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Prevention Needs of HIV-Positive Men and Women Awaiting Release from Prison

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Abstract

Greater understanding of barriers to risk reduction among incarcerated HIV+ persons reentering the community is needed to inform culturally tailored interventions. This qualitative study elicited HIV prevention-related information, motivation and behavioral skills (IMB) needs of 30 incarcerated HIV+ men and women awaiting release from state prison. Unmet information needs included risk questions about viral loads, positive sexual partners, and transmission through casual contact. Social motivational barriers to risk reduction included partner perceptions that prison release increases sexual desirability, partners' negative condom attitudes, and HIV disclosure-related fears of rejection. Personal motivational barriers included depression and strong desires for

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sex or substance use upon release. Behavioral skills needs included initiating safer behaviors with partners with whom condoms had not been used prior to incarceration, disclosing HIV status, and acquiring clean needles or condoms upon release. Stigma and privacy concerns were prominent prison context barriers to delivering HIV prevention services during incarceration.

Keywords

Prison; Incarceration; HIV prevention; HIV-positive; Qualitative

Introduction

Correctional facilities have been identified by the Center for Disease Control and Prevention (CDC) as key settings for improving HIV prevention efforts because HIV affects a disproportionate number of incarcerated persons [1]. Prevalence estimates indicate that 14% of all HIV-infected persons in the U.S. may be released from a prison or jail in a 1-year period [2], and AIDS case rates are 3–5 times higher in the U.S. prison population than in the general population [3, 4]. Two-thirds of HIV-positive incarcerated persons are diagnosed and begin treatment for the first time during incarceration, and many return to the community within 2 years [5–9].

Periods of incarceration and community re-entry can provide a window of opportunity for reducing HIV transmission risk behaviors. Post-release is a time of high risk behavior for many formerly incarcerated people, including those who are HIV-positive [10–13]. Multiple factors (e.g., housing, employment, substance abuse, mental health) have been linked to increased post-release transmission risk behavior among HIV-positive persons [14]. While behavioral intentions to practice safer sexual and drug use behaviors upon release may be high among HIV-positive men and women in prison, these intentions are often quite difficult to realize [13]. Upon re-entry to the community, subsistence needs such as housing, money, medical benefits and jobs are frequently viewed by formerly incarcerated HIV positive persons as much higher priorities than HIV risk reduction strategies [15]. It is therefore important to identify and address potential barriers to HIV prevention that may occur inside and outside of prison, and to develop prevention services that will meet the long-term needs of HIV-positive persons transitioning from prison to community settings [16–20].

Research suggests that engaging HIV-positive persons both prior to prison release and immediately following prison release is likely to positively impact health behaviors, including substance use and sexual behaviors [11, 21]. However, even intensive case management may not sufficiently reduce post-release risk behaviors [11, 22]. More effective programs to help formerly incarcerated HIV-positive persons reduce risk behavior have been called for [7, 8, 12, 13, 16, 23, 24], but intervention research with this population is largely in the formative stage [11, 21]. For example, interviews with community-based and correctional treatment providers suggest that prevention interventions delivered during the prison-community transition need to be brief, engaging, and tailored to varying levels of knowledge, education, and risk behavior experiences [21]. Interviews with formerly incarcerated injection drug users suggest that interventions for this target population should aim to improve motivation for safer behavior, increase condom negotiation skills, and address stigma-related barriers to utilizing needle exchange programs [21].

A seminal review of randomized controlled trials targeting sexual risk reduction in HIV-positive persons included 15 trials conducted in community or clinical care settings [25]. Meta-analysis of these trial findings showed interventions that included information, motivation and behavioral skills components increased condom use compared with

interventions that had only one or none of these components; interventions that did not include any of these components had non-significant effects on condom use [25]. These conclusions were consistent with other meta-analysis findings that characteristics of successful preventions interventions include being based on behavioral theory, specifically designed to change HIV risk behaviors, and providing skills building [26]. The Information-Motivation-Behavioral Skills (IMB) model for HIV prevention [27] has been successfully applied to reduce transmission risk in several HIV-positive populations [28–30]. The IMB model posits that HIV prevention-related information and motivation work primarily through HIV prevention-related behavioral skills to affect the initiation and maintenance of safer sexual and substance use behavior [27]. Direct effects of motivation and information on safer behaviors are more likely for less complex prevention behaviors [27]. Accordingly, effective HIV transmission risk reduction interventions should aim to correct deficits and build on strengths in risk reduction information, motivation, and behavioral skills [27].

Elicitation research is strongly recommended prior to implementation of population-tailored interventions to identify specific strengths and deficits in prevention-related information, motivation and behavioral skills domains that can inform targeted intervention content for various sub-populations [31, 32]. In this paper, we describe elicitation interview findings regarding HIV prevention-related strengths and deficits in each of the IMB model domains among a sample of HIV-positive men and women awaiting release from a state prison system. Our formative qualitative research is meant to provide useful contextual information for guiding culturally appropriate prevention intervention work with this understudied HIV-positive population.

Methods

Research Setting

In-person recruitment occurred in 2008–2009 at the University of Wisconsin Medical Center in Madison, Wisconsin, where HIV-positive persons incarcerated in Wisconsin state correctional institutions receive centralized medical services. A research nurse consented participants and then scheduled telephone assessments with them in coordination with prison health unit nursing staff already aware of patients' HIV status. To maximize privacy, participants received study calls on health unit telephones in 15 state prisons located throughout Wisconsin. Calls were not monitored by security personnel, and correctional officers or other inmates were not present in the interview room. For many participants, nurses were able to leave the interview room after calls were initiated, but for security reasons nurses sometimes remained in the interview room.

