

Sexual preventative health in US sexual minority women: a review

Kaitlyn C. McCune, MD,¹ Katherine L. Imborek, MD,² Colleen K. Stockdale, MD, MS³

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Abstract

Despite growing interest and research in lesbian, gay, bisexual, transgender, and queer (LGBTQ) health topics over the last 20 years, relatively little is known about sexual minority women. This review seeks to explore sexual practices, use of preventative measures including barrier methods during sexual activity, sexually transmitted infection rates, and use of screening healthcare services by sexual minority women. Additionally, the role healthcare providers can take in filling this knowledge gap and providing appropriate services is reviewed.

¹Department of Obstetrics and Gynecology, Wake Forest Baptist Medical Center, Winston-Salem, NC

²Department of Family Practice, University of Iowa Hospitals and Clinics, Iowa City, IA

³Department of Obstetrics & Gynecology, University of Iowa Hospitals and Clinics, Iowa City, IA

Introduction

Over the past 20 years, research and interest in lesbian, gay, bisexual, transgender, and queer (LGBTQ) health topics has been growing steadily. Despite this, one study found that

between the years of 1989 and 2011, of all National Institutes of Health (NIH) funded studies, only 0.5% (628 studies) focused on lesbian, gay, bisexual, and transgender (LGBT) topics.¹ Of these, 515 studies focused on health topics or human immunodeficiency virus/acquired immune deficiency syndrome (HIV/AIDs), and only 85 of those studies involved sexual minority women. This lack of inquiry may be due to a belief that sexual minority women (SMW), as defined by women self-identifying as lesbian or bisexual and/or having a history of a female sexual partner, are at lower risk for sexually transmitted infections (STI) and preventative measures during sexual activity are unnecessary. Indeed, Muzny et al. found that African American women who have sex with women (WSW) perceived there to be little or no risk of STI transmission between women despite the participants engaging in a broad range of sexual activities, many of these activities comparable to those engaged in with men.² Women in this study cited their sex education in schools as a

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Corresponding author: Colleen Stockdale, MD, MS, Department of Obstetrics and Gynecology, 200 Hawkins Drive, Iowa City, IA 52246, Phone: 319-384-6849, Fax: 319-384-8620. Email: colleen-stockdale@uiowa.edu

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primary source of information regarding sexual preventative health. Fishman and Anderson found that while 82% of lesbians surveyed perceived HIV as a problem in the lesbian community, a majority of these women believed they were at low risk for contracting HIV.³ A minority of the participants reported receiving any preventative sexual education from healthcare providers.

It is important to note that neither sexual orientation nor sexual identity always predicts sexual practices. Multiple studies have shown that sexual activity with males can occur in lesbian women as well as bisexual women. Johnson, Smith and Guenther found that 77% of lesbian women and 95% of bisexual women reported a lifetime history of sexual activity with men.⁴ More recently, Lindley et al. reported 15.1% of lesbian college students had had sex with a male in the last six months.⁵

Despite the trend by healthcare providers to consider that sexual identity is related only to sexual health thus perpetuating a lack of attention to health more broadly defined, there are limited studies focusing on sexual health in sexual minority women. This literature review seeks to explore sexual behavior, use of preventative measures including barrier methods during sexual activity, STI rates, and use of screening healthcare services by sexual minority women. Additionally, this paper will discuss the role healthcare providers can take in filling this knowledge gap and providing appropriate services.

Methods

A broad search of PubMed / Medline was performed to identify clinical reports published through April 2015 involving the following key terms: women who have sex with women, WSW, lesbian, bisexual, sexual minority women, sexual preventative health, sexual health, reproductive health, STI, sexually transmitted disease (STD). No filters were applied to limit the retrieval by study type. The search was limited to English-language publications involving humans and to those performed in the United States (one international study, which included US women, is included and noted). No date range was provided, thus including all articles through April 2015; the oldest study reviewed was from 1987. The study exclusion criteria dismissed case reports, theses, and editorials, as well as studies reported in languages other than English.

All identified abstracts were examined by one reviewer (KM) to determine if the papers met inclusion criteria. Doubts regarding their inclusion/exclusion were discussed and agreed by all authors. Subsequently, full-text articles of the selected studies were retrieved and examined. Figure 1 illustrates the search results. Thirty-nine articles were included in the final review.²⁻⁴⁰ Institutional Review Board review and approval was not required as this article does not meet the definition of human subjects' research.

