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Beyond Anal Sex: Sexual Practices of Men Who Have Sex With Men and Associations With HIV and Other Sexually Transmitted Infections

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ABSTRACT

Introduction: Unprotected anal intercourse is often used as a single indicator of risky behavior in men who have sex with men (MSM), yet MSM engage in a variety of behaviors that have unknown associations with sexually transmitted infection (STI) and HIV.

Aim: To assess the prevalence of a wide range of sexual behaviors and their associations with prevalent STI and HIV.

Methods: We used a standardized, self-administered survey to collect behavioral data for this cross-sectional study of 235 MSM seeking care in a public clinic for sexually transmitted diseases.

Mean Outcome Measures: Using modified Poisson regression, we generated unadjusted and adjusted prevalence ratios (PRs) to characterize associations between recent participation in each behavior and prevalent STI and HIV.

Results: Participants' median age was 26 years. One third (35%) were positive for STI. STI prevalence was significantly associated with using sex slings (adjusted PR [aPR] = 2.35), felching (aPR = 2.22), group sex (aPR = 1.86), fisting (aPR = 1.78), anonymous sex (aPR = 1.51), and sex toys (aPR = 1.46). HIV prevalence was 17% and was significantly associated with fisting (aPR = 4.75), felching (aPR = 4.22), enemas (aPR = 3.65), and group sex (aPR = 1.92).

Conclusion: Multiple behaviors were significantly associated with prevalent STI and HIV in adjusted analyses. To provide a more comprehensive understanding of sexual risk in MSM, prospective studies are needed to examine whether these behaviors are causally associated with HIV and STI acquisition.

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Key Words: Male; Homosexuality; Gonorrhea; Chlamydia; HIV; Syphilis; Sexual Behavior; Men Who Have Sex With Men (MSM); Sexually Transmitted Infections; Sexual Health

INTRODUCTION

Men who have sex with men (MSM) are particularly susceptible to acquisition of HIV and other sexually transmitted infections (STIs) in the United States (US).[1–3] Three fourths of primary and secondary syphilis cases,[3] 22% of gonorrhea cases[4] and two thirds of HIV diagnoses[5] in the US are in MSM. As such, the National HIV/AIDS Strategy for the US has identified sexual practices of MSM as a topic in need of additional high-quality research.[6]

Sexual health research in MSM frequently relies on unprotected anal intercourse (UAI) as a proxy for overall risky sexual behavior.[7–10] Although UAI is an efficient mode of HIV transmission,[11] and thus a risky sexual practice, it also might be a flawed singular measure to characterize a risky profile. In some scenarios, men who practice UAI have zero risk of HIV and STI acquisition: a disease-free man in a mutually monogamous relationship with another disease-free man will not acquire infection through UAI. Conversely, men who eschew UAI and engage in other sexual practices might be at risk for infection. Self-reported UAI also is often relied on to direct clinical testing and care.[12,13] For example, recent HIV pre-exposure prophylaxis guidelines from the US Public Health Service use UAI in a non-monogamous relationship as the only behavioral marker of risk for MSM.[12] Classifying MSM based only on participation in

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UAI could be flawed and might induce misclassification bias in research results and missed opportunities for intervention in clinical care. MSM negative for HIV who did not report UAI account for 34% of rectal gonorrhea infections and 36% of rectal chlamydia infections.[14] Although this could be attributable at least in part to misreporting of UAI, it highlights the limitation of using UAI as a singular screening measure. It is plausible that other behaviors practiced by MSM, alone or in conjunction with UAI, would be more useful behavioral markers for HIV and STI acquisition risk.

Men participate in different sexual behaviors for different reasons, including sexual desire, sexual orientation, or to lower the risk of HIV transmission ("seroadaptation").[15] For example, some men abstain from AI entirely to decrease their HIV risk and instead engage in other sexual behaviors that they perceive to be lower risk.[16,17] If sexual practices are selected because of perceived lower risk for HIV or STI, it is critical to understand whether that perception is accurate. Some sexual behaviors might actually increase risk because of a direct risk attached to those behaviors[18,19] or through their association with other behaviors that are known to increase HIV acquisition,[20] such as decreased condom use.[21]

Despite the high prevalence of HIV and STI in MSM and some evidence that sexual practices other than AI occur, little is known about the variety of sexual behaviors practiced by MSM and associations between those behaviors and HIV and STI. This is especially true for MSM in the US, because the limited existing research on this topic has occurred in the United Kingdom[22,23] and Australia.[13,24] The few studies exploring sexual behaviors in US MSM typically have been conducted in very high-risk groups[25,26] or very small samples,[27] limiting their generalizability. Even when US studies have presented data from larger community samples, analyses are generally limited to a single behavior.[28,29]

AIMS

Increased knowledge of the range of sexual behaviors practiced by MSM and their associations with HIV and STI could contribute to a more accurate definition of "risky sex" and could limit reliance on UAI as the primary marker of high-risk behavior.[7–10] In this study, we aimed to characterize the prevalence of a wide range of sexual behaviors and their associations with prevalent STI and HIV.

METHODS

We conducted a cross-sectional study from July 2012 through October 2013 in the sexual health clinic of a major Midwestern metropolitan health department. Study staff screened all men who presented to the clinic for HIV and STI testing for study eligibility (Table 1). Inclusion criteria included being able to speak and read English, being at least 18 years old, and reporting anal sex (insertive or receptive) with a man in the past year.

Table 1. Sample Characteristics (N = 235)

	n	%
Age (y)		
18–24	100	43
25–34	72	31
35–44	32	14
45–54	23	10
≥55	8	3
Race or ethnicity		
White	134	57
Black	54	23
Hispanic	16	7
Other minority*	31	13
Education		
High school diploma or less	69	29
At least some college	166	71
Employment		
Currently employed	172	73
Unemployed	58	25
Missing	5	2
Relationship status		
Committed partner	91	39
No committed partner	143	61
Missing	1	0
Sexual orientation		
Gay	179	76
Bisexual	32	14
Other	23	10
Missing	1	0
Lifetime number of male sexual partners		
Median	23	
IQR	11–75	
Range	1–15,000	
Missing	8	
Number of male sexual partners in past 12 mo		
Median	4	
IQR	2–8	
Range	0–100	
Missing	0	
Prevalent STI†		
Positive	82	35
Negative	151	64
Missing	2	1
Known HIV status		
Positive	41	17
Negative	194	83

HIV = human immunodeficiency virus; IQR = interquartile range; STI = sexually transmitted infection.
*Includes Asian, Pacific Islander, Native American, Native Hawaiian, other races, and any combination of races.
†Includes gonorrhea, chlamydia, and primary and secondary syphilis.