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Debunking Lesbian Bed Death: Using Coarsened Exact Matching to Compare Sexual Practices and Satisfaction of Lesbian and Heterosexual Women

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Abstract

The current study examined the prevalence and correlates of over 50 sexual practices in a national survey of heterosexual and lesbian women in relationships. Coarsened exact matching was used to create comparable samples of heterosexual ($n = 2510$) and lesbian ($n = 283$) women on six demographic factors, including relationship length. Heterosexual and lesbian women were equally likely to be sexually satisfied (66% heterosexual women vs. 68% lesbian women). Compared to heterosexuals, lesbians were more likely to report having sex 0–1 times per month (11% vs. 23%) and were less likely to report having sex greater than once per month (89% vs. 77%). Among women who had been in relationships for longer than 5 years, heterosexual women were less likely than lesbian women to report having sex 0–1 times per month (15%; 42%). This steeper drop in sexual frequency among lesbian women than heterosexual women has pejoratively been labeled lesbian bed death. Rather than accept the label “lesbian bed death” as characterizing these sexual relationships, we turn our attention to what we call lesbian bed intimacies: the myriad ways that lesbian women incorporate behaviors promoting emotional connection, romance, and mood setting, as well as relying on a wide variety of specific sexual acts (e.g., use of sex toys) and sexual communication. Compared to heterosexual women, lesbian women were more likely to usually to always receive oral sex during sex in the past month (28%; 47%) and to use sex toys in the past year (40%; 62%). In their last sexual encounter, lesbian women were more likely to say “I love you” (67%; 80%), have sex longer than 30 min (48%; 72%), and engage in gentle kissing (80%; 92%). These intimacies likely help explain why sexual satisfaction was similar in these groups despite notable differences in sexual frequency.

Keywords Sexual satisfaction · Sexual orientation · Lesbian women · Close relationships · Coarsened exact matching

Introduction

One of the most controversial questions about the sexual lives of lesbian women is whether they have sex less frequently than heterosexual women (Cohen & Byers, 2014). This

phenomenon of sharply reduced sexual frequency has colloquially earned the stigmatizing label “lesbian bed death.” This term even has its own Wikipedia entry where the concept was tied to pioneering work conducted by Blumstein and Schwartz (1983), even though the term does not appear in their groundbreaking *American Couples: Money, Work, Sex*, nor did the authors claim credit for it (P. Schwartz, personal communication, May 15, 2019). One notable finding from Blumstein and Schwartz’s study was that lesbian couples reported having sexual activity substantially less often than gay men or married and cohabiting heterosexual couples and that the drop-off in sexual frequency after two years together was steeper for lesbians. These findings were replicated in national studies (Lever, 1995), and a literature review concluded that lesbian couples have sex less often than other couples (Peplau & Fingerhut, 2007).

Discussions of lower sexual frequency among lesbian women have permeated into popular culture. Websites geared

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toward women who have relationships with other women have taken different perspectives on this phenomenon. Some of these websites provide tips for recognizing, avoiding, re-conceptualizing, or addressing this so-called lesbian bed death (Gonzalez, 2015; Lewis, 2019; Riese, 2016; Stevenson, 2017), whereas others have proposed that the concept is a myth or occurs regardless of whether relationships are same-sex or mixed-sex (Curran, 2016; Marin, 2016; McCroy, 2010; Moulder, 2014). In a qualitative study, one lesbian woman perceived the label as being a comparison to heterosexual norms: “‘I think [with] lesbian bed death, there’s been some diminished amounts of, or frequency in, typical sexual activity, as what we consider from heterosexual norms’” (Rosenkrantz & Mark, 2018, p. 231). Some women drew a connection between sociocultural expectations about lesbian bed death and how the concept itself influenced their relationship. For example, one bisexual participant added, “there’s a lot of pressure, especially when two women are in a relationship...about the lesbian bed death myth. So you have to be like, I have to sleep with her all the time” (Rosenkrantz & Mark, 2018, p. 231).

The current study investigates whether sexual frequency is actually lower among lesbian women compared to heterosexual women matched on key demographic factors. Rather than accept the pejorative label “lesbian bed death” as characterizing these sexual relationships, we turn our attention to what we call lesbian bed intimacies: the myriad ways that lesbian women incorporate behaviors promoting emotional connection (e.g., gentle kissing and saying “I love you” during sex), romance (date nights and getaways), mood setting (e.g., dimming the lights and playing music in background), as well as relying on a wide variety of specific sexual acts (e.g., use of sex toys) and sexual communication. Below we highlight some of the existing research and unanswered questions that data from the current study address in order to promote a richer understanding of women’s sexual lives.

Research Question 1: Examining Acts of Sexual Variety and Specific Sexual Acts

We investigated the extent to which heterosexual and lesbian women incorporate a variety of behaviors into their sexual lives, which is linked to greater sexual satisfaction (Muise et al., 2019) and more frequent orgasm (Frederick et al., 2018). Nichols (2004) found greater use of sex toys among lesbian woman compared to heterosexual women. Having sexual events that last for a longer duration of time per event may also enable incorporating more specific sexual acts and behaviors, and several studies have found that lesbian women report longer duration of sex than do heterosexual women (Blair & Pukall, 2014; Nichols, 2004).

In *The Advocate* survey of over 8000 lesbian women, there was strong endorsement for a variety of behaviors. The vast

majority of women reported “loving” (as opposed to liking, indifference, or disliking) hugging, caressing and cuddling (91%), French kissing (82%), caressing partner’s breasts (82%), holding hands (74%), having own (78%) or partner’s (73%) genitals touched, receiving oral sex (75%), and giving oral sex (70%), whereas only about a quarter reported loving using a vibrator or dildo with their partner (Lever, 1995). The most common sexual behaviors between women include manual stimulation of the genitals, oral sex, and genital-genital rubbing (Bailey et al., 2003; Schickt et al., 2012).

Kissing is an important part of sparking arousal and feelings of closeness during sex (Jankowiak et al., 2015). In a study comparing women in same-sex versus mixed-sex relationships, no differences in recalled use of non-organic sexual activities (e.g., kissing) were identified between heterosexual and lesbian women (Holmberg & Blair, 2009). The current study enables examination of group differences in several types of kissing (gentle, deep) in their most recent sexual encounter. These behaviors are connected to foreplay, which are associated with sexual satisfaction (Muise et al., 2014) and the likelihood of orgasm for women (Singh et al., 1998).

These existing studies suggest that acts of sexual variety are an important aspect of women’s sexual experiences, but few national or recent studies investigate their relative importance among lesbian and heterosexual women.

Research Questions 2 and 3: Examining Mood Setting and Sexual Communication

Positive sexual communication is an important part of promoting sexual well-being and people who communicate their sexual wants and needs to their partners report greater sexual satisfaction (MacNeil & Byers, 2005; Montesi et al., 2011). Despite the importance of sexual communication, few quantitative studies have investigated how lesbian versus heterosexual women employ this communication in their relationships. One study found no differences in the use of sexual communication between lesbian and heterosexual women (Holmberg et al., 2010), and the current study adds to this existing literature.

Feeling close and connected to their partners is an important ingredient of sexual satisfaction among lesbian women (Birnie-Porter & Lydon, 2013). The extent to which affection and romance are utilized by men and women during sex, however, is rarely investigated. We focused on sexual behaviors that are stereotypically tied to tenderness, affection, and setting the mood for sex. Expressions of emotional connection, such as saying “I love you” during sex, can enhance these feelings during sex, and romantic feelings can be enhanced by lighting candles, dimming the lights, and playing music. These behaviors may connect to “pillow talk” or cuddling and other affectionate behaviors that are associated with

sexual activity or sexual satisfaction (Hughes & Kruger, 2011; Muise et al., 2014; van Anders et al., 2013). The current study has the potential to add to this existing literature through an examination of a wide variety of mood setting, romantic, and sensual behaviors.