In this prison system, education about the transmission of sexually transmitted diseases including HIV is typically offered as one component of broader health education classes, which persons who are HIV negative or positive attend together. There are no formal classes specifically offered for HIV-positive inmates. Incarcerated HIV patients may discuss HIV transmission with physicians on an ad hoc basis, but no formal prevention counseling program is routinely offered to them at the university clinic.

Participant Consent and Recruitment

Thirty-one potential participants were informed by a research nurse of the opportunity to participate. The nature of the study was explained in private exam rooms at the university medical center. The Wisconsin Department of Corrections (DOC), Group Health and University of Wisconsin institutional review boards approved consent and recruitment procedures. Potential participants were informed that the study had received a federal certificate of confidentiality to protect their privacy and that any questions about specific

sexual and drug use behaviors would focus on activities in the community rather than in prison. Of the people approached, thirty (97%) gave written consent to participate in the study and one woman declined to participate. The final sample falls within the recommended parameters for elicitation research sample size [33].

Participant Selection

Inclusion criteria for the sample pool included being 18 years or older, HIV-positive, incarcerated in a Wisconsin DOC facility with a documented mandatory release date, and able to verbally communicate in English. Exclusion criteria included documented diagnosis of dementia or other severe cognitive impairment that would preclude informed consent. Purposive sampling strategies were used to select 30 HIV-positive incarcerated individuals with varied demographic characteristics (gender, ethnicity, transmission risk group, education), incarceration histories (sentence length, time until release, time since incarceration, first time or repeat incarcerations), and HIV disease and treatment characteristics (detectable/undetectable HIV viral loads, prescribed/not prescribed antiretroviral medications, first diagnosed with HIV in prison or in the community). Selection criteria were identified from clinic records and brief in-person screening interviews at the time of recruitment. In qualitative research it is meaningful to elicit responses from individuals who may have different perspectives and experiences, without seeking to select all possible combinations of such participant characteristics. Table 1 shows the characteristics of the sample.

Assessment Interview

We conducted one 30–40 min telephone interview with each participant. All interviews were digitally recorded. As an incentive for completing the interview, a $10 money order was deposited in participants' prison canteen accounts. Interviewers used a structured interview guide based on the domains of the Information-Motivation-Behavioral Skills (IMB) model as applied to "prevention for positives" [29, 30]. Open-ended questions were asked for each of the domains listed in Table 2.

Analysis of Qualitative Data

QSR N-Vivo software (QSR International, 2002) was used for data management and analyses. Digital recordings of interviews were transcribed verbatim. To ensure accuracy, interviewers compared the transcripts to the original recordings and corrected discrepancies. They recorded field observation notes regarding interview processes in association with each interview and expanded upon these notes immediately following the session [34]. Data were analyzed using adapted grounded theory strategies [35] to identify themes relevant to core elements of the IMB model and the hierarchical associations between these themes. The investigative team discussed new categories and themes that did not appear to fit into the conceptual framework and made modifications accordingly. When suggested by associations, overlap, or diversions in the data, thematic categories were refined, merged, or subdivided. Relations and associations among categories were interpreted and decision trails documented [36, 37]. This process continued iteratively until thematic saturation was achieved. A codebook was developed to include themes, illustrative texts, and node addresses (i.e., text location in the database). Two members of the analytic team formally content coded all transcripts. They discussed and resolved initial inter-rater discrepancies with a third coder until consensus was obtained. Overall, inter-rater agreement between the two coders was 93%.

Results

Main themes that emerged from analysis of elicitation interview data are summarized in Table 2.

Information

Participants were asked to discuss the information sources and needs of HIV-positive incarcerated people. They also responded to questions about their own knowledge related to HIV transmission.

Information Needs

Information Needs for Recently Diagnosed Incarcerated Persons: Being diagnosed with HIV in prison was considered particularly problematic by participants. A lack of social and emotional support in prison was seen as delaying the emotional processing needed to formulate questions or seek information:

> Maybe some one-on-one because I haven't really talked to anybody except for the people at [university HIV clinic]. The people in this [prison] facility don't address my issues. I mean, so basically, I really haven't even dealt with what has happened, you know, that I found out that I'm HIV positive... maybe a social worker, or a counselor that's trained to help people with this kind of, you know, because I really don't even know anything about it. I know about the T cells, and I know that it's transmitted through blood, and needles, basically sex, you know. Is it, I don't even know, is it transmittable through semen?

Whether diagnosed in prison or in the community, emotional distress or denial reportedly prevented many from seeking prevention information at first. Then, initial questions often focused on transmission risks from casual contact (e.g., personal hygiene, eating, shaking hands, and blood contact from fights, accidental injuries) and how participants contracted the illness (e.g., who specifically infected them, or how they could have been infected when they do not view themselves as part of a “risk group”). A few who had a partner at the time of diagnosis sought information about safer sex practices with sero-discordant and sero-concordant partners. Only one person mentioned seeking risk information around drug use.

