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Variability in Sex Attitudes and Sexual Histories Across Age Groups of Bisexual Women and Men in the United States

Brandon J. Hill[a,b], Stephanie A. Sanders[b,c], and June M. Reinisch[b,d,e]

[a]Center for Interdisciplinary Inquiry and Innovation in Sexual and Reproductive Health (Ci3), Department of Obstetrics and Gynecology, The University of Chicago, Chicago, Illinois; [b]The Kinsey Institute for Research in Sex, Gender, and Reproduction, Indiana University, Bloomington, Indiana, USA; [c]Department of Gender Studies, Indiana University, Bloomington, Indiana, USA; [d]The Museum of Sex, New York, New York, USA; [e]Institute for Preventive Medicine, Danish Epidemiological Science Center, Copenhagen University, Denmark

ABSTRACT

Data from 1,380 self-identified bisexual women and men age 18 to 70 living in the United States document significant diversity across age and gender in attitudes regarding which behaviors constitute "sex" and behavioral histories. With the exceptions of deep kissing, penile-vaginal intercourse, and penile-anal intercourse, the 18 to 29 age groups of both genders were significantly less likely to count all other behaviors (manual and oral stimulation of breasts, genitals, and anus; and use of sex toys) as sex. Stronger age effects were found for men than women for manual and oral stimulation of genitals or anus, and sex toy use. Compared to older men and women, fewer 18- to 29-year-olds had experienced each behavior. Use of behaviorally nonspecific sexual history questions in research and clinical practice is problematic because (1) across age-group comparisons may be contaminated by differential interpretation of questions across age groups and (2) within age-group comparisons may be confounded by gender differences in interpretation.

KEYWORDS

bisexual; definitions of sex; sex attitudes; older bisexuals

Over the past three decades, research on the relationship between lesbian, gay, bisexual, and transgender (LGBT) identity and health has increased significantly (Institute of Medicine [IOM], 2011). Although this research has highlighted a number of health disparities experienced by LGBT people, few studies have focused explicitly on the health of bisexual people (Human Rights Campaign [HRC], 2015). Often, data from bisexual women and men have been combined with data from lesbian women and gay men, focusing primarily on sexual behaviors (e.g., having sex with women and/or men), rather than identity and experience (Bostwick, 2012; Herek & Glunt, 1988; Pathela, Blank, Sell, & Schillinger, 2006;

CONTACT Brandon J. Hill bhill2@bsd.uchicago.edu Center for Interdisciplinary Inquiry and Innovation in Sexual and Reproductive Health (Ci3), Department of Obstetrics and Gynecology, The University of Chicago, 5481 S. Maryland Ave, Chicago, IL 60637, USA.

Pathela, Hajat, Schillinger, Sell, & Mostashari, 2006; Young & Meyer, 2005). However, bisexually identified people constitute a distinct and separate group from lesbian, gay, and heterosexual women and men (Bostwick, 2012; Galupo, 2011). Among adults in the United States who identify as LGB, population-level estimates suggest that bisexual women and men may make up the majority of the LGB community (Gates, 2011; Herbenick, Reece, Schick, Sanders, Dodge, & Fortenberry, 2010a, 2010b; but see Miller & Ryan, 2011; Weinrich, 2014). Additionally, women are significantly more likely to identify as bisexual than are men (Chandra, Mosher, & Copen, 2011; Copen, Chandra, & Febo-Vasquez, 2016; Gates, 2011). Further, population estimates of same-sex sexual behavior exceed estimates of those who identify as LGB, documenting that lifetime same-sex sexual behavior or experience may be prevalent even among those who do not identify as LGB (Gates, 2011; Herbenick et al., 2010a), and numerous studies demonstrate that behavior histories do not necessarily predict self-identified sexual orientation (Pathela, Blank, et al., 2006; Pathela, Hajat, et al., 2006). Although bisexual identity and behavior appear to be the prevalent in the United States, the sexual attitudes and behaviors of bisexual people are poorly understood.