Research Question 4: Examining Sexual Frequencies

It is well known that sexual frequency typically declines notably the longer a couple is together (Call et al., 1995; Grøntvedt et al., 2020; McNulty et al., 2016). The “lesbian bed death” stereotype rests on the notion that lesbian women have lower sex frequency after living together even a short while, and that this decline is sharper among lesbian women compared to other groups. *The Advocate*’s detailed lesbian sex survey, based on over 8000 respondents from all 50 U.S. states, reported that lesbian women’s sexual activity declined substantially after the 2-year mark. By contrasting *The Advocate*’s findings to the data on heterosexuals published in the contemporaneous nationally representative survey (Laumann et al., 1994), Lever (1995) noted that after only 2 years together lesbian women had sex less frequently than married heterosexual couples who were together for 10 years. Cohen and Byers (2014) noted that in a sample of lesbian and bisexual women, 25% of them reported infrequent genital activities (0–1 times per month) after 10 years together. Other researchers draw attention to the fact that many heterosexuals also experience these declines in sexual frequency over time, and that most lesbian women in long-term relationships report being sexually active with their partner and report positive experiences (Rosenkrantz & Mark, 2018).

This claim of substantially lower rates of sexual activity among lesbian women has prompted controversy, with the central concern centering on whether there was bias inherent in the usual survey question, “how often do you have sex?” (see Cohen & Byers, 2014, for a review). People differ in their definition of “sex” (Sanders et al., 2010). One critique is that the question wording could lead to an underreporting of sexual activity by lesbians compared to heterosexual women. This could occur if lesbian women interpret the question as specifically about penetrative vaginal intercourse (e.g., use of dildos or fingers).

In contrast to this critique, asking participants how often they have sex might be biased in favor of finding a higher sexual frequency among lesbian women if they have a more expansive definition of having sex than heterosexual women. Several studies show that women who have sex with women are more likely than mixed-gender couples to consider genital stimulation, oral sex, or use of sex toys as having had sex (Horowitz & Spicer, 2013; Sewell et al., 2017) and include a broader set of behaviors in their definition of having sex (Schick et al., 2016).

Prior research highlights the importance of measuring a wider variety of sexual behaviors and experiences in order to paint a more complete picture of the sex lives of lesbian women (Cohen & Byers, 2014; Sanders et al., 2010). This includes frequency of receiving oral sex, where evidence is mixed (Blair et al., 2018; Holmberg & Blair, 2009), and the frequency of orgasm, which has been found to be higher among lesbian women contrasted to heterosexual women in some recent research (Blair et al., 2018; Garcia et al., 2014).

Research Question 5: Examining Sexual Satisfaction

Past research has found similar levels of sexual satisfaction between heterosexual and lesbian women (Blair & Pukall, 2014; Breyer et al., 2010; Holmberg et al., 2010). Given the lower sexual frequency among lesbian women, this finding is surprising, because women who have sex more frequently with their partner tend to report greater sexual satisfaction, including among lesbian women (Scott et al., 2018). We propose that this discrepancy can largely be explained by lesbian bed intimacies: the greater use of behaviors that promote pleasure and affection among lesbian women.

Summary of Research Questions

To better understand the sex lives of heterosexual and lesbian women, we addressed five research questions. We examined similarities and differences between heterosexual and lesbian women in: acts of sexual variety, specific sexual acts, and duration of sex (Research Question 1), mood setting (Research Question 2), sexual communication (Research Question 3), frequency of sex, orgasm, and oral sex (Research Question 4), and predictors of sexual satisfaction (Research Question 5).

We hypothesized that lesbian women would report lower sex frequency than heterosexual women but would incorporate more sexual acts designed to enhance emotional connection and mood setting, have sex for longer durations, receive oral sex more often, and have orgasms more consistently. As part of Research Question 5, we tested whether these behaviors help explain why lesbian and heterosexual women have similar levels of sexual satisfaction despite having lower sexual frequency.

In the process of examining these aspects of heterosexual and lesbian women’s sex lives, we also sought to rectify a substantial statistical problem that occurs when comparing these groups. Samples of lesbian and heterosexual women can differ in relationship length, age, and other key demographic factors. By presenting our results after matching samples on these demographic factors, we help contribute to our understanding of the sex lives and close relationships of lesbian women, who have been underrepresented in studies

of sexual satisfaction (Armstrong & Reissing, 2013; Rosenkrantz & Mark, 2018).

Method

The present study is based on secondary analyses of anonymous data collected via a survey posted on the official news website of NBC News (then called msnbc.com) for ten days in 2006. Around that time internal research on msnbc.com showed approximately 58 million unique monthly visitors, equal numbers of Democrat and Republican visitors, and visitors drawn almost exclusively from within the United States. Political diversity of visitors to the site was reflected by respondents' self-identification as conservative/very conservative (34%), moderate (31%), or liberal/very liberal (24%), and in terms of percentage identifying as Republican (31%) versus Democrat (33%) (pers. comm. with msnbc.com market analyst, December 30, 2010).

This is a companion paper to one comparing gay and heterosexual men in this dataset (Frederick et al., 2021), and this dataset has been used to examine sexual satisfaction among heterosexual men and women in long-term relationships (Frederick et al., 2017b), among older adults (Gillespie, 2017a, 2017b), and sexual orientation differences in orgasm frequency (Frederick, 2018). With the exception of orgasm frequency, results for lesbian women have not been published previously. The current paper is part of a series of manuscripts based on seven different datasets on different topics conducted through msnbc.com and NBCnews.com between 2002 and 2012, including publications examining mate preferences (Fales et al., 2016), sexual jealousy (Frederick & Fales, 2016), sexual satisfaction (Frederick et al., 2017b), sexual regrets (Galperin et al., 2013), sexual experience (Frederick & Jenkins, 2015), consequences of visiting online sex sites (Groß et al., 2011), gender differences in beliefs about who should pay for dates (Lever et al., 2015), fairness in housework and shared expenses (Gillespie et al., 2019), attitudes toward female bosses (Elsesser & Lever, 2011), friendship (Gillespie, et al., 2015a, 2015b; Gillespie, et al., 2015a, 2015b), and aspects of body image (Frederick & Essayli, 2016; Frederick et al., 2006, 2007b, 2008, 2016a, 2016b; Lever et al., 2006, 2007; Peplau et al., 2009). The current data presented is specifically from the 2006 survey and dataset.

Participants

Inclusion Criteria

A total of 24,012 heterosexual women and 340 lesbian women met the criteria for inclusion: completed the full

survey via msnbc.com; aged 18 to 65 years; identified as heterosexual or lesbian; indicated they were either dating/seeing only one person, cohabiting, married or remarried; and were sexually intimate with their partner during the last month. Through the process described below, this larger sample was then reduced into the analyzed sample of 283 lesbian women and 2510 heterosexual women who could be closely matched with them on key demographic factors. The demographics for these samples are shown in Table 1.

Using Coarsened Exact Matching to Create Matched Groups

In the full sample prior to the matching procedures being employed, heterosexual women were in longer relationships ($d=0.35$), had lived with their partner longer ($d=0.30$), had more children ($d=0.42$), were younger ($d=-0.28$), had a lower body mass index ($d=-0.28$), and had less education ($d=-0.33$). The wording of these questions is presented in the measures section below.

In order to ensure that differences in the sample between lesbian and heterosexual women were not due simply to them varying in these “third variables,” we used coarsened exact matching to equalize these groups on these dimensions. We matched on these variables because they are major demographic factors (e.g., education, age), are known to be associated with sexual satisfaction or frequency (e.g., relationship length; Call et al., 1995; Grøntvedt et al., 2020; McNulty et al., 2016), could plausibly be linked to these behaviors (e.g., number of children; Jose & Alfons, 2007), or could be associated with body dissatisfaction, which is associated with sexual satisfaction (e.g., BMI; Gillen & Markey, 2019).

