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Sexual orientation and sexual and reproductive health among African American sexual minority women in the U.S. South

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Abstract

Background—Research on the sexual and reproductive health of sexual minority women, especially those of color, is limited.

Methods—Using multivariable Poisson regression, we estimated risk ratios for the association between two dimensions of sexual orientation (sexual identity and sexual behavior) and five sexual and reproductive health indicators (pregnancy, contraceptive use, HIV testing, Pap test use, and sexual assault) among African American sexual minority women in the U.S. South (N=165).

Results—Lesbians were less likely than bisexual women to have ever been pregnant ([risk ratio=] 0.64, [95% confidence interval=] 0.48-0.85), ever received an HIV test (0.88, 0.80-0.96), obtained a Pap test in the last three years (0.75, 0.61-0.91), and had an abnormal Pap test result in their lifetime (0.42, 0.24-0.75). Women with only female past-year sexual partners were less likely than women with male and female past-year sexual partners to have ever been pregnant (0.58, 0.43-0.78), ever received an HIV test (0.87, 0.79-0.96), obtained a Pap test in the last three years (0.82, 0.67-0.99), and had an abnormal Pap test result in their lifetime (0.55, 0.32-0.94). Contraceptive use, receiving an abnormal Pap test result at the time of the study visit, and experiencing sexual assault did not differ by sexual identity or behavior.

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Conclusions—Several sexual and reproductive health indicators varied in relation to sexual identity and sexual behavior among Southern African American sexual minority women. Interventions that facilitate access to sexual and reproductive health services and are tailored to the unique needs of sexual orientation subgroups of sexual minority women are needed.

INTRODUCTION

Sexual and reproductive health, defined as a state of "physical, mental and social well-being" in all matters pertaining to sexuality and reproduction, is a central aspect of public health (Glasier, Gülmezoglu, Schmid, Moreno, & Van Look, 2006; United Nations Population Fund, 2015). Moreover, sexual and reproductive health services – including contraception, sexually transmitted infection (STI) counseling and testing, and cervical cancer screening – are an essential component of high-quality health care for women (Glasier et al., 2006; Singh, Darroch, & Ashford, 2014). Sexual orientation – a multidimensional construct comprised of sexual attraction, sexual identity, and sexual behavior, each of which may influence health differently (Sell, 2007) – is an important dimension of social inequality that, singly and jointly with inequities related to gender, race/ethnicity, and socioeconomic position (SEP), influences individuals' health behaviors, outcomes, and services use (Institute of Medicine, 2011).

Research on sexual orientation and sexual and reproductive health among women is limited (Institute of Medicine, 2011; Solarz, 1999). However, sexual minority women – namely, self-identified lesbian, bisexual, and queer women and women with same-sex sexual partners and attractions, regardless of sexual identity – are at risk of poor sexual and reproductive health outcomes such as STIs (including human papillomavirus [HPV], which causes the vast majority of cervical cancers) and unintended pregnancy (National Cancer Institute, 2015; Marrazzo & Gorgos, 2012). In fact, several studies have shown that, overall, sexual minority women may be at higher risk of unintended pregnancy, STIs, and sexual violence compared to heterosexual women and women with only male sexual partners (Charlton et al., 2013; Everett, 2013; Lindley & Walsemann, 2015; Lindley, Walsemann, & Carter, 2013; McCauley et al., 2015; Rosario et al., 2014; Saewyc et al., 2006; Saewyc, Bearinger, Blum, & Resnick, 1999; Tornello, Riskind, & Patterson, 2014). In particular, bisexual women and women with male and female sexual partners may be more likely than heterosexual women and women with only male sexual partners, respectively, to have experienced intimate partner violence and utilized emergency contraception and STI and pregnancy testing services (Agénor, Krieger, Austin, Haneuse, & Gottlieb, 2014; McCauley et al., 2015; Tornello et al., 2014). Moreover, lesbians and women who have sex with women, the vast majority of whom have had sex with a male partner at some point in their life (Diamant, Schuster, McGuigan, & Lever, 1999; Marrazzo & Gorgos, 2012; Muzny et al., 2014; Muzny et al., 2011), may be less likely than heterosexual women and women with only male sexual partners, respectively, to have received contraception (Agénor et al., 2014a; Agénor et al., 2014b; Cochran et al., 2001) and regular Pap tests (Agénor et al., 2014a; Agénor et al., 2014b; Charlton et al., 2011; Marrazzo et al., 2001), which help detect abnormal changes in cells of the uterine cervix before cervical cancer develops (U.S. Department of Health and Human Services, 2013). Theories – namely, the minority stress model (Meyer, 2003) and ecosocial theory (Krieger, 2011) – and empirical research

(McNair, 2003a; McNair, 2003b; Agénor et al., 2015; Stevens & Hall, 1988; Stevens, 1998; Stevens, 1995; Hutchinson, Thompson, & Cederbaum, 2006; West, 2008) suggest that sexual orientation disparities in women's sexual and reproductive health and health care are due to heteronormativity, stigma, and discrimination against sexual minorities in society in general and the health care system in particular.