Among the limited number of studies that specifically assess bisexual health, recent research suggests that bisexual women and men face unique health disparities and inequalities specific to their bisexual identity (HRC, 2015; US Dept HHS, 2011; IOM, 2011; Tomedi & Padilla, 2013). In particular, bisexual women experience high rates of breast cancer (IOM, 2011), heart disease (Ross, Dobinson, & Eady, 2010), smoking (Balsam, Beadnell, & Riggs, 2012), obesity (Boehmer, Bowen, & Bauer, 2007; Conron, Mimiaga, & Landers, 2010), and mental health problems (e.g., depression, suicide, substance abuse) (Koh & Ross, 2006; Persson & Pfaus, 2015). Likewise, bisexual men report less frequent HIV testing, which has been associated with disproportionate rates of HIV infection (Jeffries, 2014).

However, such disparities have not been associated by increased individual-level risk behaviors alone. Rather, these disparities have been associated with low bisexual visibility, limited access or avoidance of preventative health care and screening, and increased experiences of biphobia from health care professionals (Bostwick, 2012; Fredriksen-Goldsen, Kim, Barkan, Muraco, & Hoy-Ellis, 2013; Hart & Bowen, 2009; Lim, Brown, & Kim, 2014; Rankin, Morton, & Bell, 2015).

Further, interactions with health care professionals may be complicated by health care structures and systems that are not inherently bisexual (bi) inclusive (Lim et al., 2014). For example, medical intake forms and sexual histories may not necessarily capture the sex and gender of a patient's partner, or previous sexual partners, thus limiting bisexual patients' ability to accurately report their bisexual identity or sexual history. This may be further complicated by a provider's own bias and classification of patients based on their sexual history records. For example, if bisexual patients solely report their current or most recent same-sex partner, the health care provider may classify patients as lesbian or gay and consequently interpret their sexual history and risk under the presumption that they are

diagnosing, treating, and/or making health recommendations for a lesbian or gay patient. Conversely, if a provider assumes that a bisexual patient is heterosexual or non-LGB based on a current or recent opposite-sex partner, the provider may interpret this sexual history and risk through a heterosexual lens. Such classification has been described as a misclassification bias in that health care providers or researchers inaccurately categorize patients. Misclassification can lead to provision of inaccurate or limited sexual health information based on a provider's or researcher's own assumptions and biases about a patient's sexual identity, or their assumed conceptualization about which behaviors constitute having 'had sex' (see Everett, 2013; Hill, Rahman, Bright, & Sanders, 2010; Sanders et al., 2010).

Although bisexuals have not necessarily been excluded from research on adults' attitudes regarding what behaviors constitute having "had sex," with one exception (as far as we know) no studies have specifically analyzed the sex attitudes and behaviors of bisexual participants, even in larger representative samples (Binson & Catania, 1998; Sanders et al., 2010). In fact, most studies either lacked sufficient information regarding bisexual identity (Binson & Catania, 1998; Bogart, Cecil, Wagstaff, Pinkerton, & Abramson, 2000; Carpenter, 2001; Rawlings, Graff, Calderon, Casey-Baily, & Pasley, 2006; Richters & Song, 1999; Sanders et al., 2010; Sanders & Reinisch, 1999) or had numbers of bisexual identified participants too low to conduct meaningful statistical analyses (Gute, Eshbaugh, & Wiersma, 2008; Horowitz & Spicer, 2013; Peterson & Muehlenhard, 2007). Thus, bisexual participants are often removed from data sets to conduct sexual orientation-specific analyses (Horowitz & Spicer, 2013; Sewell & Strassberg, 2015). However, the one exception to this is a recent study by Schick et al. (2015), which explores the sex attitudes of women who reported behavioral bisexuality (e.g., having had sexual relationships with women and men), but were not necessarily self-identified as bisexual (Schick et al., 2015).