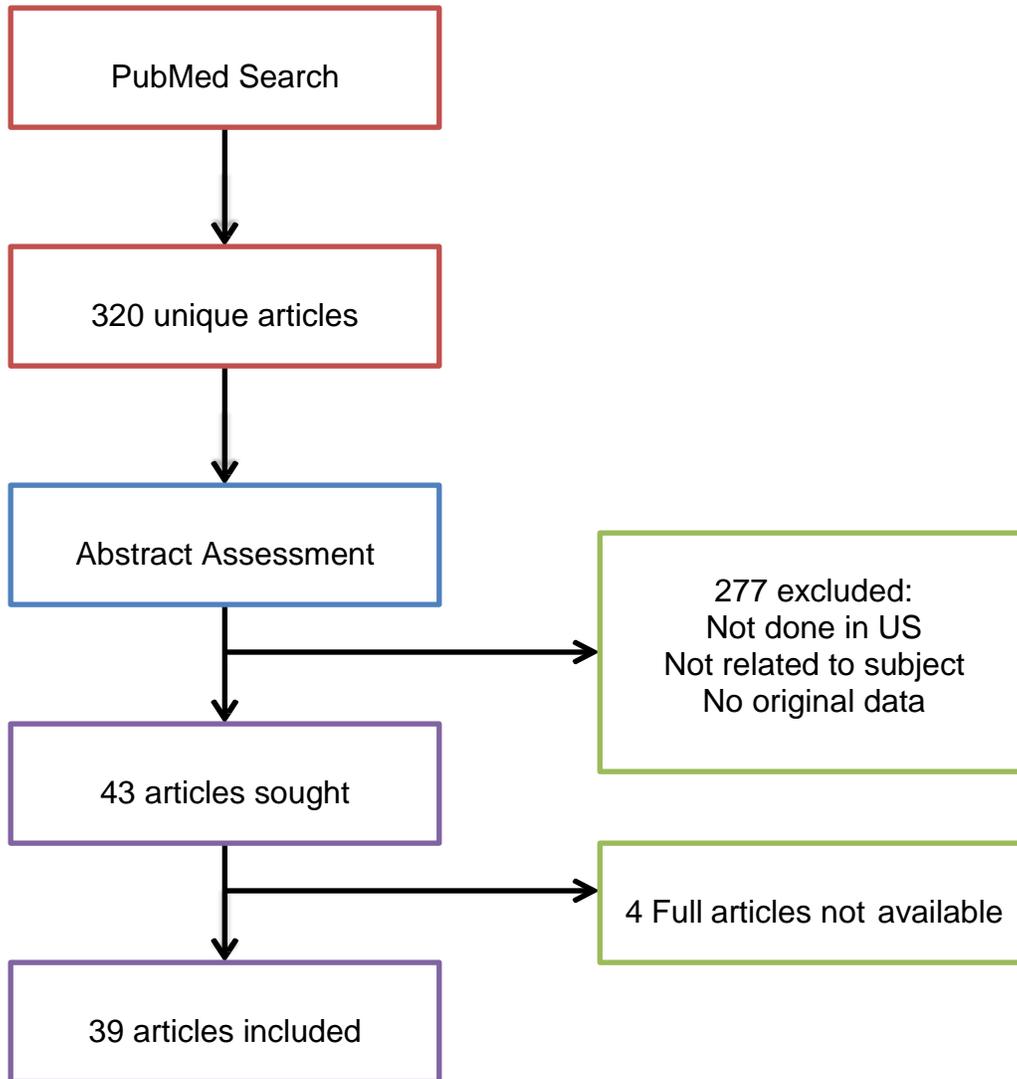


Figure 1. Methods flowsheet

Results

Sexual Practices

Sexual practices addressed in the articles discussed here include: unprotected sex, increased number of sexual partners, anonymous sex, survey participant drug or alcohol use, sexual partner drug use, and exchanging sex

for drugs or money.⁶⁻¹⁴ Articles that included adolescents also asked participants about the participant's age at sexual premier and the age of their sexual partner(s).⁹⁻¹²

All studies reviewed reported that sexual minority women and girls were more likely to participate in high risk sexual practices as outlined above.⁶⁻¹⁴ Multiple

studies showed that bisexual women and women who have sex with women and men (WSWM) were the most likely to engage in sexual practices that confer an increased risk for STI acquisition. Herrick, Matthews and Garofalo found that 32% of WSW identifying as lesbian or bisexual engaged in monthly binge drinking, 26% had anal sex with a male partner in the last year, 20% had been pregnant, and 7% exchanged sex for resources.¹³ One study found that lesbian women were more likely than bisexual or heterosexual women to have sex with males who inject drugs.⁶ The same study showed that bisexual women reported more drug use with sexual activity than their heterosexual peers. This was upheld by Estrich et al. who reported that sexual minority women had twice the odds of their heterosexual peers of drug use with bisexual women having the highest odds overall.⁸

Within the adolescent age group, Riskind et al. reported riskier sexual practices and increased negative reproductive outcomes, including unplanned pregnancy, in sexual minority girls in grades 8 through 12 regardless of whether sexual orientation was defined by sexual identity or by partner gender.⁹ Pathela and Schillinger discovered that female adolescents who reported both-sex or only same-sex partners were more likely to have an earlier age of sexual debut, more lifetime partners, and more likely to have used drugs/alcohol with their last sexual

encounter when compared to their peers who reported only opposite-sex partners in their study of over 17,000 adolescents mostly between the ages of 15 and 17 years old.¹²

Saewyc et al. addressed pregnancy risk and pregnancy outcomes specifically in a population of students aged 12-19. Results indicated that there was a higher prevalence of pregnancy in lesbian and bisexual participants than their heterosexual-identified or unsure peers. Of the SMW who reported pregnancy, a higher proportion had poor outcomes (miscarriage, abortion, death of child) compared to their heterosexual peers. In addition, this study showed that lesbian and bisexual women had increased higher risk sexual practices including exchanging sex for money or drugs and using less effective contraceptive methods (such as withdrawal or rhythm methods) compared to their heterosexual peers.¹⁰

Several of the studies reported that sexual minority women were more likely to experience sexual victimization and early homelessness. One study found that sexual minority adolescents were more likely than their heterosexual peers to have experienced relationship abuse.¹¹ Abuse during the adolescent years was also found to be associated with higher risk sexual practice and pregnancy risk.¹¹ Pathela and Schillinger reported that more than one third of female adolescents with both-sex partners had experienced intimate partner violence and forced sex.¹²

Table 1: Use of preventative measures during intercourse				
	Kerr, Ding and Thompson ¹⁶			Lindley et al. ¹⁷
	Heterosexuals	Bisexuals	Lesbians	Female LGBT college students engaging in female-male intercourse
Condom use during vaginal intercourse	60%	50.50%	16.30%	66.90%
Condom use during anal intercourse	3.90%	7.80%	3.10%	44.40%
Barrier use during oral sex	5.80%	4.60%	7.20%	10.80%

