Health Care-Related Correlates of Cervical Cancer Screening among Sexual Minority Women: An Integrative Review

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Abstract

Introduction—Sexual minority women may have lower rates of cervical cancer screening than heterosexual women. Healthcare-related factors may explain some of the variation in cervical cancer screening rates among sexual minority women (SMW; lesbian, bisexual, nonheterosexual women). We aimed to synthesize published evidence of healthcare-related correlates of cervical cancer screening among SMW.

Methods—We searched PubMed, CINAHL, and PsychInfo databases for English language studies published between January 2000 and March 2017 that 1) assessed sexual identity or the sexual partners of female participants, 2) included cervical cancer screening as a main outcome of interest, and 3) measured at least one healthcare-related variable in addition to cervical cancer screening. We excluded articles that: 1) reported on non-US samples; or 2) did not report original research. We reviewed the sample, methods, and findings of 17 studies. We then summarized current knowledge about healthcare-related factors across three categories and generated recommendations for clinical practice and future research.

Results—Several healthcare-related factors such as previous contraception use, having a primary care provider, knowledge of screening recommendations, and disclosing sexual orientation to providers were consistently positively associated with cervical cancer screening. Three groups of

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factors: previous healthcare use, provider-related, and belief-related factors, account for a substantial part of the variation in cervical cancer screening among SMW.

Discussion—Several gaps in knowledge remain that could be addressed by recruiting more diverse samples of SMW with improved generalizability. Clinicians and clinical institutions can address factors associated with low rates of screening among SMW by preventing sexual orientation-based discrimination, inviting sexual orientation disclosure, and offering cervical cancer screening to SMW at a variety of healthcare encounters. Future research should examine how the location of care and provider type impact SMW's cervical cancer screening behaviors and should test the effectiveness of healthcare interventions designed to address sexual orientation-related disparities.

Keywords

Sexual Minority women; sexual orientation; cervical cancer screening; LGBT health; health disparities

INTRODUCTION

Cervical cancer prevalence has dramatically declined since the 1950's¹ and over the past several decades,² largely due to widely available screening services. However, disparities in cervical cancer screening in the United States (US) persist by race, class, region, and sexual orientation.³ There are well-documented disparities by socioeconomic status and race in both cervical cancer screening and survival rates.⁴⁻⁶ For example, across studies, black women tended to report higher rates of screening than white women, but cervical cancer incidence and mortality rates are higher among black women than white women. In a literature review, Plourde et al⁷ found that healthcare-related factors such as provider recommendations for Papanicolaou tests, high communication scores for providers, and the presence of quality improvement programs were positively associated with rates of Papanicolaou testing. Healthcare-related factors may partially explain cervical cancer screening disparities, and represent relatively modifiable correlates of screening compared to broader social determinants of health.

Sexual minority women (SMW), or women who identify as lesbian, bisexual, queer, or other non-heterosexual identities, experience multiple health and healthcare disparities including lower rates of primary care services such as cervical cancer screening.⁸ Evidence of the incidence or prevalence of cervical cancer among SMW is scarce, due to the fact that sexual orientation data are not collected in most cancer surveillance programs.⁹ However, one analysis of data from the 2001, 2003, and 2005 California Health Interview Survey found that both lesbian and bisexual women had increased rates of cervical cancer diagnosis compared to heterosexual women.¹⁰ Analyses of the National Health and Nutrition Examination Survey (NHANES) have demonstrated the need for cervical cancer screening among SMW by showing that the prevalence of genital human papilloma virus (HPV) among women with same sex partners is between 51% and 53%, which was not significantly different than women with no same-sex partners (43.9%).^{11,12}

Two previous literature reviews have reported rates of cervical cancer screening among women who identify as lesbian specifically. Brown and Tracy^{13(p 1011)} argued that “lesbians represent an overlooked health disparity group across cancers and along the cancer continuum.” Their review concluded that several risk factors for cervical cancer aggregate among lesbians, including smoking, overweight and obesity, early sexual debut, and multiple sexual partners, and confirmed that lesbian women were less likely to be screened for cervical cancer despite potentially increased risk. Waterman and Voss¹⁴ also reviewed rates of cervical cancer screening among lesbian women. Based on literature published between 2000 and 2013, the authors found that lesbian women in various US samples reported annual cervical cancer screening rates between 48% and 81%, compared to 83% in the general population.¹⁵

At both individual and systematic levels, the social and economic consequences of living with a stigmatized sexual identity are thought to explain sexual orientation-related health disparities. Misinformation and lack of training among healthcare providers are examples of the consequences of institutional stigma around sexual orientation.⁸ For example, some providers and SMW themselves may believe that SMW do not need screening for cervical cancer because they do not have sex with men.^{16,17} However, various studies have demonstrated that most SMW have had sex with men¹⁸ and that HPV can be transmitted between women as well as via fomites,^{19,20} indicating that SMW do need regular screening. Experiences of discrimination within and outside of the healthcare system also contribute significantly to disparities.^{21–25} Some groups of SMW are more likely than others to experience discrimination in healthcare (eg, racial and ethnic minority SMW).²⁶ Accordingly, some previous studies have found lower rates of cervical cancer screening among SMW than among heterosexual women^{27,28} and others have found no differences.^{29,30}

Factors that reflect stigma and discrimination in healthcare may be more modifiable than demographic or socioeconomic factors. Therefore, the purpose of this integrative review was to synthesize published evidence about healthcare-related correlates of cervical cancer screening among SMW. In light of the limitations of the current literature and persistent disparities in sexual and reproductive health (SRH) among SMW, there is a critical need to review existing knowledge about how healthcare-related factors impact cervical cancer screening in this population.

MATERIALS AND METHODS

The research team conducted an integrative literature review following Torracco’s³¹ and Whittemore and Knafl’s³² guidelines. An integrative review aims to summarize existing literature to reconstruct an established research topic with new conceptual understanding.³¹ In this case, we aimed to reconstruct the phenomenon of cervical cancer screening among SMW to understand it as a potential outcome of various healthcare-related factors.

Literature Search

Figure 1 displays the flow diagram of our literature search process. The first author conducted the database search, reviewed article titles and abstracts for relevance, and

reviewed all relevant articles. PubMed, CINAHL, and PsychInfo databases were queried for research articles published between 2000 and 2017 that included measures of sexual identity or same-sex sexual behavior and cervical cancer screening. We included studies published since 2000 because previous reviews of cervical cancer screening, published in 2008 and 2015, only included lesbian-identified women. Search strings included multiple terms for sexual orientation (eg, “Sexual Minorit*” OR “Homosexuality, Female” OR “Lesbian”) as well as cervical cancer screening (eg, “Papanicolaou Test” OR “Early Detection of Cancer”). For this review, we defined SMW as those who identify as lesbian, gay, bisexual, or other nonheterosexual identities, and/or women who have sex with women (WSW). Although behavioral measures do not capture the complete social, cultural, and political experience of those with minority sexual identities,³³ we included these studies in order to cover the broadest range of relevant literature.