Despite these important findings, the majority of research examining sexual orientation disparities in sexual and reproductive health among U.S. women has relied on samples comprised of predominately white women (Charlton et al., 2013; Charlton et al., 2011; Cochran et al., 2001; Marrazzo & Stine, 2004; McCauley et al., 2015; Saewyc et al., 2006; Saewyc et al., 1999). However, black feminist and intersectionality theories (Collins, 2000; Bowleg, 2012), as well as empirical evidence (Krieger & Sidney, 1997; Li, Matthews, Aranda, Patel, & Patel, 2015; Stevens, 1998; Szymanski & Meyer, 2008; Wilson, Okwu, & Mills, 2011), suggest that the health and health care experiences of black sexual minority U.S. women are adversely affected by multiple forms of discrimination – including sexism, racism, classism, and heterosexism – and may differ from those of their white counterparts. Therefore, most studies on sexual orientation and sexual and reproductive health may not be generalizable to black sexual minority U.S. women.

Indeed, because of interpersonal and institutional racism against black women and men throughout history (e.g., slavery, Jim Crow laws, residential segregation), black sexual minority U.S. women tend to have less access to health-promoting social and economic resources than their white counterparts (Roberts, 1998; Williams, 2004). Specifically, using U.S. Census data, researchers found that black women in same-sex couples were more likely to be living in poverty, less likely to have attended college, less likely to own a home, and more likely to have been unemployed in the past year relative to white women in same-sex couples (Badgett, Durso, & Schneebaum, 2013; Dang & Frazer, 2005; Kastanis & Wilson, 2014). Further, the social and political climate towards sexual minorities tends to be less favorable in the South, where the majority of black sexual minority women live, compared to the Northeast, where the majority of white sexual minority women reside (Dang & Frazer, 2005; Kastanis & Wilson, 2014). Moreover, a recent report by the Southern Rural Black Women's Initiative shows that, relative to black U.S. women overall, black women in the U.S. South, especially those living in rural areas, are disproportionately affected by social and economic marginalization, including a lack of access to adequate housing, educational and employment opportunities, public infrastructure (e.g., transportation), and health services (Mason, 2015).

In recent years, a few researchers have investigated the prevalence and determinants of STIs (Muzny, Austin, Harbison, & Hook, 2014; Muzny, Harbison, Pembleton, & Austin, 2013; Muzny et al., 2015; Muzny, Kapil, Austin, Hook, & Geisler, 2014; Muzny, Sunesara, Martin, & Mena, 2011) and cervical cancer screening (Agénor, Bailey, Krieger, Austin, & Gottlieb, 2015; Agénor et al., 2014; Matthews et al., 2013; Mays et al., 2002) among black sexual minority women. However, to our knowledge, no study has assessed other aspects of sexual and reproductive health in this understudied and underserved population. Therefore, we examined the association between two dimensions of sexual orientation (sexual identity and sexual behavior) and five indicators of sexual and reproductive health (pregnancy, hormonal

contraceptive use, HIV testing, Pap test use, and sexual assault) among African American sexual minority women in the U.S. South, who may be especially vulnerable to social and economic marginalization and, in turn, poor sexual and reproductive health outcomes (Badgett et al., 2013; Dang & Frazer, 2005; Kastanis & Wilson, 2014; Mason, 2015).

MATERIAL AND METHODS

Study participants

In order to be eligible for the study, women had to self-identify as African American, be at least 16 years of age, and have engaged in oral, vaginal, or anal sex with at least one female sexual partner in the past year. Exclusion criteria included not speaking English (as translators were not readily available), being pregnant (as multiple cervical swabs were obtained, which may increase the risk of premature rupture of the membranes), and breastfeeding (which is known to alter the vaginal environment due to lack of estrogen and may in turn affect bacterial vaginosis (BV) testing results). Women who visited the Jefferson County Department of Health (JCDH) Sexually Transmitted Disease (STD) Clinic in Birmingham, AL between August 2011 and October 2013 were screened for eligibility based on their intake form (which included a complete sexual history), and eligible participants were referred to the study nurse by their health care provider and enrolled in the study. Additionally, study staff posted recruitment flyers at lesbian and bisexual women's organizations in Birmingham, AL and the University of Alabama at Birmingham campus. Women who inquired about participating in the study after having seen a recruitment flyer were screened for eligibility over the phone, and eligible participants were provided with an appointment with the study nurse, who confirmed their eligibility and enrolled them in the study. Moreover, a snowball sampling strategy in which participants referred potentially eligible women to study staff for screening by phone and enrollment at the JCDH STD Clinic was also adopted (Browne, 2005). A total of 171 eligible women were invited to participate in the study; six declined to participate, and 165 were enrolled (response rate: 96.5%).