Use of Preventative Measures During Sexual Activity

Barrier use during intercourse, including penile condom use, sex toy condom use, dental dams or barriers for oral sex, and digital condoms, was inconsistently reported in sexual minority women. Greene et al. found that while two thirds of their female study participants could name specific preventative measures, most had difficulty conceptualizing what “safe sex” meant for same-sex intercourse.¹⁵

Kerr, Ding and Thompson found statistically significant differences in barrier use during anal and vaginal intercourse₁ between heterosexual, bisexual and lesbian undergraduate women as summarized in Table 1. While there was no significant difference in barrier use during oral intercourse, it is significant that less than 10% of all participants used barrier protection for oral sex.¹⁶ Lack of barrier protection was also noted by Lindley et al. in a study

including 450 gay, lesbian, bisexual, and transgender US college students.¹⁷

Masters et al. studied a nationwide sample of adolescents aged 14 to 19 who identified as LGBTQ. Two hundred and one of the 425 participants were female. Surveys were used to assess the number of sexual safety strategies used, including discussing sexual histories and safer sex, agreeing to get tested, used condoms or other barriers, and agreeing to be monogamous. Of these female participants, 77 (38.3%) used an average of two strategies, 40 (19.9%) used an average of 4.5 strategies and 100 (49.8%) used an average of 5.75 strategies. Those that used nearly all the seven strategies had a higher average number of lifetime partners.¹⁸

Rowan et al. evaluated barrier use during oral sex, digital stimulation and stimulation with a sex toy among WSW. Any barrier use was reported as “Never Used” in 83-87% of participants for giving or receiving oral sex, 62-63% of participants for giving or receiving sex toy stimulation, and 88% of participants

₁ No definition for “intercourse” provided. It is unclear whether this term encompasses penile, digital and sex toy penetration.

for giving or receiving digital stimulation. The study found that barrier use was least likely (3-8%) during oral sex and digital stimulation. It was slightly more common (12-15%) with sex toy stimulation. Interestingly, with both oral sex and sex toy stimulation, participants were more likely to use barrier protection when performing the sex act than when receiving the same sex act.¹⁹

Only one international study was included in this literature review. Inclusion was based on its more extensive review of barrier use and hygienic measures taken during various types of female-female sexual activity, and its inclusion of U.S. women who have sex with women of all sexual identities. The study found that any barrier use was reported in less than 25% of all participants. Further, 70-87% of participants reported cleaning sex toys before and after versus 16-21% that reported using barriers and 12-16% that reported changing barriers between partners during stimulation with a sex toy.²⁰

Fishman and Anderson reported on multiple types of barrier use and additional sexual preventative measures in lesbian women. The measures assessed were: latex gloves for digital stimulation, dental dams or saran wrap for oral stimulation, condoms cut open and used as a barrier for oral sex, condoms on sex toys, non-shared sex toys, avoidance of tooth brushing/flossing before sex, avoidance of sex during menstruation, safe sadomasochistic sex (such as reducing practices that could result in breaking the skin) and avoidance of sharing razors for shaving. A majority of women reported knowledge of all these

techniques with the exception of safe sadomasochistic sex and not sharing razors. However, a minority of women (0-28%) used any of these techniques. The techniques most likely to be used among lesbian women were avoidance of sex during menstruation (12.9% always used this method, 27.4% used it sometimes) and using condoms on sex toys (11.4% always used this method, 18.6% used it sometimes).³

Two studies^{2,21} used focus groups to assess use and knowledge of protective measures taken during sexual activity among SMW. Marrazzo, Coffey and Bingham reported that barrier use was uncommon despite its use being viewed as acceptable.²¹ The African American WSW participants in Muzny et al.'s study reported good knowledge of sexual preventative measures including washing toys before and after sex, reducing number of sexual partners, and avoidance of sex during menstruation. However, participants stated that their best options for protection against STIs were good hygiene and requiring proof of testing.²

STI Rates

The largest portion of the literature identified regarding SMW lies in STI rates in this population. Studies generally fell into two categories: those that tested participants for certain STIs (here referred to as lab-confirmed STIs) and those that reported on whether participants had a self-reported history of certain STIs (here referred to as self-reported STIs). Many of the studies focused on specific subgroups of the SMW population, such as African American SMW or college students. Despite these differences, universally,

women who have sex with women and men (WSWM) and bisexual women were at higher risk for STIs than WSW or lesbian women. Additionally, WSWM were at similar or higher risk for all STIs than women who solely have sex with men (WSM) or heterosexual women. To quantify this risk, Lindley et al. showed that bisexual women had 60% higher odds of having an STI in the last year than their heterosexual peers.⁵

When considering STIs in SMW, a history of any STI₂ in the last year was reported from 5.8% and 19%, while lifetime rates of STIs was between 18% and 64%. When looking at STIs in the last year, one study of SMW reported a rate of 7% in lesbian women, 12% in heterosexual women, and 19% in bisexual women.²² Lindley headed another study specifically looking at college SMW and found STI rates over the past year of 2.3% in lesbian women, 5.8% in heterosexual women, and 9.1% in bisexual women.⁵

With regards to lifetime prevalence of any STI, Lindley et al. found that 8% of lesbian or bisexual college women had ever been diagnosed with an STI, with the majority of cases being HPV, bacterial vaginosis and genital herpes.²³ Estrich, Gratz and Hotton reported a lifetime STI rate of 18.3% in lesbian women, which was significantly lower than heterosexual and bisexual women, who had similar rates between 42% and 43%.⁸ However, Reisner et al. found no difference in STI rates between WSW and WSM when controlling for age,

race/ethnicity and health insurance.²⁴ In a study by Bauer and Welles, 13% of women reporting only female partners had a history of an STI, while 15% of lesbian-identified women reported a history of STIs. Importantly, 74% of lesbians reported both male and female partners.²⁵