Articles published in English between January 2000 and March 2017 that employed any study design were included if they 1) assessed female participants’ sexual identity or the sex or gender of sexual partners, 2) included cervical cancer screening as a main outcome, and 3) measured any other healthcare-related variable in addition to cervical cancer screening. We limited our review to studies of US populations because both the unique structure of the US healthcare system and the specific sociopolitical environment related to sexual minority status impact access to preventive care. We excluded articles that: 1) reported on non-US samples; or 2) were not data-based research reports (eg, expert opinions, policy recommendations, and editorials). We operationalized healthcare-related factors as any variables measuring an aspect of health history, healthcare utilization, experiences in healthcare, or health and healthcare beliefs. In this review these factors included contraceptive use, HPV vaccination, testing for sexually transmitted infections (STIs), pregnancy history, receipt of regular primary care, relationships with providers, and experiences of discrimination in healthcare settings, among others (see Table 2).

We intended this review to focus on cisgender SMW, or those whose gender identity aligns with the sex they were assigned at birth. However, most authors of reviewed studies did not specify how they determined the sex or gender of participants and thus it is possible that these samples include some transgender men. Two publications in this review (from one linked study) purposively included transgender men (those who were assigned female sex at birth), but the majority of findings and conclusions reported in these publications refer to SMW, so these publications were included.^{34,35} Although further study of the cervical cancer screening needs and practices of transgender, gender non-binary, and intersex populations is needed, this is beyond the scope of this review.^{36,37} Two recent reviews summarize the experiences of transgender men seeking cervical cancer screening and the disparities faced by this population.^{38,39}

Data Evaluation Approach

The first author documented characteristics of each study including approach, sampling strategy and sample size, methods, major findings, and limitations (summarized in Table 1). Each study’s measurement strategies for cervical cancer screening, sexual orientation, and healthcare-related variables were also documented. Using constant comparison as we

analyzed study findings,³² the research team maintained a list of all healthcare factors measured in the included studies, and grouped these factors into three categories. These categories were adjusted and refined until the study team reached agreement that all included studies were meaningfully represented and the categories contributed to a conceptual reconstruction of cervical cancer screening among SMW as a result of healthcare-related factors. Because the studies included in this review represent diverse methodologies and approaches, and the aim of the review was to conceptually analyze what is in the literature, we did not conduct a formal quality analysis of each study. Instead, we documented any major gaps in each study, and investigated outlying findings; in other words, we evaluated whether quality issues could have led to a publication's surprising or conflicting findings.³²

RESULTS

Description of the Studies

A total of 17 studies, three qualitative and 14 quantitative, met all inclusion criteria (see Figure 1). In one case, we located two publications reporting analyses of the same data by the same research team, so we discuss their findings as one study.^{27,40} Overall, six studies compared SMW to heterosexual women, and 11 included only SMW. All studies used participant self-report of Papanicolaou test to measure cervical cancer screening, though the measures varied in terms of timing and frequency of Papanicolaou tests. For example, what constituted routine and nonroutine screening was defined differently in each quantitative study. Sexual identity and behavior measurement strategies also varied. Quantitative sample sizes ranged from 165 to 95,096. Table 1 summarizes key factors of each study. Table 2 summarizes the healthcare factors tested or observed in reviewed studies across the three categories identified in our data analysis process.

Two studies measured relevant healthcare factors but did not analyze relationships between these factors and cervical cancer screening.^{17,41} Five quantitative studies compared correlates of screening between SMW and heterosexual women.^{27,29,40,42–44} Seven quantitative studies included samples of SMW only and explored healthcare-related factors that impact screening within this group.^{16,35,45–49} Additionally, three qualitative studies documented SMW's experiences seeking and receiving cervical cancer screening.^{34,50,51} Below, we summarize findings about each group of healthcare-related factors.

Healthcare Variables Co-Measured with Cervical Cancer Screening

In two quantitative studies, investigators measured healthcare-related variables but did not analyze their impact on cervical cancer screening. Findings from these studies are valuable because they highlight patterns of healthcare use among SMW. Agénor et al²⁷ surveyed 165 women at an Alabama sexually transmitted infection clinic who reported having had sex with at least one female partner in the past year. The investigators analyzed the sample separately by sexual identity and by sexual behavior. Findings indicated that lesbian women were less likely than bisexual women to have received a Papanicolaou test in the past three years and that women with only female sexual partners were less likely to have been screened than women with both male and female partners. One third of the full sample had a

previous abnormal Papanicolaou test, and only 6% were currently using hormonal contraception. Lesbian-identified participants were less likely than bisexual participants to have ever been pregnant and to have ever been tested for HIV.

Marrazzo et al¹⁷ recruited a community-based sample of 248 WSW in Seattle, Washington. Ten percent of study participants had been told by a provider that they did not need Papanicolaou tests because they were not sexually active with men. Participants also reported negative experiences with Papanicolaou tests and not knowing where to receive Papanicolaou testing as barriers to screening.

Factors Related to Previous Health Service Use

The use of other SRH healthcare services was consistently positively associated with screening. Many studies measured participants' use of other SRH services, including hormonal contraception,^{27,40,41,43} HPV vaccination,¹⁶ STI treatment or counseling,^{27,40,41,45} pregnancy-related care,^{27,40,41} previous good or bad Papanicolaou test experiences,^{17,35,47} and history of abnormal Papanicolaou tests.^{34,35,44,46} For example, Agénor et al^{27,40} reported analyses of data from the 2006–2010 National Survey of Family Growth in two reports. The authors found that receiving STI counseling, testing, or treatment in the past year significantly increased the odds of Papanicolaou testing over the same year across all sexual orientation groups, receiving contraception services in the past year significantly increased odds of past year Papanicolaou test among heterosexual and bisexual women, and previous pregnancy increased odds only among heterosexual women²⁷. In a second analysis of these data, both black and white women with female sexual partners had significantly lower odds of Papanicolaou testing than those with only male sexual partners.⁴⁰ Adjusting for insurance status, use of contraceptive services, and STI testing completely attenuated the lower odds among black and white women with female partners.

Matthews et al⁴⁴ analyzed data from a sample of 824 lesbian, heterosexual, and bisexual women recruited in Chicago, New York, and Minneapolis/St. Paul, and found that a history of an abnormal Papanicolaou test increased odds of both annual and routine (every three years) screening. Johnson et al surveyed 226 women who identified as lesbian or bisexual and “transgender people with a cervix”^{35(p. 457)} and found that a previous positive experience with Papanicolaou testing was associated with higher odds of recent testing.