Information Needs for Incarcerated Persons Who Were Not Recently Diagnosed: Over time, respondents reported beginning to ask more specific sexual and drug risk reduction questions: “Well, I imagine they would want to know, is there any way they could really have sex without spreading the virus... from the understanding that I've had... you must wear [a condom] each and every time you have sex for the rest of your life now since you have HIV, not to spread it to others... that's something that... kind of troubles me.” Some who had lived with HIV relatively longer felt their knowledge was fairly complete: “I relied on the information that was available to me, you know, that if I'm going to have sex, or protected sex and stuff like that. I came to grips with my HIV pretty, pretty soon after I was, you know, it was within months. You know, I mean, I was over the anger and denial stage and the acceptance stage pretty quick....”

Sources of Prevention-Related Information in Prison—Several participants said they received little or no prevention-related information while incarcerated, and the few that did receive it reported finding HIV information mainly through written media (posters, pamphlets, magazines, books) available in either the prison health services unit or through the library. A few mentioned accessing videos, but they considered these outdated. A few of the women referenced support groups; none of the men did. The prison health services unit was cited most often as the best information source, though the university HIV clinic was

also mentioned. Only a few participants referred to getting information from another person who was incarcerated or an outsider. Internet access is unavailable or heavily restricted and was not viewed as a main source of information while incarcerated.

Unmet Informational Needs—Although almost half of participants spontaneously raised at least one transmission-related question during the interview, none were specific to injection drug use. While all participants knew basic information such as that condoms can prevent transmission, they often sought some way of quantifying risk, e.g., how much condom use or an undetectable viral load decreased risk and how risky oral sex or kissing were. They also asked questions about safely having children when one has HIV, and the risk of sero-positive sex. Some expressed confusion about appropriate barrier use when performing oral sex on a female partner. Others had questions about legal penalties for exposing others to HIV: “I guess it was too late when the questions did come up because I had got in trouble for criminal transmission.... I never knew if there was an actual statute.” A surprisingly high proportion of the sample (40%) had questions or voiced concerns about casual transmission involving non-sexual saliva, urine, or blood exposure: “...so I play a lot of basketball, so I wanted to know like, you know, how if I got cut and somebody else was cut or something like that, or scratched, or whatever...” It was common for participants to indicate early in the interview that they were well informed about HIV prevention, and then for prevention-related informational needs to emerge spontaneously later in the discussion.

Transmission Risk Knowledge by Partner Serostatus—When asked about the risks of unprotected sex with someone who was HIV-negative, the most frequent responses were HIV exposure/transmission and exposure to other infections, specified as “STDs,” hepatitis, or fungal or yeast infections. Most often, they brought up the risk of other infections as an afterthought and described it as much less significant than the potential for infecting someone else with HIV. One mentioned that having HIV makes one more susceptible to contracting other STDs, while another said contracting an STD makes HIV “10 times worse.” Several respondents stated they “didn't know” the risks of serodiscordant sex, believed they were minimal, or thought they could be minimized through strategies such as choosing particular roles (e.g., insertive/receptive partner) or “pulling out” prior to ejaculating. Only one person mentioned HIV transmission as a risk connected with serodiscordant needle sharing, even though a third of participants reported IV drug use. “Other infections” were the most common risk mentioned in the context of needle sharing. Some did not know if there was risk or gave a confused response, and one believed there was little or no risk in needle sharing.

When questioned about the risks of two HIV-positive people having unprotected sex, most participants expressed some awareness that this was not recommended. The specifics of superinfection were less well understood. There were references to different strands, viruses, stages, or stems; re-infection; mutant copies causing viral load to go down; “messing with your immune system”; viruses that counteract each other; two strains making a stronger one; etc. Only two respondents mentioned possible resistance to medications associated with this issue. Some did not know if seroconcordant unprotected sex carried risk, and some thought there was no risk involved. “... I guess if you guys’ levels are the same, then it's really not going to be a problem. In fact, I would prefer to be with somebody that had it...” Only a few mentioned the risk of contracting other infections, and these included colds and pneumonia. Questions about seroconcordant needle sharing elicited similar references to superinfection. However, the most common responses were “don't know” or “unsure”. Some of those mentioning superinfection also referred to the risk of “other infections,” such as Hepatitis and MRSA. Others thought there was risk, but could not specify what.

Risk Probability Knowledge

Undetectable Viral Load: When asked about the risk of transmitting HIV when viral load is undetectable, nearly half simply stated that there was still risk in this circumstance. Several either did not know or were unsure. Among these, one person did not know the term "undetectable" and another thought that transmission was still possible but a "weaker strain" would be transmitted. A few thought there was less risk of transmission.

Effect of Antiretroviral Treatment on Transmission: As with an undetectable viral load, most participants did not understand the potential decrease in transmission that accompanies effective antiretroviral treatment. Nearly half stated that HIV transmission was unaffected by ART treatment. "What I've heard is that medications protect me from the virus...Yeah, it does nothing as far as protecting you from passing it." Several either did not know or were unsure of the effect on transmission, while one person felt the risk would be increased, since effective ART makes having HIV seem less threatening. Some stated the transmission risk would be decreased; one person had heard this but did not believe it, because he felt that knowledge about HIV changes frequently.

Risk Assessment Heuristics—When asked how they decide whether someone else has HIV, most commented that although one cannot tell based on appearances, others make these types of judgments routinely (based on skin conditions, being thin, etc.). Several felt the only ways to know were to ask or for partners to disclose their status directly; a few believed testing was necessary. A few made comments about heuristics for deciding partner status, such as assuming that the other person is HIV-negative unless told otherwise and that attractive people are HIV-negative. Regarding heuristics used to determine HIV status of drug sharing partners, the most common statement was that one cannot tell without direct disclosure. One individual added that if someone is sharing needles, that person is assumed to be positive. Another commented that seeing a former needle sharer initiating safer behavior would lead to a belief that the person had become infected. A few stated that one could tell based on appearance.