Data collection

All data were collected at the JCDH STD Clinic in Birmingham, AL. After providing written informed consent, participants completed an interviewer-administered survey that included questions on women's sociodemographic characteristics, STI history, sexual behaviors, exposure to intimate partner violence, pregnancy history, and sexual and reproductive health services use. Additionally, participants received a standardized pelvic examination performed by a clinician involved with the study, which included testing for BV, STIs (including *Trichomonas vaginalis*, *Chlamydia trachomatis*, *Neisseria gonorrhoeae*, *Mycoplasma genitalium*, syphilis, and genital herpes simplex virus (HSV) type 2), and HIV and screening for cervical cancer using a ThinPrep Pap test among those aged 21 years and over per cervical cancer screening guidelines at the time of the study (Moyer, 2012; Saslow et al., 2012). Women who tested positive for BV or an STI or had an abnormal Pap test were treated according to the Centers for Disease Control and Prevention's 2010 STD Treatment Guidelines (Workowski & Berman, 2010). The BV and STI testing results from this cohort have been previously published elsewhere (Muzny et al., 2014). This study was approved by

the Institutional Review Board (IRB) at the University of Alabama at Birmingham and by the Jefferson County Department of Health. The Office of Human Research Administration at the Harvard T.H. Chan School of Public Health found the present sub-study, which involved secondary analysis of de-identified data, to be exempt from IRB review.

Measures

The study outcomes were pregnancy history ("Have you ever been pregnant?"), current hormonal contraception use ("Are you currently on hormonal contraception?"), ever receiving an HIV test ("Have you ever been tested for HIV before today?"), receiving a Pap test in the last three years ("When was your most recent Pap smear?"), abnormal Pap test history ("Do you have a history of an abnormal Pap smear?"), receiving an abnormal Pap test result at the time of the study visit (based on clinical laboratory results), and ever experiencing sexual assault ("Have you ever been sexually assaulted?"). Participants were also asked about the sex of the person by whom they were sexually assaulted. Possible responses for pregnancy history, current hormonal contraceptive use, and ever experiencing sexual assault were "yes" and "no." Possible responses for ever receiving an HIV test were "yes," "no," and "don't know."

In line with cervical cancer screening guidelines at the time of the study (Moyer, 2012; Saslow et al., 2012), we assessed whether participants had obtained a Pap test in the last three years and classified participants who reported receiving their most recent Pap test "within the past year" or "1-3 years ago" as "yes" and those who responded "> 3 years" or "never had one" as "no." Further, participants could respond "yes," "no" or "not applicable (never had one)" to having an abnormal Pap test history. Women who obtained a result of atypical cells of undetermined significance (ASCUS), low-grade squamous intraepithelial lesion (LSIL), or high-grade squamous intraepithelial lesion (HSIL) on the Pap test performed during the study visit were classified as having received an abnormal Pap test result at the time of the visit; those who obtained a normal result were categorized as not having an abnormal Pap test result at the time of the visit.

The study's primary predictors were two of the main dimensions of sexual orientation (Sell, 2007): sexual identity (at the time of the survey) and sexual behavior (namely, sex of sexual partners in the past year). Participants were asked "What is your sexual orientation?" and categorized as lesbian, bisexual, heterosexual, questioning, or unsure. Sex of sexual partners in the past year – defined as individuals with whom study participants engaged in oral, vaginal, or anal sex in the last 12 months – was assessed based on participants' self-report during the screening process and study staff's careful review of women's self-reported sexual history on the survey. Categories included only female and both male and female sexual partners in the past year. The survey also asked participants about other sociodemographic characteristics, including their age, marital and co-habitation status, educational attainment, annual income, and employment status, and healthcare factors, including health insurance status and access to health care.

A total of 3 participants (1.8%) were missing data on receiving a Pap test in the last three years. Moreover, 29 (17.6%) participants were coded as missing data on self-reported abnormal Pap test history because they either never received a Pap test (n=7, 4.2%) or did

not provide a response (n=22, 13.3%). Among participants aged 21 years and over, data on having an abnormal Pap test result at the time of the study visit were missing for 18 (13.0%) participants either because a Pap test was not performed (n=11, 7.9%) or results were unsatisfactory (n=5, 3.6%) or missing (n=2, 1.4%). Lastly, women classified as heterosexual, questioning, or unsure in terms of sexual identity were coded as missing data on this measure because of small numbers (n=8, 4.9%). No data were missing for pregnancy history, current hormonal contraceptive use, ever receiving an HIV test, ever experiencing a sexual assault, or sex of sexual partners in the past year.

Data analysis

We conducted statistical analyses to examine the distribution of sexual and reproductive indicators and assess sexual and reproductive health disparities by sexual identity and behavior in a sample of self-identified African American sexual minority women in the U.S. South. After generating descriptive statistics for participants' sociodemographic and healthcare characteristics, we estimated the percent distribution of having ever been pregnant, current hormonal contraceptive use, ever receiving an HIV test, Pap test use in the last 3 years, self-reported abnormal Pap test history, receiving an abnormal Pap test result at the time of the study visit (among women aged 21 years and over), and ever experiencing sexual assault overall and in relation to sexual identity and sex of sexual partners in the past year. We used multivariable Poisson regression with robust error variance to estimate age-adjusted risk ratios comparing lesbians and bisexual women (reference) and women with only female past-year sexual partners and women with male and female past-year sexual partners (reference) for each sexual and reproductive health indicator (Zou, 2004). All analyses were conducted in Stata, version 13 (College Station, TX).