Several studies also found positive associations between having health insurance and cervical cancer screening among SMW. Tracy et al⁴⁸ randomly selected 1,006 lesbian women to reflect a presumed age and race distribution of the US lesbian population from the LGB Specialty Panel: a panel of 30,000 lesbian, gay, and bisexual individuals who had previously participated in another study. Non-routine screeners in this sample reported lack of insurance as one of the top three reasons for not being screened. In an analysis of 2001–2007 California Health Interview Survey data, Boehmer et al⁴² found that among 95,096 female participants, lesbian women had lower odds of past-year Papanicolaou tests than heterosexual women. When controlling for health insurance status, bisexual women had higher rates of past-year Papanicolaou tests and regular physician visits than heterosexual women.

Provider-Related Factors

In addition to individuals' use of other healthcare services, factors related to healthcare providers were also consistently positively associated with screening. These factors include provider recommendation for Papanicolaou testing, quality of communication or relationship with providers, and disclosure of sexual orientation to providers. Two studies using samples from the LGB Specialty Panel^{16,48} found that SMW commonly cited lack of provider recommendation as a reason for not being screened.

Several studies also demonstrated the association between patient-provider communication and cervical cancer screening. For example, in Johnson and colleagues' web-based survey, satisfaction with one's healthcare provider was positively associated with routine screening in multivariate regression models.³⁵ The qualitative studies in this review also highlight the impact of patient-provider relationships and communication on screening. Agénor and colleagues⁵⁰ recruited 18 African-American lesbian, bisexual, and queer women in Massachusetts to participate in focus groups addressing their experiences receiving cervical cancer screening. Patient-provider communication was the primary emergent theme. Four sub-themes included the provider's style and demeanor; encountering heteronormative assumptions; experiencing heterosexism, racism, and classism in healthcare; and the provider's own professional and socio-demographic background. Clark et al⁵¹ also conducted focus groups with women who partner with women and women who partner with men. Participants expressed that better relationships with providers, including explicit inquiry and acknowledgment of their relationships and sexual identity, would increase their use of screening services.

Finally, disclosing one's sexual orientation to healthcare providers was associated with higher rates of screening in several studies, despite the persistence of experiences of discrimination in healthcare.^{16,45,48,49,51} Youatt and colleagues⁴⁹ conducted a web-based survey of lesbian, gay, bisexual, and other nonheterosexual women between 21 and 24 years old. Their study focused on the impact of sexual orientation disclosure to physicians on use of preventive sexual health services including Papanicolaou testing. They found that being out to one's provider remained significantly associated with higher rates of Papanicolaou testing when controlling for race, ethnicity, sexual identity, age of sexual debut, and number of lifetime male sexual partners. Participants who were women who partner with women in Clark and colleagues' qualitative focus group study reported that lack of acknowledgment of minority sexual orientation was a barrier to screening, and again, that explicit acknowledgment of their relationships and sexual identity would increase their use of screening services.⁵¹ Tracy et al's⁴⁷ internet-based survey of lesbian women also found that non-routine cervical cancer screeners were less likely to have disclosed their sexual orientation to providers.

Healthcare Perceptions and Beliefs

Several studies also demonstrated associations between Papanicolaou testing and perceptions and beliefs about HPV, cervical cancer screening, and healthcare more broadly. Three studies found that SMW who reported more barriers to screening were less likely to be screened.^{29,47,48} Four studies examined SMW's perceptions of their risks for HPV

infection and cervical cancer. For example, Charlton and colleagues⁴³ used data from the 2005 Growing Up Today Study, a longitudinal study of 3,821 18-to-25-year-old women, to examine constructs from the Health Belief Model and their impact on Papanicolaou testing across sexual orientation groups. The Health Belief Model explains individuals' health behaviors through four constructs: perceived susceptibility to disease, severity of disease, benefits of the health behavior, and barriers to the behavior.^{43,52} Charlton and colleagues found that lesbian women had lower odds of reporting a past-year Papanicolaou test than other groups even when accounting for Health Belief Model constructs. Contradicting those findings, Tracy and colleagues⁴⁷ found that among SMW, nonroutine screeners perceived higher susceptibility to cervical cancer than routine screeners (21–30 yrs. old with Papanicolaou test in the past year, or 30 yrs. old with Papanicolaou test in the past two years), though there was no difference in perceived seriousness of cervical cancer between routine and nonroutine screeners.

Reviewed studies also examined the role of perceived discrimination in healthcare settings in predicting cervical cancer screening among SMW.^{29,34,35,47,51,53} We specify *perceived* discrimination not to discredit reports of discrimination but to emphasize that the perception of discrimination can have important psychological and even physical health effects.⁵⁴ For example, two studies that were part of Clark and colleagues' Cancer Screening Project for Women found that perceived discrimination was an important factor for SMW. Their quantitative analysis found that participants who had “put off, avoided, or changed the place of screenings because of their sexual orientation” were less likely to report cancer screening.^{29(p. 454)} In their qualitative focus group study, fear of discrimination in healthcare settings, and nonconforming gender expression or identity were barriers to screening among women who partnered with women.⁵¹ Experiences of stigma or unsafe healthcare environments and encountering heterosexism from providers also emerged from qualitative interviews conducted by Johnson and colleagues³⁴ and Agénor and colleagues.⁵⁰

DISCUSSION

Summary of Trends

Our review highlights consistent patterns of healthcare-related correlates of cervical cancer screening among SMW. In studies that compared SMW to heterosexual women, various healthcare-related factors moderated or explained some of the sexual orientation-related disparity, and the factors found to be associated with screening among SMW were consistent across studies. Our review also confirms that SMW may be more likely to experience the barriers that are associated with lower rates of screening for all women.

Previous Health Service Use—Reviewed studies consistently showed that use of other sexual or reproductive healthcare services, including contraception,^{27,40,41,43} STI testing or treatment,^{27,40,41,45} and pregnancy-related care,^{27,40,41} was associated with higher rates of Papanicolaou testing among SMW. Findings from this review support evidence that SMW report lower rates of these other SRH services than heterosexual women.^{16,27,41} Because SMW may be less likely to use these services, they may concomitantly experience fewer circumstances in which Papanicolaou testing is offered or recommended. Being uninsured

was also consistently associated with lower odds of cervical cancer screening, despite the existence of Title X and National Breast and Cervical Cancer Early Detection Program clinics and programs, which provide Papanicolaou tests and other SRH services at low or no cost.^{55,56} Though the impact of geographic factors on SMW's healthcare utilization have not been well studied, there may be additional, significant disparities between urban and rural SMW in terms of access to these low- or no-cost screening opportunities.