Motivation

Respondents discussed their personal motivation and intentions to avoid spreading HIV through sexual and drug-use behaviors on release and their perceptions about social norms for risk behavior and social support for safer behavior.

Personal and Social Motivation for Safer Behavior

Personal Motivation: The most frequently-mentioned personal motivational barrier to engaging in safer sexual activities was a strong focus on and desire to have sex after release: "Yeah, they've been waiting, I mean, it's like a little bomb waiting to go off ..." Other prominent factors related to personal motivation for risk reduction included denial to oneself about having HIV, and alcohol or drug use affecting judgment about needle sharing or sexual activity: "...a lot of the women in here...they say, oh, you know, I can't wait to get out and go to the bar, and get drunk, and I can't wait to go ...to the hood and get my crack... Well... you're probably going to get really drunk, and the chances of you protecting yourself are probably slim to none." Avoiding alcohol and drug use was generally viewed as necessary both for taking care of oneself and for maintaining reduced risk behavior following community re-entry. A few participants commented that anticipation of a drug high can override intentions to reduce risk when a clean needle is not available.

A main personal motivational barrier described as related to both safer sexual and drug use practices was depression, a feeling that "I'm going to die anyway," or not caring about oneself or others. Negative emotional states (anger, hatred, hurt, depression) were the most

frequent reasons mentioned for not using condoms. Anger and depression were viewed as likely emotional responses to readjusting to the community or to HIV diagnosis that could reduce the perceived importance of using condoms either due to “not caring” or desires to “get even.”

Other personal motivational barriers specific to using condoms were dislike of how condoms feel or look, fear of erectile dysfunction with condom use, and disruptions to the “heat of the moment.” Conversely, personal legal consequences were described as a motivating factor for condom use. Wisconsin state's policy of prosecuting individuals for not disclosing status during consensual sex and imposing severe penalties appeared well known by those with HIV in the correctional system. Other personal motivators for condom use included “wanting to do the right thing” and protecting oneself.

Social Motivation: Beliefs regarding more social aspects of risk and safer behaviors also emerged as important influencers of motivation. Some potential sexual partners were expected to demonstrate a welcoming attitude toward newly released individuals because those leaving prison are perceived as free of STDs and have not had sex for a long time, which contributes to their attractiveness: “I guess you glow when you get out of prison, or something like that, that you have kind of a glow to you, and women pick up on that. And then, especially when you tell them, well, I haven't had sex in 10 years...” Other social motivational barriers included people's fear of disclosing their status to partners; partners’ lack of honesty about HIV status or whether they had had other partners during the incarceration; lack of attention to HIV status on the part of parole officers, social workers, and others; availability of people who offer money and/or alcohol or drugs for sex; frustration caused by restrictions on the activities of sex offenders; and friends planning to celebrate their release with high risk activities.

Social factors specifically mentioned as influencing condom non-use included having an HIV-positive partner, manipulation or coercion by a partner reluctant to use a condom, and the concern that using a condom would make their partner suspicious, especially if HIV status had not yet been disclosed. Some participants talked about the potential effects of being in love—an uninfected partner might be motivated to become infected to show a strong bond with the infected partner: “... if the other person was like, I don't care, I love you. I'll, let's be infected together, which is idiotic, but, you know, I can see that happening.” Reports of negative reactions to condom use occurred for casual partners and steady partners. Most respondents said that if a casual partner refused to use a condom, they would not have sex with them.

Stopping the spread of HIV was the foremost reason for condom use, framed as a moral decision or a result of empathy or caring for others. Several also mentioned preventing transmission of other infections. Having a steady partner supportive of condom use was also viewed as an important social motivator. The largest number said their steady partner “didn't mind,” with a few indicating their steady partner did not like using condoms, but would go along with it. A few reported strong partner commitment to safer sex. Other social factors viewed as increasing the likelihood of safer sexual behaviors included support groups and probation restrictions on activities such as associating with other felons or using the internet.

Community Social Norms for Condom Use: When asked what important others think about condom use, a majority reported positive attitudes among family members: “My grandmother, she thinks I need to just, you know, stay with the person I'm with, and that we need to be safe, secure and do what's best for me and my health and that person's health.” Some participants reported encouraging or pushing others to use condoms, including their children, and a few said that family members had become more motivated to use condoms

after their diagnosis. Others mentioned the fact that condom use is expected, especially among women.

Many also described community attitudes or behaviors that discouraged condom use, the most frequently mentioned one being that friends and family members simply did not talk about sex or condom use. A smaller number described friends and family who were perceived as leading high-risk lives and not caring about condoms. Some stated that other people do not really care about spreading HIV or feel that HIV is not an issue. Others described some HIV-positive individuals as angry and hurt, not caring to whom they spread it.

Behavioral Intentions and Partner Status—When asked about intentions to have sexual relationships with partners who are HIV negative or whose status is unknown, participants' responses were mixed; some said they would, others would not, and some planned to have sex only with their current partner. A few were unsure or not ready to deal with sexual relationships: "...I think I'm going to be a little bit nervous when I get out... I'm kind of dreading the dating game, so to speak, when I get out. It's kind of like, well, hi, I'm HIV positive, I'm a three-time felon, would you like to get to know me? That's, you know, what do you really say?"

