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Abstract

Previous research indicates that young men may experience condom-associated erection loss and that these problems may lead to inconsistent or incomplete condom use. The primary aim of this study was to assess, using a retrospective recall period of 2 months, correlates of condom-associated erection problems among young Black men attending sexually transmitted infection (STI) clinics. Data were collected in clinics treating patients with STIs in three southern U.S. cities. Males 15 to 23 years of age who identified as Black/African American and reported recent (past 2 months) condom use were eligible. A total of 494 men participated. Nineteen percent reported that condom-associated erection problems during condom application occurred at least once, and 17.8% indicated erection difficulties occurred during sexual intercourse at least once in the past 2 months. Multivariate analyses identified that condom-associated erection problems were associated with reports of sex with more than one partner during the recall period, reported problems with condom fit and feel, lower motivation to use condoms, and attempts at condom application before having a full erection. Findings suggest that clinic interventions should address possible condom-associated erection problems among young Black men who are at risk of STIs. Encouraging men who may be vulnerable to erection loss when condoms are used to allow sufficient time for sexual arousal to build may be an effective strategy.

Keywords

male contraception, sexuality, men of color, special populations

Introduction

In the United States, young Black men (YBM) continue to be disproportionately likely to acquire sexually transmitted infections (STIs), including infection with human immunodeficiency virus (HIV; Centers for Disease Control and Prevention, 2005, 2006, 2007, 2011, 2013). The problem is most pronounced in the Southern United States (Southern States AIDS/STD Directors Work Group, 2003, 2008).

Condom use remains the primary public health strategy to prevent HIV and other STIs in YBM (Crosby, 2013; Crosby & Bounse, 2012; Crosby, Charnigo, Weathers, Caliendo, & Shrier, 2012; Holmes, Levine, & Weaver, 2004). Evidence strongly suggests that young men may experience issues with condoms that lead to erection loss, either during application or during actual use (Crosby et al., 2013; Crosby, Yarber, Graham, & Sanders, 2010; Crosby, Yarber, Sanders, & Graham, 2005; Graham et al., 2006; Graham, Crosby, Milhausen, Sanders, & Yarber, 2011; Reece et al., 2007; Reece, Briggs, Dodge, Herbenick, & Glover, 2010; Sanders,

Milhausen, Crosby, Graham, & Yarber, 2009). These condom-associated erection problems may be more common among men at risk for STIs and may lead to inconsistent or incomplete condom use (Bancroft et al., 2003; Graham et al., 2006; Richters, Hendry, & Kippax, 2003).

No previous studies have investigated the antecedents to condom-associated erection problems in clinical samples of YBM in the United States. Past studies have reported, however, that young males having multiple sex partners were more likely to also experience condom

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failures (Crosby, 2013; Crosby, DiClemente, Yarber, & Troutman, 2008), but whether Condom Use Errors/Problems Survey was a factor in the condom failure is not known. Factors such as drinking before sex and lack of motivation to use condoms may also be antecedents, as well as issues with condom fit and feel (Crosby et al., 2013; Sanders et al., 2012). Accordingly, the aim of this study was to first examine the prevalence of condom-associated erection problems and then determine the psychosocial and behavioral correlates of this occurrence in a sample of sexually active young Black male attendees of STI clinics located in three southern U.S. states.

Method

Study Sample

This sample was composed of participants from a larger National Institutes of Mental Health–funded randomized controlled trial of a safer sex intervention program designed for this population (Crosby et al., 2014). Only the baseline data from that trial were used for the current study. Recruitment occurred in clinics that diagnose and treat STIs. Inclusion criteria were (a) self-identification as Black/African American, (b) aged 15 to 23 years, (c) engaged in penile–vaginal sex at least once in the past 2 months, and (d) not knowingly HIV-positive. Recruitment occurred from approximately 2010 through 2012, in a primary site (New Orleans, LA) and two secondary sites (Baton Rouge, LA, and Charlotte, NC). The overall study participation rate was 60.4% ($N = 702$). For this secondary analysis, only YBM who reported recent (past 2 months) condom use were included ($N = 494$).

Study Procedures

After obtaining assent, research assistants asked young men less than 18 years of age for their permission to contact one parent or guardian to obtain consent for study participation. Young men aged at least 18 years old provided written informed consent. After enrollment, an audio-computer assisted self-interview (A-CASI) survey was administered. Participants were instructed in the use of a laptop computer to complete the A-CASI, lasting approximately 30 minutes. The A-CASI was completed in a private area with a research assistant being available to clarify wording if needed. Young men were provided with a \$50 gift card. The study protocol was approved by the institutional review boards at all participating sites.