Provider-Related Factors—Previous studies have demonstrated that provider-related factors are associated with increased screening rates in the general population of women.^{4,7} This review demonstrates that provider recommendations for screening, good communication, and comfort with providers are also positively associated with screening among SMW. In contrast, experiences of discrimination are common and likely negatively affect SMW's rates of screening.^{8,25,57,58} Many SMW continue to experience and fear discrimination from providers based on their minority sexual identity.^{35,47,51} In every study measuring sexual orientation disclosure, disclosure was associated with higher screening rates.^{16,45,48,51} It is unlikely that screening is a direct result of sexual identity disclosure, but more likely that providers who invite disclosure are also more likely to provide evidence-based care to SMW, or that SMW who disclose to providers also have stronger social support systems or more resources to mitigate the deleterious effects of potential discrimination in healthcare.⁵⁹ Finally, findings from only one study in this review¹⁷ directly suggested that some providers misunderstand SMW's need for cervical cancer screening. However, this study was conducted more than 15 years ago and may not represent current providers' knowledge.

Perceptions and Beliefs—Perceptions and beliefs about cervical cancer risk and the need for screening were also consistently associated with self-reported screening rates.^{16,35,43,46–48,50} Multiple studies used the Health Belief Model, a model that explains health behaviors through individuals' attitudes and beliefs.⁵² In these studies, SMW's perceived risks for HPV and cervical cancer, as well as perceived prevalence of HPV, explained some variation in cervical cancer screening rates. These studies also suggest that many SMW may still believe that they do not need cervical cancer screening.^{16,35,48,50} Although measured differently in each study, perceptions and fears of discrimination in healthcare were negatively associated with screening.^{29,30,34,35,47,48,50,51}

Quality of the Literature

There are well-documented challenges with sampling from sexual minority populations,⁸ and the representativeness of study samples of SMW is of substantial concern. However, problems with non-representative samples can be mitigated by clearly communicating the study frame and sampling strategy. In the reviewed publications, some researchers did not thoroughly describe their sampling strategy or used simple convenience samples. Samples of SMW were largely white and well-educated except where specific strategies were used to recruit either exclusively African American participants^{41,50} or racially and ethnically diverse samples.^{16,44} Six studies used data from state-level surveys, which are more likely to be representative of that state's population. Most of these authors acknowledged that their samples were not nationally representative but only one discussed the specific state-level

policies that may have affected healthcare experiences and resources for SMW in that state.²⁹ Also of concern is the fact that many of the studies in this review analyzed data that were collected more than 10 years ago. The social position of sexual minorities has rapidly changed over the previous several decades, and these changes likely have had important effects on experiences in healthcare and health outcomes for sexual minority communities.⁶⁰

The qualitative studies included in this review were of mixed quality. One study provided detailed descriptions of data collection, analysis, and reporting processes, and thick description of findings.⁵⁰ The two remaining studies did not identify a specific qualitative approach or methodology, and had more limited descriptions of the data analysis processes.^{34,51} All three of these publications, however, included rich description of themes and included several illustrative examples of each theme from participant quotes.

Limitations of this Review

Limitations of this review should be noted. First, the review may not be exhaustive. The major foci of this review (SMW, cervical cancer screening, and healthcare experiences) are broad concepts that may be referred to or indexed in multiple ways. We used a broad array of search terms to mitigate this possibility in all databases. Nevertheless, there may be published research that was not identified in our search. While PubMed, CINAHL, and PsychInfo databases are the most likely to include relevant literature, there may be existing research that is only available elsewhere. Second, this review is limited to studies of US women. The specific context of the US healthcare system is important for understanding how experiences in healthcare may influence future healthcare decisions. However, the social context of sexual minority identities may be similar in other countries, and some international literature may include relevant findings.

Finally, most studies included in this review do not reflect the most current guidelines for cervical cancer screening endorsed by the United States Preventative Services Task Force.⁶¹ Many of the reviewed studies used past-year Papanicolaou testing as the outcome of interest, which no longer reflects most women's screening needs. We can interpret these previous findings as meaningful representations of SMW's adherence to recommended screening at the time of study. However, updated guidelines that call for three-year intervals between screening for most women are likely to impact rates of adherence among various populations of women, including SMW.

Recommended Research Agenda

The results of this review provide preliminary evidence that multiple healthcare-related factors are important in predicting SMW's use of cervical cancer screening services. However, several important gaps in the literature remain. First, most studies of SMW include homogenous samples in terms of race, ethnicity, and socioeconomic class. Sexual minority women who are also members of other marginalized groups are likely to face unique challenges in seeking healthcare and may be subject to harsher social and economic consequences related to their sexual orientation.^{26,62,63} Investigators must work to develop an overall body of literature that reflects the diversity of SMW, in terms of specific sexual

identity as well as race, ethnicity, education level, income, immigration and insurance status, gender identity, and other factors likely to influence use of preventive healthcare.

Additionally, the overall reproductive health of SMW, including pregnancy and childbearing history, has not been adequately studied. This review supports evidence that pregnancy represents an important point of entry into healthcare for SMW, as for heterosexual women.²⁷ It will be important to understand how past healthcare experiences such as pregnancy-related care influence SMW's use of regular screening. Relatedly, all studies in this review had cross-sectional study designs. Although some studies evaluated routine screening or counts of Papanicolaou tests over time, they relied on self-report and therefore findings may be impacted by recall and/or social desirability biases. Longitudinal studies would help identify more clearly how aging, important life and health-related events, relationship changes, and other factors influence SMW's use of cervical cancer screening and other preventive care across the lifespan.

Future studies should also examine where SMW seek care and how choices about seeking care may change over the life course. Many urban areas in the United States have clinics that specifically target sexual and gender minority populations, which are typically characterized by patient- and community-centered care models.³⁶ However, very little evidence exists on the specific impact of these clinics on quality or frequency of care, or the health outcomes of their patients. Additionally, SMW who reside in less urban or lower-resourced communities may not have access to these clinics and be more likely to avoid care. Little or no formal research has been done to assess the effectiveness of healthcare interventions to increase screening among SMW. Evidence-based recommendations for provider- and system-level changes to address disparities among SMW should be tested rigorously. Additionally, no studies in this review reported the types of providers from whom SMW sought care, including whether they received primary or specialty gynecologic care and if their providers were physicians, nurse practitioners or nurse-midwives, or physician assistants. There may be aspects of a particular provider type's clinical practice that better meet the needs of SMW, and this information will be critical in terms of effectively improving access to high-quality, affirming care.

Clinical Recommendations

While few, if any, studies have rigorously tested the impact of healthcare interventions on improving cervical cancer screening or other preventative health service uptake among SMW, this review supports several common sense strategies that should nonetheless be employed by providers and institutions. Provider recommendations for screening, quality of relationships with providers, and disclosure of sexual orientation to providers were significant correlates of screening in multiple studies. Nurse practitioners, nurse-midwives, and other nursing professionals can all actively improve the quality of SMW's relationships to their healthcare team, and can contribute to an environment that encourages disclosure. Clinical institutions and health professional schools should ensure that all providers are trained to recommend and provide comprehensive cancer screening for SMW. Some resources exist to guide schools towards improved training, including the Association of American Medical Colleges' recommended curriculum, which outlines a broad sexual and

gender minority health agenda for medical students and recommendations for institutional climate change.⁶⁴ One textbook designed for nursing education also covers important topics in sexual and gender minority health, including specific recommendations for cancer screening among SMW.⁶⁵ However, several survey studies demonstrate that medical and nursing schools currently place little emphasis on sexual or gender minority health.^{66,67} Therefore, practicing clinicians must independently learn best practices for caring for SMW and other sexual minority populations by seeking out resources as they would on any other evidence-based practice. Table 3 lists several resources that contain advice and guidelines on caring for sexual minority populations.

