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Erectile dysfunction and premature ejaculation in men who have sex with men

Alan W. Shindel, MD^a, Eric Vittinghoff, PhD^b, and Benjamin N. Breyer, MD, MAS^c

^aDepartment of Urology, University of California, Davis, Sacramento, California, USA

^bDepartment of Epidemiology and Biostatistics, University of California San Francisco, San Francisco, California, USA

^cDepartment of Urology, University of California, San Francisco, San Francisco, California, USA

Abstract

Introduction—Quantitative research into sexual function and dysfunction in men who have sex with men (MSM) has been sparse due in large part to a lack of validated, quantitative instruments for the assessment of sexuality in this population.

Aim—To assess prevalence and associations of erectile problems and premature ejaculation in MSM.

Methods—MSM were invited to complete an online survey of sexual function. Ethnodemographic, sexuality, and health related factors were assessed.

Main Outcome Measure—Participants completed a version of the International Index of Erectile Function modified for use in MSM (IIEF-MSM) and the Premature Ejaculation Diagnostic Tool. Total score on the erectile function domain of the IIEF-EF (IIEF-MSM-EF) was used to stratify erectile dysfunction (ED) severity (25–30=no ED, 16–24 mild or mild moderate ED, 11–15 moderate ED, and ≤ 10 severe ED). PEDT scores were used to stratify risk of premature ejaculation (PE, diagnosed as PEDT score ≥9).

Results—Nearly 80% of the study cohort of 2,640 men resided in North America. The prevalence of ED was higher in older men whereas the prevalence of PE was relatively constant across age groups. Multivariate logistic regression revealed that increasing age, HIV seropositivity, prior use of erectogenic therapy, lower urinary tract symptoms (LUTS), and lack of a stable sexual partner were associated with greater odds of ED. A separate multivariate analysis revealed that younger age, LUTS, and lower number of lifetime sexual partners were associated with greater odds of PE.

Conclusions—Risk factors for sexual problems in MSM are similar to what has been observed in quantitative studies of non-MSM males. Urinary symptoms are associated with poorer sexual function in MSM.

Introduction

It is estimated that 4% and 1% of the male population in the United States identify as gay/homosexual or bisexual, respectively.^{1–2} There is also a population of men who engage in sex with other men but do not report a gay or bisexual orientation.³ The term men who have

Corresponding Author: Alan W. Shindel, MD, alan.shindel@ucdmc.ucdavis.edu.

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sex with men (MSM) is often utilized in sexuality research to collectively refer to men who engage in sexual acts with other men, irrespective of self-reported sexual orientation.

Health disparities in MSM and other sexual minority groups have been highlighted as a significant obstacle to be addressed in the United States Government Healthy People 2020 initiative.⁴ Numerous studies have indicated that MSM are at increased risk for poor health due to an array of social and behavioral factors.^{2, 4-6} Sexual health in this population has been particularly neglected.⁷⁻⁹ Although more attention has been given to sexual health in MSM since the advent of the HIV/AIDS epidemic, the sexual wellness of MSM extend beyond prevention of HIV infection and treatment of HIV-associated sexual problems.^{7-8, 10} Culturally competent care and improved understanding of how sexual dysfunction affects MSM are important topics for further research and development.^{7-9, 11}

Sexual concerns are quite prevalent in gay men, with prevalence of at least one sexual concern as high as 50–79% in recent studies.¹¹⁻¹⁴ Interestingly, there appear to be significant differences between strictly heterosexual men and MSM in the prevalence of sexual symptomatology; for instance, erectile dysfunction (ED) is purportedly more prevalent in gay-identified men compared to heterosexual men whereas ejaculation concerns are less prevalent in gay-identified men.^{12, 14} In a convenience sample of 2,937 men (mean age 35 years), Bancroft reported that 42% of gay-identified men reported “never” having experienced ED compared to 54% of heterosexual men; 57% of gay men reported “never” having had rapid ejaculation compared to 44% of heterosexual men.^{12, 14} These research efforts have indubitably enhanced our understanding of differences in the sexual wellness needs of MSM compared to non-MSM males. However, much of the existing research on sexuality in MSM has relied on single item questions to assess sexual function/dysfunction and/or has not controlled for co-morbid medical conditions known to be associated with male sexual dysfunctions.