RESULTS

A total of 50.9% of women identified as lesbian and 44.2% as bisexual; 47.3% reported having only female sexual partners in the past year, of whom 93.4% identified as lesbian and 6.6% as bisexual (data not shown), and 52.7% reported having both male and female sexual partners in the past year, of whom 16.0% identified as lesbian and 84.0% as bisexual (data not shown) (Table 1). A substantial proportion (44.2%) of participants (mean age: 28.4 years, standard deviation: 9.2 years) had completed some college education or attended vocational school, although very few (3.0%) had earned a bachelor's degree or more. About a third of women was unemployed, and most (61.8%) earned less than $10,000 per year. Slightly less than half (49.1%) of participants lacked health insurance, and the majority (59.4%) had no primary care provider. Most women had never been married (78.8%) and were not living with a sexual partner at the time of the survey (70.3%). Lesbians and women with only female sexual partners were more likely to be 30 years of age and younger, living with a female sexual partner, have obtained some college education, be employed, earn $10,000 or more per year, and have health insurance and a primary care provider compared to bisexual women and women with both male and female sexual partners in the past year, respectively (Table 1).

Table 2 shows that the majority of participants had ever been pregnant (56.4%), ever received an HIV test (92.7%), and received a Pap test in the last three years (70.4%). A notable proportion had ever experienced a sexual assault (41.2%), the vast majority of which was perpetrated by men (89.71%, data not shown). Approximately a third (32.4%) of women had received an abnormal Pap test result at some point in their life, and 14.1% of participants aged 21 years and over received an abnormal Pap test result at the time of the study visit. A total of 6.1% of participants reported using hormonal contraception at the time of the survey. Lesbians were less likely to have ever been pregnant (41.7% vs. 71.2%, $p<0.001$), ever received an HIV test (86.9% vs. 98.6%, $p=0.006$), obtained a Pap test in the last three years (59.8% vs. 80.6%, $p=0.005$), and ever received an abnormal Pap test result (19.1% vs. 43.9%, $p=0.002$) compared to bisexual women (Table 2). Similarly, women with only female past-year sexual partners were less likely to have ever been pregnant (38.5% vs. 72.4%, $p<0.001$), ever received an HIV test (85.9% vs. 99.0%, $p=0.001$), obtained a Pap test in the last three years (61.8% vs. 77.9%, $p=0.025$), and ever received an abnormal Pap test result (22.0% vs. 40.3%, $p=0.024$) compared to women with only female sexual partners in the past year (Table 3).

Adjusting for age, lesbians were 36% less likely to have ever been pregnant (risk ratio [RR]=0.64; 95% confidence interval [CI]: 0.48, 0.85) and 12% less likely to have ever received an HIV test (RR=0.88; 95% CI: 0.80, 0.96) compared to bisexual women (Table 4). Moreover, relative to bisexual women, lesbians were 25% less likely to have obtained a Pap test in the last three years (RR=0.75; 95% CI: 0.61, 0.91) and 58% less likely to have ever received an abnormal Pap test result (RR=0.42; 95% CI: 0.24, 0.75), adjusting for age. Similarly, women with only female past-year sexual partners were 42% less likely to have ever been pregnant (RR=0.58; 95% CI: 0.43, 0.78) and 13% less likely to have ever obtained an HIV test (RR=0.87; 95% CI: 0.79, 0.96) relative to women with male and female past-year sexual partners, adjusting for age. Further, adjusting for age, women with only female past-year sexual partners were 18% less likely to have received a Pap test in the last three years (RR=0.82; 95% CI: 0.67, 0.99) and 45% less likely to have had an abnormal Pap test in their lifetime (RR=0.55; 95% CI: 0.32, 0.94) compared to women with male and female past-year sexual partners. Current hormonal contraceptive use, receiving an abnormal Pap test result at the time of the study visit, and ever experiencing sexual assault did not differ by sexual identity or sex of sexual partners in the past year among women in our study (Table 4).

DISCUSSION

To our knowledge, this is the first study to examine the distribution of a broad range of sexual and reproductive health indicators (namely, pregnancy, hormonal contraception use, HIV testing, Pap test use and results, and sexual assault) among Southern African American sexual minority women, overall and by sexual identity and sexual behavior. Given the well-documented link between societal factors and population health, we first situate our findings in the social and economic context of women's lives in order to aid in their interpretation. In particular, the prevalence of poverty, unemployment, uninsurance, and lack of access to a primary care provider – all of which have been shown to influence population health – were considerably higher in our sample relative to the U.S. population overall. For example, in