Interestingly, Everett separately analyzed sexual identity and actual sexual practice, and found that women who identified as bisexual and were sexually active with men and women had the highest rates of STIs (64.1%). In contrast, women who identified as lesbian or gay but were sexually active with both men and women had the lowest rates of STIs (32%), as compared to heterosexual identified and behaving women (46.6%).²⁶

With regards to specific STIs, the Appendix is a summary of papers addressing STIs in SMW and their findings.^{5,25,27-38}

HIV

In the mid 1990's, Shotsky reported the prevalence of HIV in WSW at 3%, which was not significantly different from the 2.9% seroprevalence in WSM. WSWM had a significantly higher rate at 4.8%.²⁷ More recently, a study of African American women found that WSW had a rate of 1% while WSWM had a rate of 4% HIV positivity. This study noted that WSWM were more likely to have more lifetime partners compared to their WSW peers.²⁸

In a study from 2001 done with Latino's who inject drugs, 8% (n=12) identified as WSW (lesbian or bisexual OR had sex with a female partner in the last six months OR had ever had sex with a

² Cervicitis, chlamydia, genital warts, gonorrhea, hepatitis B, HIV/AIDS, HPV, pelvic inflammatory disease, syphilis, trichomoniasis, urethritis, vaginitis.

female who injects drugs). However, within that small subset of the study population, the seroprevalence of HIV was 42%, which was significantly higher than heterosexual men or women; with heterosexual women having a seroprevalence of 16%.²⁹ In another study of 231 WSW₃ who inject drugs from 19 US cities, 13% were HIV positive.³⁰

Herpes Simplex Virus-2

Within the African American population, Muzny et al. again showed a higher risk in WSWM than WSW with rates of 64% and 26%, respectively.²⁸ Bauer and Welles found the prevalence to be 5% among SMW surveyed at a Pride festival, however, they did not separate their STI-specific data based on sexual orientation.²⁵ Xu, Sternberg and Markowitz separately analyzed sexual orientation and practice and found that heterosexual women with discordant sexual activity (history of sexual activity with women) had the highest rates of HSV-2 at 45.6% seroprevalence.³¹ This is increased as compared to women with concordant sexual identity and activity; bisexual women with a history of sexual activity with men and women had a seroprevalence of 35.9%. Both heterosexual women and bisexual women with a history of sexual activity with women had a significantly higher rate of seroprevalence of HSV-2 when compared to heterosexual women with a history of sexual activity with only men, who had a seroprevalence rate of 23.8%. Lesbian women with a history of sexually activity only with women had the lowest seroprevalence at 8.2%.³¹

³ WSW defined as having sex with a female partner in the last 30 days.

Chlamydia trachomatis

Two studies headed by Muzny showed that approximately 3% of African American WSW were positive for chlamydia based on laboratory testing at the time of the study. In one study, this rate was not significantly different from the rate of chlamydia in WSWM.²⁸ Conversely, the other found WSWM had significantly higher rates of chlamydia positivity (22.5%).³² Additionally, this study found that 13.5% of WSW reported a lifetime history of chlamydia versus 35% of WSWM.³² Lindley et al. reported no significant difference in chlamydia rates between bisexual and heterosexual women college students, with lesbians having significantly lower rates.⁵

In a Midwest sampling from a pride festival, Bauer and Welles reported the prevalence of chlamydia in SMW to be 6%.²⁵ In a nationwide study over eight years by Singh, Fine and Marrazzo, chlamydia rates were reported as 7.1% in both WSW and WSWM, which is higher than the WSM rate of 5.3%. This study also found that rates were 14% higher in Asian/Pacific Islander WSW and 123% higher among American Indian/Native Alaskan WSW, when compared to their white peers. However, these racial disparities affected different groups when looking at WSWM, with Hispanic WSWM having 12.7% higher risk than their white peers.³³

Neisseria gonorrhoea

Lab-confirmed Gonorrhoea positivity rates at the time of the study and within the past 12 months in SMW were between 0 and 1% for WSW/lesbians and 2 to 8% for WSWM/bisexuals.^{5,28,32} However, none of these studies found a significant difference in rates of GC in

WSWM/bisexuals and their heterosexual counterparts. However, in all of these studies, WSW/lesbians had significantly lower rates. Only one study specific to African American WSW looked at lifetime gonorrhea rates and found gonorrhea rates to be 2.7% in WSW and 28.8% in WSWM.³² Bauer and Welles found the self-reported gonorrhea rate to be just 2% in SMW.²⁵

Human Papillomavirus

Human Papillomavirus (HPV) positive Pap prevalence was studied in one study specifically within HIV positive SMW women. This study found that HPV positive Pap tests⁴ were less common in HIV negative WSW⁵ and WSM⁶ compared to HIV positive WSW and WSM.³⁴ Between the two groups, HPV was less prevalent in WSW (when CD4 count was controlled for in the HIV positive group); 42% in HIV positive WSW and 27% in HIV negative WSW.³⁴

In the larger population, Marrazzo et al. (2001) found that SMW who reported sex with a male in the last year were significantly more likely to have HPV DNA detected.³⁵ Subsequently, Charlton et al. (2011) found that self-reported HPV diagnoses were constant across all sexual orientation groups in adolescents with a prevalence of about 66%.³⁶ In a study of 275 women who had had sex

with women in the last year recruited at the Atlanta Gay Pride Festival, HPV self-reported prevalence 5%, with 27% reporting a history of abnormal Pap smear.³⁷

