



Self-Justifications for Unsafe Sex Among Incarcerated Young Men Who Have Sex with Men and Are Living with HIV: Results from a New York City Jail-Based Pilot Intervention

Janet J. Wiersema¹ · Anthony J. Santella² · Press Canady³ · Alison O. Jordan³

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Abstract

Young men who have sex with men (YMSM), especially African American and Latinx YMSM, accounted for the highest proportion of new HIV diagnoses in 2016. Minorities and persons living with HIV are over-represented in correctional settings. To influence risk behaviors of incarcerated YMSM who are living with HIV, New York City Health + Hospitals adapted, implemented, and evaluated an evidence-based intervention (EBI)—Personalized Cognitive Counseling—as a pilot program for YMSM, aged 20–29 in New York City jails from May 2015 to July 2016. Thirty-four participants recalled a memorable episode of unprotected anal intercourse (UAI), discussed the episode and resulting thoughts and feelings, identified the self-justifications that facilitated the episode, and discussed possible behavior modifications when presented with similar situations in the future. The top endorsed self-justifications for UAI included that they already had UAI with this person, condomless sex feels more natural, not wanting to lose the opportunity for sex, that substance use influenced their thinking, and not wanting to think about HIV transmission. HIV knowledge improved slightly, as measured by the 18 item HIV-KQ-18 HIV Knowledge Questionnaire, from a pre-intervention average of 15.17 (SD = 3.05) to post-intervention average of 16.48 (SD = 1.64) ($p < 0.05$). Learning the self-justifications that justice-involved MSM have for having UAI is beneficial for targeting future health promotion interventions. Despite challenges inherent in the jail setting, HIV behavioral EBIs are feasible and they can improve HIV knowledge and encourage exploration of self-justifications for risky behavior.

Keywords Health education and risk reduction · Incarcerated persons · Young minority men who have sex with men · Adapted evidence-based intervention · Correctional health

Introduction

HIV/AIDS continues to disproportionately impact men who have sex with men (MSM) in the United States (US), especially those who are young and racial/ethnic minorities. From 2008 to 2011, there was a 26% increase in diagnosed HIV infections among young (aged 13–24) men who have

sex with men (YMSM), the largest increase among all age groups. An estimated 58% and 20% of all new infections were among non-Hispanic Black and Latinx YMSM, respectively [1]. The Centers for Disease Control and Prevention (CDC) estimates that if incident HIV diagnoses continue at the current rate, one in six MSM overall, one in two non-Hispanic Black MSM, and one in four Latinx MSM will be diagnosed during their lifetime [2].

Almost one in seven people living with HIV spend time in U.S. correctional facilities [3]. The rate of HIV among people in state and federal prisons is more than five times that among people who are not incarcerated and it is highest among racial/ethnic minorities [4]. In jails, non-Hispanic Black men are five times as likely as non-Hispanic White men, and twice as likely as Latinx men, to have HIV [4]. Individuals involved in the justice system are often young minority men [5, 6] who lack access to health services in the community due to being uninsured or underinsured and/or

✉ Janet J. Wiersema
jwiersema1@nychhc.org

¹ NYC Health + Hospitals Correctional Health Services, 55 Water Street, 18th Floor, New York, NY 10041, USA

² Department of Health Professions, Hofstra University, 126 Hofstra Dome, Hempstead, NY 11549, USA

³ NYC Health + Hospitals Correctional Health Services, 200 Construction Way, Rikers Island, East Elmhurst, NY 11370, USA

having distrust of medical establishment, competing priorities, environmental stress, or stoic attitudes [7, 8].

Delivering health education and risk reduction interventions during incarceration provides a significant public health opportunity to connect with young minority men, including MSM and YMSM, who are living with or at risk for HIV and who may not otherwise be accessible [7]. While there are many behavioral focused evidence-based interventions (EBI) for MSM at risk for HIV [9], behavioral EBIs for MSM living with HIV in the correctional setting—particularly in jails which are associated with short stays—are scarce.