In order to meet the screening needs of SMW, healthcare professionals should develop clinical communication skills, with a focus on eliciting sexual orientation and sexual and social history information without expressing assumptions or moral judgments. Healthcare providers must discuss recommendations for cervical cancer screening in a way that is comprehensible and relevant to patients. While nursing and nurse-midwifery both share philosophies of care that highlight person-centeredness and individualized care guided by evidence, neither has consistently applied these philosophies to SMW either in formal education or clinical practice.^{68–71}

Evidence suggests that fear and anticipation of discrimination in healthcare settings is enough to act as a barrier to cervical cancer screening among SMW. Clinical institutions can address these fears of discrimination by making sexual orientation-diverse families and individuals visible in marketing materials, signage, and written informational materials. All written forms should include open-ended items about sexual orientation and relationship status to communicate acceptance of and competence around sexual orientation.⁷² Innovations in electronic health records can potentially encourage disclosure by prompting providers to collect relevant data.⁷³ Some institutions have also begun to offer specialty clinic days for SMW,⁷⁴ or designating certain clinic locations as specialized in sexual minority care.⁷⁵

Finally, this review's finding that SMW who have received healthcare for other SRH needs are more likely to report cervical cancer screening indicates that providers may recommend screening only at visits directly related to SRH. Given evidence that SMW may be less likely to seek or need these other SRH services, providers should also encourage and discuss cervical cancer screening at a wider variety of clinical encounters. Electronic health records can be used to generate automated reminders for clinicians and patients about their next recommended screening who otherwise do not return for care often. This may be increasingly important under the latest screening guidelines, which have lengthened the time between recommended Papanicolaou tests for most people.⁷⁶ While public health approaches are necessary to address population level disparities, this review demonstrates that individual clinical institutions and providers can also meaningfully impact regular cervical cancer screening among SMW.

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Quick Points

- Uninsurance is consistently negatively associated with reporting cervical cancer screening among sexual minority women despite programs that provide funding for Papanicolaou tests at reduced or no cost.
- Fear of discrimination in healthcare settings and poor communication with healthcare providers act as barriers to cervical cancer screening among sexual minority women.
- Providers should invite sexual orientation disclosure and discuss and encourage cervical cancer screening at a variety of clinical encounters to improve screening rates among sexual minority women.

Figure 1.
Flowchart of study selection process.

Table 1

Summary of Studies Included in Review.

Author Date Study Location	Methods/ Approach	Sample	Outcome Variable	Findings Related to Demographic Factors	Findings Related to Health Care Factors	Study Limitations
Studies Co-Measuring Health Care Related Variables						
Agénor et al ⁴¹ 2016 Birmingham, Alabama	Descriptive correlational survey using self-report.	Purposive sample of African-American women attending Jefferson County Department of Health Sexually Transmitted Disease clinic who reported sex with at least one female partner in past year (N=165).	Papanicolaou test within past 3 years (yes/no).	Lesbian women less likely to report screening than bisexual women (RR, 0.75; 95% CI, 0.61–0.91). Women with only female partners less likely to report screening than women with male and female partners (RR, 0.82; 95% CI, 0.67–0.99).	Patterns in other SRH use: Bisexual women were more likely to have been pregnant (RR, 0.64; 95% CI, 0.48–0.85) and been tested for HIV (RR, 0.88; 95% CI, 0.80–0.96) than lesbian women. Only 6% overall were currently using hormonal contraceptives.	Sample is not generalizable to larger population of SMW.
Marrazzo et al, ¹⁴ 2001 Seattle, Washington	Descriptive correlational survey using self-report.	Community-based convenience sample of women reporting sex with 1 woman in past year (N=248).	Ever vs never had a Papanicolaou test. Number of Papanicolaou tests in past 5 years. Years since last Papanicolaou test. Age at first Papanicolaou test (years). History of abnormal Papanicolaou test (yes/no).	Women who had never had a male partner were less likely to have had any Papanicolaou tests (10% vs 2.1%; $P=.03$), had fewer Papanicolaou tests in the past 5 years (2.3 vs 3.5 tests; $P<.001$), and a longer time interval since their last Papanicolaou test (2.2 vs 1.3 years; $P<.001$) than women with male sexual partners in the past year.	Patterns in other SRH use: 10% were told by providers that they did not need Papanicolaou tests. Reasons for not being screened included uninsurance (42%), previous negative experiences with Papanicolaou tests (26%), not knowing where to get a Papanicolaou test (26%), and belief that they did not need Papanicolaou tests (22%).	Had detailed sexual history data but did not measure sexual orientation. Did not control for demographics in regression analysis. Sample was 88% white and 69% college-educated; may not be representative.
Studies Examining Health Care Experience Variables as Correlates to Cervical Cancer Screening						
<i>Samples comparing SMW and heterosexual women</i>						
Agénor et al ^{24, a} 2014 United States	Secondary analysis of 2006–2010 National Survey of Family Growth data.	2006–2010 National Survey of Family Growth data; designed to be national representative of civilian, noninstitutionalized women in the United States ages 15–44 (N=9,581 women aged 21 to 44)	Papanicolaou test in past 12 months (yes/no).	Black race was positively associated with odds of past year Papanicolaou test (OR, 1.65; 95% CI, 1.28–2.13). Less than high school education (OR, 0.71; 95% CI, 0.53; 0.95) and all incomes lower than 300% of federal poverty level (ORs, 0.62–0.73) were negatively associated with odds of testing.	Uninsurance was associated with lower odds of Papanicolaou testing (OR, .43, 95% CI, 0.35–0.52). Interaction terms showed that past year use of contraception was associated with higher odds of Papanicolaou testing among heterosexual (OR, 6.79, 95% CI, 5.46–8.44) and bisexual women (OR, 10.03; 95% CI, 1.51–66.03) and ever being pregnant was associated with higher odds of testing only among heterosexual testing.	Large nationally representative sample, some racial diversity (61% white), nuanced sexual orientation measures.