This approach provides a number of notable benefits over commonly used approaches, such as propensity score matching (Iacus et al., 2011, 2012, 2019). In coarsened exact matching, n control variables on which the samples will be matched are selected. Each of these variables are coarsened (i.e., stratified into discrete bins). This creates an n -dimensional grid that lesbian and heterosexual women can be placed in according to their coarsened control variables. The data are then pruned of any participants that do not fall into a grid unit with at least one lesbian and one heterosexual woman. Subsequent analyses are performed with the addition of a weight that equalizes the number of lesbian and heterosexual women in each grid unit.

Due to our large sample size, we were able to match age, relationship length, education, and cohabitation length on each individual response (e.g., age of 21) rather than larger bins (e.g., ages 20–25). For the number of children living at home, a 4+ bin was used for all individuals with greater than or equal to four children in their home, so there were five total bins for number of children (0, 1, 2, 3, 4+). In the coarsened exact matching process, BMI was stratified into the following classes: < 18.5, 18.5–25, > 25.

Table 1 Key demographics for original sample and analyzed samples comparing groups of lesbian and heterosexual women matched using coarsened exact matching

	Original sample		Matched sample	
	Heterosexual women	Lesbian women	Heterosexual women	Lesbian women
	% (N)	% (N)	% (N)	% (N)
Sample size	(24,012)	(340)	(2510)	(283)
<i>Ethnicity</i>				
White	83.6	84.1	85.8	83.0
Black	3.5	2.9	2.3	3.5
Hispanic	4.7	3.5	2.6	3.5
Asian	2.4	1.2	2.4	1.4
Native American	0.6	1.8	0.7	2.1
Other	0.8	0.9	0.8	1.1
Biracial	1.8	2.1	2.9	2.2
Prefer not to say	2.6	3.5	2.5	3.2
<i>Education</i>				
Some high school or less	0.9	0.3	0.0	0.0
High school graduate	11.8	7.1	6.7	6.7
Some college/associates	40.1	32.6	35.7	35.7
College degree	33.8	35.6	35.7	35.7
Graduate degree	13.4	24.4	21.9	21.9
<i>Relationship status</i>				
Dating/seeing one person	26.5	28.8	30.2	31.4
Cohabiting	19.5	54.1	24.4	50.2
Married	49.4	15.6	38.0	16.6
Remarried	4.6	1.5	7.4	1.8
<i>Relationship length</i>				
0–6 months	7.0	8.8	9.5	9.5
7–11 months	6.9	9.7	9.5	9.5
1 year	8.0	12.4	9.2	9.2
2 years	11.5	14.1	12.4	12.4
3–5 years	21.0	25.3	26.1	26.1
6–10 years	19.4	17.4	20.1	20.1
11–20 years	17.6	10.3	11.3	11.3
> 20 years	8.6	2.1	1.8	1.8
<i>Have children under 21?</i>				
Yes	49.7	22.4	22.2	22.2
<i>Means for key variables</i>	<i>M</i> (SD)	<i>M</i> (SD)	<i>M</i> (SD)	<i>M</i> (SD)
Age	33.8 (9.6)	36.5 (9.7)	35.6 (9.0)	35.5 (9.2)
Relationship length	8.2 (8.5)	5.2 (5.8)	5.4 (5.8)	5.4 (5.8)
Cohabiting length	6.5 (8.5)	4.0 (5.8)	4.4 (5.9)	4.4 (5.9)
BMI	25.4 (5.8)	27.3 (6.9)	26.7 (6.0)	27.4 (6.6)
Number of children (entire sample)	0.9 (1.2)	0.4 (0.9)	0.3 (0.7)	0.3 (0.7)
Number of children (among women with children)	1.9 (1.0)	1.8 (1.0)	1.5 (0.7)	1.6 (0.7)

This process resulted in a sample of 283 lesbian women and 2510 heterosexual women who could be matched with them (Table 1). One demographic variable of note that differed substantially between lesbian and heterosexual women was relationship status. For example, 38.0% of heterosexual

women reported being married compared to only 16.6% of lesbian women. This is likely due to the fact that marriage was not legal at the time of the survey and, therefore, was not an ideal variable to match on. The 16.6% who indicated they were married likely lived in U.S. states where domestic

partnerships were legal, considered themselves married even if they did not have this legal status within the U.S., or were legally married in another country such as Canada. The groups were equivalent, however, in the percentages of heterosexual versus lesbian women who were dating one person (30.2% vs. 31.4%) versus cohabiting, married, or remarried (69.8% vs. 68.6%).

Measures

After indicating their age and their current relationship status, participants were routed to a series of questions about their sex lives and relationships. Because some participants might have been dating more than one person or had affair partners, they were asked to keep their “primary” sexual partner in mind.

Research Question 1: Examining Acts of Sexual Variety and Specific Sexual Acts

Total Number of Acts of Sexual Variety in Past Year Participants were given a list of 17 different activities and were asked “Have you done any of the following in the past year to improve your sex life? If so, select all that apply.” We coded

affirmative responses as 1 for each activity, creating an acts of sexual variety variable by summing the responses (range 0–17; 0 = none of these activities, 17 = all of these activities). The mean scores for this summed variable are shown in Table 2, and the list of individual items is shown in Table 3.

Total Number of Specific Sexual Acts During Last Sexual Encounter Eight items described actions that people might have engaged in during their last sexual encounter (e.g., gentle kissing and deep kissing). Participants could check all items that applied. We coded affirmative responses as 1 for each activity, and created a variable indicating the total number of specific sexual acts during last sexual encounter by summing the responses (range 0–8; 0 = none of these acts, 8 = all of these acts). The mean scores for this summed variable are shown in Table 2, and the list of individual items is shown in Table 3.

Duration of Sex During Last Sexual Encounter Participants were asked “how much time was spent on that occasion, from the time physical contact began until it ended (including kissing, petting, etc.)?” and responded in minutes or hours (15 min or less, 16–29 min, 30–59 min, 60–119 min, 120+ min) (Table 3). Participants were also asked if the duration of this encounter was “too long,” “too short,” or “about right” (Table 3).

Table 2 Mean sexual satisfaction, frequencies, behaviors, and attitudes among heterosexual and lesbian women (RQ 1–5)

Measure	Scale	Matched sample				
		Heterosexual women		Lesbian women		Heterosexual women minus lesbian women
		<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>	
<i>Sexual variety and specific sexual behaviors (RQ1)</i>						
Number of acts of sexual variety in past year	0–17	6.01	3.58	6.38	3.75	– 0.10
Number of specific sexual acts during last sexual encounter	0–8	4.93	1.63	4.87	1.68	0.04
I am satisfied with variety of sexual positions with partner	1–4	3.07	0.93	2.99	1.00	0.09
Our sex life is predictable	1–4	2.66	0.96	2.51	1.02	0.16*
<i>Mood setting and romance (RQ2)</i>						
Mood setting	0–5	2.33	1.76	2.29	1.73	0.02
<i>Sexual communication (RQ3)</i>						
Sexual communication behaviors	0–5	2.05	1.28	2.40	1.27	– 0.27***
I feel comfortable asking my partner for what I want in bed	1–4	3.22	0.86	3.39	0.80	– 0.20**
<i>Sexual frequencies (RQ4)</i>						
Sexual frequency per month	0–32	8.49	7.08	5.88	6.41	0.37***
Own orgasm frequency	0–4	2.72	1.23	3.29	1.04	– 0.47***
Partner orgasm frequency	0–4	3.71	0.64	3.40	1.03	0.45***
Receive oral frequency	0–4	1.67	1.30	2.19	1.48	– 0.39***
Give oral frequency	0–4	2.01	1.28	2.32	1.49	– 0.24***
<i>Sexual and relationship satisfaction (RQ5)</i>						
Sexual satisfaction	1–7	4.50	1.79	4.62	1.72	– 0.07
Relationship satisfaction	1–4	3.51	0.75	3.54	0.72	– 0.04