2013, 8% of the total U.S. population (compared to 33.9% of this sample) was unemployed (DeNavas-Walt & Proctor, 2014), and 13.4% (compared to 49.1% of this sample) had no health insurance (Bureau of Labor Statistics, 2015). Similarly, data from the 2014 National Health Interview Survey indicate that 12.1% of the total U.S. population reported having no usual source of medical care (CDC, 2015); in contrast, 59.4% of study participants had no primary care provider. Indeed, research shows that racism and heterosexism singly and jointly contribute to a lack of access to social and economic resources among U.S. women and men (Badgett, 1995; Badgett, Lau, Sears, & Ho, 2007; Williams, 2004), such that black individuals in same-sex couples have poverty rates that are more than twice the rate for black persons in different-sex married couples, and black women in same-sex couples are three times more likely to be poor than their white counterparts (Badgett et al., 2013). Additional research is needed to identify how social and economic factors measured at multiple levels throughout the life course (e.g., poverty, health insurance status, interpersonal and institutional discrimination) influence women's sexual and reproductive health, in relation to both sexual orientation and race/ethnicity.

The prevalence of sexual assault was strikingly high among women in our study (41.2% compared to 18.3% among U.S. women overall in 2010) (Black et al., 2011), and a substantial proportion had received an abnormal Pap test result at some point in their life. The majority of women had been pregnant during their lifetime; however, additional research is needed to determine whether or not pregnancies were intended and/or wanted as well as when the pregnancies occurred. Hormonal contraception use was low among study participants (6.1% compared to 16.0% among all U.S. women aged 15-44 years in 2012) (Guttmacher Institute, 2015a); in contrast, the rate of Pap test use in the last three years among women in our sample was similar to that of U.S. women overall (70.4% versus 73.7%) and rates of HIV testing were high (92.7% compared to 54% among U.S. adults in 2012) (Kaiser Family Foundation, 2015).

Our findings pertaining to sexual assault are consistent with those of other investigators (Tornello et al., 2014; Walters et al., 2013), including McCauley and colleagues (2015) who found that 46.5% of predominately white sexual minority women receiving care at family planning clinics in western Pennsylvania had experienced intimate partner violence in their lifetime. Further, research shows that sexual minority women are more likely to have experienced childhood sexual abuse (Austin, Roberts, Corliss, & Molnar, 2008) and sexual violence (Tornello et al., 2014; Walters et al., 2013) compared to heterosexual women. Gender inequality, heterosexism, and racism at the interpersonal and institutional level – as well as economic insecurity, which disproportionately affects sexual minority women of color – may contribute to particularly elevated levels of sexual assault among African American sexual minority women (West, 2002; Sokoloff & Dupont, 2005). Additional quantitative and qualitative research is needed to identify the societal factors at multiple levels and throughout the life course that underlie high rates of sexual assault among African American sexual minority women in order to help inform evidence-based interventions that address their specific needs and concerns. Moreover, sexual assault may contribute to high rates of abnormal Pap tests among women in our study by increasing their risk of exposure to STIs, including HPV (Coker, Hopenhayn, DeSimone, Bush, & Crofford, 2009; Hindin, Btoush, Brown, & Munet-Vilaro, 2015).

The comparatively low rate of hormonal contraception among study participants may be due to a lack of health insurance and access to a primary care provider among women in our sample, as well as a lack of comprehensive sex education that is inclusive of sexual minorities in Southern states (Guttmacher Institute, 2015b). Further, it is possible that healthcare providers may not perceive sexual minority women as being at risk of pregnancy and may thus offer them contraception less often than their heterosexual counterparts (McNair, 2003a, McNair, 2003b). The high rates of pregnancy among women in our study are in line with the findings of prior research conducted in predominately white and multiracial samples, which showed that, overall, sexual minority girls and women are more likely to become pregnant at some point in the life compared to their heterosexual counterparts and those with only male sexual partners (Charlton et al., 2013; Saewyc et al., 1999).

In contrast to low rates of hormonal contraception, the prevalence of HIV testing and Pap test use in the last three years was relatively high among women in our study. Although Alabama does not provide Medicaid coverage for routine HIV testing (Kaiser Family Foundation, 2014), the state uses funds from Title X, the National Family Planning Program, Title XX, the federal Maternal and Child Health Block Grant, Title V, the federal Social Services Block Grant, and state funds to pay for Pap tests for low-income women. Thus, high levels of Pap test use in the last three years among women in our study, all of whom were poor or low-income, may be due to the allocation of federal and state funds to provide coverage for Pap testing among low-income women in Alabama.