Understanding the sex attitudes and variability in lifetime sexual behavior of bisexual women and men has clinical relevance, as attitudes may not be constant across age, gender, and/or culture (Peterson & Muehlenhard, 2007; Pitts & Rahman, 2001; Randall & Byers, 2003; Richters & Song, 1999; Sanders et al., 2010; Sanders & Reinisch, 1999). The purpose of the present study is to explore what behaviors bisexually identified women and men consider having 'had sex,' and which of these behaviors they have engaged in with women only, men only, women and men, or no one. Additionally, this study examines differences in sex attitudes and sexual histories of bisexual women and men across generational age cohorts.

Method

Participants

Participants were selected from a larger database ($N = 14{,}724$) that included a spectrum of sexual orientations. Inclusion criteria for the current analyses included being at least age 18 years, living in the United States (as other studies of this topic

have shown variation by country of residence; e.g., Hill et al., 2010), self-identification as bisexual, and identifying as a man ($n = 447$) or woman ($n = 933$) but not as transgender or intersex (see Demographics for 'Gender' below).

Measures

This secondary analysis utilized data from the Kinsey Institute's 2007 Had Sex Survey, a cross-sectional survey using an online questionnaire for individuals age 18 years or older examining gender, sexual orientation, attitudes regarding what behaviors constitute having 'had sex,' lifetime experience of those behaviors, and some basic demographics. Participants were recruited online through Facebook, various websites, and student/LGBT listservs. In turn, participants could refer others they knew to the survey URL.

Demographics

The following questions and response options were used to assess demographic variables:

1. Age – "What is your age?"
2. Country of residence – "In what country do you live? (USA, Canada, United Kingdom, Australia, India, I choose not to answer, Other (please specify))"
3. Sexual orientation – "Which of the following commonly used terms would you use to best describe your sexual orientation now?" (heterosexual/straight, lesbian/gay/homosexual, bisexual, I choose not to answer, other (please specify))."
4. Gender[1] – "Which of the following best describes you? (Woman (born female), Man (born male), Transsexual/transgendered woman (MTF), Transsexual/transgendered man (FTM); Intersexed woman; Intersexed man; I choose not to answer)."
5. Race (using National Institutes of Health [NIH] categories) – "What is your race? Pick as many as apply to you. (American Indian/Alaska Native, Asian, Black or African American, Native Hawaiian or other Pacific Islander, White, I choose not to answer, Other (please specify))."
6. Hispanic ethnicity (assessed separately from race per NIH guidelines) – "Are you Hispanic or Latino? (Yes, No, I choose not to answer)."
7. Hometown size (population density) – "Which of the following best describes where you lived most of the time you were growing up? (Large city, like New York, London, Paris, or the suburban area around it, Medium city or the surrounding area, Small city or surrounding area, Small town not very close to a city, Rural area, I choose not to answer)."

Definitions of sex

Attitudes regarding which behaviors constitute having had sex were assessed by asking "Would you say you 'had sex' with someone if the most intimate behavior you engaged in was…?" followed by the list of behaviors in Table 1 presented in random order to each participant. Answer choices for each behavior were: "No," "Yes," and "I Choose Not to Answer."

Lifetime behavior patterns

Participants were asked to identify the gender(s) of partner(s), if any, for each of the specified behaviors by asking, "Have you ever engaged in any of the following behaviors with a man (men) or a woman (women)?" The same list of behaviors as for Definitions of Sex was randomly presented. Response options included "No," "Men Only," "Women Only," "Both," and "I Choose Not to Answer." Participants were instructed to "Please answer: No, if you never did it; Men Only, if you only did the behavior with men; Women Only, if you only did the behavior with women; and Both, if you have done this with both."

Data analysis

Participants who selected "I Choose Not to Answer" responses were treated as missing data. Gender comparisons were conducted using a *t* test to compare mean age; Chi-square tests were used to compare race, ethnicity, and size of hometown. Chi-square analyses were also used to compare attitudes regarding what behaviors constitute "sex," and to compare behavioral history across age groups separately

Table 1. Wording of questions and definition of abbreviations.