* $p < .05$; ** $p < .01$; *** $p < .001$

Table 3 Examining sexual variety and specific sexual behaviors among heterosexual and lesbian women (RQ1)

Measure	Matched sample		
	Heterosexual women	Lesbian women	Heterosexual women versus lesbian women
	%	%	χ^2
<i>Acts of sexual variety past year (% yes) (goal 1)</i>			
At least one of us got a mini-massage or backrub	63	74	13.4***
One of us wore sexy lingerie/underwear	66	50	30.2***
Took a shower or bath together	60	62	0.3
Made a "date night" to be sure we had sex	46	59	18.1***
Tried a new sexual position	60	53	4.7*
Went on a romantic getaway	43	53	10.4**
Used a vibrator or sex toy together	40	62	49.7***
Tried anal stimulation	37	33	1.9
Viewed pornography together	38	42	1.4
Talked about or acted out our fantasies	36	44	8.2**
Had anal intercourse	24	13	17.6***
Had sexual contact in a public place	22	28	4.2*
Integrated food into sex (e.g., chocolate/whip cream)	20	28	9.1**
Tried light S&M (e.g., restraints, spanking)	23	26	1.2
One of us took Viagra or a similar drug	9	2	16.0***
Videotaped our sex or posed for pictures in the nude	12	8	4.6*
Invited another person into bed with us	3	3	0.0
<i>Specific acts during last sexual encounter (% yes) (goal 1)</i>			
Vaginal intercourse	94	56	409.0***
Manual stimulation of genitals	83	90	8.5**
Gentle kissing	80	92	22.1***
Deep kissing	71	80	9.8**
Changed positions during sexual intercourse	66	58	8.5**
Gave oral sex	52	54	0.4
Received oral sex	41	53	13.4***
Anal intercourse	4	5	0.6
<i>Sexual attitudes (% somewhat-strongly agree) (goal 1)</i>			
I am satisfied with variety of sexual positions/activities with partner	75	70	4.1*
Our sex life is predictable	60	56	2.0
<i>Duration of sex during last sexual encounter (%) (goal 1)</i>			
2+ h	3	9	78.6***
1–2 h	10	18	
30–60 min	35	45	
15–30 min	34	19	
15 min or less	18	9	
<i>Good duration of sex during last sexual encounter (%) (goal 1)</i>			
It was about right	70	77	10.7**
It was too short	26	22	
It was too long	4	1	

* $p < .05$; ** $p < .01$; *** $p < .001$

Attitudes About Sexual Variety and Predictability in Relationship Participants completed two items related to sexual variety and monotony in their sex lives (“I am satisfied with

the variety of sexual positions and activities that my partner and I use;” “Our sex life is predictable”) (Table 3). Participants responded on a four-point Likert scale (1 = Strongly

Disagree; 4 = Strongly Agree). To facilitate data presentation, we also identified the percentage of participants who disagreed (1–2) versus agreed (3–4) with the statements. Participants could also indicate “not applicable” on these items and 0.3% and 0.4% of people selected these options on these two items, respectively, and were excluded from analyses using that item.

Research Question 2: Examining Mood Setting, Affection, and Romance

Mood Setting During Last Sexual Encounter Five of the items described things people might have done to set the mood or build romance (e.g., playing music in the background or lighting a candle). One of the items represented an expression of love (“One of us said ‘I love you’”). Participants could check all items that applied. We coded affirmative responses to each item as 1, and created a mood setting variable by summing the responses for the five items (range 0–5). The full list of mood setting and romance behaviors is shown in Table 4.

Feelings During Last Sexual Encounter Participants indicated the one option that best described how they felt during their last sexual encounter (e.g., loving and tender; passionate; playful; pressured). The full list of options is shown in Table 4.

Research Question 3: Sexual Communication

Sexual Communication Behaviors Participants were given a list of six different types of sexual communication and asked “In the past month, have you and your partner talked about sex in any of these ways? Please select all that apply.” The full list of communication behaviors is shown in Table 4. We coded affirmative responses to each item as 1 and created a communication variable by summing the responses for the six items (range 0–6).

Comfort with Sexual Communication Participants completed one item related to comfort with sexual communication with their partner (“I feel comfortable asking my partner for what I want in bed”). Participants responded on a four-point Likert scale (1 = Strongly Disagree; 4 = Strongly Agree). To facilitate data presentation, we also identified the percentage of participants who disagreed (1–2) versus agreed (3–4) with the statements. Participants could also indicate “not applicable” on this item and 0.5% of people selected this option and were excluded from analyses using that item (Table 4).

Research Question 4: Examining Sexual Frequencies

Sexual Frequency Participants were asked, “How often do you typically have sex with your partner?” and the responses were recoded to reflect the approximate number of times each participant reported having sex each month (0 = Not at all, 0.50 = Once every few months, 1 = Once a month, 2 = Two or three times a month, 6 = Once or twice a week, 14 = Three to four times a week, 20 = Five or more times a week, and 32 = More than once a day) (Table 4).

Oral Sex Frequency Participants were asked two questions: “During your lovemaking in the past month, how often did you [give oral sex to your partner]/[receive oral sex from your partner]?” (0 = Never, 1 = Rarely, 2 = About half of the time, 3 = Usually, 4 = Always). Participants indicating not applicable on these items (fewer than 1%) were excluded from analyses using that item (Table 4).

Orgasm Consistency Participants were asked two questions: “During the past month, how often did [you]/[your partner] reach orgasm when you and he or she were intimate?” (0 = Never, 1 = Rarely, 2 = About half of the time, 3 = Usually, 4 = Always) (Table 4).

Research Question 5 Measures: Relationship and Sexual Satisfaction Variables

Relationship Satisfaction Participants completed one item regarding their relationship satisfaction (“Thinking of my relationship overall, I feel happy with my partner”). Participants responded on a four-point Likert scale (1 = Strongly Disagree; 4 = Strongly Agree).

Sexual Satisfaction We asked, “How satisfied are you with your sex life now?” (1 = Very Dissatisfied, 4 = Neutral, 7 = Very Satisfied). In a separate study (see Frederick et al., 2017a, b), responses to the satisfaction with sex life now item were highly correlated ($r=0.91$) with the Global Measure of Sexual Satisfaction Scale (Lawrance & Byers, 1995).

Demographic Variables

Demographic variables included gender, age, relationship status, relationship length, education level, and number of children. Sexual orientation was assessed with the item “Do you consider yourself:” with response options of “straight/heterosexual,” “gay/lesbian,” or “bisexual.” Participants indicated if their relationship length was 0–5 months, 6–11 months, 1 year, 2 years, 3–5 years, 6–10 years, 11–20 years, > 20 years; these were recoded as 0.25, 0.75, 1, 2, 4, 8, 16, and 30 years, respectively. Cohabitation length was recorded in the same manner as relationship length, and coded as 0 if they indicated that they did not live with their partner. Education was coded from lower (1 = some high school education or less) to higher (5 = graduate degree).

