Male heterosexual crack smokers with multiple sex partners: between- and within-person predictors of condom use intention

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Abstract

Little research has examined predictors of condom intention within concurrent partnerships. This study examined predictors of intention among 259 male African–American crack smokers with multiple partners. Each participant reported personal condom intention at next sex, condom use self-efficacy, responsibility and outcome expectancies for himself and his perceptions for his last two sex partners. Stepwise logistic regressions showed that for both partners one and two, condom use at last sex and personal responsibility for condom use were predictors of intention to use condoms at next sex. Perceived partner responsibility was an additional positive predictor with Partner 2. Hierarchical generalized linear model analyses showed that positive intention was associated negatively with perceived partner responsibility and intimacy, while positively related to situational self-efficacy. Personal responsibility interacted with intimacy such that only men who indicated the highest levels of intimacy were more likely to intend to use condoms. Overall, the findings in this study support the need for examining additional social cognitive constructs that capture the interpersonal aspects of sexual relationships such as personal and perceived responsibility, intimacy and how beliefs may change between multiple partners and across time. Finally, the differences in the valence of perceived partner responsibility across analyses and the interaction of personal responsibility with intimacy suggest the need for studies that include measure of power within the relationship.

Introduction

The incidence of human immunodeficiency virus (HIV) infection is disproportionately high among African Americans, accounting for more than half of the new infections in the United States [1]. Two factors contributing to higher rates of HIV infection among African Americans are drug use [1] and having sex with multiple partners [2], especially multiple concurrent partners [3]. Drug use, most importantly smoking crack cocaine, is one of the most important factors contributing to a disproportionately high rates of HIV infection among heterosexual African Americans [4]. Unlike the use of injection drugs, crack smoking is indirectly related to HIV infection through its relationship to the sexual behaviors of crack smokers [5]. Smoking crack produces a sense of euphoria and reduces sexual inhibitions. For many long-time users, deprivation of the drug results in depression and feelings of extreme craving. These smokers are often compulsively motivated to obtain the drug. Studies that have examined the sexual behaviors of crack smokers have found that they have high numbers of sexual partners [6–8], have sex with casual partners [6–8], trade sex for crack or [9–11], and inconsistently use condoms with all sexual partners [8, 12–14].
Having multiple sexual partners [15] may promote rapid transmission of HIV within and across sexual networks. Multiple overlapping, concurrent partners are of special concern. Within a set of serial relationships, transmission is linear, so early partners are protected. In the case of concurrent partners, earlier partners continue to be at risk if the subject is infected by a later partner because the partners overlap in time. The long-term effect of concurrency on the HIV epidemic has been modeled by Morris and Kretzschmar [16]. The model showed that high levels of concurrent partnering in a population could increase the size of sexually transmitted disease epidemic by 10 times over 5 years. Research on the transmission dynamics of chlamydia [17] and HIV [16] support the model. The existence of concurrent partners may also be indicative of more risky sexual behaviors in a network. Ford et al. [15] found that adolescents with concurrent partners were less likely to use condoms with their partners than were adolescents without concurrent partners.

Consistent condom use is an effective method for reducing HIV transmission, yet consistent condom use among heterosexuals with multiple partners is low [18] and non-use of condoms by drug users is the norm [19, 20]. A number of studies have examined differences in cognitions related to condom use by heterosexuals and drug users across partner types. In an early study, Baker [21] examined the sufficiency and usefulness of variables included in the theory of reasoned action [22] for predicting condom use intention with casual and steady partners. Attitudes and norms were found to strongly predict condom use intention with steady partners, but only weakly predict condom use intention with casual partners.

Differences in antecedent thoughts and beliefs about condom use across partner type have been replicated in several between-subject studies. Corby et al. [23] found that perceived changes in intimacy as a result of condom use affected men’s intention to use condoms with main partners, but had no effect on condom use with non-main partners. Using a sample of adult heterosexuals who were attending a clinic for sexually transmitted disease, Morrison et al. [24] found that intention to use condoms with steady partners was more strongly influenced by attitudes about condoms than by normative or self-efficacy beliefs. On the other hand, normative beliefs were found to strongly influence condom use intentions with casual partners, while attitudes and self-efficacy were unrelated.