	Wording of Question
Abbreviation	Stem: Would you say you "had sex" with someone if the most intimate behavior you engaged in was…
Deep kissing	Deep kissing (French or tongue kissing)
MB-performed	You touched, fondled, or manually (hand) stimulated a person's breasts or nipples
MB-received	A person touched, fondled, or manually (hand) stimulated your breasts or nipples
OB-performed	You licked, sucked, or orally (mouth) stimulated a person's breasts or nipples
OB-received	A person licked, sucked, or orally (mouth) stimulated your breasts or nipples
MG-performed	You touched, fondled, or manually (hand) stimulated a person's genitals
MG-received	A person touched, fondled, or manually (hand) stimulated your genitals
OG-performed	You licked, sucked, or orally (mouth) stimulated a person's genitals
OG-received	A person licked, sucked, or orally (mouth) stimulated your genitals
PVI	Penile-vaginal intercourse (penis in vagina)
PAI-receptive	Receptive penile-anal intercourse (a person put his penis in your anus/rectum)
PAI-insertive	Insertive penile-anal intercourse (you put your penis in a person's anus/rectum) MEN ONLY
MA-performed	You touched, fondled, or manually stimulated a person's anus (fingering)
MA-received	A person touched, fondled, or manually stimulated your anus (fingering)
OA-performed	You licked, sucked, or orally (mouth) stimulated a person's anus (rimming)
OA-received	A person licked, sucked, or orally (mouth) stimulated your anus (rimming)
ST-performed	You used sex toys (e.g., vibrator, dildo) to stimulate a person
ST-received	A person used sex toys (e.g., vibrator, dildo) to stimulate you

by gender. For attitudes and behaviors, tables list p values from the chi-square tests. Although all p values are presented, post hoc Holm-Bonferroni correction for familywise error rates that occur during multiple group comparisons would set a more stringent standard for attaining significance at $p \leq .001$. The tables also present Cramer's V, a test of association between the nominal answers and the ordinal age categories within gender. Cramer's V accounts for variations in sample sizes with values ranging from 0 (*no association*) to 1 (*perfect association*). Interpretation of effect sizes was guided by the criteria described in Gingrich (2004). Post-hoc analyses examined whether overall gender differences in attitudes for each behavior remained after controlling for age. This was done using binary logistic regression analyses with actual age (continuous variable, not the categorical variable used in the tables) and gender (categorical men vs. women) as covariates using the enter method and each attitude variable (yes vs. no) used as the dependent variable. Analyses were conducted with IBM SPSS Statistics 23.

Results

Demographics

The bisexual men ($n = 447$, $M = 34.74$ years, $SD = 12.34$, min–max 18–70) were significantly older than the bisexual women ($n = 933$, $M = 27.37$ years, $SD = 7.90$, min–max 18–65) in the sample ($t = 13.39$, $df = 1379$, $p < .001$). As seen in Table 2, the majority of the women (68.49%) were in the 18 to 29 age group, but this was the case for less than one half of the men (41.39%, still the largest age subgroup for men). Race, Hispanic ethnicity, and size of hometown did not vary by gender. The sample was a predominantly White (88.6%), with 7.9% multiracial, 4.2% African American, and the remainder identifying as other races. A small percentage (6.7%) identified as Hispanic. The majority of the sample had grown up in large (17.2%) or medium-size cites (38.3%) or their surrounding areas, with another 22.8% from small cities or surrounding areas, and the remainder from small towns or rural areas. All remaining analyses were conducted within gender across age groupings with the percentage in each group provided in the tables.

Definitions of sex

Table 2 presents the percentage of bisexual men and bisexual women in each of four age groups (18–29, 30–39, 4–49, 50+ years) who answered *yes* they would say they 'had sex' if the most intimate behavior was the one listed. Relatively few considered deep kissing and manual or oral breast stimulation to have been 'sex.' The Cramer's V statistics indicate that the relationship with age is negligible for deep kissing, and weak to moderate for the breast-related behaviors, with older people being more likely to consider these behaviors to have been 'sex.' Post-hoc analyses found significant gender differences in answers to these questions, with men being significantly more likely than women to answer *yes* even when controlling for age

Table 2. Bisexual men's and women's attitudes toward what behaviors constitute having 'had sex' ($n = 1{,}380$).