Table 4 Mood setting behaviors (RQ2) and sexual communication (RQ4) among heterosexual and Lesbian women

Measure	Matched sample		
	Heterosexual women	Lesbian women	Heterosexual women versus lesbian women
	%	%	χ^2
<i>Mood setting during last sexual encounter (% yes) (RQ2)</i>			
At least one of us said “I love you”	67	80	20.5***
We engaged in sexy talk	44	46	0.5
Laughed about something funny happened during sex	37	43	3.3
Lit a candle or dimmed the lights	21	29	8.4**
Played music in the background	13	24	29.2***
<i>Sex frequency (RQ4)</i>			
8+ times per week	3	2	75.6***
5+ times per week	8	5	
3–4 times per week	24	11	
1–2 times per week	34	34	
2–3 times per month	20	25	
Once per month	7	12	
Once every few months	4	10	
Not at all/Never had sex	0	1	
<i>Participant orgasms in past month (RQ4)</i>			
Always	32	57	74.8***
Usually	34	28	
Half of the time	16	7	
Rarely	10	4	
Never	8	4	
<i>Participant partner orgasms in past month (RQ4)</i>			
Always	78	64	55.9***
Usually	17	23	
Half of the time	3	6	
Rarely	1	3	
Never	1	4	
<i>Participant received oral sex past month (RQ4)</i>			
Always	11	26	64.8***
Usually	17	21	
Half of the time	23	19	
Rarely	26	14	
Never	23	20	
<i>Participant gave oral sex past month (RQ4)</i>			
Always	16	30	54.8***
Usually	21	22	
Half of the time	27	15	
Rarely	22	14	
Never	15	19	

* $p < .05$; ** $p < .01$; *** $p < .001$

Participants self-reported their heights and weights which were used to calculate BMI. Participants indicated the number of children in their home under age 21 years, ranging from 0 to 6+ (see Table 1).

Overview of Data Analytic Approach

Effect Sizes

What is considered a small, moderate, or large effect size can vary dramatically based on the research question of interest. As a very rough guide, Cohen (1988) suggests that effect size d can be interpreted as small (0.20), moderate (0.50), or large (0.80). These values correspond to Pearson's r correlations of 0.10, 0.24, and 0.37. Ferguson (2009, p. 533) suggested somewhat higher thresholds for what should be considered the “recommended minimum effect size representing a ‘practically’ significant effect for social science data” ($d = 0.41$; β or $r = 0.20$). With very large sample sizes it is possible for even very small effects to be statistically significant at traditional thresholds. Given the large sample size and multiple statistical comparisons, we note in the tables whether effects were significant at the $p < 0.05$, 0.01, or 0.001 levels, emphasize the findings that are significant at the $p < 0.001$ level, and emphasize the effect sizes. We draw particular attention to statistically significant findings with Cohen's d values greater than 1.20, β values greater than 1.09, and percentage differences greater than 8 percentage points.

Data Analyses and Data Presentation

For heterosexual and lesbian women, we highlighted the frequency distributions for sexual frequency among couples who had been together longer than 5 years (Fig. 1) and

the key behaviors that differed among heterosexual and lesbian women who had been together for longer than 5 years (Fig. 2). Mean differences were compared with t -tests and proportion differences were compared using chi-square tests.

We conducted regression analyses examining the predictors of sexual satisfaction separately for lesbian and heterosexual women (Table 5). Although average treatment effects are sometimes used for this purpose, we chose to use regression since it controls for confounders (Ho et al., 2007). We used the same predictor variables that were included in the Frederick et al. (2017b) paper examining these associations among men and women. We conducted two separate regression models. Regression Model 1 included all of the relevant predictors, including relationship satisfaction and sexual frequency. Regression Model 2 removed relationship satisfaction and sexual frequency as predictors because sexual satisfaction is likely a component of relationship satisfaction, and sexual frequency is closely intertwined with sexual satisfaction (people who are satisfied may choose to have more sex) (McNulty et al., 2016). The patterns of results were generally similar in Regression Model 1 and Regression Model 2, except the effects of the other predictors were generally stronger when relationship satisfaction and sexual frequency were removed in Model 2, as would be expected given the strong relationship between those three variables. In the regression models all measures were treated as continuous (e.g., age, orgasm frequency).

We show the findings for both models in Table 2 but we focus on the patterns found in Model 2 in the Results section and Discussion. Skewness was low in all continuous variables (< 1.3 for all variables, and < 1.0 for majority of variables), as was kurtosis (< 1.3 for all variables and < 1.0 for majority of variables, with the exception of partner orgasm frequency (9.3) which was driven by the fact that

Fig. 1 Frequency of sex was lower among lesbian women than heterosexual women who had been together for longer than 5 years. For example, fewer heterosexual women than heterosexual women reported having sex 0 times per month (0% vs. 3%), 0.5 times per month (7% vs. 22%), or once per month (8% vs. 17%)

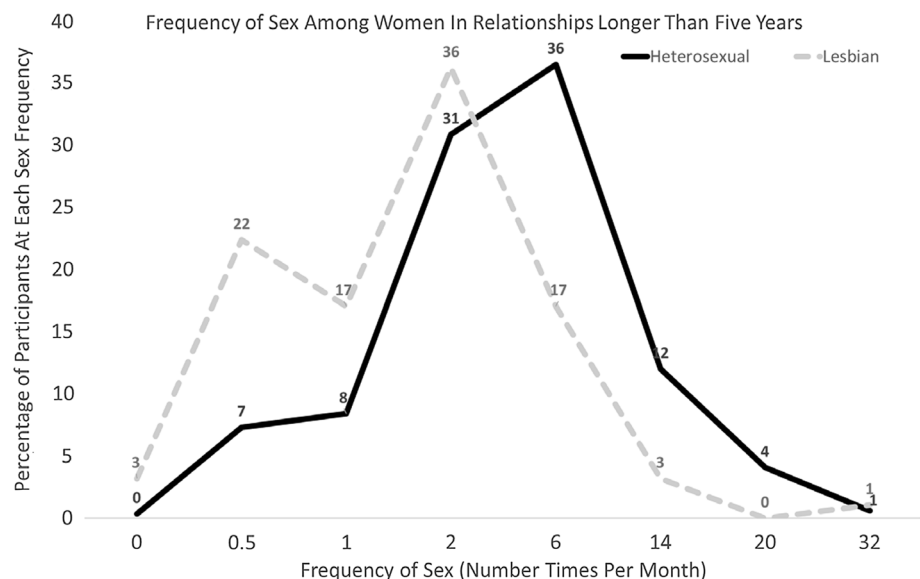
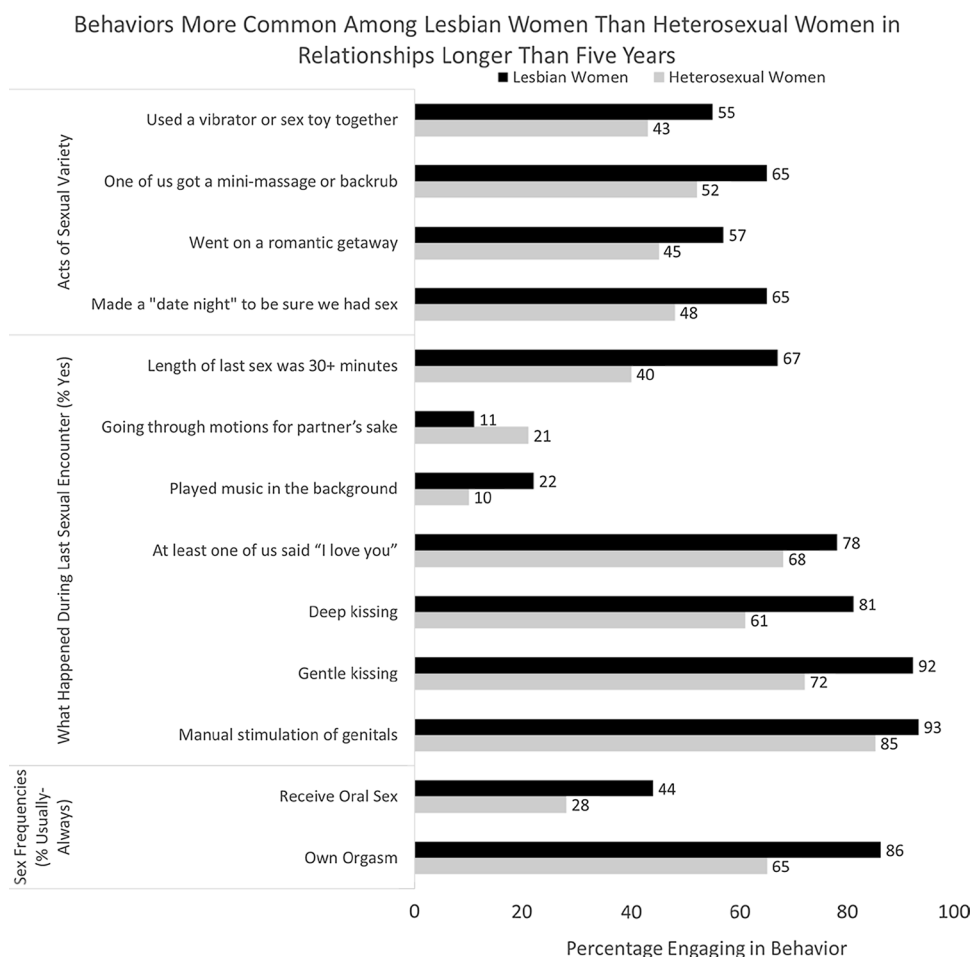