Studies of condom use by heterosexual drug users have found similar differences in predictors of condom use across partner types. Corby et al. [23] found that attitudes toward condom use outcomes strongly predicted condom use intention regardless of partner type. Partner norms were found to be important predictors of condom use for men and women with main partners and for men with non-main partners, but not for women with non-main partners. Self-efficacy or perceived behavioral control was also important for men and women with main partners, but only for women with non-main partners. Bowen and Trotter [25] found similar patterns, but also found that assertiveness beliefs (or communication) predicted condom use with both main and casual partners. Assertiveness beliefs and age were the best predictors of condom use with casual partners, and the negative aspects of condom use were important for non-use of condoms with main partners. In a study involving heterosexual crack cocaine smokers, Bowen [26] again found that assertiveness was the best predictor of condom use intention, particularly for those who had multiple partners.

As the above review suggests, studies that have investigated condom use by drug users have tended to focus on individual-level psychosocial models of condom use [27], and it has been suggested that the models fail to explain condom use [28]. Studies investigating the effect of partnership dynamics on condom use have found that partnerships of longer duration [29], those involving strong feelings of attachment and higher levels of trust [30] and those that include drug or alcohol use before or after sex [31, 32] are less likely to include condom use. These studies suggest that cognitive predictors of condom use might be influenced by partner-level factors.

The purpose of this study was to examine social cognitive predictors of condom use intention.
using both individual- and partner-level factors. The research questions posed for the study were what are the significant predictors of intention to use condom, how do perceptions of the sexual partners’ condom use attitudes and beliefs influence intention to use condoms and what is the mix of personal (individual level) and partner (partner level) predictors of intention to use condoms across two concurrent partners? These questions were investigated using a sample of young adult male African–American crack smokers having two concurrent female sexual partners. Regression analyses were conducted to examine between-subject predictors and within-subject changes in predictors across partners.

Methods

The data for this study were taken from the intake data of a larger study on the efficacy of a psychosocial intervention to increase condom use by heterosexual crack smokers. Participation criteria for the intervention study required that participants: be African–American, 18–40 years old; had smoked crack cocaine in the 48 hours before being screened; had had vaginal sex at least once in the 7 days before being screened; resided in one of the neighborhoods targeted for recruitment and could provide sufficient information that they could be relocated for follow-up interviews.

One thousand one hundred and ten individuals were screened and 514 (41%) met eligibility criteria for the intervention study. Reasons for being ruled ineligible were not having had sex in the 7 days before screening (38%), not having had vaginal sex (26%), having a negative urine screen for cocaine (12%) and other reasons (24%), such as failing to be within the specified age range, living outside the target neighborhoods or being too high or too incoherent to respond to screening questions. There were no significant differences in gender, age or reported frequency of drug use between those who were admitted to the study and those screened out.

For this study, the sample included 258 eligible males who had at least two sex partners in the 30 days prior to the interview, and planned to have sex with those partners again in the next 30 days. Participants who were not included in the analyses included 102 women and 99 men who denied planning to have sex with one or both partners and one no partner age. Data were collected between January 2002 and May 2003 in Houston, TX. All procedures and data collection forms for the study were reviewed and approved by university committees for the protection of human subjects.

Measures

The peer outreach questionnaire was based on instruments developed by the investigators and used in previous studies of drug using populations. Data included self-reported socio-demographic characteristics, drug use behaviors, sexual behaviors, condom use and attitudes toward condom use with specific sexual partners. Forty-eight-hour test–retest data generated by a sample of 50 individuals matching study criteria showed that the instrument produces reliable data (questionnaire and data available from the authors).