When asked whether partner HIV status would affect condom use some responded that it would, noting that if one partner were known to be positive and one negative, the couple would be more likely to use condoms: "Because it takes the guesswork out of it ... You wouldn't pick up a gun if you knew it had a hair trigger on it...If somebody knew that they were positive, they would demand the condom use and demand, you know, they would be more safe with the other person...."

Post-Release Behavioral Intentions—Many participants reported intentions to protect others from transmission of HIV. Spontaneous mentions of safer drug use intent were less frequent than expressions of sexual risk reduction intent, even by former drug users. Some who had injected drugs in the past said they planned not to return to injecting drugs or using other substances. None of the participants stated that they personally intended to use needle exchange programs when they returned to community, either because they expected not to resume injection drug use or due to perceived access barriers. Regarding safer sexual practices not specific to condoms, a few participants mentioned intentions to develop a long-term relationship or to avoid sex. Others expressed their resolve to disclose HIV status to sexual partners. A wide variety of intentions for condom use or non-use are described below.

Condom Use Intentions: Most participants expressed intentions upon release to use condoms "always," or "in every situation." When asked about specific sexual acts, several said they would use condoms during oral sex or intercourse. A few said they would use condoms despite a partner's objection, regardless of their partner's HIV status, during mutual masturbation, if they had sex outside their main relationship, or "even when drinking." One man said he began to use condoms in a moment of spiritual insight in which he decided it was wrong not to care if he infected others: "I really had this mindset of I don't really care, and fuck it, let me get however many how I got it, and you know, and I just said, no, I can't think like that... because I'm a, I'm a very church-going person...."

Non-Condom Use Intentions: Asked about situations in which they would not use condoms, some said they would not use them for "non-intercourse sex," when they were performing oral sex on a woman, or if the relationship was committed or serious. A few said they would not use them if their partner was also HIV-positive, specifying that in this case

they would both need to be tested for STDs and “our levels have to be the same.” A few said they would not wear condoms if using drugs or alcohol, with their main partner, or if they and their partner decided not to.

Sexual Abstinence Intentions: A minority of participants stated a desire or intention to abstain from sex with others for at least a period of time after release. Some believed they would remain abstinent for the rest of their lives. Others thought they would wait to have a sexual relationship. A few seemed ambivalent; one stated a desire to be abstinent and almost immediately contradicted himself. The most frequently-mentioned reasons to remain abstinent were a desire to prevent the spread of HIV to others and a feeling that sex was not as important as it was previously: “...after awhile, or if we was getting really, really close, and I had broke it off, I didn't even want to get into it...I don't trust condoms, you know, so I really, I um, I would rather just not do it, period. Because I would hate to pass this on to somebody, like somebody passed it onto me... And to me, I might as well be locked up if I do something like that, because I'm giving somebody a death notice. And that's just as bad as murder to me.”

Motivation Towards Disclosure—Many participants offered reasons both for and against disclosing their HIV status, indicating ambivalence. The strongest facilitator of disclosing HIV status to others was timing, particularly telling partners before sexual involvement started. Self-acceptance and feeling accepted by others were also important: “Yeah, once you accept it for yourself, then it's easier to tell other people and either, I mean, accept how they're going to react, good or bad... Because if you're not at peace with it, then you've just increased the likelihood that they're not going to be.” Some referred to incarcerated persons having “papers” or documents with their STD test reports on them when released, which a few noted could be shown to potential partners (to aid HIV disclosure) or possibly altered (to avoid HIV disclosure). Several talked about trust in and support from others, some brought up legal penalties for not disclosing, and some were motivated by a desire to help and protect others. Most perceived fear of rejection as the biggest deterrent to disclosing HIV status. Several lacked trust that their confidentiality would be respected. Some expected that their sexual partner would respond with fear–either of becoming infected or of what would happen to the HIV-positive person in the future. Some feared or had experienced prior HIV-related stigma or rejection after disclosure. Others feared a violent reaction by a partner or by fellow inmates if their status became known in prison. Some anticipated feeling shame. Despite these fears, most thought that disclosure was important in at least one of a variety of situations, including sexual encounters, interactions with close family members, and any situation in which someone might be accidentally exposed. A few thought that people should always reveal their status to sexual partners.

Behavioral Skills

Participants discussed their perspectives on what would help or hinder HIV risk reduction behaviors upon release from prison. Because of IRB restrictions on asking incarcerated people specific questions about their current high-risk behaviors in prison, behavioral skills questions had to be worded indirectly and oriented towards future behaviors in the community. Thus, responses often expressed motivation, intent, or opinions about others’ behaviors.

Behavioral Skills Impacting Condom Use on Release—Access, or having condoms on hand, was considered important immediately upon release from prison. Structural suggestions for ensuring access after release included handing them to people as they walk out the prison gate; having them available at needle exchanges, Planned Parenthood, local

AIDS service organizations, or medical clinics; or having people hand them out on the street. Other respondents felt it was up to the individual: "... my first stop is going to be the clinic, so I can get me a bag of them rubbers." A few people did not think any assistance was necessary because condoms are already so accessible. Participants mentioned that condom use might be improved by attending group meetings focused on skills building before leaving prison (where condom use would be discussed); use of ultra sensitive condoms to surmount objections to how they feel; having the right size condom; and avoidance of alcohol and drugs. Conversely, participants considered lack of skills and resources for accessing condoms to be a barrier to use when transitioning back to the community. Like many other aspects of this transition, access to condoms was hindered by lack of money: "In here, if you come in with nothing, you stay here with nothing, you leave with nothing, what are you going to do, hit the [drug store] when you get out of here with nothing?"