New York City Health + Hospitals Correctional Health Services (NYC CHS) oversees the provision of medical, mental health, dental and discharge planning services for people in the NYC jail system [10]. In 2016, NYC CHS served around 60,000 patients [11] of whom more than 1400 were living with HIV [12]. Patients living with HIV were mostly male (83.0%), Black or African American (69.7%), receiving public health insurance such as Medicaid (85.6%), and unstably or temporarily housed (58.7%), and contracted HIV through heterosexual contact (66%) [12]. A unit of NYC CHS, Reentry and Continuity Services (RCS), provides transitional care coordination services to people living with HIV. These services incorporate education around medication adherence and stress the importance of being linked and staying connected to HIV care. To supplement their services, RCS received a service grant to adapt an EBI, Personalized Cognitive Counseling (PCC), for the jail setting to target YMSM living with HIV to (1) understand self-justifications for unprotected anal intercourse (UAI) and (2) explore its utility as a secondary HIV prevention intervention. RCS conducted the adapted PCC intervention as a pilot program to determine the feasibility of implementing PCC with YMSM living with HIV in the jail setting and to learn more about their self-justifications for risky sexual behaviors. This paper describes the 2015–2016 implementation and results of the NYC jail-based pilot intervention.

Methods

PCC Overview

The PCC intervention is a standard EBI endorsed by the CDC as proven effective for eliciting positive behavioral (e.g., use of condoms, reduced number of sexual partners) and/or health outcomes (e.g., reduced number of new sexually transmitted infections) among HIV-negative MSM [13]. PCC was designed as an individual-level, single session counseling intervention to reduce UAI among MSM who are HIV-negative and repeat testers for HIV utilizing the person's self-justifications, including thoughts, attitudes, and

beliefs, for engaging in risky behavior [13, 14]. Main components include (1) recalling a memorable episode of UAI, (2) completing the PCC questionnaire which includes a list of self-justifications to rationalize risky behavior, (3) discussing the UAI episode and any resulting thoughts or feelings, (4) identifying the self-justifications that facilitated the episode, and (5) discussing what they will do in the future when in a similar situation [15, 16]. RCS's decision to adapt PCC to target MSM living with HIV, rather than HIV-negative MSM was based largely on the unavailability of similar behavioral-focused EBIs designed for this population. The authors recognize that administering an EBI to a population other than the population for which it was intended may alter the fidelity and effectiveness of the intervention.

Eligibility Criteria and Recruitment

Initial participant eligibility criteria included (1) being incarcerated, (2) age 20–29 years, (3) a minority Non-Hispanic Black or Latinx MSM, and (4) living with HIV. These criteria were later expanded to include men of other races/ethnicities in order to evaluate the intervention as a potential standard of care component and secondary prevention measure for all YMSM with HIV, regardless of race/ethnicity. Those who met eligibility criteria and were interested in participation were asked to complete an informed consent and HIPAA release form so health information could be shared with a community partner. Informed consent was obtained from all participants included in the study.

Participants were recruited and enrolled from May 2015 to July 2016. Potential participants were systematically identified from an electronic health record (EHR) report containing eligibility indicators from the jail-based medical intake including age, race/ethnicity, HIV status, and whether a client reported having sex with other men. Individuals who did not report having sex with men at intake, but later disclosed this to their RCS transitional care coordinators were also invited to participate in the intervention.

Evaluation Instruments and Data Sources

RCS staff asked participants to take part in evaluation activities by completing: (1) a baseline survey that included the PCC questionnaire, (2) a post-intervention survey, and (3) a 90-day follow-up interview after returning to the community. The self-administered paper baseline survey contained questions on age, race, ethnicity, education, employment status, health insurance status, housing status, mental health diagnoses, sexual activity, and substance use history. The baseline survey also included an HIV knowledge questionnaire (HIV-KQ-18) containing 18 questions with response options of true, false, and I don't know [17]; the Short Form Health Survey

(SF-12v2) [18, 19] to gauge the general physical and emotional health of participants, and the PCC questionnaire. The original PCC questionnaire targets HIV-negative MSM who engage in UAI with non-primary partners. The questionnaire was subsequently adapted by developers to target HIV-negative substance-using MSM because episodic drug use and binge drinking are associated with HIV risk among this population [20]. RCS staff opted to use the latter instrument because there is a high prevalence of substance use among incarcerated populations, including in the NYC jail system [21–23]. While the questions on this instrument were intended for HIV-negative episodic substance using MSM, many of the questions also appeared applicable to substance-using MSM living with HIV and incarcerated in NYC jails.