We also examined disparities in sexual and reproductive health indicators among women in our sample by both sexual identity and sexual behavior in order to help inform tailored interventions that meet the needs of sexual orientation subgroups of African American sexual minority women. We found that lesbians and women with only female past-year sexual partners were less likely than bisexual women and women with male and female past-year sexual partners, respectively, to have ever been pregnant, ever received an HIV test, obtained a Pap test in the last three years, and ever received an abnormal Pap test result. Contrary to other studies, we found no sexual orientation disparities in current hormonal contraceptive use (Charlton et al., 2015) and ever experiencing sexual assault (McCauley et al., 2015). Additional quantitative and qualitative research is needed to understand the pregnancy desires and intentions and barriers to and facilitators of reproduction among both lesbianS (and women with only female sexual partners) AND BISEXUAL WOMEN (and women with male and female sexual partners). Moreover, the lower likelihood of HIV and Pap testing among lesbians and women with only female past-year sexual partners, which was similar to the findings of studies conducted among predominately white sexual minority women (Marrazzo, 2005; Marrazzo et al., 2001; Cochran et al., 2001; Mayes et al., 2002; Kerr et al., 2013), may be due to pervasive stereotypes, among women and health care providers, that lesbians are not at risk for HIV and other STIs, including HPV, and therefore do not need to be screened for STIs and cervical cancer, despite evidence to the contrary (Marrazzo, 2005). Lastly, it is possible that lesbians and women with only female past-year sexual partners were less likely to have ever received an abnormal Pap test result compared to bisexual women and women with male and female past-year sexual partners respectively

because of a later age at first sex and lower number of female and male sexual partners in the former compared to latter groups (Everett, 2013; Lindley, 2015; Rosario et al., 2014).

Our findings should be interpreted in light of some limitations. First, cross-sectional, self-reported data were collected from a small sample of low-income African American sexual minority women residing in Birmingham, AL who were recruited from a local STD clinic, university campus, and lesbian and bisexual women's organizations. Thus, our findings are subject to participants' memory, reflect their health status at the time of the study, and may not be generalizable to all African American women in Birmingham, AL or sexual minority women of African descent who self-identify in other ways (e.g., black, Caribbean), live in other geographic locations in the South and across the U.S., and are from more privileged socioeconomic backgrounds.

Additionally, the surveys were administered by an interviewer, which may have led some participants to provide socially desirable responses. It is possible that social desirability differed systematically in relation to sexual orientation and therefore compromised the internal validity of our study findings. Third, due to our study's small sample size, we were only able to adjust our findings for age. Analyses that adjust for other potential confounders and also consider the role of factors measured at different points in time (e.g., childhood sexual abuse) and at different levels (e.g., interpersonal and institutional discrimination) on African American sexual minority women's sexual and reproductive health, both overall and by sexual identity and behavior, are needed. Lastly, because this was a pilot study, we were not able to enroll heterosexual women and women with only male sexual partners. Future studies should include these populations in order to provide estimates of sexual orientation disparities in sexual and reproductive health not only among African American sexual minority women but also between this understudied population and a heterosexual comparison group.

IMPLICATIONS FOR POLICY AND PRACTICE

Our study findings suggest that policy initiatives are needed to improve the sexual and reproductive health of African American sexual minority women in the U.S. South. Sources of sexual and reproductive health information that comprehensively and reliably address the specific concerns of sexual minority women are scarce (Lindley, Friedman, & Struble, 2012; Workowski & Bolan, 2015). Community-based organizations, healthcare facilities, and public health departments should develop and implement programs that offer information and other resources (e.g., female and male condoms, dental dams) relevant to the sexual and reproductive health of sexual minority women.

Moreover, federally-funded, school- and community-based sex education programs have traditionally ignored the needs of lesbian, gay, bisexual, transgender, and queer (LGBTQ) individuals (Gowen & Winges-Yanez, 2014; Santelli et al., 2006). Indeed, under Section 510 of Title V of the Social Security Act (1996) and the Community-Based Abstinence Education projects (2000), sex education programs, which focused on abstinence until (different-sex) marriage until 2010, were barred from discussing sexual orientation and gender identity (Santelli et al., 2006). As of 2015, only nine states required LGBTQ-

affirming discussion of sexual orientation in sex education programs, and no state required the discussion of gender identity (Guttmacher Institute, 2015b). Introduced in Congress in 2013, the Real Education for Healthy Youth Act seeks to promote comprehensive sex education, which the bill defines as including accurate information on both sexual orientation and gender identity (Advocates for Youth, 2015). If passed, this legislation may help ensure that sexual minority women have access to accurate and relevant information on sexual and reproductive health topics, including sexual assault, pregnancy, contraception, HIV and other STIs, and cervical cancer.

Additionally, healthcare providers, including gynecologists (Amato & Morton, 2002), often lack adequate training in LGBTQ health (Lim, Johnson, & Eliason, 2015; McNair, 2003b; Obedin-Maliver et al., 2011), which negatively impacts their ability to provide high-quality health care to sexual and gender minority patients. In order to promote the sexual and reproductive health of sexual minority women, medical and nursing curricula should include evidence-based content on the risk and prevention of sexual assault, pregnancy, HIV and other STIs (including HPV), and cervical cancer in this population (McNair, 2003a; McNair, 2003b), while recognizing the diversity of sexual behaviors and sexual and reproductive health needs that exist among sexual minority women (Muzny et al., 2013). Further, healthcare providers should be aware that the majority of sexual minority women, including lesbians and women with only female sexual partners in the past year, have engaged in sexual activity with men (Diamant et al., 1999; Marrazzo & Stine, 2004; Muzny et al., 2011). As a result, sexual minority women should be counseled and screened according to a comprehensive sexual history that includes an assessment of their HIV and STI risk from both male and female sexual partners, past experiences of and current vulnerability to sexual assault, risk for cervical cancer, contraception needs, and pregnancy intentions.