Others

Only three studies, two headed by Muzny and done with African American women, reported on the prevalence of *Treponema palladium* (syphilis), *Trichomonas vaginalis*, and *Mycoplasma genitalium*.^{28,32} These studies reported the seroprevalence of syphilis at the time of the study to be 0% in WSW and between 0 and 2% of WSWM. The lifetime rates for syphilis were not significantly different at 3.6% and 2.5% for WSW and WSWM, respectively. *T. vaginalis* lab confirmed prevalence in these studies was 13%-17% in WSW and 24%-25% in WSWM. The lifetime rates were only slightly higher at 15.3% for WSW and 28% for WSWM. *M. genitalium* prevalence was between 4% and 7% of WSW tested, and 8% and 12% of WSWM tested. The third study, by Bauer and Welles reported the prevalence of trichomoniasis in SMW to be 6%.²⁵

Bacterial vaginosis (BV) rates were consistently the highest among any single STI researched in SMW. Muzny et al. found lab-confirmed rates in African American women to be 43% among WSW and 59% among WSWM.³⁸ Interestingly Muzny et al. a year later found rates in African American women to be significantly higher in WSWM (48%) than WSW (33%).²⁸

Use of Screening Healthcare Services

Multiple studies analyzed the use of

⁴ Testing included all alpha-9 types (HPV 16, 31, 33, 52 and 58) and alpha-7 types (HPV 18, 39, and 45) of HPV.

⁵ WSW defined as participants who reported no sexual activity with a male partner in the last 5 years but who did report sexual activity with a female partner in that time period.

⁶ WSM defined as participants who reported sexual activity with male partners in the last 5 years and no sexual activity with female partners in that time period.

preventative healthcare services by sexual minority women. Specifically, these services included: recent or lifetime gynecologic general exams (including Pap tests) by a healthcare provider, recent or lifetime mammograms (beginning at age 40), colon cancer screening (beginning at age 50), and HIV testing. As early as 1987, it was reported that lesbian women were less likely than bisexual women to have had Pap smears yearly.⁴ Kerr, Ding and Thompson found that lesbian identified women were less likely to have had a gynecologic exam in the last year or have ever been tested for HIV than their bisexual and heterosexual peers. In this study, however, bisexual women were more likely than heterosexual women to participate in these preventative healthcare measures.¹⁶ The disparity between lesbian identified women and bisexual and heterosexual women had previously been found by Charlton et al. in 2011, who also reported that lesbian women were less likely than their heterosexual and bisexual peers to have had Pap exams both in their lifetime and in the last year, with lesbian identified women having a lifetime Pap exam rate of 76% compared to 90% in bisexual women and 86% and 93% with “completely heterosexual” women and “mostly heterosexual” women, respectively.³⁶

Valanis et al. determined the utilization of mammograms, Pap smears and colon cancer screening by hemoccult testing amongst sexual minority women.³⁹ Lifetime lesbians⁷ and bisexual women were less likely to have

had a Pap test in the last year, and more likely to have never had a Pap as compared to heterosexual women. There was no significant difference among the groups with mammogram testing, nor with Hemoccult testing. This study also found that lesbian and bisexual women were more likely to smoke, be obese, use alcohol, and had lower measures of mental health and social support.³⁹

Kerker, Mostashari and Thorpe separately analyzed sexual identity and actual sexual behavior and found that women whose identity and behavior were concordant were more likely to access preventative care.⁴⁰ Marrazzo et al. found that lifetime WSW were significantly more likely to have never had a pelvic exam when compared to their WSWM peers. Additionally, lifetime WSW had significantly fewer Pap exams over the last five years than their WSWM peers.³⁵

Eaton et al. analyzed WSW use of healthcare services in the setting of having a history of an abnormal Pap smear. Their data showed that women who had a history of an abnormal Pap smear were more likely to have ever had a mammogram or clinical breast exam, and to have had a greater number of lifetime Pap smears compared to their peers who had no history of abnormal Pap smear.³⁷

Discussion

Despite common perception, it is clear that sexual minority women are a population requiring more focus and intervention in regard to sexual preventative health. No subpopulation under the “sexual minority women”

⁷ Defined as ever only having female sexual partners

umbrella had a negligible risk of sexually transmitted infections. Bisexual women/women who have sex with women and men often were found to have a higher risk of STIs. Increased number of lifetime sexual partners among SMW was also a significant predictor of STI risk. Finally, the studies reviewed showed that sexual minority women were less likely to have accessed preventative healthcare or screening testing.

Healthcare professionals are an important link in connecting SMW with preventative healthcare services and education. At a minimum, the specific protocols provided by the United States Preventive Services Task Force (USPSTF) regarding screening testing and preventative health measures for assigned females at birth should be followed regardless of the patient's self-identified sexual identity/orientation, sexual behavior, or gender identity.⁴¹ Additionally, specific resources for SMW can be found from the CDC recommending routine screening tests for SMW as for heterosexual women.⁴² As noted previously, SMW were more likely to be overweight, obese, and to smoke. The CDC also provides information about counseling for these topics. However, counseling alone does not address stigma and social determinants of health. Thus, it is important for healthcare professionals to educate themselves on the aforementioned risks in the SMW population in order to best optimize the sexual health of the population. It is necessary to understand that while we often group women in this population under broad categories, it is imperative to understand each patient's individual

risk. Specifically, women who only have sex with other women during their lifetime could potentially be in a different risk category than bisexual women or women who have sex with women and men. It is crucial to note that the number of sexual partners also plays an important role in assessing risk.