The PCC questionnaire included 48 items to measure self-justifications for engaging in UAI. The first set of self-justification statements ($n = 7$ statements) queried how substance use played a role in the participant's decisions to have UAI. Participants were asked how "true" different statements were for them when they had UAI with a non-primary partner and were under the influence of drugs or alcohol with five Likert-scale options of *very true*, *moderately true*, *slightly true*, *not true*, and *I can't remember*. The second set of self-justification statements ($n = 41$) explored a variety of potential thoughts, feelings, and attitudes that may have contributed to the participant having UAI with a non-primary partner while also drinking or doing drugs, with the following response options: *I had this thought strongly (in the forefront of my mind)*, *I had this thought to a moderate degree*, *I had this thought slightly (in the back of my mind)*, *I didn't have this thought at all*, and *I can't remember at all whether I had this thought or not*. This series of questions was followed by an open-ended question asking participants to describe any additional reasons for having UAI that were not already covered.

After completion of the PCC intervention (described below) and before returning to the community from jail, participants completed a post-intervention survey that included both open- and closed-ended questions and repeated the HIV knowledge questionnaire (HIV-KQ-18). Participants who returned to the community after incarceration were also asked to complete an interview at 90 days post-release that included both structured and open-ended questions to ascertain their perception of the jail-based PCC intervention and how it may or may not have impacted their risk behaviors post-release.

An additional data source included CHS EHR, which included participant self-reported demographic and health information, lab results and other clinical information, and incarceration information.

Adapted PCC Pilot Intervention

In-jail participation usually involved two to four office visits for: (1) recruitment and consent, (2) having the participant complete the baseline survey that incorporated the PCC questionnaire, (3) conducting a brief one-on-one HIV education session, (4) conducting the individual PCC session, and (5) having the participant complete the post-intervention survey prior to release from jail. The brief HIV education session was an enhancement to RCS's standard provision of health education and risk reduction to patients living with HIV. All participants were also offered transitional care coordination services to facilitate linkages to health care and access to other benefits and services for after incarceration, as per routine RCS protocol and as needed [24].

The PCC session was conducted in English by existing RCS transitional care coordinators who are routinely tasked with conducting needs assessments for patients living with HIV and other chronic conditions, identifying appropriate community-based service providers for patient referrals, making appointments and/or providing referrals, following up with patients after release, and providing program staff with documentation of patient connection to care in the community after incarceration [24]. Some transitional care coordinators initially expressed discomfort discussing anal intercourse, same sex behavior risk, and MSM prevention care needs. Some staff were equally uncomfortable with the explicit language in the PCC questionnaire that asked participants about their feelings and attitudes related to UAI. To address this, RCS conducted a cultural competency training to encourage comfort and appropriate use of language related to lesbian, gay, bisexual, transgender, and queer (LGBTQ) individuals with a special focus on the incarcerated MSM population. The training included role plays so that transitional care coordinators could practice discussing UAI, condom use, and the PCC questionnaire. Refresher training sessions and responses to individual inquiries were provided on an as-needed basis.

For security reasons, many of the jail facilities offered only limited private office space to allow for sensitive discussions with participants. Staff identified additional office space for the interventions and arranged staff schedules to allow for office use when there were fewer staff and clients in the nearby areas such as during evenings and weekends. Participants received clothing and a \$25 commissary deposit while in jail. Those who completed the follow-up interview in the community received a \$20 gift card to a local pharmacy.

Analyses

We used descriptive statistics to examine sociodemographic variables, health characteristics, and self-justifications for

engaging in UAI on the baseline survey. Self-justification responses were analyzed in two ways: whether the participant endorsed the statement *at all* (e.g., strongly, moderately, or slightly) and whether they endorsed it *strongly*. The self-justifications were categorized into seven themes applicable to persons living with HIV and following the methods described in Knight et al. [25]: (1) substance use as facilitator of risk, (2) transmission risk calculus, (3) assumptions regarding partner's HIV status, (4) cognitive escape, (5) sensation seeking/spontaneity, (6) condom-related issues, (7) opportunities for sex, (8) expectation or obligation, and (9) invincibility. Two themes—condom-related issues and sensation seeking/spontaneity—were combined for analyses as they measured similar constructs. In addition to the baseline survey, information on incarceration history, HIV viral load, CD4 count, and self-reported antiretroviral therapy (ART) adherence from the jail EHR were used to further characterize participants at baseline. Eventual incarceration disposition (e.g., returned to community, sentenced to prison) was also summarized.

Responses to the HIV-KQ-18 HIV knowledge questions on the baseline and post-intervention surveys were recoded to dichotomous variables of correct or not correct. McNemar's and paired t-tests were used to compare individual and average numbers of correct HIV knowledge question from pre- to post-intervention. For those participants who completed the interview after returning to the community, interview responses were summarized.