Measures

Two items taken from the Condom Use Errors Survey (Crosby, Graham, Milhausen, Sanders, & Yarber, 2010)

assessed participants' recent experiences with condom-associated erection problems: (a) In the past 2 months, have you had any problems with losing your erection (staying hard) while putting on a condom? (b) In the past 2 months, did you have any problems with losing your erection (staying hard) once the condom was on and sex had started? Potential correlates of condom-associated erection problems were problems with fit and feel; discussing condoms before use; placing condom on wrong-side up; wanting lubricant but not having any; condom broke, leaked, or slipped off; needing a new condom; attempting application before full erection; using condoms with new partners; drinking alcohol before sex; being high during sex; having multiple sex partners; and really wanting to use a condom. Response alternatives were "no," "yes," or "refuse to answer"; for those participants who indicated "yes," we also asked, "How many times did this happen?"

Data Analysis

For analyses, the two items assessing recent experiences with condom-associated erection problems were added together to create a single variable. This variable, in turn, was divided by the number of times condoms had been used for penile–vaginal sex during the recall period. The resulting proportional variable served as the dependent variable for the analyses. Independent groups *t* tests were used to determine the bivariate significance of the 12 selected correlates with the dependent variable. Correlates testing significant at the bivariate level were then used to construct a hierarchical multiple linear regression model, with age being entered into the first block and with the correlates being entered into the second block using a forward stepwise procedure. Significance was defined by an alpha of .05. All analyses were conducted using SPSS (Version 20.0).

Results

Characteristics of the Sample

The mean age of the analytic subsample ($n = 494$) was 19.6 years ($SD = 1.9$). All the participants reported having used condoms at least once in the past 2 months. The majority reported finishing high school or earning a General Equivalency Diploma ($n = 318$, 64.4%). More than one-half ($n = 253$; 51.2%) reported current school enrollment (information on type of school attended was not collected). The mean age of sexual debut (first time they willingly had penetrative sex) was 13.8 years ($SD = 2.4$). The mean number of lifetime sex partners was 19.1 ($SD = 19.9$), and the mean number of sex partners in the past 2 months was 3.4 ($SD = 6.5$). The mean number of penile–vaginal sex acts reported for the 2-month recall period was 9.5 ($SD = 13.1$).

Nearly one-half ($n = 227$, 46.0%) reported having any unprotected vaginal sex in the past 2 months. Only a small percentage reported never having been diagnosed with an STI ($n = 24$, 4.8%), with 397 men (80.3%) reporting ever being diagnosed with one STI, 66 (13.4%) reporting two diagnoses, and 7 (1.5%) reporting three diagnoses. Regarding the results of our baseline assessments for Chlamydia/gonorrhea, 96 men (19.4%) tested positive for at least one of these infections.

Descriptive Findings

A total of 494 men reported recent (past 2 months) condom use during penile–vaginal sex and also provided valid responses to the two questions assessing condom-associated erection loss. The distribution included 365 indications (74.0%) of zero instances of condom-associated erection loss, 69 indications (14.0%) of problems occurring each time a condom was used, and 60 indications (12.0%) of problems occurring on some occasions.

For the item assessing erection loss during condom application, 94 men (19.0%) indicated this event occurring at least once. The mean was 0.72 times ($SD = 2.36$), with a range of 0 to 30 times. For the item assessing erection loss during sex, 88 (17.8%) indicated this event occurring at least once. The mean was 0.75 times ($SD = 3.81$), with a range of 0 to 56 times. For the combined variable (erection loss during application and during sex), 129 men (26.1%) indicated this event occurring at least once. The mean was 1.45 times ($SD = 4.93$), with a range of 0 to 60 times. In dividing the combined variable by the frequency of condom use for penile–vaginal sex during the same 2-month recall period, the mean was 19.0% ($SD = 35.9$).

Bivariate Findings

The observed bivariate associations are presented in Table 1. As reported, 10 of the 12 associations tested significant at the bivariate level. In each of these 10 associations, a greater mean percentage of condom-associated erection problems was observed for men indicating various occurrences of condom use errors/problems, multiple partners, drinking before sex, or not being highly motivated to use condoms. Also, using Pearson product–moment correlations, a small, but significant, positive association ($p = .001$) was observed between participants' age and the dependent variable ($r = .15$), with advancing age being predictive of a greater percentage of condom-associated erection problems.

Multivariate Findings

The results of the regression model are displayed in Table 2. The model was significant ($F = 15.88$ [5, 469], $p <$

Table 1. Bivariate Associations Between the Percentage of Times Condom-Associated Erection Loss Occurred and Selected Correlates Among 494 Young Black Males.

