulation, and social support influence sexual risk behaviors upon release. In addition, emergent data suggested several new issues that should be addressed in the adapted intervention. Using the qualitative focus group data, existing intervention content was adapted and new content was developed. The adapted intervention was reviewed in follow-up focus groups and then pilot tested.

Successful adaptation is a multistep process. We chosse to adapt an intervention that was a good match to the needs of our target population and which was methodologically and theoretically appropriate for our planned approach. In this project the original intervention's designer collaborated with researchers with complementary content expertise in the target population and with a qualitative methodology expert. We recruited participants who effectively represent the experiences and needs of the population and use non-leading, open-ended, but purposeful qualitative questions to ask about relevant experiences. We regularly assessed our progress between groups to make sure we were collecting relevant data. The resulting qualitative data was summarized into a useable form and both the summary data and the full data set was available

when we met to adapt the intervention and develop new content. Finally, one of the essential elements in this process was allotting enough time to effectively carry out each necessary step. Each element described required several months to complete. Below we provide rough time estimates for our completion of each of the components of the steps discussed above, to assist other research teams in planning and preparation:

1. Identify and review existing intervention	2 weeks
2. Set adaptation goals	2 weeks and several regular meetings
3. Write focus group agendas	1 month of weekly meetings
4. Conduct focus groups	
4a. Recruit participants	2-4 weeks
4b. Conduct focus groups	3 months
5. Asses the data via debriefs and meetings	3 months (concurrent with 4b)
6. Code the data	approximately 6 months
6a Transcribe and clean focus groups	2 months
6b. Develop coding scheme	1 month of weekly meetings
6c. Coding transcripts, including concording	6 weeks of weekly meetings
6d. Data entry into NVivo	2 weeks

7. Analysis 3 weeks

8. Intervention adaptation 1 week with daily co-investigator meetings

9. Conduct focus groups to get feedback on the adapted intervention 6 weeks

10. Finalize intervention 3 weeks

This process represents approximately 12 -18 months of work. Additional time may be required to secure relevant IRB and other agency approvals. Note that the second round of focus groups in this project were not formally transcribed and analyzed. However, it is not uncommon for longitudinal projects to repeat a full analysis protocol for confirmatory and feedback groups. If this is the case, steps 3-10 are all repeated and the timeline should be extended by approximately 9 months. Additionally, as this was work with a protected population, required state and federal oversights further lengthened this process.

Conclusion:

Although we knew through our prior research experience that incarcerated women with interpersonal violence had specific needs for HIV prevention, our qualitative research steps enabled us to successfully adapt an existing intervention to this specific population and to place within that adaptation content, language, examples and experience that contributed to its success. Effective use of these methods requires careful planning and ample time for recruitment, analysis, adaptation, refinement and pilot testing, and a commitment from all investigators to good communication and flexibility. The time and effective methodology, however, can be reflected in strong results. The qualitative process contributed to the first trauma-focused HIV

prevention intervention for women to target the specific negative sequelae of interpersonal violence. The open trial results suggest that the resulting intervention was feasible and acceptable and that it may be effective: trial participants' number of unprotected sexual occasions decreased significantly from baseline to post-release assessment (Johnson, et al 2015). Effective qualitative methods played an important role in this translational behavioral intervention research.