We recently completed an internet-based cross-sectional study of urinary and sexual health in MSM (Men who have Sex with Men uRinary and sExuAL function [MSM REAL] study). This hypothesis generating, exploratory study was designed in part to investigate associations between two common male sexual dysfunctions [ED and premature ejaculation (PE)] and a broad array of ethnodemographic, psychosocial, and sexuality variables in a population of MSM. We hypothesized that risk factors for sexual problems in MSM would be similar to what has been reported in exclusively heterosexual men.

Methods

Study Design and Cohort Description

Institutional Review Board approval was obtained prior to initiating the study. The cohort was restricted to English-literate, internet-using MSM who were greater than 17 years of age. International sampling was achieved by distribution of an invitation to local, national and international Lesbian, Gay, Bisexual and Transgender community centers, organizations catering to MSM, and advertisements on Facebook (www.facebook.com, Palo Alto, California, U.S.A.) directed towards gay men and other MSM. Potential subjects were given the opportunity to click on a link to the survey which was posted on an internet based survey site (www.surveymonkey.com, Palo Alto, California, U.S.A.). Respondents were informed that they would be asked to provide ethnodemographic information and answer questions about sexual and urinary wellness; subjects were given the option to decline participation or stop the survey at any time. Implied consent was assumed based on subject completion of the instrument. To maintain privacy, no personally identifying information was collected and no incentive was provided for participation. The survey was available from January 19, 2010 to May 19, 2010.

Description of Variables

Outcome Variables—There were two main outcome variables. The first was the Erectile Function domain score on a version of the International Index of Erectile Function previously validated for use in HIV+ MSM (IIEF-MSM) by Coyne *et al.*¹⁵ Although this instrument was validated in HIV+ MSM no question on the instrument itself pertains directly to HIV status; it was therefore deemed adequate for adaptation to our study. The second main outcome variable was score on the Premature Ejaculation Diagnostic Tool (PEDT).¹⁶

The original IIEF was developed by Rosen *et al.* for use in exclusively heterosexual men and assesses five domains of male sexual function, including desire, erectile function, orgasm, intercourse satisfaction, and overall satisfaction.¹⁷ Validated cut-off scores for ED of different degree of severity were derived from the erectile function domain of the original IIEF (IIEF-EF) by Cappelleri *et al.*¹⁸ These investigators stratified men into groups based on their response to the single item IIEF question on overall satisfaction with sexual intercourse.¹⁸ In order to determine optimal IIEF-MSM-EF cut off values, after data acquisition we analyzed the IIEF-MSM single item question pertaining to overall sexual satisfaction to see if clusters of IIEF-MSM-EF scores were associated with responses to the satisfaction question. This analysis was patterned after the study of Cappelleri *et al.*¹⁸

Analysis of IIEF-MSM-EF domain scores, stratified by response to the single item question on sexual satisfaction, demonstrated a high level of overlap between groups; the analysis was hence uninformative and we were unable to designate cut-off scores for ED severity by this method. We then performed a sensitivity analysis using various cut off values from the IIEF-MSM-EF to define moderate/severe erectile dysfunction (defined here, as they were in Cappelleri's study, as a response of "never" or "rarely" on the sexual intercourse satisfaction question).¹⁸ Similar results were obtained from the initial IIEF-MSM-EF cut-off value of 15 that was chosen by Coyne *et al.* in their initial study;¹⁵ an IIEF-MSM-EF score of 15 or less was therefore selected as evidence of moderate/severe ED. In an attempt to further stratify ED severity, we arbitrarily classified IIEF-MSM-EF score of 25–30 as indicative of no ED, 16–24 as evidence of mild or mild/moderate ED, 11–15 as moderate ED, and 10 or less as evidence of severe ED.¹⁸

