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Introduction

Women who have sex with women and men (WSWM) are relatively understudied in the gender/sexual minority literature, although data suggest that this population has a higher prevalence of sexually transmitted infections and sexually-associated infections, such as bacterial vaginosis (BV), compared to women who have sex with men (WSM) (Bailey, 2004) and lesbians (Muzny, 2014). Lesbians generally have the lowest incidence of STIs of these three population of women. Thus it appears it is the presence of male partners that increases the STI risks for WSWM, though other factors are not well understood.

WSWM have been found to experience higher rates of intimate partner violence (IPV) (Alexander, 2016), drug use (Estrich, 2014), and teen pregnancy (Goldberg, 2016), and are more aware of their STI risk with their male partners compared to their female partners (Schick, 2015). Not all women who have sex with women and men identify as bisexual, rather their self-reported behavior is described by the WSWM label.

The literature lacks specific information regarding the practices and beliefs of WSWM that may contribute to their increased susceptibility to these infections. Without understanding these aspects of their behavior, clinicians will not be able to fully meet their reproductive and sexual health needs and policy will not reflect the population level needs of this group of women.

Objectives

- To understand the sexual and other risk behaviors of WSWM and how they differ from WSM
- To uncover what factors lead to the higher prevalence of BV and STIs among WSWM compared to WSM

Methods

Data Collection:

139 sexually active women and girls, age 15-24, were recruited from an outpatient clinic in Baltimore, Maryland. Participants completed a questionnaire using an Audio Computer-Assisted Self-Interview (ACASI) system, which gathered demographic, behavior, symptomatic and

Participants were tested for bacterial vaginosis (BV), chlamydia, gonorrhea, and trichomonas infection. Of these, 108 were eligible for this analysis. Diagnosis of BV was made by a positive gram stain (Nugent score) or presence of clue cells on wet mount.

Participants were an average of 20.5 years old, with the WSWM population having a slightly lower mean age of 19.8 years.

Statistic Analysis:

Statistical analyses were performed using SAS with Fisher's exact test, Mann-Whitney U test, and logistic regression.



Results

Cohort Characteristics

	All Women	WSM	WSWM	P value
	109	97	12	
Black race	67	60	7	0.33
New partner	34	28	6	<0.001
2 or more current partners	31	23	8	0.002
Non-monogamous partner	24	17	7	0.001
Sex without condom	92	83	9	0.34
Had "1 night stand"	21	15	6	0.004
Anal sex	20	17	3	0.53
Use sex toys	30	25	5	0.25
Share sex toys	9	7	2	0.59
Sex while high or drunk	40	34	6	0.31
Use marijuana	53	47	6	0.92

Table 1

STI and BV outcomes

	All Women	WSM	WSWM	P value
Bacterial Vaginosis	38%	36%	56%	0.29
Gonorrhea	4%	3%	8%	0.37
Chlamydia	9%	8%	17%	0.35
Trichomonas	4%	3%	8%	0.37
Any STI	13%	12%	17%	0.65
Any STI + BV	38%	36%	67%	0.35

Table 1: WSWM report significantly higher rates of new partners, multiple partners, non-monogamous partners, and 1 night stands compared to WSM.

Table 2: WSWM had higher prevalence of each condition tested, although this difference was not significant.