% Respondents Answering *Yes* to Each Behavior	Gender	18–29	30–39	40–49	50+	χ^2 *p* value	Cramer's *V*	Total
	Men *n* (%)	185 (41.4)	112 (25.0)	92 (20.6)	58 (13.0)			447
	Women *n* (%)	639 (68.5)	215 (23.0)	64 (6.9)	15 (1.6)			933
Deep kissing****	Men	17.9	18.8	26.1	32.8	.063	.13	21.7
	Women	10.3	9.8	21.9	20.0	.024	.10	11.2
MB-performed****	Men	18.9	29.5	35.9	46.6	<.001	.21	28.6
	Women	9.6	14.4	28.1	33.3	<.001	.17	12.3
MB-received**	Men	16.3	26.8	32.6	41.4	<.001	.20	25.6
	Women	10.6	15.8	31.3	40.0	<.001	.18	13.7
OB-performed****	Men	21.1	34.8	42.4	48.3	<.001	.22	32.4
	Women	11.1	15.3	31.3	46.7	<.001	.19	14.1
OB-received***	Men	18.4	30.4	35.9	41.4	.001	.19	28.0
	Women	11.6	17.7	34.4	46.7	<.001	.20	15.1
MG-performed	Men	37.3	54.5	70.7	72.4	<.001	.29	53.0
	Women	33.1	54.4	64.1	80.0	<.001	.25	40.9
MG-received	Men	34.6	54.5	69.6	77.6	<.001	.33	52.3
	Women	33.8	54.0	71.9	80.0	<.001	.26	41.8
OG-performed	Men	55.1	79.5	88.0	91.4	<.001	.34	72.7
	Women	61.0	75.3	89.1	93.3	<.001	.20	66.8
OG-received	Men	55.1	76.8	83.7	91.4	<.001	.31	71.1
	Women	62.3	74.4	87.5	86.7	<.001	.17	67.2
PVI****	Men	93.5	97.3	98.9	98.3	.087	.12	96.2
	Women	98.6	99.5	98.4	100.0	.684	.04	98.8
PAI-receptive*	Men	90.8	90.2	89.1	87.9	.922	.03	89.9
	Women	93.1	94.4	95.3	100.0	.599	.05	93.7
PAI-insertive	Men	94.1	92.9	91.3	94.8	.800	.05	93.3
	Women	–	–	–	–	–	–	–
MA-performed	Men	31.4	58.0	69.6	70.7	<.001	.34	51.0
	Women	28.4	49.8	70.3	80.0	<.001	.29	39.5
MA-received	Men	29.7	57.1	72.8	63.8	<.001	.36	49.9
	Women	32.1	50.2	67.2	80.0	<.001	.25	44.4
OA-performed	Men	33.2	64.3	71.7	70.7	<.001	.35	53.8
	Women	37.6	52.8	71.9	93.3	<.001	.24	44.4
OA-received	Men	32.6	64.3	71.7	70.7	<.001	.38	53.6
	Women	39.6	54.2	75.0	93.3	<.001	.24	46.3
ST-performed****	Men	33.0	60.7	68.5	63.8	<.001	.31	51.2
	Women	57.5	67.4	78.1	86.7	<.001	.14	61.7
ST-received****	Men	34.6	61.6	68.5	63.8	<.001	.30	52.1
	Women	58.3	70.7	75	86.7	<.001	.14	62.8

Indicates a significant gender difference after controlling for age in post-hoc analyses: $^{*}p < .05$ $^{**}p < .01$ $^{***}p < .005$ $^{****}p < .001$

in logistic regression (deep kissing, $p < .001$; MB-performed, $p < .001$; MB-received, $p = 006$; OB-performed, $p < .001$; OB-received, $p < .003$).

