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Condom Use Errors and Problems: A Comparative Study of HIV-Positive Versus HIV-Negative Young Black MSM

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Abstract

Objective—To describe self-reported frequencies of selected condom use errors and problems among young (ages 15–29) Black MSM (YBMSM) and to compare the observed prevalence of these errors/problems by HIV serostatus.

Methods—Between September 2012 October 2014, electronic interview data were collected from 369 YBMSM attending a federally supported STI clinic located in the southern U.S. Seventeen condom use errors and problems were assessed. Chi-square tests were used to detect significant differences in the prevalence of these 17 errors and problems between HIV-negative and HIV-positive men.

Results—The recall period was the past 90 days. The overall mean number of errors/problems was 2.98 (sd=2.29). The mean for HIV-negative men was 2.91 (sd=2.15) and the mean for HIV-positive men was 3.18 (sd=2.57). These means were not significantly different (t=1.02, df=367, P=.31). Only two significant differences were observed between HIV-negative and HIV-positive men. Breakage (P = .002) and slippage (P = .005) were about twice as likely among HIV-positive men. Breakage occurred for nearly 30% of the HIV-positive men compared to about 15% among HIV-negative men. Slippage occurred for about 16% of the HIV-positive men compared to about 9% among HIV-negative men.

Conclusion—A need exists to help YBMSM acquire the skills needed to avert breakage and slippage issues that could lead to HIV transmission. Beyond these two exceptions, condom use errors and problems were ubiquitous in this population regardless of HIV serostatus. Clinic-based

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intervention is warranted for these young men, including education about correct condom use and provision of free condoms and long-lasting lubricants.

Keywords

Condoms; young men; sexually transmitted diseases; sexual behavior

Introduction

Despite accounting for an estimated 2% of the United States population, gay and bisexual males account for an estimated three-fourths of all new HIV infections.¹ Young, Black men who have sex with men (YBMSM) have experienced a far more rapid escalation of the HIV/AIDS epidemic than MSM who identify as White or Latino or any other sub-population in the U.S.^{1–6} YBMSM have a one-in-four chance of becoming infected with HIV by the time they reach 25 years of age.⁷

Although biomedical approaches to resolving the HIV epidemic among YBMSM are currently popular,⁸ condom use remains an optimal strategy to prevent HIV and other STIs.^{9–11} However, evidence strongly suggests that condoms are only efficacious when they are also used correctly.¹² Despite the urgency to prevent infections with HIV and other STIs among YBMSM, research on male condom errors and problems has neglected this population. For example, of more than 30 studies reviewed that reported original data on condom use errors and problems, only one included predominately young Black/African Americans¹³ and none specifically focused on YBMSM.

Studies have not comprehensively described the condom use errors and problems experienced by YBMSM. Because many YBMSM are living with HIV/AIDS, an investigation should be conducted that compares those who are HIV-positive to those who are HIV-negative. It may be that HIV-positive YBMSM have taken the time to learn and practice the skills required to avoid condom use errors and problems. Accordingly, the purpose of this study was to describe self-reported frequencies of selected condom use errors (mistakes or issues experienced by the user) and problems (events not necessarily directly caused by the user) among YBMSM and to compare the observed prevalence of these errors/problems by HIV serostatus.

Methods

Study Sample

A convenience sample of 398 YBMSM was recruited for participation from a larger NIHfunded randomized controlled trial of a safer sex intervention program. Only baseline data (collected before randomization and intervention) was used for the present study. Recruitment occurred in a federally supported clinic, located in Jackson, MS, designated specifically for the diagnosis and treatment of HIV and other sexually transmitted infections. The clinic was located in a mid-size southern city experiencing extremely high incidence rates of HIV. Inclusion criteria were: 1) self-identification as Black/African American; 2) aged 15 to 29 years; 3) attending the clinic to be tested for HIV or other STIs, 4) engaging in

Crosby et al.

penile-anal sex, as a TOP with a male partner, at least once in the past 6 months, and 5) the ability to speak and comprehend English.

Age-eligible Black males were approached in clinic waiting areas and asked about their interest in volunteering for an HIV prevention study. Those expressing interest were screened for eligibility. After being offered the opportunity to enroll, 85 YBMSM declined, yielding a participation rate of 82.5%.