Demographics, drug and sex risks

The characteristics of respondents were measured by responses to questions about age, marital status and employment status. Drug use in the last 30 days was measured for crack cocaine, alcohol, marijuana, methamphetamines, fry (marijuana cigarettes dipped in formaldehyde) and heroin. HIV sexual risk behaviors included number of sex partners in the past 7 days, currently trading sex for money or drugs, use of drugs before last sex and condom use as last sex. Number of sex partners in the past 7 days was assessed by asking participants to answer ‘How many different people have you had sex within the past 7 days?’ Similarly, participants responded ‘yes’ or ‘no’ to two questions that were asked: ‘Are you currently trading sex for money (drugs)?’ Condom use at last sex was assessed for Partner 1 and Partner 2 separately by asking the participants to think about each partner by name and respond ‘yes’ or ‘no’ to the question ‘Did you use a condom the last time you had sex with name?’
Partner type and intimacy
Respondents’ label for each sexual partner was originally coded as one of seven categories and then recoded into three: like a spouse (spouse, like a spouse and lover), friend (friend and acquaintance) and customer (paying customer you like and paying customer). Feelings of intimacy toward each partner were assessed with questions about feelings of trust, concern about the partner’s activities, feelings of love and attraction. Principal components factor analysis (PCA) with Varimax rotation was conducted on the responses for Partner 1. This revealed one nine-item factor that accounted for 54.9% of the variance. The same questions were used to compute intimacy scores for Partner 2. Cronbach’s alpha scores were 0.88 for Partner 1 (P1) and 0.90 for Partner 2 (P2).

Partner specific sexual risks
HIV sexual risk behaviors were assessed for each respondent/partner pair. Past condom use with each partner was measured by asking how often the respondent or the partner used a male or a female condom. Responses were recorded using a five-point Likert type scale that ranged from ‘never’ to ‘always’. Intention to use condoms was measured by a single item asking the respondent if he intended to use a condom with the specified partner the next time they had sex. Responses were recorded using a binary yes/no response.

Social cognitive variables
Attitudes and thoughts about condom use were derived from several psychosocial models of behavior change [33–36] and from the authors’ experience with the population. Specifically, questions were developed to assess: personal outcome expectancies for condom use (POE) and perceptions of partner’s outcome expectancies for condom use (PPOE); personal and perceive partner condom use responsibility (PCUR and PPCUR, respectively), and personal self-efficacy beliefs for condom use with each partner (PSE). PCA with Varimax rotation was used to identify multiple constructs within a specific set of attitude questions. Nine personal outcome expectancy questions, such as ‘How important to you is it that condoms make sex less exciting’, were rated using a Likert scale ranging from 1 (not at all important) to 10 (very important). PCA resulted in one nine-item factor that accounted for 59% of the variance, with an alpha score of 0.91. The mean of the nine items was computed to form the POE scale. PPOEs were assessed by rewording items to include the following stem: ‘How strongly do you think (partner’s name) agrees or disagrees that condoms get in the way of romance?’ The PPOE scale was computed using the mean of the same nine items and the internal consistency was 0.96 for P1 and 0.97 for P2.

Six items were used to assess personal responsibility for condom use beliefs using the stem, ‘I think ...’ and perceptions of the partner’s responsibility beliefs used the stem, ‘(Partner’s name) thinks ....’ Items were rated using a Likert scale ranging from 1 (strongly disagree) to 10 (strongly agree). PCA with Varimax rotation of the participants’ personal responsibility beliefs in relation to Partner 1 revealed two subscales. ‘PCUR’ included four items (46.8% of variance), but one related to beliefs about the partner and deletion of this item increases the scale reliability so it was deleted. The three-item scale measured the belief that it is one’s responsibility to use a condom during vaginal sex (e.g. ‘I think it is my responsibility to be sure we use a condom.’) and the alpha reliabilities were 0.90 (P1) and 0.92 (P2). The second factor included two items (24% of the variance), one related to trust and the other related to beliefs about the necessity of using condoms during vaginal sex. The items did not make logical sense and alpha reliabilities were <0.50. Therefore, this factor was not used. Perceived Partner Condom use Responsibility (PPCUR) beliefs were computed using three questions and resulted in alpha scores of 0.92 for P1 and 0.91 for P2.