While it may be difficult for healthcare providers to introduce topics of sexual orientation, identity, and behavior, many patients desire this topic to be discussed during their healthcare visit. Baker and Beagan (2014) interviewed both physicians and LGBTQ-identified women and found that physicians taking a "neutral stance" often made SMW feel as if the hetero- and gender-normative status quo was being reinforced. Rather than making patients feel comfortable, the neutrality and avoidance of labels made patients feel as if they had to initiate conversations of sexuality. Many LGBTQ women interviewed wanted their providers to acknowledge their relationships or sexual orientation instead of staying silent in an attempt to avoid making assumptions.⁴³ This was previously reported by Allen et al. who noted that two-thirds of gay, lesbian, and bisexual young adults had not discussed sexual orientation with a healthcare provider, but desired to do so.⁴⁴ Cultural competency training provides healthcare professionals with an understanding of respectful terminology and a base level of knowledge, which will enable them to start these important conversations.

This review on sexual preventative health in US SMW is limited by the mixed methodology and inconsistent definitions used regarding sexual health practices between studies. Thus,

comparisons between studies were difficult. However, we described and outlined comparisons between the studies and formalized key findings with notes in Table 2 as well as throughout the manuscript. Identification and use of standard definitions and core outcome measures would strengthen future research.

Sexual preventative health counseling provided by healthcare professionals must be more commonplace and needs to be tailored to the patient. Fishman and Anderson found that only 15% of lesbians interviewed had received safer sex education regarding female-female sexual activity from their healthcare providers.³ Multiple of the above studies address the fact that a patient's sexual orientation or identity does not always predict their behavior. Thus, it becomes important to not only ask how patients identify, but also with whom they engage in sexual activity, and in what kind of sexual activity they engage. This allows for more directed and appropriate screening for STIs and counseling on preventative measures which can be used during sexual activity. Specifically, a complete discussion of barrier methods can only be had once there is an understanding of the type of sexual activity engaged in and the physical anatomy of the partner(s). It is important for healthcare providers to provide counsel regarding barrier methods (female condom, male condom, digital glove) during penetrative sexual activity. Additionally, counseling should be provided regarding applying a new barrier if sharing sex toys or if there are multiple partners involved in the sexual encounter.

Conclusions

It is important to recognize that the data on sexual preventative health in sexual minority women is limited. Most research in the area concerns subpopulations of this broad heading, and is done by relatively few researchers. Continued and increased research into the area will allow a better understanding of the issues facing SMW and lead to targeted interventions to improve the overall health of this population.

References

1. Coulter RW, Kenst KS, Bowen DJ, Scout. Research funded by the National Institutes of Health on the health of lesbian, gay, bisexual, and transgender populations. *Am J Public Health*. 2014 Feb;104(2):e105-12. <https://doi.org/10.2105/AJPH.2013.301501> PubMed PMID: 24328665; PubMed Central PMCID: PMC3935708.
2. Muzny CA, Harbison HS, Pembleton ES, Austin EL. Sexual behaviors, perception of sexually transmitted infection risk, and practice of safe sex among southern African American women who have sex with women. *Sex Transm Dis*. 2013 May;40(5):395-400. <https://doi.org/10.1097/OLQ.0b013e31828caf34> PubMed PMID: 23588129.
3. Fishman SJ, Anderson EH. Perception of HIV and safer sexual behaviors among lesbians. *J Assoc Nurses AIDS Care*. 2003 Nov-Dec;14(6):48-55. <https://doi.org/10.1177/1055329003255591> PubMed PMID: 14682068.
4. Johnson SR, Smith EM, Guenther SM. Comparison of gynecologic health care problems between lesbians and bisexual women. A survey of 2,345 women. *J Reprod Med*. 1987 Nov;32(11):805-11. PubMed PMID: 3430489.

5. Lindley LL, Barnett CL, Brandt HM, Hardin JW, Burcin M. STDs among sexually active female college students: does sexual orientation make a difference? *Perspect Sex Reprod Health.* 2008 Dec;40(4):212-7. <https://doi.org/10.1363/4021208> PubMed PMID: 19067934.
6. Koh AS, Gómez CA, Shade S, Rowley E. Sexual risk factors among self-identified lesbians, bisexual women, and heterosexual women accessing primary care settings. *Sex Transm Dis.* 2005 Sep;32(9):563-9. <https://doi.org/10.1097/01.olq.00001754.17.17078.21> PubMed PMID: 16118605.
7. Tornello SL, Riskind RG, Patterson CJ. Sexual orientation and sexual and reproductive health among adolescent young women in the United States. *J Adolesc Health.* 2014 Feb;54(2):160-8. <https://doi.org/10.1016/j.jadohealth.2013.08.018> PubMed PMID:24157195.
8. Estrich CG, Gratzner B, Hotton AL. Differences in sexual health, risk behaviors, and substance use among women by sexual identity: Chicago, 2009-2011. *Sex Transm Dis.* 2014 Mar;41(3):194-9. <https://doi.org/10.1097/OLQ.00000000000000091> PubMed PMID: 24521726.
9. Riskind RG, Tornello SL, Younger BC, Patterson CJ. Sexual identity, partner gender, and sexual health among adolescent girls in the United States. *Am J Public Health.* 2014 Oct;104(10):1957-63. <https://doi.org/10.2105/AJPH.2014.302037> PubMed PMID: 25121821; PubMed Central PMCID: PMC4167074.
10. Saewyc EM, Bearinger LH, Blum RW, Resnick MD. Sexual intercourse, abuse and pregnancy among adolescent women: does sexual orientation make a difference? *Fam Plann Perspect.* 1999 May-Jun;31(3):127-31. <https://doi.org/10.2307/2991695> PubMed PMID: 10379429.
11. McCauley HL, Dick RN, Tancredi DJ, Goldstein S, Blackburn S, Silverman JG, Monasterio E, James L, Miller E. Differences by sexual minority status in relationship abuse and sexual and reproductive health among adolescent females. *J Adolesc Health.* 2014 Nov;55(5):652-8. <https://doi.org/10.1016/j.jadohealth.2014.04.020> PubMed PMID: 24962502.
12. Pathela P, Schillinger JA. Sexual behaviors and sexual violence: adolescents with opposite-, same-, or both-sex partners. *Pediatrics.* 2010 Nov;126(5):879-86. <https://doi.org/10.1542/peds.2010-0396> PubMed PMID: 20974791.
13. Herrick AL, Matthews AK, Garofalo R. Health risk behaviors in an urban sample of young women who have sex with women. *J Lesbian Stud.* 2010;14(1):80-92. <https://doi.org/10.1080/10894160903060440> PubMed PMID: 20077268.
14. Champion JD, Wilford K, Shain RN, Piper JM. Risk and protective behaviours of bisexual minority women: a qualitative analysis. *Int Nurs Rev.* 2005 Jun;52(2):115-22. <https://doi.org/10.1111/j.1466-2435.2005.00246.x> PubMed PMID: 15842324.
15. Greene GJ, Fisher KA, Kuper L, Andrews R, Mustanski B. "Is this normal? Is this not normal? There's no set example": Sexual Health Intervention Preferences of LGBT Youth in Romantic Relationships. *Sex Res Social Policy.* 2015 Mar;12(1):1-14. <https://doi.org/10.1007/s13178-014-0169-2> PubMed PMID: 25678895; PubMed Central PMCID: PMC4321759.