Compared to kissing and breast stimulation, more participants considered manual and oral stimulation of the genitals and anus, and use of sex toys, as 'sex.' Significant age effects were found for manual and oral stimulation of the genitals (MG performed and received, OG performed and received) and anus (MA performed and received, OA performed and received). The Cramer's *V* statistics indicate the association was moderately strong to strong for manual- and oral-genital behaviors, and moderate to very strong for manual- and oral-anal behaviors. For these variables, no gender differences were found after controlling for age. On the other hand, men were significantly less likely than women to have selected *yes* for

ST-performed ($p < .001$) and ST-received ($p < .001$). The relationship of age to the likelihood of considering use of sex toys as having 'had sex' was statistically significant for both genders, with older men and women being generally more likely to count sex toy use as sex compared to younger groups. However, Cramer's V statistics showed the relationship was strong for men and very weak for women.

Regardless of gender and age, most, but not all, participants (88% – 100%) considered penile-vaginal (PVI) and penile-anal intercourse (PAI-receptive; and for men PAI-insertive) as having 'had sex.' Chi-square comparisons of age groups within gender did not attain significance. However, the post-hoc binary logistic regression analyses revealed a significant positive relationship between age as a continuous variable and counting PVI as sex ($p = .003$). When controlling for age, women were found to be significantly more likely than men to count PVI and PAI-receptive as sex.

Lifetime behavior patterns

Bisexual men

Table 3 presents the percentages of bisexual men within each age group who reported having engaged in each behavior with no one, men only, women only, or men and women. Combining across all age groups, for bisexual men in the sample the most prevalently reported behaviors engaged in with men and women partners were MG (84.7% received, 82.5% performed), OG (79.4% received, 75.8% performed), deep kissing (69.7%), MB (67.9% received, 64.7% performed), OB (62.3% received, 60.5% performed). About one third (36.5%) reported insertive anal intercourse with men and women, and another 26.5% reported it with men only.

With the exception of deep kissing ($p = .043$), the answers to all other behavioral variables were found to be significantly associated with age at $p \leq .001$. Across all behaviors assessed, proportionally more of the 18- to 29-year group reported they had not engaged in the behavior compared to the older groups and proportionally fewer reported having engaged in the behaviors with both men and women. Although the Cramer's V statistics indicate moderately strong (.25) to extremely strong associations (.45) between age and gender of partners for all behaviors except kissing (which was weak), these relationships are not necessarily linear in the sense of there being ordinal incremental differences across age groups. The oldest age group (50+ years old) did not always have the highest proportion of engaging in behaviors with men and women. In some instances the older three groups are similar, in others it is the middle two age groups (30–39 and 40–49 years) that show the highest proportions of engaging with both genders.

Bisexual women

Table 4 presents the percentage of bisexual women in each age group who reported having engaged in each behavior with no one, men only, women

Table 3. Sexual behavior history among bisexual men ($n = 447$).