Twenty-three items were developed to examine condom use self-efficacy beliefs and items were rated on a 10-point scale, ranging from 1, not at all confident, to 10, very confident. PCA of the participant’s responses in relation to Partner 1 revealed three factors. Personal situational self-efficacy was
composed of 15 items measuring the belief that condoms can be used in a variety of situations, such as when drunk, high, sexually aroused, lonely, needy and accounted for 43.8% of the variance. The second four-item affective self-efficacy scale measured the belief that the respondent could make using condoms during vaginal sex exciting and emotionally satisfying accounted for 17.6% of the variance. The third factor included two items that measure self-efficacy for enjoying non-vaginal sex and was not used. Alpha reliabilities for situational self-efficacy were 0.97 for P1 and 0.92 for P2. Alpha reliabilities for affective self-efficacy were 0.92 for P1 and 0.95 for P2. Alpha reliabilities for the two-item non-vaginal intercourse self-efficacy scale were 0.68 for P1 and 0.82 for P2. Perceptions of the partners’ self-efficacy were not assessed.

Procedure

Individuals were recruited using a combination of targeted sampling and participant referral. A targeted sampling plan was developed to identify neighborhoods with high rates of drug use and confirmed through interviews with knowledgeable local key informants [37, 38]. Key informants were also asked to identify neighborhood places where crack smokers were likely to congregate and to provide introductions for the outreach workers. Outreach workers briefly described the research project to individuals who might qualify, provided them with a risk-reduction packet that included condoms and asked if they were interested in taking part in a health-related study. If persons were interested, the outreach worker gave them a business card and asked them to go to the nearby office for screening. Individuals presenting for screening were informed: of the intent of the study, that their participation was voluntary, that he/she could refuse to answer any question and asked for their consent to be screened. If an individual met screening criteria, he/she was asked to provide a urine sample. The sample was tested for cocaine using ONTRACK test kits. If the person met study criteria and had a positive urine screen for cocaine, he was asked to be in the study and to provide written informed consent. If a urine sample was negative, he/she was told that he/she was not eligible and all screening data were eliminated.

Once written informed consent was obtained, participants were interviewed in private by trained research assistants. Respondents were asked about their most recent sexual partner in the 30 days before the interview, P1, and about their next most recent partner in the 30 days before the interview, P2. To increase question specificity and respondent recall, respondents provided an identifier for each partner, such as a first name or initials. The questionnaire took ~1 hour to complete and participants were paid $25 for their time and travel expenses.

Analyses

Intimacy and partner type

One-way analysis of variance with partner type as the independent variable revealed significant differences in mean intimacy scores across partner types for P1 (F(2, 256) = 39.25, P < 0.000) and P2 (F(2, 256) = 27.14, P < 0.000). Mean intimacy if the partner was a ‘like a spouse’ was 8.56 (SD = 1.45) for P1 and 8.25 (SD = 2.06) for P2. Mean intimacy if the partner was a ‘friend’ was 6.60 (SD = 2.06) for P1 and 6.18 (SD = 2.06) for P2. Mean intimacy if the partner was a ‘customer’ was 5.43 (SD = 1.94) for P1 and 5.31 (SD = 2.31) for P2. Paired comparisons of mean scores using the Sheffe test were significantly different for ‘spouse–friend’, ‘spouse–customer’, but not for ‘friend–customer’ for both P1 and P2. Given the strong relationship between partner type and level of intimacy and the low numbers of partners labeled ‘customer’ (P1, n = 18, and P2, n = 20), we decided that intimacy should be used as a proxy for partner type, rather than running separate regressions for each partner type or using a categorical partner-type variable.

Between-person analyses

Two forward stepwise logistic regressions were used to determine predictors of the respondent’s intention to use condoms with P1 and P2 at next sex. Since condom use with the partner at last sex was moderately correlated with future intention
(P1, $r = 0.69; $P2, $r = 0.78$), it was controlled by entering it in Block 1. The age difference between partners was computed by subtracting the partner’s age from the participant’s age (range: -20 to 20) and was controlled by entering it in Block 1. Block 2 included the social cognitive variables (affective self-efficacy, situational self-efficacy, personal outcome expectancies, perceived partner outcome expectancy, personal responsibility and perceived partner responsibility), intimacy and intimacy as an interaction with each social cognitive variable.