Fig. 2 Lesbian women systematically engaged in these behaviors linked to intimacy, sexual pleasure, and sexual satisfaction more so than heterosexual women did. All of the group differences listed above were statistically significant at the $p < .001$ level, except for manual stimulation of genitals and deep kissing ($p < .01$), and all Chi-square values exceeded 8.0



most women reported their partners usually-always orgasm. Collinearity diagnostics revealed that multicollinearity was low for all predictors (all tolerance values, 0.50–1.0; all VIF values, 1.0–2.0).

Results

In the results, in sentences comparing heterosexual and lesbian women, the first number listed always represents heterosexual women and the second number represents lesbian women. For example, heterosexual women were less likely than lesbian women to report usually/always orgasming with their partner (heterosexual women = 68% vs. lesbian women = 85%).

Research Question 1 Measures: Examining Acts of Sexual Variety and Specific Sexual Acts

There were some notable differences in specific acts of sexual variety that heterosexual and lesbian women tried out in the past year to improve their sex lives (Table 3). Some of the acts that were less common among heterosexual women than

lesbian women included using a vibrator or sex toy with their partner (40% vs. 62%), date night to have sex (46% vs. 59%), mini-massage or backrub (63% vs. 74%), going on a romantic getaway (43% vs. 53%), and talking about or acting out fantasies (36% vs. 44%). In contrast, heterosexual women were more likely than lesbian women to report use of sexy lingerie or underwear (66% vs. 50%) and anal intercourse (24% vs. 13%). Despite these differences in specific acts, there no overall difference between the groups in the total number of acts they engaged in (6.2 vs. 6.5, $d = -0.10$; Table 3).

Looking at their last sexual encounter, lesbian women were more likely to engage specific behaviors tied to intimacy or likelihood of orgasm, including gentle kissing (80% vs. 92%), deep kissing (71% vs. 80%), and receiving oral sex (41% vs. 53%). In contrast, heterosexual women were more likely to change positions during sexual intercourse (66% vs. 58%) and to have vaginal intercourse (94% vs. 56%). Overall, however, heterosexual women and lesbian women did not differ in the total number of specific sexual acts they engaged in during last encounter (4.93 vs. 4.87, $d = 0.04$; Table 3).

Heterosexual and lesbian women did not differ in their means levels of satisfaction with variety of sexual positions/activities ($d = 0.09$; Table 3). Heterosexual women were

Table 5 Predictors of sexual satisfaction among heterosexual and lesbian women (RQ5)

	Matched sample			
	Model 1		Model 2	
	Heterosexual women	Lesbian women	Heterosexual women	Lesbian women
	β	β	β	β
Age	.06***	.05	.03	.00
Relationship length	-.05**	-.02	-.08***	-.02
Education	.04**	-.07	.05**	-.05
Children under 21	-.01	.03	-.01	.04
Your orgasm frequency	.17***	.11*	.22***	.21***
Partner orgasm frequency	.04*	.07	.07***	.10
Receive oral frequency	.02	-.05	.04*	-.03
Give oral frequency	.01	.00	.00	.03
Duration of last sex	.07***	.14**	.11***	.22***
Sexual variety	-.02	.01	.01	.01
Mood setting	.08***	.05	.17***	.15*
Communication behaviors	.16***	.04	.27***	.20**
Relationship satisfaction	.33***	.45***	—	—
Sex frequency	.23***	.24***	—	—
<i>df</i>	14, 2482	14, 265	12, 2484	12, 267
<i>N</i>	2496	279	2496	279
<i>F</i>	156.2	20.2	99.5	9.5
Adj <i>R</i> ²	.47***	.49***	.32***	.27***

Positive β s indicate that participants who scored higher on the predictor variables were more sexually satisfied (e.g., in Model 1, heterosexual women who reported more frequent sex reported greater sexual satisfaction, $\beta = .28$). Relationship satisfaction and sex frequency tend to be tightly connected to sexual satisfaction, and can be viewed as outcomes of sexual satisfaction or indicators of sexual satisfaction, rather than as predictors of sexual satisfaction. For this reason, Model 1 includes relationship satisfaction and sex frequency as predictors, whereas Model 2 does not

* $p < .05$; ** $p < .01$; *** $p < .001$

slightly less likely to report that their sex lives were predictable ($d = 0.09$), but this difference was statistically significant at $p < 0.05$ level and not the $p < 0.001$ level.) (Table 2). There were also no differences in the proportions of heterosexual versus lesbian women who agreed they were satisfied with the variety of sexual positions/activities (58% vs. 61%) and who agreed their sex life was predictable (70% vs. 65%) (Table 3).

Perhaps the most notable difference was that lesbian women were more likely to report that their last sexual encounter lasted longer. They were more likely to say that their last sexual encounter lasted 30 min or longer (48% vs. 72%) (Table 3). This is important because for the most part, the longer sex lasted, the more likely women were to say that it was “about the right” length of time: 0–15 min (39% vs. 42%), 16–29 min (66% vs. 60%), 30–59 min (84% vs. 80%), 60–119 min (90% vs. 98%), and 120+ min (75% vs. 96%).

Overall, heterosexual and lesbian women who reported engaging in more total acts of sexual variety in the past year were somewhat more likely to report more specific acts

during last sexual encounter ($r = 0.33$ vs. $r = 0.31$), were more satisfied with variety of sexual positions/activities ($r = 0.26$ vs. $r = 0.23$), were less likely to say their sex life was predictable ($r = -0.24$ vs. $r = -0.21$), and reported longer duration of sex ($r = 0.19$ vs. $r = 0.16$), all $ps < 0.001$. Heterosexual and lesbian women who engaged in more total specific acts during their last sexual encounter were more satisfied with the number of sex positions ($r = 0.33$ vs. $r = 0.40$), less likely to feel their sex lives were predictable ($r = -0.31$ vs. $r = -0.35$), and reported a longer duration of sex ($r = 0.47$ vs. $r = 0.44$), all $ps < 0.001$.

Research Question 2 and 3 Results: Examining Mood Setting and Sexual Communication

Heterosexual women engaged in slightly fewer mood setting behaviors than lesbian women ($d = -0.27$) (Table 2). Most notably, heterosexual women were less likely than lesbian women to report that they or their partner said “I love you” during sex (67% vs. 80%) or played music in the background

(13% vs. 24%) (Table 4). Women's feelings about their last sexual encounter did not vary by sexual orientation by more than eight percentage points.