Discussing Condom Use with a Partner—Many respondents said that it would be quite difficult to initiate condom use with a regular partner with whom condoms had not been used in the past. This issue was especially significant for individuals who had been diagnosed with HIV in prison and were subsequently returning to the community. Nearly half thought a partner would be fearful or suspicious if condom use was suggested because of concerns over infidelity or "having something": "There might be a question why, you know, why do we got to wear a condom now? After, you know, you might have had sex... multiple times... That would be like really bad." Other participants felt their partners would object to condom use because of loss of sensation or closeness.

Several participants stated that it would not be difficult to tell a partner they wanted to use a condom. Perceived community awareness of HIV/STD issues was believed by some to aid discussion or use of condoms. Others felt that it would be easy to give reasons other than their HIV status for condom use, such as pregnancy prevention, non-specific concerns about safety or protection, or the recently released person's suspicions about his/her partner's sexual activities in the community while the partner was incarcerated. Skills thought to be important for introducing condom use into relationships included educating partners about HIV transmission, disclosing one's HIV status, making condom use fun and discussing how to enhance pleasure despite their use, or talking about condoms before touching begins. Some respondents did not feel condom use was subject to discussion. They felt that presenting one or putting one on spoke for itself.

Needle Sharing—Use of needle exchange programs was the most frequently mentioned skill for injection risk reduction, particularly in reference to one's own past behavior or others future behavior. One person added that syringes with retractable needles should be provided, while another suggested that HIV clinics should incorporate needle exchange into their services. Other skills noted included always having one's own needle on one's person, avoiding needle re-use, and avoiding sharing one's needles with others: "I never used the same water or the same syringe as somebody else, you know. I used my own cotton and my own everything... And I wouldn't let anybody share with me." While some participants considered needle exchange programs helpful, a few mentioned them as presently insufficient, either because they do not supply adequate information or because there are not enough programs. One person commented that clean needles are not affordable or legal. Another stated that cleaning needles with bleach was ineffective and that a belief in the effectiveness of this technique hindered safer behavior.

Other Behavioral Strategies—HIV education was the most frequently mentioned way to encourage individuals leaving prison to reduce risk behaviors. Risk reduction strategies that were viewed as effective included "having a plan," "being ready to repel advances," limiting the number of sexual partners, and "avoiding hustling." A few individuals endorsed

lowering sexual risk and taking responsibility for one's own protection by not believing what others say about their STD status. One person mentioned the importance of seeking support to avoid feeling lonely or isolated, which could trigger risky behavior. A few cited abstinence as a prevention strategy and encouraged masturbation and the use of sex toys and pornography to maintain it. Finally, using “other protection” such as foam was mentioned as a strategy to reduce transmission. Strategies outside of sex and drug use behaviors included hand-washing and exercising care with injuries or exposure to bodily fluids.

A few participants mentioned non-disclosure of HIV status to a sexual partner as an ineffective behavioral strategy. In addition, disclosure could be ineffective if the partner did not believe it or did not care. Some criticized not ejaculating (withdrawal) as ineffective prevention, along with paying for sex, having sex in prison, and having multiple partners. One felt that abstinence would not work because it was too hard to maintain.

Privacy and Safety Issues

The prison context, in which safety through concealment of HIV status was often mentioned as critical, flavored the discussions about core IMB constructs and affected the interrelationships between information, motivation and behavioral skills. Of particular importance, participants consistently made reference to the interaction between their attempts to implement basic information seeking skills and their beliefs about the very high costs of doing so—potential HIV status disclosure. Some participants noted the difficulty of discerning whom to trust about HIV health issues while incarcerated; this exacerbates social isolation and may be a barrier to information seeking. Even when participants in prison reported suspecting that another person was HIV-positive, or having experiences that only another person with HIV would have (e.g., riding in the van to the university HIV clinic), they said they were reluctant to disclose their own status because of fear that the information would be shared with others. Several participants also indicated difficulty finding a private time and place in the prison setting to read sensitive materials related to HIV. This was viewed by participants as an important environmental issue because of stigma and safety concerns.

The lack of privacy while incarcerated was seen as increasing the risk that other people in prison might learn and disclose one's HIV status to others, potentially leading to social ostracism or physical harm. Some participants specifically noted they do not feel it is safe to have written information about HIV or medical papers in their possession: “... giving them reading material and stuff, because of the privacy issue, is not, I mean, I hate to say it, but then you start putting them in danger for just having the material.”

Discussion

Information, motivation and behavioral skills domains provide an appropriate framework for many of the HIV prevention barriers that are experienced by incarcerated HIV-positive persons. Consistent with prior prevention research conducted with HIV-positive persons in the community [26, 30, 38], interviews with this incarcerated sample suggest that interventions directed at HIV-positive persons should have certain characteristics to be most effective. They should provide information about how viral load impacts transmission risk in addition to general information about transmission routes, should focus efforts to increase motivation on protection of others as well as on self-protection, and should attempt to enhance behavioral skills specific to HIV-positive persons (i.e., serostatus disclosure, reducing needle sharing after the HIV-positive person has used) in addition to general prevention skills (i.e., condom negotiation, needle exchange program use). Research in community and primary care samples [26, 31] indicates that population targeted and prevention focused interventions may be better able to address the specific transmission

prevention deficits of HIV-positive persons. These recommendations for designing effective prevention interventions are in direct contrast to the non-targeted, non HIV-specific educational programs available to HIV-positive persons incarcerated in the Wisconsin state correctional system. Our findings point to missed opportunities for education and counseling during incarceration and indicate that resources should be allocated to the program development and evaluation of prison-based interventions that are tailored to HIV-positives.