16. Kerr DL, Ding K, Thompson AJ. A comparison of lesbian, bisexual, and heterosexual female college undergraduate students on selected reproductive health screenings and sexual behaviors. *Womens Health Issues*. 2013 Nov-Dec;23(6):e347-55. <https://doi.org/10.1016/j.whi.2013.09.003> PubMed PMID: 24183409.
17. Lindley LL, Nicholson TJ, Kerby MB, Lu N. HIV/STI associated risk behaviors among self-identified lesbian, gay, bisexual, and transgender college students in the United States. *AIDS Educ Prev*. 2003 Oct;15(5):413-29. <https://doi.org/10.1521/aeap.15.6.413.24039> PubMed PMID: 14626464.
18. Masters NT, Beadnell B, Morrison DM, Hoppe MJ, Wells EA. Multidimensional characterization of sexual minority adolescents' sexual safety strategies. *J Adolesc*. 2013 Oct;36(5):953-61. <https://doi.org/10.1016/j.adolescence.2013.07.008> PubMed PMID: 24011111; PubMed Central PMCID: PMC3780982.
19. Rowen TS, Breyer BN, Lin TC, Li CS, Robertson PA, Shindel AW. Use of barrier protection for sexual activity among women who have sex with women. *Int J Gynaecol Obstet*. 2013 Jan;120(1):42-5. <https://doi.org/10.1016/j.ijgo.2012.08.011> PubMed PMID: 23106842; PubMed Central PMCID: PMC3557847.
20. Schick V, Rosenberger JG, Herbenick D, Reece M. Sexual behaviour and risk reduction strategies among a multinational sample of women who have sex with women. *Sex Transm Infect*. 2012 Oct;88(6):407-12. <https://doi.org/10.1136/sextrans-2011-050404> PubMed PMID: 22563015.
21. Marrazzo JM, Coffey P, Bingham A. Sexual practices, risk perception and knowledge of sexually transmitted disease risk among lesbian and bisexual women. *Perspect Sex Reprod Health*. 2005 Mar;37(1):6-12. <https://doi.org/10.1363/3700605> PubMed PMID: 15888397; PubMed Central PMCID: PMC1350985.
22. Lindley LL, Walsemann KM, Carter JW Jr. Invisible and at risk: STDs among young adult sexual minority women in the United States. *Perspect Sex Reprod Health*. 2013 Jun;45(2):66-73. <https://doi.org/10.1363/4506613> PubMed PMID: 23750620.
23. Lindley LL, Kerby MB, Nicholson TJ, Lu N. Sexual behaviors and sexually transmitted infections among self-identified lesbian and bisexual college women. *J LGBT Health Res*. 2007;3(3):41-54. <https://doi.org/10.1080/15574090802093323> PubMed PMID: 19042904.
24. Reisner SL, Mimiaga MJ, Case P, Grasso C, O'Brien CT, Harigopal P, Skeer M, Mayer KH. Sexually transmitted disease (STD) diagnoses and mental health disparities among women who have sex with women screened at an urban community health center, Boston, MA, 2007. *Sex Transm Dis*. 2010 Jan;37(1):5-12. <https://doi.org/10.1097/OLQ.0b013e3181b41314> PubMed PMID: 20118673; PubMed Central PMCID: PMC2818209.
25. Bauer GR, Welles SL. Beyond assumptions of negligible risk: sexually transmitted diseases and women who have sex with women. *Am J Public Health*. 2001 Aug;91(8):1282-6. <https://doi.org/10.2105/AJPH.91.8.1282> PubMed PMID: 11499119; PubMed Central PMCID: PMC1446761.