The PEDT is a validated 5 item screening survey designed to assess risk for PE.¹⁶ The PEDT has not been specifically validated for use in MSM. However, the instrument does not include language that assumes heterosexual coitus so it is likely applicable to MSM. Higher scores on the PEDT imply poorer control over ejaculation. In the validation study it was found that the score of 11 very reliably differentiated men with self-reported "no PE" from men with a time-based diagnosis of PE; in certain other iterations of the model a score of as low as 8 differentiated men with PE from those that did not. In the final model Symonds *et al.* elected to classify 9 or 10 as "high risk" of PE and scores of 11+ as indicative of PE.¹⁶ or the purpose of this analysis we considered men with scores of 0–8, 9–10, and 11+ as low, moderate, or high risk for PE.

To capture data on global assessment of sexual function, we used a single item question from the IIEF-MSM, specifically "How satisfied have you been with your overall sex life?" Response options included "very satisfied", "moderately satisfied", "equally satisfied and dissatisfied", "moderately dissatisfied", and "very dissatisfied".

Exposure Variables—Respondents provided information on their age, geographic location, size of city of residence, and race/ethnicity (African, Asian, Caucasian, Latino, Native American, other). Respondents were asked if they used any of the following recreational drugs: methamphetamine, cocaine, ketamine, ecstasy, prescription pills. For

each drug, participants were asked “how often do you use drugs to get high?” [never, rarely about once per year, sometimes several times a year, monthly, weekly, daily]. For ease of interpretation, the variable was made binary by grouping “several times a year”, “monthly”, and “daily” as a positive response to drug use and “never” or “rarely, about once per year” as a negative response.

Sexual history was assessed with the following questions: (number of lifetime sexual partners, current regular partner [yes/no], sex with strangers [yes/no], use of condoms for anal insertive or receptive sex (in quartiles for frequency of usage including the option of not participating in anal insertive and/or receptive sex). Subjects also were asked if they had ever consulted a health care professional for sexual problems [yes/no]. Respondents were asked if they used the following erectile aids [yes/no]: phosphodiesterase 5 inhibitors [Viagra®/Levitra®/Cialis®], over-the-counter erectile aids, penile vacuum device, penile injection therapy, penile suppository therapy or penile prosthesis. To ascertain sexual practices in this cohort, subjects were asked [yes/no] if they had or had not engaged in list of diverse sexual activities (presented completely in table 2).

Respondents were asked (via a questionnaire with “yes” and “no” radio button response options) “Have you been diagnosed or treated for the following medical conditions”: diabetes, coronary artery disease, hyperlipidemia, high blood pressure, neurologic dysfunction, and depression. Respondents were also asked if they were HIV-infected [yes/no/uncertain]. As bothersome urinary tract symptoms have been clearly associated with sexual problems,¹⁹ subjects completed the International Prostate Symptom Score (IPSS), an internationally validated metric of bothersome lower urinary tract symptoms (LUTS).²⁰ IPSS is graded on a scale of 0–35 and based on 7 questions pertaining to urinary symptoms including: frequency, urgency, nocturia, intermittency, weak stream, straining, and incomplete emptying. Higher scores indicate worse urinary symptoms. Total IPSS was scored as either none/mild/moderate (IPSS = 0–19) vs. severe (IPSS = 20–35).

Statistical Analysis

We calculated summary scores provided respondents answered at least 4 of 6 IIEF-MSM-EF questions, 3 of 5 PEDT questions, and 5 of 7 IPSS questions. In calculating the summary score, we imputed the mean of the participant’s responses on the non-missing items for the 1 or 2 missing according to the method of Afifi and Elashoff.²¹ Descriptive statistics were used to characterize the study population. IIEF-MSM-EF domain scores and PEDT total scores were compared between men divided into ~10 year age cohorts (18–29, 30–39, 40–49, 50–59, 60+).