Total number of communication styles used did not differ between heterosexual and lesbian women ($d=0.02$) (Table 2). Most heterosexual and lesbian women agreed that they felt comfortable asking their partner for what they wanted in bed (83% vs. 86%), and women who felt more comfortable reported more total communication behaviors in the past month ($r=0.37$ vs. $r=0.24$, all $ps < 0.001$).

Research Question 4 Results: Examining Sexual Frequencies

Heterosexual women reported having sex approximately 8.5 times per month compared to approximately 6 times for lesbian women ($d=0.37$) (Table 2). Heterosexual women were more likely than lesbian women to report having sex three or more times per week (35% vs. 18%) and were less likely to report having fewer than once per week (31% vs. 48%) (Table 4). This represents a notable difference, and the gap between lesbian women and heterosexual women becomes even more stark in longer relationships. Heterosexual women who were in relationships longer than 5 years were much less likely than their lesbian counterparts to report having sex 0–1 times per month (16% vs. 43%) (Fig. 1).

Heterosexual women were less likely than lesbian women to receive oral sex in the past month ($d = -0.36$), to give oral sex to their partner ($d = -0.27$), and to orgasm ($d = -0.47$) (Table 2). Fewer heterosexual women reported usually/always receiving oral sex (28% vs. 47%) and fewer usually/always gave oral sex (37% vs. 52%) (Table 4).

Research Question 5A Results: Examining Sexual Satisfaction

Examining Overall Sexual Satisfaction and Predictors of Sexual Satisfaction

Heterosexual and lesbian women did not differ in overall mean sexual satisfaction ($d=0.07$) or relationship satisfaction ($d = -0.04$; Table 2), and the majority reported being sexually satisfied (68% vs. 66%) and satisfied with their relationship (89% vs. 92%).

In Regression Model 1, sexual frequency and relationship satisfaction were the strongest predictors of sexual satisfaction for both groups (Table 5). In Regression Model 2, the four strongest predictors (β s) of sexual satisfaction were the same for heterosexual and lesbian women: number of communication strategies (0.27 vs. 20), own orgasm (0.22 vs. 0.21), number of mood setting techniques (0.17 vs. 0.15), and length of the last sexual encounter (0.11 vs. 0.21). No other statistically significant predictors exceeded 1.091.

Relationship length was not a notable predictor because factors more proximately tied to sexual satisfaction (e.g., orgasm frequency) were included in the model.

Finally, although our regression models focused primarily on sexual frequencies and numbers of acts, the other sexual variety and communication variables in the study were associated with sexual satisfaction. Sexual satisfaction among heterosexual and lesbian women was higher among women who were more comfortable asking their partner for what they wanted in bed ($r=0.41$ vs. $r=0.42$), engaged in more total sex acts during their last sexual encounter ($r=0.41$ vs. $r=0.41$), and who were satisfied with the number of sexual positions and activities they engaged in ($r=0.51$ vs. $r=0.61$). Sexual satisfaction was lower among heterosexual and lesbian women who reported their sex life felt predictable ($r = -0.40$ vs. $r = -0.44$).

Research Question 5B Results: Examining Lesbian Bed Intimacies as an Explanation for Group Similarities in Sexual Satisfaction

Lesbian and heterosexual women had similar levels of sexual satisfaction overall and across most relationship lengths. We investigated these patterns further to identify data that might explain why heterosexual and lesbian women do not differ in sexual satisfaction, despite having notable differences in sexual frequency. Lesbian women in longer-term relationships (greater than 5 years) engaged in some behaviors more frequently than did heterosexual women (Fig. 2). Consistent with our “lesbian bed intimacies” concept, these behaviors are tied to feelings of emotional closeness (e.g., saying “I love you during sex,” deep and gentle kissing, giving or getting massaged, playing background music during sex), sexual pleasure (more consistent orgasm, more oral sex, use of sex toys, manual stimulation of genitals), longer duration of sex, and making time for romance (e.g., date nights and romantic getaways).

We examined whether these factors were potentially responsible for the equivalent levels of sexual satisfaction between heterosexual and lesbian women. When just sexual orientation was used as a predictor, there was no difference between heterosexual and lesbian women sexual satisfaction ($\beta = -0.07$, $p=0.29$; $Model\ Adj.\ R^2=0.00$). We then entered control variables related to sexual intimacy and pleasure that lesbian women experience more often than heterosexual women: own orgasm frequency, receiving oral sex frequency, number of mood-setting techniques, length of last sex, and gentle kissing, deep kissing, and genital manipulation during last sex. If higher levels of these behaviors contribute to lesbian women having the same sexual satisfaction as heterosexual women despite lower sexual frequency, then adding them to the model should lead lesbian women to be less satisfied than heterosexual women.

Consistent with this proposal, lesbian women were notably less satisfied than heterosexual women with these predictors added ($\beta = -0.37$, $p < 0.001$; *Model Adj. $R^2 = 0.28$*). This suggests that these factors are likely playing a role in reducing the degree of sexual dissatisfaction that is typically seen when sexual frequency is lower. Sexual frequency, however, still mattered. Once sexual frequency was controlled for, lesbian women still reported lower satisfaction than heterosexual women ($\beta = -0.20$, $p < 0.001$; *Model Adj. $R^2 = 0.38$*), suggesting that additional unmeasured and uncontrolled for factors likely play a role in promoting sexual satisfaction among lesbian women.

Discussion

This study examined similarities and differences between heterosexual women and lesbian women in sexual and relationship satisfaction, along with associated sexual attitudes and behaviors in a national sample. These comparisons were conducted after statistically matching these groups of women on key demographic factors, such as relationship length. The findings revealed many similarities in the experiences of heterosexual and lesbian women, but also several key differences.

Research Question 1 Findings: Examining Acts of Sexual Variety and Specific Sexual Acts

Although heterosexual women and lesbian women were similar in the mean number of acts of sexual variety in the past year (six acts) and during their last sexual encounter (five acts), there were notable differences between the groups in the actual acts performed. Several of the items that lesbian women endorsed more often than heterosexual women centered around physical affection, romance, and making time for their partners. In the past year, lesbian women were more likely than heterosexual women to report incorporating massages, date nights, and romantic getaways into their relationships. Looking at the last sexual encounter, lesbian women were also more likely to report gentle kissing and deep kissing.

Lesbian women were more likely to use vibrators or other sex toys. Research on sex toy use, particularly on the impact of sexual products on individual and couple satisfaction, is rather limited (Döring & Poeschl, 2020). Especially given the easy availability of sexual products, a greater understanding of how the use of sex toys connects to sexual satisfaction is needed.

Another notable difference in the present study was that heterosexual women were more likely to wear lingerie. Objectification theory (Fredrickson & Roberts, 1997) highlights the idea that women are more sexualized and engage

in more monitoring of their gendered and sexualized appearance for the sake of male partners. For example, women engage in more “surveillance” or monitoring of their appearance than men (Frederick et al., 2007a), which is linked to poorer body image (Frederick et al., 2016a), and heterosexual women engage in surveillance more so than lesbian women (Engeln-Maddox et al., 2011; Kozee & Tylka, 2006). This might explain why heterosexual women report hiding more aspects of their body during sex than lesbian women and report more negative impacts of their body image on their sex lives (Peplau et al., 2009). This greater sexual objectification leads to heterosexual women’s wearing lingerie more often to please their partner and increase their feelings of sexual desirability. More generally, body dissatisfaction is a prevalent problem (Swami et al., 2010), and more work is needed to understand how sociocultural appearance pressures (Frederick et al., 2017a; Schaefer et al., 2015, 2019) and body image concerns differentially affect sexual satisfaction and behaviors among lesbian and heterosexual women.