Data were prepared and analyzed in Microsoft Excel and SPSS version 24. Measurement of changes or differences was considered statistically significant at $p < 0.05$. This protocol was deemed a program evaluation and thus exempt from human subjects research review by the NYC Department of Health and Mental Hygiene Institutional Review Board.

Results

Demographic, Incarceration, and Health Characteristics

Fifty-seven individuals were identified as being eligible to participate in the intervention. Of these, 34 (59.6%) completed the baseline survey and PCC session and were considered participants, 23 (40.4%) YMSM did not participate as 20 were discharged from jail prior to being seen or to completing both the baseline and PCC session, two declined participation, and one was determined to have limited consent capacity to participate in the study. Of the 34 participants, 28 (82.4%) completed the post-intervention survey.

Twenty-five of the 34 (73.5%) men who completed the PCC intervention were non-Hispanic Black and six (17.6%)

were Latinx (Table 1). The average age was 25.9 years ($SD = 2.18$) and most (61.8%, $n = 21$) had finished high school or a GED or had some schooling beyond high school. Forty-four percent of participants ($n = 15$) reported housing instability and nearly three-quarters of participants had been incarcerated previously in NYC jails ($n = 25$, 73.5%). Over a quarter of participants (26.5%, $n = 9$) indicated not having a healthcare provider in the community, although most (85.3%, $n = 29$) reported having health insurance. Over half reported having a prior mental health diagnosis (58.6%, $n = 20$). Seventy percent ($n = 21$) reported taking ART prior to incarceration, and for most of these individuals (71.4%, $n = 15$) their last dose of ART was within the prior week. Seven individuals (21.2%) had an undetectable viral load (< 20 copies/mL) at jail medical intake and 11 (33.3%) were virally suppressed (< 200 copies/mL). Over three quarters (78.8%, $n = 26$) had a CD4 count ≥ 200 cells/mm.

Most participants reported being sexually active in the prior year ($n = 29$, 85.3%) with an average of 3.8 partners ($SD = 3.03$) (Table 2). Most also indicated having ever used drugs including marijuana ($n = 30$, 88.2%), with 27 (79.4%) reporting use in the prior three months. Over half also reported ever trying to control the use of any drug ($n = 20$, 58.8%). With regard to their general health, 13 participants (39.4%) reported that their health was "excellent" or "very good," seven reported that it was "good" (21.2%), and 13 (39.4%) indicated that it was "fair." Over a third ($n = 13$, 38.2%) responded that their physical health or emotional problems interfered with social activities at least "a little of the time." Similarly, 11 participants (27.5%) indicated having accomplished less than they would have liked as a result of emotional problems such as feeling depressed or anxious. Finally, seven participants (20.6%) reported that their health limits them "a little" in moderate activities, such as moving a table, pushing a vacuum cleaner, sweeping a floor, or walking.

Reasons and Self-Justifications for Engaging in Unprotected Anal Intercourse

The 34 participants endorsed a variety of self-justifications for having UAI (Fig. 1). The most-endorsed self-justifications (and corresponding themes) were "We've already fucked without a condom, so there's no point in using one now" (74%, $n = 25$, expectation or obligation) and "This feels more natural, sex is just better without condoms" (71%, $n = 24$, condom-related issue, sensation seeking/spontaneity). The next most endorsed self-justifications, endorsed by nearly two-thirds of participants, were "This guy's really hot and doesn't want to use a condom, I don't want to lose this opportunity" (65%, $n = 22$, opportunities for sex), "Alcohol/drugs let me forget about HIV risk, sometimes I want to stop thinking about that" (65%, $n = 22$, cognitive escape), "This

Table 1 Participant demographic, socioeconomic, health, and other characteristics (n = 34)