Risk behaviors of WSWM compared to WSM

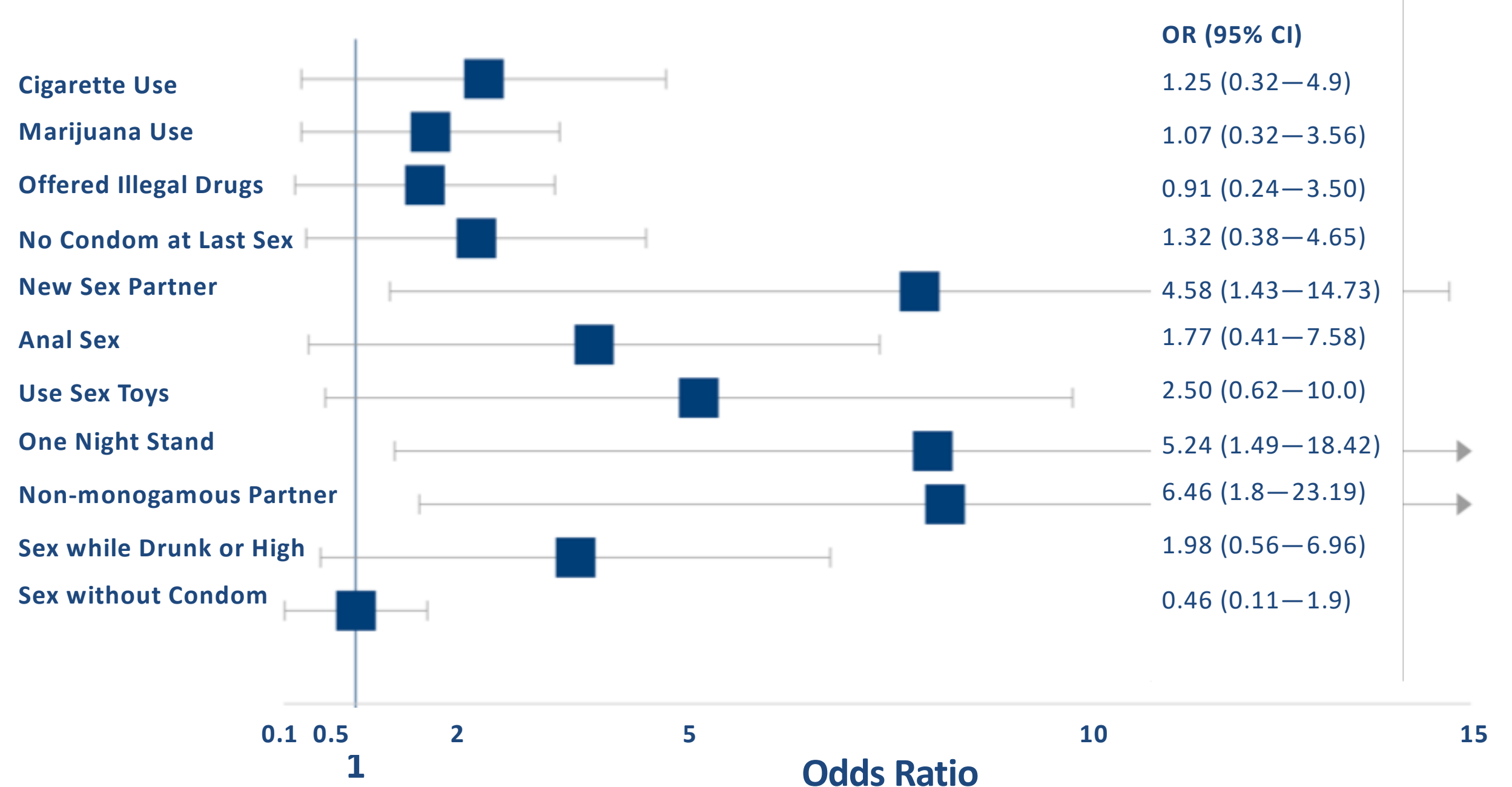


Figure 1: Women who have sex with women and men (WSWM) have high odds of engaging in various risk behaviors compared to their counterparts who have sex only with men (WSM) when controlling for age. WSWM were at significantly higher risk to engage in one night stands, have partners who are not monogamous, and report a new sexual partner within the month.

Conclusions

While WSWM had a similar prevalence of BV and STIs, they were more likely to engage in high-risk sexual behaviors compared to their peers who report only having sex with men. It appears that the behavior of having sex with both women and men is not a direct risk factor for STI and BV acquisition, but rather these women are engaging in other risky behaviors at higher rates than their WSM peers.

It is important for providers to take into account these risk factors for WSWM in STI screening and counseling, in addition to asking about the genders of a patient's sexual partners.

Limitations:

The major limitation of this study is the small sample size, especially with respect to the WSWM population. Previous studies have shown a significantly higher prevalence of STIs and BV in WSWM, so it is perhaps due to the underpowering of this study that this association was not seen.

Future Directions:

Given the lack of a statistical difference in STI and BV prevalence in this cohort, additional participants should be enrolled with particular effort to recruit women who identify as bisexual and/or report recent sex with both men and women.

Further, it will be illuminating to understand the causative pathway that leads to the discrepancy in STI and BV acquisition in WSWM. It is unclear whether their sexual orientation or the gender of sexual partners is itself a risk factor for STI and BV acquisition or whether the effect is mediated through higher engagement in risky behaviors.

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