Within-person analyses
Two-level hierarchical generalized linear models (HLMs) [39] with a Bernoulli sampling model and a logit link function were used to estimate within-person differences in expected condom use for P1 versus P2. Models for P1 and P2 were estimated separately. In the first level of these analyses, within-person variations in expected condom use were estimated. More specifically, two models were specified at Level 1: (i) a main effects model and (ii) an interactive model. In the first level of analysis for the main effects model, intimacy, partner outcome expectancies, affective self-efficacy, personal situational self-efficacy, personal responsibility and perceived partner responsibility were included as within-person predictors. In the first level of analysis for the interactive model, interactions between intimacy and the five psychosocial predictors were added to the main effects model. The interactive model was estimated to determine if the effects of outcome expectancies, self-efficacy, and responsibility varied by how intimate men were with their partners. In the second level of both models (main effects and interactive), between-person differences in past condom use, personal outcome expectancies and age differences between partners were controlled.

Results

Participant characteristics
The sample used for this study was composed of 258 young male heterosexual African–American crack users. The majority of the sample was between 31 and 40 years of age (74%) and single (74%). Fifteen percent were divorced or separated and 11% were married. The majority reported that they were employed full-time (10%), part-time (22%) or occasionally (28%) at some type of job. The remaining men were either unemployed (38%) or had ‘other’ (1%) employment.

The most recent sex partner (P1) was classified as a ‘friend’ by 59% of the men, a ‘like a spouse’ by 34% and a ‘customer’ by 7%. The second partner (P2) was also most frequently classified as a ‘friend’ (68%), followed by ‘like a spouse’ (24%) and ‘customer’ (8%). The overlap in type of partner reported for P1 and P2 was relatively low and significantly different ($\chi^2 = 38.35, P = 0.001$). The highest overlap in partner type was for the friend category, with 46% reporting that P1 and P2 were friends. There was only an 11% overlap for category of ‘like a spouse’ and 3% for ‘commercial partner’ between P1 and P2.

Drug and sex risks
Participants’ use of crack cocaine in the last 30 days ranged from 8% smoking 1–10 times to 34% reporting smoking >60 times. Other drugs used at least once in the last 30 days included marijuana (70%), amphetamines (90%) and ‘fry’ (62%). In the last 30 days, 27% reported having sex with two people, 30% with three to five and the remaining 43% reported six or more partners. Currently, trading sex for money was reported by 22% of the men and trading sex for drugs by 22%. Condom use by the men was relatively infrequent, with 68% reporting no condom use with the first named partner and 60% with second named partner.

Between-person predictors of condom use
The results of the between-person analyses are shown in Table I. Forward-conditional logistic regression was used to predict intention to use condoms at next intercourse with P1. The sample includes only participants who reported <100% past condom use with Partner 1 ($n = 196$). Condom use at last sex and age differences were entered in the first block. The second block included all social cognitive variables for P1, intimacy and interaction
terms for intimacy by the social cognitive variables. The overall fit of the model was good, with a significant model chi-square of 45.32 (P < 0.001), a non-significant Hosmer and Lemeshow chi-square (9.59, P = 0.14) and a Nagelkerke $R^2$ of 0.54. The percentage of participants correctly classified was 82.7. Neither age difference nor intimacy affected intention to use condom either directly or as an interactive factor for P1. Condom use at last sex was a significant predictor of intention (OR = 5.74; 95% CI = 1.95–16.88). One social cognitive variable entered the model, personal responsibility for condom use (OR = 1.60; 95% CI = 1.36–1.87).

The same approach was used to examine condom use intention at next intercourse with P2, after removing participants who reported 100% condom use with P2 (n = 177). The estimated P2 model had a good overall fit with a significant model chi-square of 36.18 (P < 0.001), a non-significant Hosmer and Lemeshow chi-square (7.86, P = 0.35) and a Nagelkerke $R^2$ of 0.58. The percentage of participants correctly classified was 87. Again, past condom use was the strongest predictor of intention (OR = 10.94; 95% CI = 3.18–37.55).