	Number	Percent
<i>Demographic and other characteristics</i>		
<i>Race/ethnicity</i>		
Non-Hispanic Black	25	73.5
Hispanic/Latinx	6	17.6
Non-Hispanic White or other	3	8.8
<i>Education</i>		
Less than high school	13	38.2
High school diploma/GED	7	20.6
More than high school	14	41.2
Average age at admission (SD)	25.9 (2.18)	
<i>Employment status (n = 33)</i>		
Employed (full, part, or self-employed)	10	30.2
Unemployed/not in workforce	23	69.7
Ever homeless or anticipates homelessness at release ^a	15	44.1
Prior incarceration	25	73.5
Born in USA (including territories)	31	91.2
<i>Health characteristics</i>		
<i>Health insurance status^b</i>		
Public (i.e., Medicaid, Medicare)	27	79.4
Private	3	8.8
No insurance	5	14.7
Has community health care provider	25	73.5
Has had a mental health diagnosis	20	58.8
Year of HIV diagnosis mean (SD)	2010 (5.5)	
Viral load mean (SD)(n = 33)	59,787 (125,614)	
Undetectable viral load (< 20 copies/mL)	7	21.2
Viral suppression (\leq 200 copies/mL)	11	33.3
CD4 count mean (SD)(n = 33)	554 (366.5)	
CD4 count \geq 200 cells/mm	26	78.8
Taking antiretroviral therapy (ART) at jail intake (n = 30)	21	70.0
<i>Date of last ART dose (n = 21)</i>		
< 7 days ago	15	71.4
7–30 days ago	1	4.8
> 30 days ago	5	23.8

Information taken from electronic health records

^aFourteen participants (41.2%) indicated never being homeless in the past or anticipating being homeless on release. Responses were missing for five individuals (14.7%)

^bOne person indicated having both public and private insurance

guy is really into me, it feels good to be wanted so much” (62%, n = 21, opportunities for sex), and “Condoms take all the feeling away” (62%, n = 21, condom-related issue, sensation seeking/spontaneity).

The most *strongly* endorsed statements (and corresponding themes) were “Alcohol and/or drugs make it easier to have sex (or different kinds of sex),” (*strongly* endorsed by 41%, n = 14, substance use as facilitator of risk) “We’ve already fucked without a condom, so there’s no point in using one now” (38%, n = 13, expectation or obligation), “This guy is really into me, it feels good to

be wanted so much” (35%, n = 12, opportunities for sex), and “This guy’s really hot and doesn’t want to use a condom, I don’t want to lose this opportunity” (32%, n = 11, opportunities for sex). Nearly a third of participants (32%, n = 11) strongly endorsed five additional statements.

Additional themes for self-justified UAI emerged in the open-ended questions at the end of the survey. These themes included wanting an emotional connection with their partner, that a condom wasn’t available, and for a few participants, that their UAI with a non-primary partner was related to transactional sex as they were

Table 2 Participant behavioral and general health characteristics and post-intervention outcomes including HIV knowledge changes and connection to health care (n = 34)

	Number	Percent
<i>Sexual activity—past 12 months</i>		
Sex in past 12 months	29	85.3
Number of sexual partners (n = 27) (range 1 to 10) average (SD)	3.8 (3.03)	
Sexually active with:		
Men	21	61.8
Both men and women	9	26.5
Neither	4	11.8
<i>Substance use</i>		
Ever used		
Any drug (including marijuana)	30	88.2
Any drug (not including marijuana)	22	64.7
Used in past 3 months		
Any drug (including marijuana)	27	79.4
Any drug (not including marijuana)	18	52.9
Ever tried to control use of		
Any drug (including marijuana)	20	58.8
Any drug (not including marijuana)	13	38.2
<i>General health^a</i>		
In general, would you say your health is ^b :		
Excellent	8	24.2
Very good	5	15.2
Good	7	21.2
Fair	13	39.4
On a typical day, does your health now limit you in: moderate activities, such as moving a table, pushing a vacuum cleaner, sweeping a floor, or walking?		
No, not limited at all	27	79.4
Yes, limited a little	7	20.6
During the past 4 weeks, how often have you accomplished less than you would like with your work or other regular daily activities as a result of any emotional problems (such as feeling depressed or anxious)?		
Most of the time	3	6.9
Some or a little of the time	8	20.6
None of the time	23	72.4
During the past 4 weeks, how often has your physical health or emotional problems interfered with your social activities (like visiting friends, relatives, family, etc.)?		
All or most of the time	2	5.9
Some or a little of the time	11	32.4
None of the time	21	61.8
<i>Post-intervention outcomes</i>		
Pre-intervention HIV knowledge summary score (n = 28) average (SD) ^c	15.07 (3.05)	
Post-intervention HIV knowledge summary score (n = 28) average (SD) ^c	16.43 (1.64)	
Mean difference in HIV knowledge (n = 28), <i>p</i> -value ^c	1.36, <i>p</i> < 0.05	
Twenty participants returned to community; 3 were reincarcerated within one month. Of the remaining 17:		
Connected to healthcare	10	58.8
Not connected to healthcare	7	41.2