Particular sensitivity regarding contraception and pregnancy intentions is essential, as providers may mistakenly assume that women with female sexual partners are not concerned with preventing pregnancy or interested in becoming pregnant. In addition, training curricula should discuss the similarities and differences in sexual and reproductive health that exist between lesbians (and women with only female sexual partners) and bisexual women (and women with female and male sexual partners) in order to ensure that clinicians are aware of the specific needs of sexual orientation subgroups of sexual minority women. Lastly, so that health care providers are able to address the unique concerns of African American sexual minority women in the context of their lives, medical and nursing school curricula, as well as residency and continuing education programs, should address not only how gender inequality and heterosexism but also racism and economic insecurity influence women's health and health care and train providers to identify and address these multiple forms of discrimination in the health care system (Bowleg, 2012; Stevens, 1998).

CONCLUSIONS

In a sample of self-identified African American sexual minority women in the U.S. South, we found low levels of health insurance and access to health care and a high prevalence of poverty, unemployment, sexual assault, and lifetime history of receiving an abnormal Pap test result. Further, although the prevalence of HIV and Pap testing was high among women

overall, lesbian and women with only female past-year sexual partners were less likely to receive these essential sexual and reproductive health services compared to bisexual women and women with male and female past-year sexual partners. Additional quantitative and qualitative research is needed to identify the social, economic, and policy determinants of sexual and reproductive health, both overall and by sexual identity and behavior, among African American sexual minority women in the South and other parts of the U.S. In the meantime, interventions that provide women and health care providers with information on the sexual and reproductive health risks and needs and address the specific concerns of sexual orientation subgroups of African American sexual minority women and other sexual minority women of color at the intersection of gender, sexual orientation, race/ethnicity, and SEP are needed.

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TABLE 1

Percent distribution of socio-demographic and health care factors by sexual orientation identity and sex of sexual partners in the past year among Southern black sexual minority women (N=165)

Variable (%)	Total	Sexual orientation identity		Sex of sexual partners in the past year	
		Lesbian	Bisexual	Only female	Both male and female
	N=165	n=84	n=73	n=78	n=87
Total	100.0	50.9	44.2	47.3	52.7
Age (years)					
17-21	21.2	23.8	19.2	24.4	18.4
22-25	28.5	32.1	24.7	32.1	25.3
26-30	22.4	25.0	19.2	21.8	23.0
≥ 31	27.9	19.0	37.0	21.8	33.3
Marital status					
Married	1.8	1.2	2.7	1.3	2.3
Separated, divorced, or widowed	19.4	8.3	28.8	10.3	27.6
Never married	78.8	90.5	68.5	88.5	70.1
Co-habitation status					
Living with a female sexual partner	23.6	3 4 . 5	11.0	34.6	13.8
Living with a male sexual partner	5.5	0.0	11.0	0.0	10.3
Living with both male and female sexual partners	0.6	0.0	1.4	0.0	1.1
Not living with a sexual partner	70.3	65.5	76.7	65.4	74.7
Educational attainment					
< High school	19.4	16.7	24.7	14.1	24.1
High school diploma or GED	33.3	33.3	32.9	34.6	32.2
Some college, associate's degree vocational school	44.2	48.8	37.0	50.0	39.1
Bachelor's degree or more	3.0	1.2	5.5	1.3	4.6
Annual income ($)					
< 10,000	61.8	58.3	65.8	53.8	69.0
10,000-19,000	21.8	21.4	23.3	24.4	19.5
≥ 20,000	16.4	20.2	11.0	21.8	11.5
Employment status					
Employed	39.4	42.9	35.6	43.6	35.6
Student	26.7	26.2	28.8	28.2	25.3
Unemployed	33.9	31.0	35.6	28.2	39.1
Has health insurance: yes	50.9	52.4	49.3	55.1	47.1
Has a primary care provider: yes	40.6	44.0	38.4	44.9	36.8

Note. GED: General Education Development. Percentages may not add to 100% due to rounding error. Women who responded "heterosexual," "questioning," or "don't know" (n=8, 4.9%) to the question on sexual orientation identity were excluded from this analysis.

TABLE 2

Percent distribution of sexual and reproductive health indicators by sexual orientation identity among Southern black sexual minority women (N=165)

Variable	Total (N=165)	Lesbian (n=84)	Bisexual (n=73)	p-value
	% (95% CI)	% (95% CI)	% (95% CI)	
Ever pregnant: yes	56.4 (48.7, 64.0)	41.7 (31.0, 52.4)	71.2 (60.7, 81.8)	<0.001
Currently using hormonal contraception: yes	6.1 (2.4, 9.7)	3.6 (0.0, 7.6)	9.6 (2.7, 16.4)	0.124
Ever received HIV test: yes	92.7 (88.7, 96.7)	86.9 (79.6, 94.2)	98.6 (95.9, 101.3)	0.006
Pap test use in last 3 years: yes	70.4 (63.3, 77.5)	59.8 (49.0, 70.5)	80.6 (71.3, 89.8)	0.005
Ever received abnormal Pap test result: yes	32.4 (24.4, 40.3)	19.1 (9.2, 28.9)	43.9 (31.8, 56.1)	0.002
Received abnormal Pap test result at time of study visit: yes *	14.1 (7.8, 20.3)	11.3 (3.3, 19.3)	18.5 (8.0, 29.1)	0.272
Ever experienced sexual assault: yes	41.2 (33.6, 48.8)	39.3 (28.7, 49.9)	38.4 (27.0, 49.7)	0.905