Study Procedures

After providing written informed consent men completed an online questionnaire, using Qualtrics software, in a private office not physically connected to the clinic. All study procedures were approved by the Internal Review Board at the University of Mississippi Medical Center and the Office of Research Integrity at the University of Kentucky.

Measures

To minimize recall bias and improve validity of self-reported data, the recall period was limited to the last time men used a condom for anal sex and the questions were only posed to those acting as an insertive partner. An expanded version of the Condom Use Errors/ Problems Survey was employed.¹⁴ The published version of this survey instrument contains 13 items. Based on empirical findings, for this study we added items assessing whether the condom was new,¹² whether it distracted from sexual pleasure,^{15,16} and whether the width or length of the condom was not right.^{17,18} A few of the 17 items warrant note. For instance, the item pertaining to not allowing enough time for condom applications stems from evidence suggesting that men engaged in "rushed" application of condoms are more likely to experience breakage and/or slippage as a consequence.^{19,20} Also, the item assessing damage during sex pertains to any form of damage rather than just breakage (e.g., tearing, separation of the rim from the shaft). Also, one item used local language among YBMSM for the event of ejaculation – referred to in this community of YBMSM as "having your nut."

Items were prefaced with the following statement: "The next several questions are about the last time you used a condom as an insertive partner for anal sex with another male." Response options were simply, "No" versus "Yes." Of the men completing the baseline questionnaire 391 had been insertive partners (tops) in the past 90 days and thus provided answers to the questions assessing condom use errors and problems.

Data Analysis

The prevalence of errors/problems was compared between HIV-positive and HIV-negative men by using contingency table analyses. A summative score or errors/problems was also created and a t-test was used to compare means between the two groups of YBMSM, followed by a Mann-Whitney U-test to correct for lack of normality issues pertaining to the t-test. Significance was defined by an alpha of .05. All analyses were conducted using SPSS, version 20.0.

Results

Characteristics of the Sample

Average age was 22.58 (sd=3.13). Men's average monthly income ranged from less than \$500 per month (19.6%), to \$500–\$1,000 per month (28.0%), to \$1,001–\$1,500 (20.6%), to \$1,501–\$2,000 (15.0%), to greater than \$2,000 (16.8%). More than one-half (58.8%) reported having education beyond high school graduation and 47.0% reported currently enrollment in a school or college. The number of male sex partners (lifetime) reported ranged from 1–1000, with a median of 8. In the past 90 days, the mean number of sex partners when enrolled men were the top was 2.68 (sd = 7.1).

Descriptive and Comparative Findings

The overall mean number of errors/problems was 2.98 (sd = 2.29). The mean for HIVnegative men was 2.91 (sd = 2.15) and the mean for HIV-positive men was 3.18 (sd = 2.57). These means were not significantly different (t = 1.02, df = 367, P = .31) and this did not change when applying the Mann-Whitney U test (P = .68).

Table 1 displays the frequency of errors/problems experienced by 283 HIV-negative YBMSM, and 108 HIV-positive YBMSM, who were insertive partners the last time they used a condom. Condom errors/problems were common, especially four that greatly diminish the protective value of condoms against STI/HIV transmission and acquisition: breakage, slippage, late application, and early removal. Breakage and slippage were about twice as likely among HIV-positive men. Breakage occurred for nearly 30% of the HIV-positive men compared to about 15% among HIV-negative men. Slippage occurred for about 16% of the HIV-positive men compared to about 9% among HIV-negative men. The late application of condoms approached significance (P = .058) with about 16% of those who were HIV-negative reporting this error versus about 12% for those who were HIV-negative.