Correlate	Mean %	t Value	df	p
Problems with fit and feel				
No	14.0	4.39	211.8	<.001
Yes	31.0			
Discussed condom use before sex				
No	20.9	0.94	350.8	.35
Yes	17.7			
Placed condom on wrong side up				
No	17.0	2.07	168.5	.04
Yes	25.5			
Wanted lubricant, but had none				
No	16.1	2.91	182.7	.004
Yes	27.8			
Condom broke, leaked, or slipped off				
No	17.4	2.01	102.48	.047
Yes	27.3			
Needed a new condom				
No	16.2	3.06	122.3	.003
Yes	30.6			
Attempted application before full erection				
No	13.4	4.93	207.0	<.001
Yes	32.8			
Used condoms with new sex partners				
No	15.4	2.63	325.9	.009
Yes	24.7			
Drank alcohol before sex				
No	15.3	2.12	490.8	.035
Yes	22.1			
High during sex				
No	16.8	1.40	453.5	.16
Yes	21.4			
Had multiple sex partners				
No	11.4	4.69	456.2	<.001
Yes	26.3			
"I really want to use condoms"				
Strongly agree	15.3	2.84	319.5	.005
Do not strongly agree	25.2			

.001). As reported, 4 of the 10 correlates retained significance. Having issues with the way condoms fit or felt was independently predictive of an increasingly greater proportional rate of condom-associated erection problems, as was attempting condom application without a complete erection. Those reporting sex with more than one partner during the recall period also had a greater proportional rate of condom-associated erection problems, as did those disagreeing with the statement, "I really want to use condoms." The control variable (age) yielded a significant Beta value in this model (Beta = .12, $t = 2.82$, $p = .005$), indicating greater proportional condom-associated erection problems in YBM with each advancing year of age.

Table 2. Age-Adjusted Multivariate Associations Between the Percentage of Times Condom-Associated Erection Loss Occurred and Selected Correlates.

Correlate	Beta	t Value	p
Problems with fit and feel	.16	3.69	<.001
Attempted application before full erection	.20	4.56	<.001
Had multiple sex partners	.13	2.96	.003
Not agreeing with the statement: "I really want to use condoms"	.10	2.35	.019

Discussion

Overall, a substantial proportion of the young Black male participants in this sample reported losing their erection on at least one occasion in the previous two months, either during condom application (19.0%) or during sexual activity (17.8%).

Consistent with previous studies (Bancroft et al., 2003; Graham et al., 2006; Musacchio, Hartrich, & Garofalo, 2006), having had multiple partners during the 2-month recall period increased the likelihood of condom-associated erection problems occurring. It may be that men who are vulnerable to experiencing erection problems engage in more risky sexual behavior, and with more female partners, in an effort to heighten their sexual arousal. Another possibility is that sexual situations and negotiating condom use with an unfamiliar partner may be anxiety-provoking for some men, which increases the likelihood of erection loss.

Also consistent with prior research, problems with the fit and feel of condoms predicted the likelihood of erection loss during condom application and during sex (Crosby et al., 2013; Graham et al., 2006; Sanders et al., 2012). Men who were less motivated to use condoms were also more likely to report erection loss during condom application or during sex. Previous research has documented that low motivation to use condoms was associated with a greater likelihood of incomplete use (i.e., putting condoms on after starting sex or removing condoms before sex was over; Graham, Crosby, Sanders, & Yarber, 2003), which may be precipitated by erection difficulties. The lack of motivation to use condoms could also be an effect, rather than a cause, of condom-associated erection problems.

A novel finding was that men attempting condom application without a full erection was a significant predictor of reports of condom-associated erection problems. In a recent psychophysiological study of sexual arousal patterns among young heterosexual men, men with and without condom-associated erection problems differed in the ease with which they become sexually aroused (Janssen et al., 2014). Although the erectile responses of these two groups of men were indistinguishable after 3

minutes of exposure to an erotic film, men with a history of condom-associated erection problems needed more time and/or more intense stimulation to become fully aroused. There is also some preliminary evidence that men who report condom-associated erection problems are also more likely to experience erectile difficulties in sexual situations where condoms are not used, that is, they may be more vulnerable to erectile problems (Sanders et al., 2014).

The geographic diversity of the sample is limited to patients attending clinics in three U.S. cities; thus, generalizability of the findings to other populations of young males is problematic. The sample would also not have included men whose erection problems (condom-related or otherwise) led to them avoiding having sex altogether. The study findings are also limited by the validity of participants' self-reports of condom-associated erection problems. It is possible, for example, that men who have multiple sexual partners may report erectile problems with condom use as a way to justify not using condoms.

The findings have clear implications for clinic-based interventions that aim to promote the consistent and correct use of condoms among high-risk YBM. Addressing possible condom-associated erection problems experienced by young men should be included in any interventions, particularly among men who have a history of multiple partners and those who appear less motivated to use condoms. Interventions such as the newly developed Kinsey Institute Homework Intervention Strategy (Milhausen et al., 2011), which emphasizes practice applying, using, and removing condoms alone, in a "low pressure" situation, may be beneficial for this group of men. In addition, men who are vulnerable to experiencing condom-associated erection problems should be encouraged to allow sufficient time during a sexual encounter to become sexually aroused before applying condoms.

Declaration of Conflicting Interests

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