% Respondents Answering *Yes* to Each Behavior	Age Group	No One	Men Only	Women Only	Men and Women	χ^2	p	Cramer's V
Deep kissing	18–29	6.5	3.8	25.0	64.7	17.37	.043	.197
	30–39	0.9	1.8	19.6	77.7			
	40–49	3.3	3.3	17.4	76.1			
	50+	1.7	1.7	36.2	60.3			
	Total	3.8	2.9	23.5	69.7			
MB-performed	18–29	8.2	7.6	31.5	52.7	30.35	<.001	.261
	30–39	0.9	3.6	23.4	72.1			
	40–49	2.2	3.3	21.7	72.8			
	50+	0.0	0.0	24.1	75.9			
	Total	4.0	4.7	26.5	64.7			
MB-received	18–29	14.7	12.5	17.4	55.4	29.50	.001	.257
	30–39	2.7	6.3	13.4	77.7			
	40–49	5.4	4.3	13.0	77.2			
	50+	5.2	10.3	10.3	74.1			
	Total	8.5	9.0	14.6	67.9			
OB-performed	18–29	10.3	9.8	32.1	47.8	41.56	<.001	.305
	30–39	0.9	3.6	28.6	67.0			
	40–49	2.2	2.2	22.8	72.8			
	50+	0.0	0.0	31.0	69.0			
	Total	4.9	5.4	29.1	60.5			
OB-received	18–29	17.4	15.8	19.0	47.8	44.14	<.001	.315
	30–39	2.7	6.3	18.8	72.3			
	40–49	5.4	4.3	10.9	79.3			
	50+	8.6	15.5	13.8	62.1			
	Total	10.1	11.0	16.6	62.3			
MG-performed	18–29	6.5	14.1	9.8	69.6	42.26	<.001	.308
	30–39	0.9	6.3	6.3	86.6			
	40–49	1.1	3.3	1.1	94.6			
	50+	0.0	1.7	1.7	96.6			
	Total	3.1	8.3	6.1	82.5			
MG-received	18–29	5.4	11.4	8.2	75.0	31.03	<.001	.264
	30–39	0.9	3.6	8.1	87.4			
	40–49	1.1	2.2	1.1	95.7			
	50+	0.0	3.4	3.4	93.1			
	Total	2.7	6.5	6.1	84.7			
OG-performed	18–29	10.9	19.0	9.8	60.3	58.32	<.001	.362
	30–39	0.9	6.3	9.8	83.0			
	40–49	1.1	9.8	1.1	88.0			
	50+	0.0	0.0	8.6	91.4			
	Total	4.9	11.4	7.8	75.8			
OG-received	18–29	8.2	18.5	10.9	62.5	60.71	<.001	.369
	30–39	0.9	4.5	7.1	87.5			
	40–49	1.1	4.3	1.1	93.5			
	50+	0.0	1.7	3.4	94.8			
	Total	3.8	9.9	7.0	79.3			
PVI	18–29	24.0	2.2	69.4	4.4	51.38	<.001	.340
	30–39	4.5	3.6	83.0	8.9			
	40–49	3.3	1.1	88.0	7.6			
	50+	0.0	0.0	93.1	6.9			
	Total	11.7	2.0	79.8	2.1			
PAI-receptive	18–29	47.3	42.9	3.3	6.5	29.05	.001	.255
	30–39	25.0	52.7	5.4	17.0			
	40–49	28.3	48.9	2.2	20.7			
	50+	32.8	51.7	0.0	15.5			
	Total	35.9	47.8	3.1	13.2			
PAI-insertive	18–29	29.9	28.3	12.5	29.3	28.28	.001	.252
	30–39	10.7	28.6	20.5	40.2			
	40–49	14.1	26.1	19.6	40.2			
	50+	27.6	17.2	8.6	46.6			

(*Continued*)

Table 3. (*Continued*)

% Respondents Answering *Yes* to Each Behavior	Age Group	No One	Men Only	Women Only	Men and Women	χ^2	p	Cramer's V
	Total	21.5	26.5	15.5	36.5			
MA-performed	18–29	32.1	24.5	18.5	25.0	53.51	<.001	.346
	30–39	9.9	21.4	21.4	47.3			
	40–49	8.7	16.3	14.1	60.9			
	50+	12.1	24.1	17.2	46.6			
	Total	19.0	22.0	18.2	40.8			
MA-received	18–29	33.7	29.3	12.5	24.5	88.65	<.001	.446
	30–39	3.6	25.0	19.6	51.8			
	40–49	4.3	18.5	12.0	65.2			
	50+	8.6	31.0	10.3	50.0			
	Total	16.8	26.2	13.9	43.1			
OA-performed	18–29	57.1	15.2	16.3	11.4	62.41	<.001	.375
	30–39	19.6	20.5	28.6	31.3			
	40–49	21.7	17.4	23.9	37.0			
	50+	40.4	19.3	19.3	21.1			
	Total	38.2	17.5	21.3	23.0			
OA-received	18–29	46.2	25.5	10.9	17.4	76.39	<.001	.415
	30–39	10.7	30.4	18.8	40.2			
	40–49	17.4	23.9	6.5	52.2			
	50+	32.8	37.9	3.4	25.9			
	Total	29.6	28.0	11.0	31.4			
ST-performed	18–29	46.2	6.0	28.8	19.0	44.05	<.001	.314
	30–39	18.8	8.0	44.6	28.6			
	40–49	14.1	7.6	45.7	32.6			
	50+	24.1	3.4	39.7	32.8			
	Total	29.8	6.5	37.7	26.0			
ST-received	18–29	53.3	10.3	21.7	14.7	49.99	<.001	.331
	30–39	21.4	15.2	37.5	25.9			
	40–49	20.7	13.0	33.7	32.6			
	50+	27.6	13.8	27.6	31.0			
	Total	35.2	12.6	28.9	23.3			