Information from analyses of PCC program evaluation instruments

^aFrom SF-12v2 Health Survey (Standard, US Version) © 1994, 2002 by QualityMetric Incorporated and Medical Outcomes Trust

^bNo participants indicated “poor” (n = 33)

^cFrom HIV-KQ-18: Carey and Schroder [17]

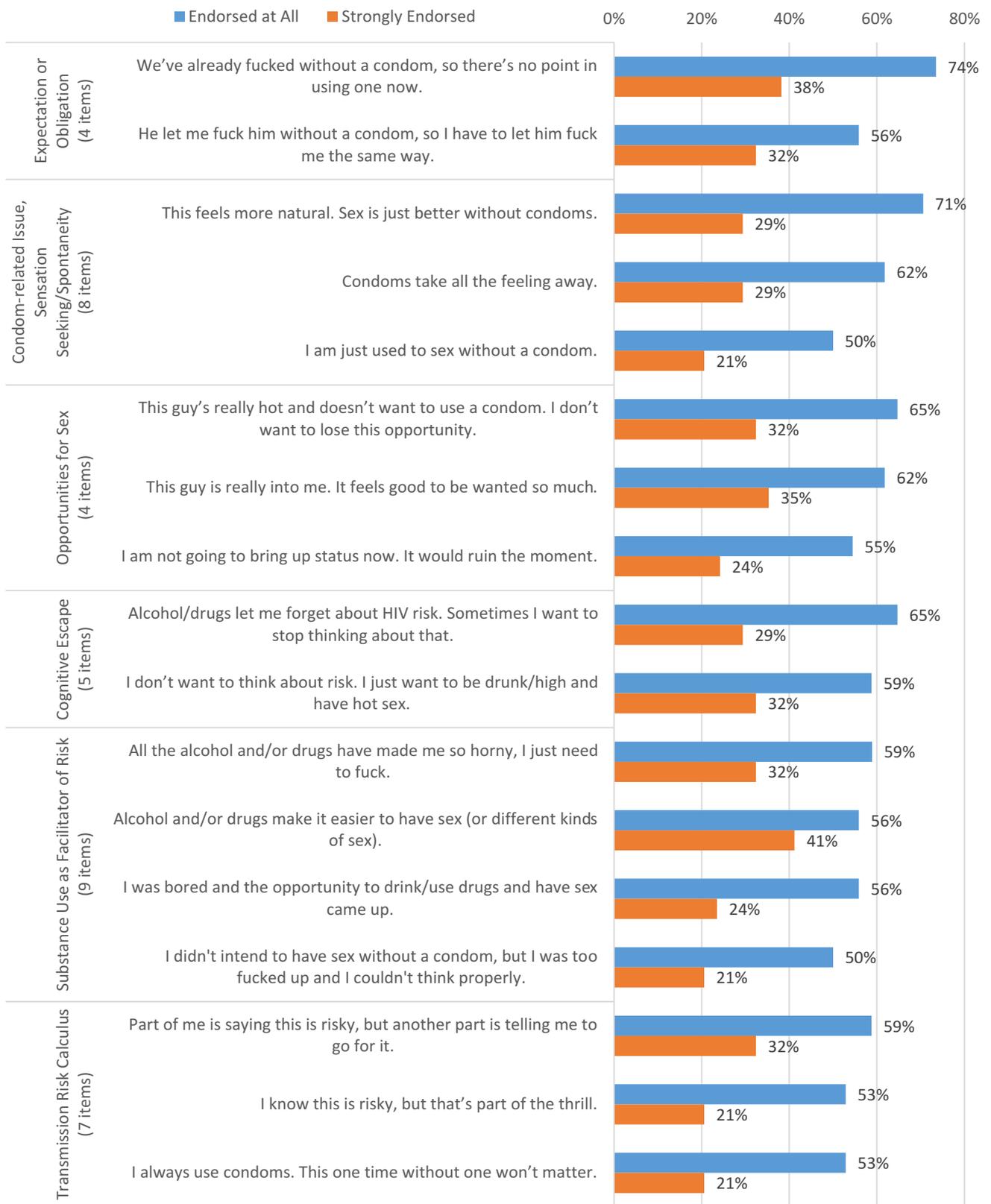


Fig. 1 Percent of most frequently endorsed self-justifications for having unprotected anal intercourse among men living with HIV who have sex with other men, ranked by the most-endorsed single item

within each theme (n=34). Only statements endorsed by 50% or more of participants are included

having condomless sex in exchange for housing, drugs, or money.