Structural barriers to HIV education in prison were not as explicitly captured by the IMB model as were social barriers. A number of incarcerated HIV-positive people expressed confidentiality and safety concerns that could interfere with delivering HIV prevention-related information in a prison setting. Interview questions aimed at eliciting knowledge about transmission risk among HIV-positive persons awaiting release from prison revealed a lack of understanding about specific transmission information that appeared partially due to barriers in accessing HIV information while in prison. The incarcerated individuals we interviewed perceived that they were cut off from private, immediate, and updated HIV prevention information resources like the internet, street campaigns, and various forms of public media. Therefore, it may be helpful for prison-based interventions to provide updated information through alternative means that are sensitive to their concerns about HIV status being discovered by correctional officers or other incarcerated persons. Such means include providing information to all inmates regardless of status, and proactively including HIV prevention services as an integrated part of routine HIV medical care services provided to prisoners.

One study conducted with incarcerated men (HIV serostatus unknown) found that HIV knowledge was comparable to that reported in a large health survey in the community [39]. One would hope that HIV-positive inmates might have fewer information deficits regarding HIV transmission than prison populations in general. However, despite the generally good basic transmission knowledge we observed, 40% of our sample had questions or concerns about transmission risk through casual contact. This finding was quite consistent with prior studies conducted with general prison populations that described moderate to high levels of HIV knowledge among prisoners, with the most notable deficits involving knowledge about casual contact [40, 41].

Given the heightened degree of stigma among both incarcerated individuals and prison staff that has been shown to permeate correctional settings [42] and the secrecy that results from fear of persecution for being discovered to be HIV-positive, emotional processing of the diagnosis may be more difficult for incarcerated people who learn about their diagnosis while in prison. Efforts to provide a safe way to discuss their illness beyond the post-test counseling that is traditionally provided in testing scenarios may be necessary. Providing proactive emotional support and opportunities to discuss reactions to diagnosis within a safe and confidential venue may help alleviate distress and allow for incarcerated individuals to more quickly ask questions and address concerns about their own infection. This could increase capacity and motivation to learn how to reduce transmission to others.

The process of community re-entry is challenging for all incarcerated people [43]. For those living with HIV, the challenges may impede engaging in secondary HIV prevention. Many HIV-positive participants stated that sexual contact and substance use were likely to occur at a more frequent rate and in a less cautious manner immediately following incarceration. Without pre-release intervention—particularly for those diagnosed in prison—many will likely return to their communities without ever having engaged in skillful discussions about condom negotiation or HIV disclosure. In addition to skills training to acquire free condoms in the community, one obvious structural intervention that seemed widely supported by participants was provision of condoms as people are released from prison. Another potential

way to reduce risk during reentry would be to support releasees in obtaining the skills necessary to disclose their disease status to family and friends who may otherwise encourage high-risk behavior.

Transmission risk during community re-entry can also be impacted by the psychological stress, frustration or hopelessness that many newly released individuals may experience when their initial optimism and excitement about regaining freedom fades in the face of common adjustment problems. These can include finding employment and housing, experiencing barriers to financial support as an ex-convict, fearing consequences for lack of compliance with parole officers, staying on life-saving antiretroviral medications without the health care provided through the prison system, and negotiating the dynamics of parenting and intimate relationships after the separation of prison time [43]. Psychological distress and psychiatric disorders are reported at alarmingly high rates among prison populations [44], and many do not receive treatment for their distress [45]. The negative affective states described by study participants, if left unaddressed at prison release, could result in high HIV risk related to substance use (e.g., sex with an IDU, unprotected sex while intoxicated [46, 47], lack of adherence to antiretrovirals that could lower transmission risk [48], and a lack of motivation to protect sexual partners or fellow injection drug users from acquiring HIV [49]). Consequently, prison to community transition interventions seeking to reduce sexual and drug-related risk behaviors should provide alternative stress coping strategies ahead of time and supportive case management and assessment of psychological distress following release.

While many incarcerated participants reported being highly motivated to reduce the risk of HIV transmission to others when they re-enter the community, a few were not as strongly motivated by a desire to protect others, and some voiced perceptions that other HIV-positive persons lack sufficient concern about risk to others. Attribution of responsibility or blame for one's HIV status to others has been shown to predict high risk sexual behavior, with those who believe someone intentionally infected them found most likely to engage in risky sex [50]. Given potential differences in empathy and personal responsibility among participants and others in their community, prevention interventions for incarcerated or formerly incarcerated HIV-positive people should tailor motivational messages based on these observed strengths and deficits in prevention-related social motivation. That is, it may be beneficial to tailor motivational messages to individuals' capacity for empathy, as well as to the presence or absence of perceived community norms supporting safer behavior.