Author Date Study Location	Methods/ Approach	Sample	Outcome Variable	Findings Related to Demographic Factors	Findings Related to Health Care Factors	Study Limitations
Agénor et al ^{36,a} 2014 United States	Secondary analysis of 2006–2010 National Survey of Family Growth data focused on reporting differences among racial groups.	2006–2010 National Survey of Family Growth data; designed to be national representative of civilian, noninstitutionalized women in the United States ages 15–44 (N=9,581 women aged 21 to 44)	Papanicolaou test in past 12 months (yes/no).	Reporting only female sexual partners was associated with lower rates of past year Papanicolaou testing among white women (OR, 0.25; 95% CI, 0.12– 0.52) and marginally among black women (OR, 0.32; 95% CI, 0.01– 1.52).	women (OR, 1.37; 95% CI, 1.11– 1.70). Including healthcare indicators in regression models attenuated the lower odds of Papanicolaou tests among both white (OR, 0.61; 95% CI, 0.26–1.46) and black women (OR, 0.40; 95% CI, 0.11–1.52) with only female partners. Under- or uninsurance was negatively associated with past year testing in all race groups (ORs, 0.35–0.52) and contraception or STI service use was positively associated with past year testing in all race groups (ORs, 2.61–8.23).	Addressed intersectionality by modeling past year Papanicolaou test outcome separately for white, black, and Hispanic/Latina women, but unable to compare rates directly.
Boehner et al ³⁸ 2012 California	Secondary Analysis of California Health Interview Survey	California Health Interview Survey from 2001, 2003, 2005 and 2007; representative of the population of California (N= 95,096 women)	Papanicolaou test in past year (yes/no).	Controlling for race, education, household income, insurance status, and nativity, lesbian women <50 years old had lower odds of past year Papanicolaou tests than heterosexual women <50 years old (OR, 0.54; 95% CI 0.42–0.69). There was no significant difference in odds for women >50 years old.	Patterns in other healthcare use: Lesbian women (OR, 1.55; 95% CI, 1.13–2.11) and bisexual women (OR, 1.32; 95% CI, 1.03– 1.68) had greater odds of past year emergency department visit than heterosexual women. Controlling for health insurance status, bisexual women had higher rates of past-year Papanicolaou tests (OR, 1.3; full results not shown) and regular physician visits than heterosexual women (OR, 1.4; full results not shown).	Sample only representative of California. Authors did not report some statistical results.
Charlton et al ³⁹ 2014 United States	Secondary Analysis of data from Growing Up Today Study (GUTS)	18–25-year-old women in the 2005 (N=3,821) GUTS study; a longitudinal cohort of US adolescents who are the children of Nurses' Health Study II participants.	Intention to receive Papanicolaou test in next year (5-point Likert scale from extremely likely to extremely unlikely). Receipt of Papanicolaou test in the following year (yes/no).	Controlled for age, race, and geographic region (ORs for these variables not shown).	Bisexual women perceived higher susceptibility to cervical cancer (3.0 vs 2.7 on a 5-point Likert scale, $P<.001$), lesbian women perceived lower severity of cervical cancer (3.1 vs 3.3 on a 5- point Likert scale $P=.03$) than heterosexual women. Before adjusting, bisexual and lesbian women had lower Papanicolaou test intention (β , -0.20; SE 0.09; β , -0.68; SE 0.15), respectively) and lower Papanicolaou test use in the following year (OR, 0.56; 95% CI, 0.31–0.99; OR, 0.24; 95% CI, 0.12–0.47, respectively). Adjusting for HBM constructs, sexual history, and hormonal contraception use, lesbian women	Sample is 93% white and 94% heterosexual or “mostly heterosexual.” Children of nurses in the United States may have higher health care use than the general population. Unclear conceptualization of “positive health beliefs.”

Author Date Study Location	Methods/ Approach	Sample	Outcome Variable	Findings Related to Demographic Factors	Findings Related to Health Care Factors	Study Limitations
Clark <i>et al</i> ⁴⁹ 2009 Rhode Island	Descriptive correlational using self-report	Targeted and respondent-driven sample of legally unmarried women ages 40–75 (N=603)	On time screening (yes/no). On time defined as 2 Papanicolaou tests ever, 3yrs since most recent Papanicolaou test, and <3 years between two most recent tests.	Controlled for marital status, age, education, income, employment and status, race, smoking and alcohol use, family history of cancer (ORs for these variables not shown).	had lower Pap test intention (β , -0.46; SE, 0.13). Measured insurance status but did not include in analysis. Partner gender was not associated with on-time screening (OR, 1.1; 95% CI, 0.6–2.0). Women with more barriers to screening were less likely to report screening; there were no differences in number of barriers by partner gender (results not shown). Women who reported that they had delayed, avoided, or changed the place of screenings because of sexual orientation were less likely to report on time cervical cancer screening (OR, 0.5; 95% CI, 0.2–1.0).	Unmarried WPW and unmarried WPM in 2009 may not have been comparable in terms of sexual behaviors and history, social support, and other factors.
Matthews <i>et al</i> ⁴⁴ 2004 Chicago, New York City, and Minneapolis/St. Paul	Descriptive correlational survey using self-report	The Multisite Women's Health Study: a snowball convenience sample of women (N=824).	Papanicolaou test adherers (annual) (yes/no). Routine screeners (every 3yrs) (yes/no). Never had a Papanicolaou test (yes/no).	Women who were younger (OR 0.93, 95% CI 0.87–0.98) and had lower incomes (OR 0.30, 95% CI 0.09–0.99) were more likely to have never had a Papanicolaou test. Nonheterosexual women had decreased odds of annual (OR 0.46, 95% CI 0.32–0.67) and routine (OR 0.40, 95% CI 0.23–0.70) screening.	Seeing a provider annually increased odds of both annual (OR, 10.32; 95% CI, 6.87–15.50) and routine (OR, 7.48; 95% CI, 4.64–12.08) screening. History of an abnormal Papanicolaou test also increased odds of annual (OR, 1.63; 95% CI, 1.10–2.41) and routine (OR, 2.85; 95% CI, 1.48–5.46) screening.	Sampling techniques not described clearly.
<i>Studies including only SMW</i>						
Diamant <i>et al</i> ⁴⁵ 2000 United States	Descriptive correlational survey using self-report	Convenience sample of lesbians in the United States; survey distributed by mail with copies of <i>The Advocate</i> magazine (N=6,935).	Papanicolaou test within past year (yes/no). Papanicolaou test within past 2 years (yes/no).	Age 50 (PR, 0.04; 95% CI, 0.01–0.06) and history of vaginal intercourse without a condom (PR, 0.06; 95% CI, 0.04–0.08) were associated with higher odds of Papanicolaou tests within the past two years. Some college or less education (PR, -0.06; 95% CI, -0.08 to -0.03) and individual income < \$20,000 (PR, -0.06; 95% CI, -0.09 to -0.03) were associated with lower	Having a regular provider or site for medical care (PR, 0.11; 95% CI, 0.08–0.15), history of at least one STI (PR, 0.05; 95% CI, 0.02–0.07), and disclosing SO to provider (PR, 0.11; 95% CI, 0.09–0.14) were associated with higher odds of Papanicolaou test.	Large sample but 88% white, only included lesbian-identified women.