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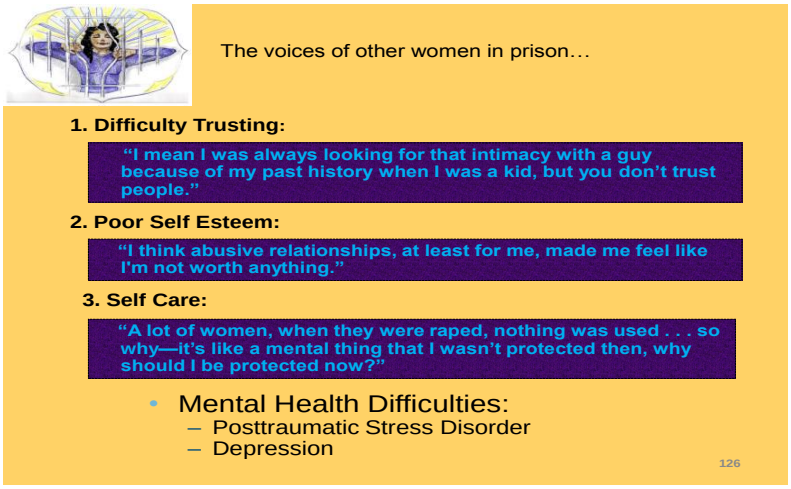
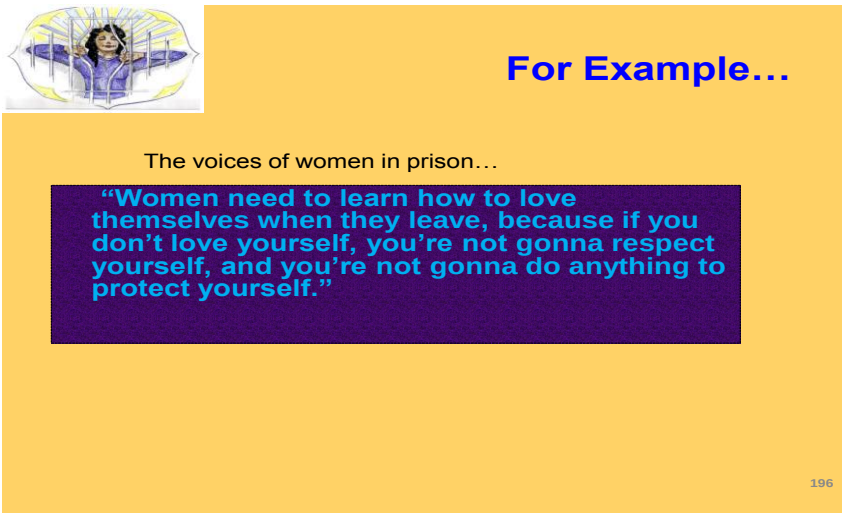
Illustrations:

1.



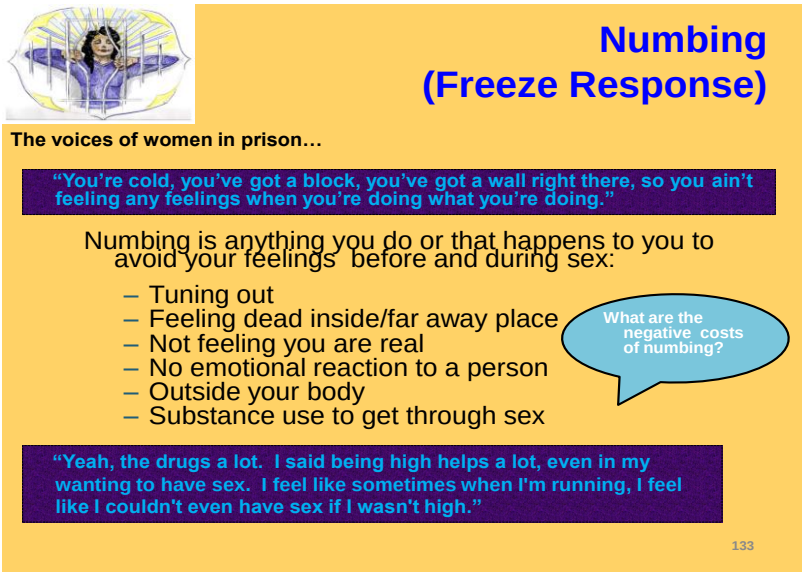
Caption: Relevant concerns are illustrated with comments from the focus group participants.

2.



Caption: Focus group quotes provide perspectives from other incarcerated women

3.



Caption: Intervention content directly addressing experiences of women from the target population developed based on qualitative results