Study findings should be viewed in the context of restrictions on the interview content that could be explored in interviews with currently incarcerated persons. Some participants may not have felt comfortable discussing attitudes or behavioral intentions they believed might be viewed as socially undesirable, immoral, or legally questionable. For example, such discomfort may have led to overstated sexual or substance use abstinence intentions. Because stated abstinence intentions appeared to be associated with resistance to planning for future risky situations, interventions that begin during incarceration will need to address this potential barrier to behavioral skills training. Likewise, due to concerns about self-presentation, some incarcerated participants appeared reluctant to admit any lack of prevention-related knowledge, despite observed information deficits. Thus, interventions with this population must be tailored to address not only a wide range of actual prevention-related knowledge [21], but also different levels of perceived or acknowledged knowledge deficits. Another potential limitation involved our assessment of community prevention-related behavioral skills while participants were still incarcerated. While this approach likely enabled us to include high risk persons in this elicitation research who might be difficult to reach after release, it also likely elicited descriptions of future intentions and past behavioral

skills more than current risk reduction skills. However, findings from this study appear consistent with past research that surveyed HIV-persons pre- and post-release [13].

Great variability in HIV prevention-related strengths and deficits was observed among incarcerated men and women in this study. A number of potential moderators of the relation between IMB constructs and safer behavior were also identified, including individual mental health and substance use characteristics as well as environmental barriers to prevention commonly encountered during and after incarceration. These formative research findings suggest that interventions for HIV-positive persons transitioning from prison to community settings should be designed to mitigate prison-related prevention barriers experienced by this population, as well to allow for individual level tailoring of information, motivation and behavioral skills intervention content.

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Table 1

Sample characteristics

Participant characteristics	Mean (range)	*N* (%) (*n* = 30)
Age (years)	39.0 (20–58)	
Years of education	12.8 (9–18)	
Years of prison sentence	6.3 (0.75–22)	
Years since HIV diagnosis	10.3 (<1–24)	
Race/ethnicity		
African-American		14 (47%)
Mixed African-American/White		2 (7%)
White		11 (37%)
Hispanic/Latino		2 (7%)
Native American		1 (3%)
Gender		
Male		20 (67%)
Female		9 (30%)
Transgender		1 (3%)
Preferred gender of partners		
Men		
MSM		7 (23%)
MSW		9 (30%)
MSM/W		4 (13%)
Women		
WSM		7 (23%)
WSM/W		2 (7%)
Transgender		
Men		1 (3%)
Previously incarcerated		17 (57%)
Ever prescribed antiretrovirals		21 (70%)
Currently prescribed antiretrovirals		13 (43%)
Ever injection drug user		11 (37%)
Ever undetectable viral load		19 (63%)

Table 2

Main themes by prevention-related IMB domains

Prevention-related IMB domains	Main themes
Sources of information and information seeking	• Confidentiality concerns sharply limited information seeking and access during incarceration
	• At initial HIV diagnosis, information needs focused on emotional coping, transmission risk of casual contact; and how or from whom they contracted it. Specific questions about transmission tended to arise later
	• Information was mainly accessed through written media; no prison groups or programs existed specifically for those with HIV and computer access was very restricted
Transmission risk knowledge	• When asked, most people denied having transmission related questions; however, such questions tended to arise spontaneously during interviews
	• There were far more questions related to sexual transmission than to injection drug use, despite the fact that one-third of participants had used injection drugs
	• Most situations identified by participants as risky involved sexual and casual contact scenarios
	• Common questions concerned barrier use in certain situations; risk of casual contact; and legal implications of sex when one has HIV
Risk probability knowledge	• Participants were aware that unprotected sex when both partners are HIV+ had risks, but showed little understanding of the nature of the risks
	• Risk probability related to the effects of antiretroviral treatment or having an undetectable HIV viral load was not widely understood
	• Participants overestimated transmission risk from casual contact or kissing
Risk assessment heuristics	• Participants stated one cannot tell if someone has HIV based on appearance, but believed others routinely make such judgments
	• Changes in needle sharing were sometimes viewed as an indicator of HIV status
Personal motivation	• Motivators for risk behaviors included release from prison following a long period of sexual abstinence, depression or stress from release, and return or anticipation of a return to substance use
	• Motivators for risk reduction included abstinence from alcohol and drugs, altruism, and self protection
Social motivation	• Motivators for risk behaviors included fear of status disclosure, “being in love,” and “partying” with friends or family to celebrate release. Some potential sex partners considered those recently released to be “clean” & desirable partners. Initiating condom use when not previously used was considered difficult
	• Motivators for risk reduction included altruism, supportive partners, and changing norms endorsing condom use in the community. Restrictions on activities during probation decreased opportunities for risk behavior
Risk reduction strategies	• Access to condoms was critical but problematic for financial and logistics reasons immediately upon release from prison
	• External supports and environmental factors were considered important in avoiding substance use or in using drugs more safely. Needle exchange programs were viewed as the strongest facilitator for injection drug risk reduction
	• Opinions about the effectiveness of educational programs and materials in reducing HIV transmission risk were mixed
	• Effective ways to communicate to a partner about condom use included simply presenting one; discussing it before touching; disclosing status; and giving reasons other than HIV status for their use
Self-efficacy	• Participants felt it would be particularly difficult to initiate condom use on release with a partner with whom condoms had not been used in the past
	• A high level of abstinence self-efficacy for sex or substance use was a potential barrier to contingency planning
	• Another barrier to risk reduction behavior on release was a fear that others would regard these behaviors with suspicion
Other (prison context)	• Lack of privacy and not knowing whom to trust in prison were barriers to seeking HIV-related information and social support

Prevention-related IMB domains	Main themes
	• HIV disclosure concerns included fears about social stigma, ostracism, and threats to personal safety