<table>
<thead>
<tr>
<th>Between-person predictors (stepwise logistic regression)</th>
<th>OR (95% CI)</th>
<th>P</th>
<th>Model $\chi^2$</th>
<th>Percent correctly classified</th>
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<tr>
<td>Relationship 1 (n = 196)</td>
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<td>Used condom last sex</td>
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<td>0.000</td>
<td>45.32***</td>
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<td>Personal responsibility</td>
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<tr>
<td>Relationship 2 (n = 177)</td>
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<tr>
<td>Used condom last sex</td>
<td>10.94 (3.18–37.55)</td>
<td>0.000</td>
<td>36.18***</td>
<td>87.0</td>
</tr>
<tr>
<td>Personal responsibility</td>
<td>1.48 (1.24–1.78)</td>
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<tr>
<td>Perceived partner responsibility</td>
<td>1.26 (1.05–1.50)</td>
<td>0.013</td>
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**Within-person predictors (HLMs)**

<table>
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<th>Main effects model</th>
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<th>392.16***</th>
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<td>Intimacy</td>
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<td>Self-efficacy, situational</td>
<td>1.54 (1.15–2.06)</td>
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<td>Perceived partner responsibility</td>
<td>0.72 (0.59–0.87)</td>
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<tr>
<td>Interactive model</td>
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<td></td>
<td>342.38***</td>
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<tr>
<td>Personal responsibility</td>
<td>1.12 (1.02–1.10)</td>
<td>0.04</td>
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<tr>
<td>Average intimacy</td>
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<tr>
<td>High intimacy</td>
<td>1.39</td>
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*P < 0.05, **P < 0.01, ***P < 0.001.

Personal responsibility for condom use (OR = 1.48; 95% CI = 1.24–1.78) and perceived partner responsibility (OR = 1.26; 95% CI = 1.05–1.50) were significantly related to intention.

**Within-person predictors of condom use**

The HLM results from the main effects and interaction models are summarized in Table I. Both models provided significantly better fit relative to an unconditional baseline model (i.e. for main effects, $\chi^2 = 392.16$, P < 0.001 and for interaction, $\chi^2 = 342.38$, P < 0.001). The main effects of intimacy, situational self-efficacy and perceived partner responsibility were associated with condom use intention. As men’s intimacy and perceived partner responsibility increased, their probability of intending to use a condom decreased (OR = 0.75; 95% CI = 0.58–0.97 and OR = 0.72; 95% CI = 0.59–0.87, respectively). On the other hand, as men’s situational self-efficacy increased, their probability of intending to use a condom increased (OR = 1.54; 95% CI = 1.15–2.06).

In the interactive model, intimacy significantly moderated the association between personal responsibility and expected condom use (OR = 1.12; 95%
CI = 1.02–1.10). The association between personal responsibility and expected condom use was largest and most positive for partners with whom men had higher levels of intimacy. For example, when the men reported an average level of intimacy, the relationship between intention and partner responsibility had an OR of only 1.09. On the other hand, when the men’s intimacy score was at least one standard deviation above the mean level of intimacy, the relationship between partner responsibility and intention had an OR of 1.39.

**Discussion**

Consistent and correct condom use has been shown to be an effective method for preventing the transmission of HIV [40, 41]. Individual level social cognitive theories were adapted, and examined for their utility in predicting both intention to use condoms and actual condom use. However, Ogden [28] argued that only a small percentage of the variance in individual condom use can be explained by the variables in any of the psychosocial models. An explanation for this finding is that condom use is not an individual behavior, but a combination of an individual’s personal attitudes, perceptions of the partner’s attitudes and the partner’s actual attitudes. We began to address some of these issues by adding questions about participants’ perceptions of their partners’ beliefs, measures of personal and perceived responsibility and intimacy.

For men, initiating condom use is a simple physical act such that increasing their personal responsibility should result in more condom use. In terms of intention to use condoms, this thesis was well supported in both the between- and within-subject analyses. Stronger beliefs that condom use is the male participant’s personal responsibility, after controlling for past condom use, was more strongly related to intention than the man’s feelings about condoms or the belief that he could make sex pleasurable while using condoms. In future, examining responsibility beliefs of both partners should provide additional information, especially in terms of communicating responsibility beliefs and the women’s perception of the partner’s responsibility. Intervention studies are also needed to examine whether targeting men’s personal responsibility beliefs results in increased condom use.