Note. CI: confidence interval. P-values are based on chi-square tests comparing lesbians and bisexual women. Women who responded "heterosexual," "questioning," or "don't know" (n=8, 4.9%) to the question on sexual orientation identity were excluded from this analysis. The proportion of missing data was 1.8% (n=3) for Pap test use in the last 3 years, 17.6% (n=29) for ever receiving an abnormal Pap test result, and 13.0% (n=18) for receiving an abnormal Pap test at the time of the study visit (among women aged 21 years and over).

* Only applies to women aged 21 years and over (n= 139).

TABLE 3

Percent distribution of sexual and reproductive health indicators by sex of sexual partners in the past year among Southern black sexual minority women (N=165)

Variable	Total (N=165)	Only female (n=78)	Both male and female (n=87)	p-value
	% (95% CI)	% (95% CI)	% (95% CI)	
Ever pregnant: yes	56.4 (48.7, 64.0)	38.5 (27.5, 49.4)	72.4 (62.9, 81.9)	<0.001
Currently using hormonal contraception: yes	6.1 (2.4, 9.7)	6.4 (0.9, 11.9)	5.8 (0.8, 10.7)	0.859
Ever received HIV test: yes	92.7 (88.7, 96.7)	85.9 (78.1, 93.7)	99.0 (96.6, 101.1)	0.001
Pap test use in last 3 years: yes	70.4 (63.3, 77.5)	61.8 (50.8, 72.9)	77.9 (69.0, 86.8)	0.025
Ever received abnormal Pap test result: yes	32.4 (24.4, 40.3)	22.0 (11.3, 32.8)	40.3 (29.1, 51.4)	0.024
Received abnormal Pap test result at time of study visit: yes *	14.1 (7.8, 20.3)	12.5 (3.7,21.3)	15.4 (6.5, 24.3)	0.649
Ever experienced sexual assault: yes	41.2 (33.6, 48.8)	42.3 (31.2, 53.4)	40.2 (29.8, 50.7)	0.787

Note. CI: confidence interval. P-values are based on chi-square tests comparing women with only female sexual partners in the past year and women with both male and female sexual partners in the past year. The proportion of missing data was 1.8% (n=3) for Pap test use in the last 3 years, 17.6% (n=29) for ever receiving an abnormal Pap test result, and 13.0% (n=18) for receiving an abnormal Pap test at the time of the study visit (among women aged 21 years and over).

* Only applies to women aged 21 years and over (n= 139).

TABLE 4

Risk ratios for sexual and reproductive health indicators in relation to sexual orientation identity and sex of sexual partners in the past year among Southern black sexual minority women (N=165)

Outcome RR (95% CI)	Sexual orientation identity		Sex of sexual partners in past year	
	Bisexual (reference)	Lesbian	Male and female (reference)	Only female
Ever pregnant	1.00	**0.64 (0.48, 0.85)**	1.00	**0.58 (0.43, 0.78)**
Currently using hormonal contraception	1.00	0.33 (0.09, 1.31)	1.00	1.03 (0.29, 3.63)
Ever received HIV test	1.00	**0.88 (0.80, 0.96)**	1.00	**0.87 (0.79, 0.96)**
Pap test use in last 3 years	1.00	**0.75 (0.61, 0.91)**	1.00	**0.82 (0.67, 0.99)**
Ever received abnormal Pap test result	1.00	**0.42 (0.24, 0.75)**	1.00	**0.55 (0.32, 0.94)**
Received abnormal Pap test result at time of study visit *	1.00	0.52 (0.21, 1.25)	1.00	0.71 (0.30, 1.73)
Ever experienced sexual assault	1.00	1.11 (0.75, 1.66)	1.00	1.10 (0.76, 1.58)

Note. RR: risk ratio; CI: confidence interval. Boldface indicates statistical significance ($p<0.05$). Women who responded "heterosexual," "questioning," or "don't know" (n=8, 4.9%) to the question on sexual orientation identity were excluded from this analysis. The proportion of missing data was 1.8% (n=3) for Pap test use in the last 3 years, 17.6% (n=29) for ever receiving an abnormal Pap test result, and 13.0% (n=18) for receiving an abnormal Pap test at the time of the study visit (among women aged 21 years and over). Separate models were estimated for each outcome in relation to each dimension of sexual orientation. All models were adjusted for age (modeled as 17-21 years, 22-25 years, 26-30 years, and 31 years and older).

* Only applies to women aged 21 years and over.