Author Date Study Location	Methods/ Approach	Sample	Outcome Variable	Findings Related to Demographic Factors	Findings Related to Health Care Factors	Study Limitations
Eaton <i>et al</i> ⁶ 2008 Atlanta, Georgia	Descriptive correlational survey using self-report	Community-based convenience sample of women who reported sex with at least 1 woman in the past year and attended a gay pride festival (N=275).	Papanicolaou test within past year: Total number of Papanicolaou tests over lifetime.	Measured age, education, income, ethnicity, sexual orientation, relationship status, and disclosure of sexual orientation. Demographic characteristics were not different among women with and without histories of an abnormal Papanicolaou test.	Participants generally reported low perceived risk for HPV (22.7 and 17.8 on a 135-point scale with higher scores indicating higher perceived risk). Women with a previous abnormal Papanicolaou test had higher numbers of lifetime Papanicolaou tests (15.7 vs 10.8, $P<.05$), rated higher HPV prevalence in their city (7.8 vs 7.2, $P<.05$), and higher risk for HPV (22.7 vs 17.8, $P<.01$), but did not differ in odds of past year Papanicolaou test.	The authors did not consistently differentiate between sexual orientation and sexual behaviors. Individuals who attend gay pride festivals may not be representative of the general population of SMW.
Johnson <i>et al</i> ⁵ 2016 United States	Descriptive correlational survey using self-report	Web-based convenience sample of lesbian and bisexual women and transgender men (N=226).	Routine testing (Papanicolaou test in past 3 years) vs Nonroutine testing (>3 years since last Papanicolaou test).	In bivariate analyses, higher income ($P=.0002$) and education level ($P=.0034$), who were older ($P=.0011$) and employed ($P=.0027$) were more likely to be routine screeners.	In final multivariate analysis, health insurance (OR, 3.0; 95% CI, 1.1–8.5; $P=.036$), knowledge about cervical cancer screening recommendations (OR, 2.6; 95% CI, 1.1–6.2; $P=.032$), provider recommended Papanicolaou test (OR, 4.2; 95% CI, 1.9–8.9; $P<.001$), and satisfaction with health care provider (OR, 2.9; 95% CI, 1.2–7.0; $P=.015$) were associated with higher odds of routine screening. Perceived discrimination based on gender expression was associated with lower odds (OR, 0.30; 95% CI, 0.09–0.96; $P=.042$).	Most participants were white, college educated, urban, employed, insured, and married or partnered. Did not distinguish findings between participants who were SMW and transgender men.
Reiter & McCree ¹⁶ 2015 United States	Descriptive correlational survey using self-report	Lesbian and bisexual women ages 21–26 recruited from the LGB specialty panel of Harris Interactive ^b (N=418)	Papanicolaou test within past 3 years (yes/no).	Older age increased odds of Papanicolaou test (OR, 1.21; 95% CI, 1.02–1.43; $P<.05$). Hispanic identity decreased odds (OR, 0.30; 95% CI, 0.14–0.63; $P<.01$).	Reasons for not getting Papanicolaou test included cost (21%), embarrassment (20%), lack of provider recommendation (13%), and believing it was not necessary (11%). Having health insurance (OR, 2.13; 95% CI, 1.09–4.16; $P<.05$), a routine checkup in the past year (OR, 2.41; 95% CI, 1.38–4.21; $P<.01$), at least one dose of HPV vaccine (OR, 2.63; 95% CI, 1.47–4.70; $P<.01$), and disclosing sexual orientation to healthcare providers (OR, 2.01; 95% CI, 1.02–3.95; $P<.05$) all increased odds of Papanicolaou test.	Only sampled young SMW, moderate response rate and lack of data on non-respondents.

Author Date Study Location	Methods/ Approach	Sample	Outcome Variable	Findings Related to Demographic Factors	Findings Related to Health Care Factors	Study Limitations
Tracy <i>et al</i> ⁷ 2010 Baltimore, Maryland and surrounding area.	Descriptive correlational survey using self-report	Convenience sample of lesbian women (N=225).	Routine (Papanicolaou test in past 24 months) vs Nonroutine (no Papanicolaou test in past 24 months).	Controlled for age, race, and education (ORs not shown).	In univariate analyses, nonroutine screeners reported greater perceived susceptibility to cervical cancer, more barriers and fewer benefits to screening, less knowledge about screenings, and greater healthcare discrimination ($P<.01$ for all, ORs and statistical test values not shown) than routine screeners. Controlling for age, race, and education, only knowledge about screening (OR, 2.30; 95% CI, 1.43–3.69; $P<.001$), benefits (OR, 1.23; 95% CI, 1.10–1.36; $P<.001$), and barriers (OR, 0.83; 95% CI, 0.77–0.88; $P<.001$) remained significant.	Convenience sample from magazine distribution, mostly white, high education levels. Only included lesbian women.
Tracy <i>et al</i> ⁸ 2013 United States	Descriptive correlational survey using self-report	Lesbian women ages 21–26 recruited from the LGB specialty panel of Harris Interactive (N=1,006)	Routine (21–30 yrs. old with past year Papanicolaou test or 30 yrs. old with Papanicolaou test within the past 24 months) (yes/no).	Routine screeners were more likely to have graduated college (49.7% vs 38%; $P=.01$), work full-time (54.3% vs 41.5%; $P=.04$), be married or cohabitating (58.9% vs 46.9%; $P=.01$), and report an income >\$50,000 (58.1% vs 42.9%; $P=.02$) than non-routine screeners.	Non-routine screeners cited lack of physician referral (17.5%, not having a doctor (17.3%), and uninsurance (12.2%) as top three reasons. Adjusting for age, education, and relationship, employment, and insurance status, thinking of not getting Papanicolaou tests as a risk factor (OR, 1.95; 95% CI, 1.30–2.91), more perceived benefits (OR, 1.23; 95% CI, 1.13–1.33), and fewer barriers to screening (OR, 0.88; 95% CI, 0.84–0.92), being out to both PCPs and specialists (OR, 2.84; 95% CI, 1.82–4.45 and OR, 2.30; 95% CI, 1.33–3.96, respectively), and providers recommending Papanicolaou tests (OR, 2.04; 95% CI, 1.32–3.15) were all correlates of routine screening.	Large national sample but 77% white. Only included people who self-identified as gay or lesbian, not bisexual or other identities.
Youatt <i>et al</i> ⁹ 2017 United States	Descriptive correlational survey using self-report	Community-based convenience sample of lesbian, bisexual, other non-heterosexual women ages 18–24 (N=285).	Ever Papanicolaou test (yes/no).	More male sex partners were associated with higher odds of Papanicolaou tests (OR, 3.77; 95% CI, 4.49–42.22; $P<.001$). Black (OR, 0.43; 95% CI, 0.19–0.96; $P=.04$), other race (OR, 0.39; 95% CI, 0.16–0.99; $P=.05$), and bisexual identity (OR, 0.42; 95% CI, 0.18–0.98;	In adjusted model, being out to providers was associated with Papanicolaou test use (OR, 2.66; 95% CI, 1.46–4.88; $P<.001$). Uninsurance was not significantly associated with ever having a Pap test.	Only sampled young women (ages 18–24), and investigators measured few health services factors.