On the other side of the argument, the literature indicates that women are often held responsible for initiating condom use [42]. The effect of the men’s perception that their female partner believes that it is her responsibility to use condom changes depending upon the focus of the analysis. When comparing men’s beliefs to other men (i.e. between subjects), partner responsibility has no effect on intention for the first and more intimate partner. On the other hand, with their second and less intimate partner, stronger feelings that the partner thought it was her responsibility had a small positive effect on intention. Although intimacy did not contribute directly to intention to use a condom with the second less intimate partner, it might be hypothesized that the men have less emotional investment in the second partner, giving the partner more power in determining condom use. This may be supported by the finding that within an individual, when examining attitudes about concurrent partners, men’s intention to use condoms goes down as he places more emphasis on the partner’s responsibility to use condoms.

When attitudes about the concurrent partners were examined, increased intimacy reduced intention and personal responsibility had a positive effect only for the most intimate relationships. The men who take personal responsibility for condom use may do so because they want to control the situation. On the other hand, mentally giving that responsibility to the women may allow a man to avoid the issue if the woman does not bring it up, plus he can disclaim any negative outcomes of unprotected sex. Interventions that teach women to express a liking for condoms and to take responsibility for their use in relationships with men may have the effect of increasing men’s intentions to use condoms. Unfortunately, there may be difficulties implementing this type of intervention if there are power differentials within a partnership favoring the man. Of particular interest would be to examine the effect of power within dyads to determine how power might fluctuate as partnerships...
and intimacy change. Future work should continue to examine the issue of responsibility, first to examine whether findings obtained in this analysis generalize to other samples, to examine the female perspective and to examine the relationship between responsibility and power dynamics in dyads.

Previous research has shown that condom use intention is lower with more intimate partners [30]. Intimacy in this study reduced intention only when feelings about condom use between concurrent partners were examined. The lack of apparent effect between participants for either partner may be a result of the generally high-risk life of men in the sample and the fact that the majority of the sample had more than just two partners. The majority of partners was rated as friends or acquaintances and there was no significant difference in intimacy scores between friends and customers, suggesting that many of these relationships were about sex, not trust or love in such a way as to affect condom use. In contrast, intimacy does reduce condom use intention with the more intimate of the two partners. Two things might be concluded from these findings. First, the results strengthen the need to examine the contribution of attitudes of both members of a sexual dyadic on condom use. Second, results strongly suggest that the interaction between power and intimacy in the context of safer sex decisions deserves additional research.

There are a number of limitations in this study. First, the sample, all male, all African–American, and all crack smokers, limits the generalizability to a select group of high-risk men. Findings may not generalize to other groups of heterosexual men. Second, the assessment of only one partner in the dyad precluded examining the relationship between the participant’s perceptions and the partner’s true beliefs and the interaction between these beliefs. Third, intimacy was measured as feelings of trust and closeness between the partners. However, power dynamics within the partnership should be measured in future analyses. It will be important to identify whether power affects personal and perceived responsibility separately or in combination with intimacy. Finally, all measures were self-reported. While an effort was made to reduce the error associated with self-reported behavior, it is likely that some clustering of events and failure to recall events did occur. However, error did not appear to be systematic either across or within partners. Finally, and possibly most importantly, this was a cross-sectional study that examined only intention to use condoms. Longitudinal studies are needed to determine whether strong responsibility beliefs increase consistent condom use and to assess how changing feelings of intimacy for a partner across time interact with responsibility beliefs to affect consistent use of condoms.

It is interesting to note that the stronger the men’s beliefs that they could use condoms when high, drunk or lonely increased condom use intention only when comparing it across partners. Consistent with many cross-sectional studies [26, 43], the between-subject analyses did not find a significant effect for self-efficacy. As might be expected, participants’ intention to use condoms varied between partners as did self-efficacy, intimacy and responsibility beliefs. These findings suggest that continuing to examine the generic main or casual partner may not be sufficient, since risk-reduction beliefs and behaviors may vary in a more microscopic fashion. Additionally, one might expect these attitudes to vary across time with individual partners and in relation to longevity of the relationship [29] suggesting the need for more dynamic models.

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