Multiple logistic regression models for odds of moderate to severe ED (IIEF-MSM erectile function domain score ≤ 15) or risk of PE (PEDT ≥ 9) were developed with predictor variables selected *a priori*. These variables included HIV serostatus, age in 10 year increments, presence of co-morbid diseases (diabetes, coronary artery disease, hyperlipidemia, high blood pressure, neurologic dysfunction, depression), condom usage during insertive anal intercourse, partner condom usage during receptive anal intercourse, presence of a current steady partner, sexual practices, use of recreational drugs more than once in the past year, severe LUTS (IPSS ≥ 20), and dissatisfaction with sexual life (defined as those respondents who were “moderately” or “very” dissatisfied with their sexual function versus all others). Logistic regression with backward stepwise modeling was performed and utilized a p-value of ≤ 0.20 as the model cut off. Test for trend was used to assess the relationship between ED and both number of lifetime sexual partners and frequency of condom usage. Statistical significance was set at $p < 0.05$ and all tests were 2-sided. STATA 11 (Statacorp, College Station, TX, USA) was used for all analyses.

Results

A total of 2,783 men accessed the survey website; 1,769 (64%) of this initial cohort completed all portions of the questionnaire pertaining to the IIEF-MSM and the PEDT. After imputing summary score estimates, data from 2,640 (94.8%) were utilized. The cohort had a mean age of 39.3 years (standard deviation 12, range 18–81). Ethnodemographic and health data are summarized in table 1.

The median number of lifetime sexual partners in this cohort was 27 (interquartile range 6–100). A steady sexual relationship was reported by 1,216 (51.4%) of the subject pool. Additional information on sexual activity is presented in table 2. A substantial proportion of our population reported sexual activity with partners who were not well known. A history of sexual activity with female partners was not rare in this cohort. Although over 25% of men reported used of oral therapy for enhancement of erections, just 19% had consulted a provider about erectile function problems. IIEF-MSM-EF domain scores are presented graphically in figure 1, stratified by decade of life. There was a trend towards progressively greater prevalence of ED of all severities with increasing age, with over half of men over age 60 reporting at least mild ED. PEDT domain scores are presented in figure 2. In contrast to what was observed with respect to ED, there was little difference in the prevalence of moderate and severe risk of PE between age groups.

The final logistic regression model for odds of moderate to severe ED (IIEF-MSM-EF score ≤ 15) is presented in table 3. Increasing age, voiding symptoms, HIV+ status, not being in a steady relationship, prior use of erectogenic therapy, not engaging in anal insertive intercourse, and lower sexual life satisfaction were significantly associated with greater odds of moderate to severe ED after multivariate adjustment. Test for trend did not reveal any significant relationship between odds of ED and both number of lifetime partners and frequency of condom usage. No other variables were associated with moderate/severe ED after multiple variable adjustment (data not shown).

The final logistic regression model for odds of PE is presented in table 4. Voiding symptoms, HIV+ status, having fewer than 6 lifetime sexual partners, and sexual life dissatisfaction were significantly associated with greater odds of PE after multivariable adjustment. Increasing age was associated with lower odds for ED. No other variables were associated with significantly different odds of PE after multiple variable adjustment (data not shown).

Responses to the single item question on global satisfaction with sexual life are presented in figure 3, stratified by age. The majority of respondents at all ages were either very or moderately satisfied with their sexual function; this was essentially stable between age cohorts.