Other Findings

The 28 participants who completed both the baseline and post-intervention surveys (Table 2) had high baseline levels of HIV knowledge, that is, 71% ($n=20$) answered 15 or more of the 18 questions correctly. While there were no significant changes in knowledge per individual questions, an increase in the average number of questions answered correctly after participation in the intervention was observed (pre: 15.2, $SD=3.05$ to post: 16.5, $SD=1.64$; $p<0.05$).

Of the total 34 participants, 20 (58.8%) returned to the community after incarceration and 14 (41.2%) were sentenced to a state prison or transferred to a different jurisdiction. Three of the individuals who returned to the community were re-incarcerated within one month, and of the remaining 17, 10 (58.8%) were successfully connected to primary care in the community after incarceration (Table 2). Eight of the 20 participants (40%) returning to the community completed the 90-day follow-up interview. Six of the participants said the counseling session was “very useful,” and five said they “always” apply the information they learned from the session. Six participants said they used condoms during sex after incarceration with two saying they used condoms 100% of the time and the other four reported using condoms 50, 80, 90, and 99% of the time, respectively.

Discussion

The self-justifications for having UAI (and corresponding theme) that were most endorsed by YMSM living with HIV in this pilot study—from most- to least-endorsed—were: (1) “We’ve already fucked without a condom, so there’s no point in using one now” (expectation or obligation), (2) “This feels more natural, sex is just better without condoms” (condom-related issue/sensation seeking/spontaneity), (3) “This guy’s really hot and doesn’t want to use a condom, I don’t want to lose this opportunity” (opportunities for sex), and (4) “Alcohol/drugs let me forget about HIV risk, sometimes I want to stop thinking about that” (cognitive escape). These endorsements and corresponding themes are somewhat different than those of HIV-negative MSM in a 2014 study by Knight et al. that used the same interview guides and themes [25]. In that study, the most endorsed self-justifications corresponded to the following themes: (1) substance use as facilitator of risk, (2) transmission risk calculus, (3) assumptions regarding partner’s HIV status, and (4) cognitive escape. These differences are not surprising given the likely varying concerns, attitudes, and priorities of MSM living with HIV compared to MSM at risk for HIV. In their

study of both HIV-positive and negative MSM, Gold et al. found the most common reported self-justification for UAI among MSM living with HIV was a feeling that participants “had nothing to lose” because these men were already living with HIV and they felt they did not need to worry about using protection [26]. Gold et al. also found that MSM living with HIV reported having UAI in an effort to seek adventure and excitement through sex, which is similar to findings from this study that MSM living with HIV valued sensation seeking, spontaneity and having opportunities for sex.

At least one prior study adapted the PCC intervention for use with MSM living with HIV, which was unknown to the current study team prior to the implementation of this intervention. Skinta et al. modified the PCC questionnaire to include 14 themes of self-justifications appropriate for MSM living with HIV [27]. The authors found that MSM living with HIV endorsed self-justification statements within the following themes from most to least: (1) assumption that partner is already living with HIV, (2) fulfilling intimacy and emotional needs, (3) deferring responsibility to partner and (4) willingness to take the risk [15, 16, 27]. While the thematic adaptation of their study questionnaire differed from ours, some similarities in results were noted. For example, a large proportion of participants in both studies endorsed statements related to fulfilling intimacy and emotional needs, such as “This guy is really into me, it feels good to be wanted so much,” and “This guy is really hot and he doesn’t want to use a condom, I don’t want to lose this opportunity.”

Some participants in our sample reported having UAI for transactional sex to obtain drugs, housing, or money, and it is likely that the needs and self-justifications of these MSM are different from those of MSM who do not exchange sex for such things. In a study of MSM who engage in transactional sex—specifically street sex workers and internet escorts—Mimiaga et al. found high rates of unprotected sex, inconsistent condom use, and low rates of HIV status disclosure with their sex partners [28]. The MSM in the Mimiaga study also reported being offered more money to have unprotected sex and the MSM street sex workers reported agreeing to UAI more out of desperation and a need for money and other resources. Drugs and alcohol were found to be prominent in the lives of street sex workers, who acknowledged that their drug habit was a main motivation and reason for doing sex work [28], similar to those in this study. To better understand self-justifications of MSM who engage in transactional sex versus those who do not, it would have been helpful to add additional questions to the PCC questionnaire or have a longer baseline survey. We did not otherwise ascertain such information.