Discussion

In this study of 369 YBMSM, condom use errors and problems were extremely common, more so than previous studies of other populations,^{21–25} including young Black males having sex with females.¹⁸ At least in regards to breakage and slippage, this may be a consequence of investigating anal sex as opposed to penile-vaginal sex given that anal sex is associated with high rates of condom breakage and slippage. One recent study reported that, over a 6-month period, nearly 40% of black MSM reported breakage or incomplete use, and they were more likely to report breakage, early removal and delayed application of a condom than white MSM.²⁵

Some of the current findings are particularly noteworthy, such as the result that nearly 30% of the HIV-positive men reported condom breakage the last time they had sex as a top. Presumably these men (and possibly their receptive partners) used condoms to avoid risk of infecting or cross infecting their receptive partner. With the occurrence of breakage the effort used to incorporate condoms into sex becomes un-rewarded and may discourage similar future efforts. Also, whether these insertive partners reported the breakage to the

Crosby et al.

receptive partners is an empirical question as yet uninvestigated. Also, about one of every six HIV-positive men reported that condoms slipped off during sex, significantly more (as was true for breakage) than those who were HIV-negative. These two problems (breakage and slippage) are often considered to be the most critical of the possible errors and problems that occur with condom use.^{9,12}

Given the amount of clinical time invested in persons living with HIV/AIDS, the study findings strongly suggest that this investment should also include repetitive teaching designed to improve the skills men need to use condoms correctly when they are tops. If, for example, receptive partners who are HIV-positive could avoid breakage, slippage, late application, early removal, and not using a new condom, these improvements in their quality of condom use may translate into reduced transmission risk and lead to lower community viral load. Breakage and slippage are particularly important focal points for intervention with HIV-positive YBMSM. Future investigations should determine the most likely causes of these two common problems with condom use among men living with HIV/AIDS. Understanding what antecedents to breakage/slippage are unique to these HIV-positive YBMSM is an important goal for future studies.

Limitations

Findings are limited by the use of a convenience sample and the validity of men's selfreported experiences relative to the last time a condom was used for insertive anal sex. This "last event" approach; however, should theoretically optimize validity. Findings are also limited by the possibility of differential reporting bias as a function of HIV status.

Conclusion

Generally, HIV-positive YBMSM may not be any less likely to report most condom use errors and problems than their HIV-negative counterparts. Two of the most important problems, however – breakage and slippage – may be more likely to occur among those living with HIV/AIDS. Post-diagnostic counseling protocols should intensify efforts to help men identify and avert causes of breakage and slippage.

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Crosby et al.

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Table 1

Frequency of Condom Use Errors/Problems Stratified by Partner-Application Among Young Black Men

Error or Problem	HIV- (n = 283) % (n)	HIV+ (n = 108) % (n)	Р	RR/CI ¹
Errors (mistakes or issues experienced by the user)				
Not enough time available to put on condom	14.1 (37)	7.5 (8)	.08	1.76 (85–3.67)
Started having anal sex then put condom on later	12.9 (34)	16.1 (16)	.058	1.23 (.71–2.14)
Took condom before "having your nut"	19.0 (50)	26.4 (28)	.11	1.47 (.98–2.20)
Condom slipped off penis during withdrawal	9.5 (25)	7.5 (8)	.55	.84 (.39–1.81)
Gave up on condom use - too frustrating	8.7 (23)	7.5 (8)	.71	.91 (.42–2.09)
Condom contacted sharp jewelry, fingernails or teeth	1.5 (4)	3.8 (4)	.18	2.62 (.67-10.29)
Condom was not lubricated	9.9 (26)	6.6 (7)	.32	.70 (.31–1.58)
Condom dried out during sex	20.9 (55)	20.8 (22)	.97	1.05 (.67–1.63)
Condom used was not in a sealed package	15.2 (40)	10.4 (11)	.22	.72 (.38–1.35)
Condom was damaged, in any way, during sex	6.5 (17)	5.7 (6)	.77	.93 (.37–2.28)
Condom use distracted from sexual pleasure	16.3 (43)	20.8 (22)	.31	1.34 (.84–2.13)
Condom leaked during sex	3.8 (10)	6.6 (7)	.24	1.83 (.71–4.70)
Condom length was not right	24.3 (36)	13.9 (10)	.07	.73 (.37–1.41)
Condom width was not right	29.1 (43)	27.8 (20)	.84	1.22 (.75–1.97)
Problems (events not necessarily directly caused by the user)				
Condom broke during sex	15.2 (40)	29.2 (31)	.002	2.03 (1.34-3.07)
Condom slipped off during sex	9.1 (24)	16.0 (17)	.005	1.86 (1.04–3.31)
Lost erection when applying condom	18.3 (48)	18.9 (20)	.89	1.09 (.68–1.75)