Author Date Study Location	Methods/ Approach	Sample	Outcome Variable	Findings Related to Demographic Factors	Findings Related to Health Care Factors	Study Limitations
Qualitative Studies						
Agénor <i>et al</i> ⁶⁰ 2015 Boston and Cambridge, Massachusetts	Qualitative descriptive approach. Thematic analysis using inductive and deductive coding.	Purposive sample of 18 black lesbian, bisexual, and queer women.	Defined by participants.		Participants balanced wanting to avoid Papanicolaou tests because of felt discomfort with the knowledge that they were receiving lower quality care if they did not receive a Papanicolaou test. The major emergent theme was patient-provider communication, including provider style and demeanor; heteronormative assumptions; heterosexism, racism, classism; and provider background.	Study was conducted in a state where uninsurance is low.
Clark <i>et al</i> ⁶¹ 2003 Rhode Island	Data collection strategy: focus groups	Convenience sample of 28 legally unmarried women.	Defined by participants.	Barriers to screening included pain during procedure, body image, and negative reactions to bodies by technicians or providers.	Barriers to screening included lack of acknowledgment of sexual orientation, fears of discrimination about gender identity, and uninsurance. Participants reported that better relationships with providers and better inquiry about relationships would increase screening.	Did not identify specific approach, method, or analysis techniques in detail. Unmarried SMW and heterosexual women may not be comparable, and analysis did not address differences between them.
Johnson <i>et al</i> ⁶⁴ 2016 United States	Methods included inductive and deductive content analysis.	Online convenience sample of LBQ women (N=16) and transgender men (N=4).	Routine (Papanicolaou test in past 3 years) vs Nonroutine (>3 years since last Papanicolaou test).		Themes included contextual characteristics (stigma and safety of health care environment), individual characteristics (knowledge, peer support, distrust in healthcare, insurance, socioeconomic status, and regular PCP), health behaviors (provider behavior and competence), and outcomes (completion and results of Papanicolaou test, health maintenance, cancer diagnosis, and satisfaction with care).	Did not name a specific qualitative approach. The authors did not describe analysis techniques in detail. Findings from transgender men and LBQ women were not differentiated.

Abbreviations: RR, relative risk; CI, confidence interval; SRH, sexual and reproductive health; SMW, sexual minority women; OR, odds ratio; STI, sexually transmitted infection; SE, standard error; HBM, Health Belief Model; LGB, lesbian, gay, bisexual; HPV, Human papilloma virus; PCP, primary care provider; LBQ, lesbian, bisexual, queer; WPW, women who partner with women; WPM, women who partner with men; PR, prevalence ratio.

⁶⁴Two reports by Agénor *et al*^{27,40} analyzed the same data, and are therefore counted as one study, with findings presented individually.

The LGB Specialty Panel is a panel of 30,000 lesbian, gay, and bisexual individuals who had previously participated in another study through Harris Interactive.

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Table 2

Summary of healthcare-related correlates of cervical cancer screening in reviewed studies, by categories developed from this review.

Correlate	Healthcare-Related Correlates Tested
Previous Use of Health Services	Previous use of contraception
	Received HPV vaccine
	Any STI treatment or counseling
	History of pregnancy
	Previous good or bad Papanicolaou test experiences
	History of abnormal Papanicolaou test
	Health insurance status
Provider Factors	Provider recommended Papanicolaou test
	Communication or quality of relationship with provider
	Disclosed sexual orientation to provider
	Having a regular provider or annual visits
Perceptions and Beliefs	Number of Barriers to Screening Reported
	Perceived Risk or Prevalence of HPV or Cervical Cancer
	Experienced discrimination in healthcare

Table 3

Brief list of clinically relevant resources to improve practice for sexual minority women.

Resource Title	Description	Access Information	
LGBT Glossary of Terms for Health Care Teams	A simple but thorough glossary of terms related to sexuality, gender, and sexual and gender minority identities relevant to health care providers.	National LGBT Health Education Center.	https://www.lgbthealtheducation.org/wp-content/uploads/LGBT-Glossary_March2016.pdf
Guidelines for care of lesbian, gay, bisexual, and transgender patients.	A guide for clinicians; covers clinical considerations for specific populations including SMW and recommendations for creating a welcoming atmosphere, including example questions for intake forms.	GLMA: Health Professionals Advancing LGBT Equality.	https://npin.cdc.gov/publication/guidelines-care-lesbian-gay-bisexual-and-transgender-patients
Patient Sexual Health History: What You Need to Know to Help	A video that reviews the importance of taking a comprehensive sexual health history, and best practices for discussing sexual history and related health risks with patients.	American Medical Association	http://www.bigshouldersdubs.com/clients/AMA/23-AMA-HealthHistory.htm
Taking Routine Histories of Sexual Health: A System-Wide Approach for Health Centers.	A toolkit to develop and implement systems for collecting sexual health histories of adult patients, developed by the National LGBT Health Education Center, a program of the Fenway Institute. The tools can be applied by any healthcare provider to different practice settings and patient populations. The toolkit includes a "Routine Sexual History Tool," considerations for special populations and situations, and recommendations for larger healthcare settings.	National LGBT Health Education Center.	http://www.lgbthealtheducation.org/wp-content/uploads/COM-827-sexual-history_toolkit_2015.pdf
Implementing Curricular and Institutional Climate Changes to Improve Health Care for Individuals Who Are LGBT, Gender Nonconforming, or Born with DSD: A Resource for Medical Educators.	Summarizes the health needs of individuals who are LGBT, gender nonconforming, and/or born with disorders of sexual development. Designed for implementing curricular and climate change in medical education, suggests ways that LGBTQ content can be integrated into medical education.	Association of American Medical Colleges.	https://members.aamc.org/eweb/upload/LGBTDS20Publication.pdf

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Resource Title	Description	Access Information	
LGBTQ Cultures: What Health Care Professionals Need to Know About Sexual and Gender Diversity.	A textbook written for nursing professionals and other health care workers that covers replacing myths and stereotypes about LGBTQ communities with facts and how to provide appropriate, culturally sensitive care to persons of all sexual orientations and gender identities. Include up-to-date statistics on healthcare refusal rates, prominent LGBTQ health issues, and social, psychological, and environmental factors affecting LGBTQ health.	Eliaison, MJ; Dibble, SL; DeJoseph, J; Chinn, P. Lippincott Williams & Wilkins.	https://www.nursingcenter.com/journalarticle?article_id=3251321

Abbreviations: LGBT, lesbian, gay, bisexual, transgender; LGBTQ, lesbian, gay, bisexual, transgender, queer; DSD, disorders of sexual development