Discussion

In this study we determined that a several variables known to be associated with increased prevalence of sexual problems in heterosexual men (age, voiding concerns, absence of a stable relationship) were also associated with sexual problems in MSM. An association of sexual problems with age in MSM has been previously reported.^{14, 22} The quality of intimate relationships and social support have also been associated with lower risk of sexual problems in MSM.^{11–13, 23} Our findings corroborate these prior reports; while not surprising nor entirely novel, these data support the contention there are important similarities in sexual function between MSM and non-MSM males. Additionally, we report new findings on the association between LUTS and sexual problems in MSM. LUTS have been linked to erectile dysfunction in heterosexual men but until now this has not been

clearly evidenced in MSM.²⁴ Interestingly, our multivariate model suggested that odds of PE were slightly greater in younger MSM, dissimilar to what has been reported in prior studies of non-MSM males.^{25–26}

Vascular diseases are known to be associated with greater odds of ED in heterosexual men but were not independently associated with ED in this population.²⁷ It seems unlikely that vascular disease exerts a different effect on erectile function in MSM; it is more likely that because our population was generally younger medical conditions were either not yet present or had not progressed to the point of causing end-organ damage. Furthermore, severity of co-morbid conditions was not assessed; this necessitates caution in interpreting these findings.

A recent study similar in concept to our own was reported by Hirshfeld et al. This internet survey enrolled 7,001 MSM; a relatively high fraction (79%) of the respondent pool endorsed at least one sexual concern in response to single item questions on a variety of sexual issues. Low sexual desire was the most prevalent complaint at 57%, with erectile problems, non-pleasurable sex, difficulty with orgasm, and sexual pain reported by 45%, 37%, 36%, and 14% of men, respectively.¹¹ Age less than 30, use of club drug or medications for ED, single status, a history of sexually transmitted infection, and poorer self-reported mental/physical health were also risk factors for sexual problems in this study.¹¹ These authors did report that while sexual problems in general were more prevalent in men less than 30 years, erectile dysfunction as a specific problem was associated with age greater than 50 years. The nature of data acquisition in this study differs substantially (single item questionnaire in the prior work compared to a validated scale in our study); furthermore, our study builds upon health related variables not assessed in the publication by Hirshfeld.

We did not find an association between condom usage and ED. In a cross-sectional questionnaire study of 78 HIV+ MSM seen in a specialty clinic, Cove and Petrak reported that condom-associated ED led to substantial declines in condom usage during anal insertive intercourse.²⁸ Adam et al reported similar findings in a qualitative study of 102 gay and bisexual men recruited from a non-clinic population.²⁹ This difference in outcomes may be related to substantial differences in study design and/or study cohort. Our investigation of the relationship between condom usage and PE in MSM is to our knowledge novel; while not statistically significant, men with lower adherence to condom usage during insertive anal sex had greater odds of PE. Cause and effect cannot be gleaned from these data although it seems logical to speculate that the decreased sensitivity afforded by condoms may help to prolong ejaculation latency in MSM who are concerned with PE; this may represent an attractive adjunctive incentive for condom use in select MSM.

Our study population consists of English-speaking, internet-using MSM willing to respond to a series of sexuality questions posted on an internet-website; results may thus not necessarily be generalizable to all MSM. Older MSM are under-represented in this study so our conclusions in this population must be interpreted cautiously; the relative dearth of older men (in whom a higher burden of disease would be expected) may account for the absence of a statistically significant relationship between vascular health variables and ED in this study. Our younger population also had a relatively high prevalence of HIV infection and drug use; this may partially limit the generalizability of our results. In the absence of any form of compensation for participation there is no clear reason for misrepresentation in a survey such as this; however we must entertain the possibility of false reporting due to recall bias or deliberate attempts (malicious or otherwise) to skew these data on sexuality in a sexual minority group.³⁰ Occult co-morbid conditions may also be present in this

population, although we maintain that we accounted for the vast majority of known causes of sexual dysfunction in the male population.