As expected, participants were quite knowledgeable about HIV at the start of the intervention (average of 15.2 HIV-KQ-18 questions answered correctly [$SD=3.05$]). Despite already high baseline HIV knowledge, knowledge increased

significantly, albeit slightly, after the intervention which included the brief one-on-one HIV information session. While this demonstrates potential for improved knowledge even among people living with HIV who may already have high levels of knowledge, it should be noted that its practical significance remains unknown. For example, improved knowledge may not lead to actual behavior change such as increased condom use. Earlier studies have found that both HIV-negative MSM and those living with HIV who engaged in UAI did so even though virtually all of them knew about the potential risk of contracting or transmitting HIV [26, 29].

Participants completing the 90-day post-incarceration interview indicated that the intervention was thought provoking and most reported that it contributed to increased condom use with non-primary sexual partners within that 90-day period after incarceration. However, our analysis is limited by the small sample, common to many correctional health studies requiring community follow-up. Additionally, while prior studies have shown that PCC is effective for promoting greater condom use among HIV-negative MSM [13, 14], a recent study showed that it may not be as effective for MSM living with HIV [30]. Schwarcz et al. randomized MSM living with HIV to either receipt of PCC or standard counseling and found that the mean number of UAI episodes decreased without significance among both groups from baseline to six months and baseline to 12 months.

Implementation challenges encountered by RCS in the current study are inherent in jail settings. For example, many MSM do not disclose having sex with other men due to pervasive stigma in jails [31]. This made recruitment a challenge since most participants were invited to participate based on self-report of having sex with other men at medical intake. Further, participation of eligible MSM was affected by their unavailability due to jail transfers, “alarms” which restrict movement because of jail violence or emergencies, court appearances, being discharged to the community from court, and other priorities such as work duty, common in the jail setting. These factors, in addition to offering the intervention only to MSM in their twenties, contributed to having a small participant sample, which could have otherwise been larger.

The adaptation of PCC to target MSM living with HIV is a limitation of this study. PCC is an EBI designed for HIV-negative MSM, and it is not yet proven effective for use with MSM living with HIV. Another limitation of the study is that RCS used the PCC questionnaire designed for episodic substance users. While most participants were in fact episodic substance users, a minority indicated not using substances and it is possible that some participants were dependent on substances. This is an important consideration because research by Coffin et al. showed that although PCC is efficacious in reducing sexual risk among

HIV-negative episodic substance users, it had no effect for those who were substance-dependent [20]. We do not know if the choice of PCC questionnaire for adaptation was appropriate for use among MSM living with HIV or among non-episodic substance users, or how the intervention itself may have been impacted by its use.

Nevertheless, the modified PCC intervention shows potential as a routine intervention for incarcerated MSM living with HIV and learning the self-justifications that YMSM have for engaging in UAI may be beneficial for targeting future interventions. A future investigation into PCC’s usefulness with this population would benefit from a larger sample size, using a validated questionnaire designed for MSM living with HIV who are justice-involved, and more extensive community follow-up to better gauge the effects of the intervention made available via a different study design and additional resources. In addition, the PCC questionnaire could be better matched to the individual participant, since there are currently PCC questionnaires for HIV-negative MSM, for HIV-negative MSM who are episodic substance users [13], for transgender women [32], and for MSM living with HIV [27], although it is unclear whether the questionnaires developed for the latter two populations are endorsed by the U.S. CDC as EBI programs.

Given the high prevalence of HIV among MSM, EBIs that help curb the transmission of HIV continue to be needed, including the subpopulation of MSM with criminal justice-involvement who are often young and of color. The RCS-adapted PCC intervention in the NYC jail system illustrates that such interventions are feasible among YMSM with the potential for scale-up, and that they may foster improvements in HIV knowledge and encourage self-reflection on risky behaviors. Behavioral interventions, including PCC, that encourage condom use and risk-reduction behaviors in HIV-positive MSM, remain a valuable tool to address key risk factors among this population. Despite challenges in implementation and need for refinement in methodology and outcomes-based evidence, EBIs, including PCC, remains a prime opportunity to reach an otherwise, hard-to-reach population.

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Compliance with Ethical Standards

Conflict of interest The authors declare that they have no conflict of interest.

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