Research Question 2 and 3 Findings: Examining Mood Setting and Sexual Communication

Consistent with the value placed on affectionate behaviors before, during, or after sex (Hughes & Kruger, 2011; Muise et al., 2014; van Anders et al., 2013), many women reported incorporating behaviors linked to mood setting, affection, and romance. Heterosexual and lesbian women were similar in their total number of mood-setting acts, and lesbian women were only slightly more likely to report sexual communication behaviors. Underneath these similarities, however, there were several notable differences in the specific behaviors they engaged in. Lesbian women were more likely to report saying “I love you,” playing music in the background, and lighting a candle or dimming the lights—behaviors that likely promote emotional connection and romance in people’s sex lives.

Research Question 4 Findings: Examining Sexual Frequencies

The findings revealed rather notable differences between heterosexual and lesbian women in terms of frequency of sex, frequency of oral sex, and orgasm consistency. Although the difference in sexual frequency between heterosexual and lesbian women was small to moderate overall, this difference was moderate to large in relationships longer than 3 years. Although this might traditionally be taken as evidence for the notion of “lesbian bed death,” we consider several potential explanations for this notable group difference in sex frequency.

Data from the present survey provide evidence for the claim that lesbian women have a broader definition of the phrase “having sex” than heterosexual women do. When

asked about their last sexual encounter with their partner, almost all of the heterosexual women (94%) indicated they had vaginal intercourse, which is consistent with the proposal that most heterosexual women define having sex as incorporating vaginal intercourse. The most common genital activity for heterosexual women was vaginal intercourse (94%) whereas the most common genital activity for lesbian women was manual stimulation of genitals (90%).

Furthermore, many lesbians considered “vaginal intercourse” to apply to them, with a majority of lesbian women choosing this as a behavior that applied to their last sexual encounter (56%), but the fact that 44% of lesbian women did not select this option indicates it is not an essential component of “having sex” for many lesbian women. These results are consistent with the proposal that lesbian women have a lower sex frequency than heterosexual women despite potentially having a more expansive definition of sex.

Another explanation for heterosexual women’s report of more frequent sex is that sexual scripts emphasize that men should initiate sexual activity and this is a component of being a “masculine” man. Several studies show that men are more likely than women to initiate sexual activity (Byers & Heinlein, 1989; Impett & Peplau, 2003), and that heterosexual women were less likely to initiate sex than women in relationships with other women (Gonzalez-Rivas & Peterson, 2018). Finally, although there are substantial variations in sex drive among men and among women (Dawson & Chivers, 2014; Mark, 2015), generally men report a greater sexual motivation (stronger sex drive) than women (Baumeister et al., 2001; Lippa, 2009; Regan & Atkins, 2006), especially in terms of spontaneous arousal (Basson, 2000; Meana, 2010). These factors may indicate that sex of one’s partner, in combination with one’s own sex, is a useful predictor of sex frequency.

In contrast to findings related to sex frequency, and consistent with past research on orgasm frequency, lesbian women reported more consistent orgasm when intimate with their partner over the past month (Garcia et al., 2014). Lesbian women in our study also gave and received oral sex from their partner more routinely in the past month than heterosexual women did. Some expectations around sexual intimacies may explain why nearly three-quarters of lesbians’ last sexual encounter was more than a half hour in duration and more than a quarter lasted over an hour. If greater time and variety of behaviors are expected during sex among lesbian women, one or both partners may be reluctant to initiate sex on occasions when time is limited or someone is tired, given the expectations around fulfilling sexual intimacies. In contrast, heterosexual couples may be more likely to have “quickies” and male partners might be more comfortable initiating these quickies. This expectation for intimacy and reciprocity in sexual pleasure may underlie lesbians’ greater reliance on date nights and romantic getaways that create time for these

events. Future research assessing these expectations would be valuable, and our findings highlight the importance of considering a variety of ways for assessing sexual frequency, such as measuring frequency of oral sex and other specific sexual behaviors.

Research Question 5 Findings: Sexual Satisfaction and Identifying if Lesbian Bed Intimacies Explain Why Sexual Satisfaction is Similar Between Groups Despite Lower Sex Frequency

Heterosexual and lesbian women did not differ in overall sexual satisfaction, despite lower sex frequency. Our data suggest that lesbian women engaged in more behaviors directly tied to sexual pleasure and likelihood of orgasm (e.g., manual stimulation of genitals, receiving oral sex), were more likely to orgasm consistently, and incorporated more acts of sexual variety and mood setting that can promote intimacy and sexual satisfaction (e.g., massages, date nights, romantic getaways, deep and gentle kissing). These findings reinforce other researchers’ highlighting the diverse ways that women experience sexual pleasure and intimacy in relationships with other women (Cohen & Byers, 2014; Nichols, 2004).

One noteworthy finding, however, is that after controlling for sex frequency, sexual satisfaction was slightly lower for lesbian women than for heterosexual women, so low sex frequency might have particularly important implications for lesbian women who have average levels of other behaviors (e.g., communication, mood setting). One approach for future research would be to systematically test which specific aspects of women’s sex lives they are satisfied with, ranging from sexual satisfaction and frequency to emotional communication during sex (e.g., see the New Sexual Satisfaction Scale; Štulhofer et al., 2010). This approach will help pinpoint the extent to which it is sexual frequency per se, rather than associated variables, that impact sexual satisfaction among lesbian women.

Limitations and Strengths

A notable strength is that we recruited heterosexual and lesbian women through the same outlet instead of using differential recruitment mechanisms (e.g., solicitation of lesbian participants via LGBTQ listservs or websites and comparing to a more general heterosexual sample). Furthermore, use of coarsened exact matching and having a sizable sample of lesbian women greatly enhanced our ability to directly compare the sex lives of heterosexual and lesbian women. The data for our study were collected prior to the legalization of same-sex marriage in the United States, which presents an opportunity for a potential comparison in patterns between our findings and those based on more recent data.

Unfortunately, we did not assess the gender of each participant's partner—some heterosexual women possibly had female partners, and some lesbian women possibly had male partners (Diamond, 2016; Pham, 2019), and our three-category assessment of sexual orientation (heterosexual, lesbian, bisexual) oversimplifies the full range of sexual orientation identities (Greaves et al., 2019; Kaestle, 2019). In contrast to many national sex surveys that focus primarily on risk behaviors, the survey contained a rich set of questions on attitudes, practices, and sexual and intimate behaviors.

Conclusions

The current study provides a wealth of information on the sexual lives of lesbian women in relationships, information that is not readily available in existing studies of sexuality. In contrast to the pejorative framing of lesbian women's sex lives as facing “lesbian bed death,” our data highlight the powerful role that lesbian bed intimacies play in promoting sexual satisfaction among lesbian women. Compared to heterosexual women, lesbian women engaged in more behaviors tied to intimacy and emotional connection (gentle kissing, deep kissing, and saying “I love you”). They gave and received oral sex more often, had sex for longer periods of time, and experienced orgasm more routinely. Lesbian women were also more likely to engage in manual stimulation of genitals and use sex toys. And, important to keeping sex lively, lesbians also were more likely to schedule date nights and having romantic getaways. One of the central messages of this paper is highlighting the critical importance of examining lesbian bed intimacies in greater detail and understanding how they contribute to lesbian women's overall psychological and sexual well-being, and to the health of their relationships. Furthermore, these findings have important implications for women's sexuality across sexual orientations, highlighting the important roles that mood setting, sexual variety, sexual frequency, oral sex, and orgasm frequency play in predicting sexual satisfaction.

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Declarations

Conflict of interest All authors declare that they have no conflict of interest.

Ethical Approval The study was approved by the institutional IRB.

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