26. Everett BG. Sexual orientation disparities in sexually transmitted infections: examining the intersection between sexual identity and sexual behavior. *Arch Sex Behav.* 2013 Feb;42(2):225-36. doi: 10.1007/s10508-012-9902-1. <https://doi.org/10.1007/s10508-012-9902-1> PubMed PMID: 22350122; PubMed Central PMCID: PMC3575167.
27. Shotsky WJ. Women who have sex with other women: HIV seroprevalence in New York State counseling and testing programs. *Women Health.* 1996;24(2):1-15. https://doi.org/10.1300/J013v24n02_01 PubMed PMID: 8948083.
28. Muzny CA, Austin EL, Harbison HS, Hook EW 3rd. Sexual partnership characteristics of African American women who have sex with women; impact on sexually transmitted infection risk. *Sex Transm Dis.* 2014 Oct;41(10):611-7. <https://doi.org/10.1097/OLQ.00000000000000194> PubMed PMID: 25211257.
29. Diaz T, Vlahov D, Greenberg B, Cuevas Y, Garfein R. Sexual orientation and HIV infection prevalence among young Latino injection drug users in Harlem. *J Womens Health Gen Based Med.* 2001 May;10(4):371-80. <https://doi.org/10.1089/152460901750269698> PubMed PMID: 11445028.
30. Kral AH, Lorvick J, Bluthenthal RN, Watters JK. HIV risk profile of drug-using women who have sex with women in 19 United States cities. *J Acquir Immune Defic Syndr Hum Retrovirol.* 1997 Nov 1;16(3):211-7. <https://doi.org/10.1097/00042560-199711010-00011> PubMed PMID: 9390574.
31. Xu F, Sternberg MR, Markowitz LE. Women who have sex with women in the United States: prevalence, sexual behavior and prevalence of herpes simplex virus type 2 infection-results from national health and nutrition examination survey 2001-2006. *Sex Transm Dis.* 2010 Jul;37(7):407-13. <https://doi.org/10.1097/OLQ.0b013e3181db2e18> PubMed PMID: 20531032.
32. Muzny CA, Sunesara IR, Martin DH, Mena LA. Sexually transmitted infections and risk behaviors among African American women who have sex with women: does sex with men make a difference? *Sex Transm Dis.* 2011 Dec;38(12):1118-25. <https://doi.org/10.1097/OLQ.0b013e31822e6179> PubMed PMID: 22082722.
33. Singh D, Fine DN, Marrasso JM. Chlamydia trachomatis infection among women reporting sexual activity with women screened in Family Planning Clinics in the Pacific Northwest, 1997 to 2005. *Am J Public Health.* 2011 Jul;101(7):1284-90. <https://doi.org/10.2105/AJPH.2009.169631> PubMed PMID: 20724697; PubMed Central PMCID: PMC3110221.
34. Massad LS, Xie X, Minkoff H, Darragh TM, D'Souza G, Sanchez-Keeland L, Watts DH, Colie C, Strickler HD. Abnormal pap tests and human papillomavirus infections among HIV-infected and uninfected women who have sex with women. *J Low Genit Tract Dis.* 2014 Jan;18(1):50-6. <https://doi.org/10.1097/LGT.0b013e3182942733> PubMed PMID: 23959300; PubMed Central PMCID: PMC3905442.
35. Marrasso JM, Koutsky LA, Kiviat NB, Kuypers JM, Stine K. Papanicolaou test screening and prevalence of genital human papillomavirus among women who have sex with women. *Am J Public Health.* 2001 Jun;91(6):947-52. <https://doi.org/10.2105/AJPH.91.6.947> PubMed PMID: 11392939; PubMed Central PMCID: PMC1446473.

36. Charlton BM, Corliss HL, Missmer SA, Frazier AL, Rosario M, Kahn JA, Austin SB. Reproductive health screening disparities and sexual orientation in a cohort study of U.S. adolescent and young adult females. *J Adolesc Health*. 2011 Nov;49(5):505-10. <https://doi.org/10.1016/j.jadohealth.2011.03.013> PubMed PMID: 22018565; PubMed Central PMCID: PMC3200536.
37. Eaton L, Kalichman S, Cain D, Cherry C, Pope H, Fuhrel A, Kaufman M. Perceived prevalence and risks for human papillomavirus (HPV) infection among women who have sex with women. *J Womens Health (Larchmt)*. 2008 Jan-Feb;17(1):75-83. <https://doi.org/10.1089/jwh.2006.0256> PubMed PMID: 18240984.
38. Muzny CA, Sunesara IR, Austin EL, Mena LA, Schwebke JR. Bacterial vaginosis among African American women who have sex with women. *Sex Transm Dis*. 2013 Sep;40(9):751-5. <https://doi.org/10.1097/OLQ.0000000000000004> PubMed PMID: 23949590.
39. Valanis BG, Bowen DJ, Bassford T, Whitlock E, Charney P, Carter RA. Sexual orientation and health: comparisons in the women's health initiative sample. *Arch Fam Med*. 2000 Sep-Oct;9(9):843-53. <https://doi.org/10.1001/archfami.9.9.843> PubMed PMID: 11031391.
40. Kerker BD, Mostashari F, Thorpe L. Health care access and utilization among women who have sex with women: sexual behavior and identity. *J Urban Health*. 2006 Sep;83(5):970-9. <https://doi.org/10.1007/s11524-006-9096-8> PubMed PMID: 16897415; PubMed Central PMCID: PMC2438586.
41. U.S. Preventive Task Force. Published Recommendations. 2015 May. Rockville, MD. Available from: <http://www.uspreventiveservicestaskforce.org/BrowseRec/Index>
42. Centers for Disease Control and Prevention. Lesbian and Bisexual Women. 2014 Mar. Available at <http://www.cdc.gov/lgbthealth/women.htm>
43. Baker K, Beagan B. Making assumptions, making space: an anthropological critique of cultural competency and its relevance to queer patients. *Med Anthropol Q*. 2014 Dec;28(4):578-98. <https://doi.org/10.1111/maq.12129> PubMed PMID: 25196115.
44. Allen LB, Glick AD, Beach RK, Naylor KE. Adolescent health care experience of gay, lesbian, and bisexual young adults. *J Adolesc Health*. 1998 Oct;23(4):212-20. [https://doi.org/10.1016/S1054-139X\(98\)00022-6](https://doi.org/10.1016/S1054-139X(98)00022-6) PubMed PMID: 9763157.