This study was designed as an exploratory, hypothesis generating investigation and causality cannot be inferred based on the cross-sectional design. Despite its' limitations, our data are a novel contribution to the biomedical literature on sexuality in MSM. Additional investigation of how health care providers can best tend to the sexual health needs of their MSM patients are warranted. Formal development of cut-off scores for ED severity using the IIEF-MSM-EF would be of interest. Furthermore, more information is required on how MSM adapt to changes in their erectile capacity rigidity with age/medical co-morbidity, the efficacy of PDE5I in management of ED in MSM, and the definition of clinically relevant PE in male same-sex encounters. This last question is of great interest as the current International Society for Sexual Medicine definition of premature ejaculation explicitly includes language that presupposes vaginal penetration, creating something of a quandary for diagnosis of PE in MSM.³¹ For the time being, it is important that sexual medicine providers inquire about the sexual orientation and practices of their patient. A small but important minority of male sexual medicine patients engage in same sex activity; their specific healthcare needs may differ from those of men who have sex exclusively with women.

Conclusions

Our data contribute to further understanding of the burden of sexual concerns in MSM. Enhancement of our medical and psychosocial understanding of what sexual wellness for MSM entails will improve our ability to provide culturally competent care for this population.

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Figure 1.
Prevalence/severity of ED by decade of life

Figure 2.
Prevalence/severity of PE by decade of life

Figure 3.
Overall satisfaction with sexual life, by decade of life

Table 1

Demographic information (n=2640)*

Age	n	%
18–29	513	19.4
30–39	842	31.9
40–49	785	29.7
50–59	348	13.2
60+	152	5.8
Geographic location		
Western US	463	17.6
Midwest US	372	14.2
Northeast US	457	17.4
Southern US	373	14.2
Southwest US	167	6.4
Northwest US	95	3.6
Canada	175	6.7
Europe	326	12.4
Australia	162	6.2
Other**	33	1.3
City population		
<100, 000	816	31.2
100,000–1,000,000	969	37.0
>1,000,000	834	31.8
Racial/Ethnic Background		
African	78	3.1
Asian	76	3.0
Caucasian	2173	85.5
Hispanic	183	7.2
Native American	32	1.2
Comorbid medical conditions		
HIV+	370	14.1
Diabetes	181	6.8
Coronary Artery Disease	136	5.1
Hyperlipidemia	483	18.3
High Blood Pressure	600	22.7
Neurologic Dysfunction	156	5.9
Depression	1016	38.4
Drug use >1 time per year		
Methamphetamine	205	9.3
Cocaine	293	13.4
Ketamine	104	4.8
MDMA (Ecstasy)	293	13.4

Age	n	%
Recreational Prescription narcotics	331	15.2

* Some categories do not sum to 2,640 secondary to missing data points.

** Asia, Africa, South America, Central America

Table 2

Sexual practices

Life time sexual partners (quartiles)	n=	%
0 to 6	611	26.2
7 to 29	559	23.9
30 to 100	586	25.1
>100	575	24.7
How often do you wear condoms when you insert your penis into your partner's anus?		
I don't insert my penis in my partner's anus	360	15.6
Always (100%)	641	27.7
Most of the time (75%)	279	12.1
Sometimes (50%)	170	7.4
Rarely (25%)	213	9.2
Never (0%)	648	28.0
How often does your partner wear condoms when he inserts his penis into your anus?		
Partner does not insert his penis in my anus	413	17.9
Always (100%)	677	29.3
Most of the time (75%)	249	10.8
Sometimes (50%)	166	7.2
Rarely (25%)	185	8.0
Never (0%)	622	26.9
Report "sex with men you do not know"	1335	56.4
Have asked provider about problems with erectile function	438	19.3
Have used erectile aids		
PDE5 Inhibitor Drugs	680	25.7
Over-the-counter erectile aids	185	7.0
Penile vacuum device	132	5.0
Penile injection therapy	56	2.1
Penile suppository therapy	19	0.7
Penile prosthesis	6	0.2
Sexual Practices		
Digital Sex, Male Partner	2258	95.7
Digital Sex, Female Partner	447	21.3
Received Fellatio	2297	97.0
Performed Fellatio	2316	97.5
Performed Cunnilingus	473	22.3
Anal Receptive Sex	2021	86.8
Anal Insertive Sex, Male Partner	2045	87.6
Anal Insertive Sex, Female Partner	141	6.7
Vaginal Sex	617	28.7
Anal Receptive Fisting	213	10.0
Anal Insertive Fisting	451	20.8

Life time sexual partners (quartiles)	<i>n</i> =	%
Vaginal Fisting, Female Partner	39	1.9
Received analingus	1938	83.9
Performed Analingus	1779	78.1
Sex with >1 partner	1437	63.7
Been Restrained for Sexual Pleasure	672	31.0
Restrained another for Sexual Pleasure	644	29.8
Received Pain for Sexual Pleasure	354	16.5
Inflicted Pain for Sexual Pleasure	339	15.9
Received Urethral Insertion for Sexual Pleasure (sounding)	228	10.7
Anal Receptive Sex with sexual toy/product	1174	53.7

Table 3Logistic Regression for moderate-severe ED (IIEF-EF ≤ 15)

	Odds Ratio	95% CI	P=
Age (10 year increase)	1.495	1.353–1.653	<0.001
Medical History			
Diabetes	1.348	0.901–2.016	0.147
Neurological Dysfunction	1.403	0.917–2.147	0.118
Voiding Symptoms (IPPS ≥ 20)	1.426	1.135–1.792	0.002
<i>HIV status</i>			
HIV–	1.000	ref	ref
HIV+	1.521	1.117–2.071	0.008
HIV status unknown	1.025	0.599–1.754	0.929
Sexuality Variables			
Dissatisfaction with sexual life	3.848	3.066–4.829	<0.001
In a steady relationship	0.587	0.459–0.751	<0.001
Use of PDE5 inhibitors	2.071	1.61–2.656	<0.001
<i>Lifetime Sexual Partners</i>			
0–6	1.000	Ref	Ref
7–29	1.013	0.743–1.380	0.937
30–100	0.832	0.607–1.140	0.252
>100	0.910	0.658–1.260	0.571
<i>Frequency of condom usage during insertive anal sex</i>			
100%	1.000	ref	ref
75%	1.060	0.677–1.660	0.797
50%	1.504	0.868–2.605	0.145
25%	0.847	0.476–1.508	0.572
0%	1.209	0.748–1.955	0.439
Does not have insertive anal sex	2.600	1.785–3.787	<0.001
<i>Frequency of condom usage during receptive anal sex</i>			
100%	1.000	ref	ref
75%	0.924	0.584–1.461	0.735
50%	0.823	0.470–1.443	0.497
25%	1.305	0.734–2.321	0.365
0%	0.815	0.504–1.318	0.404
Does not have receptive anal sex	0.728	0.504–1.051	0.090

Table 4

Logistic Regression for odds of PE (PEDT > 9)

	Odds Ratio	95% CI	P=
Age (10 year increase)	0.877	0.780–.987	0.029
Medical History			
Hyperlipidemia	1.237	0.903–1.695	0.186
Voiding Symptoms (IPPS ≥ 20)	1.600	1.242–2.060	<0.001
<i>HIV status</i>			
HIV–	1.000	ref	ref
HIV+	1.405	1.003–1.968	0.048
HIV status unknown	1.299	0.752–2.245	0.348
Recreational Drug Use			
Prescription Drugs	1.323	0.959–1.826	0.088
Sexual History			
Dissatisfaction with sexual life	2.148	1.676–2.753	<0.001
<i>Lifetime Sexual Partners</i>			
0–6	1.000	ref	ref
7–29	0.587	0.416–0.827	0.002
30–100	0.751	0.541–1.041	0.086
>100	0.658	0.461–0.937	0.021
<i>Frequency of condom usage during insertive anal sex</i>			
100%	1.000	ref	ref
75%	1.375	0.922–2.051	0.118
50%	1.726	1.090–2.733	0.020
25%	1.402	0.895–2.196	0.140
0%	1.232	0.885–1.715	0.215
Does not have insertive anal sex	0.807	0.534–1.219	0.309