only, or men and women. Combining across all age groups, for bisexual women in the sample the most prevalently reported behaviors engaged in with men and women partners were: deep kissing (88.2%), MB (83.9% received, 76.3% performed), MG (75.5% received, 77.0% performed), OB (78.0% received, 71.2% performed), and OG (66.0% received, 66.8% performed). Sex toy used with men and women was reported by less than one half of the bisexual women (ST performed 35.0%, received 41.9%). Having engaged in manual and oral-anal stimulation was reported more often for men only than with partners of both genders. PVI and PAI-receptive was most commonly reported with men only, 83.9% and 63.9%, respectively.

With the exception of deep kissing ($p = .060$), the answers to all other behavioral variables were found to be significantly associated with age at $p \leq .001$. However, the strength of the associations of behavioral histories with age, as measured by the Cramer's V, are generally weaker than those found for men. Moderate to moderately strong (Cramer's $V = .20–.30$) associations were found for OB-received, MG-performed and -received, MA-performed and -received, and OA-performed and -received. Weak associations (Cramer's

Table 4. Sexual behavior history among bisexual women ($n = 933$).

% Respondents Answering *Yes* to Each Behavior	Age	No One	Men Only	Women Only	Men and Women	χ^2	p	Cramer's V
Deep kissing	18–29	1.9	9.7	1.7	86.7	16.34	.060	.101
	30–39	0.0	7.9	0.5	91.6			
	40–49	0.0	7.8	0.0	92.2			
	50+	6.7	0.0	6.7	86.7			
	Total	1.4	9.0	1.4	88.2			
MB-performed	18–29	6.1	10.4	12.4	71.1	37.30	<.001	.168
	30–39	0.5	7.0	3.7	88.8			
	40–49	3.1	6.3	6.3	84.4			
	50+	0.0	0.0	13.3	86.7			
	Total	4.5	9.1	10.0	76.4			
MB-received	18–29	2.0	16.1	1.6	80.3	27.65	.001	.183
	30–39	0.0	7.0	0.0	93.0			
	40–49	1.6	9.4	1.6	87.5			
	50+	0.0	0.0	6.7	93.3			
	Total	1.5	13.3	1.3	83.9			
OB-performed	18–29	8.9	16.0	11.1	63.9	59.04	<.001	.190
	30–39	0.5	8.4	3.3	87.9			
	40–49	3.1	6.3	6.3	84.4			
	50+	0.0	0.0	13.3	86.7			
	Total	6.4	13.3	9.1	71.2			
OB-received	18–29	2.8	21.6	3.0	72.6	47.86	<.001	.200
	30–39	0.0	8.8	0.0	91.2			
	40–49	1.6	10.9	1.6	85.9			
	50+	0.0	0.0	13.3	86.7			
	Total	2.0	17.6	2.4	78.0			
MG-performed	18–29	3.0	23.4	3.1	70.5	52.73	<.001	.246
	30–39	0.0	7.9	0.5	91.6			
	40–49	1.6	9.4	0.0	89.1			
	50+	0.0	0.0	6.7	93.3			
	Total	2.1	18.5	2.4	77.0			
MG-received	18–29	3.1	24.3	3.5	69.1	50.99	<.001	.260
	30–39	0.0	9.3	0.0	90.7			
	40–49	1.6	12.5	1.6	84.4			
	50+	0.0	0.0	6.7	93.3			
	Total	2.2	19.7	2.6	75.5			
OG-performed	18–29	6.4	32.9	2.2	58.5	72.19	<.001	.196
	30–39	0.0	14.9	0.5	84.7			
	40–49	1.6	10.9	1.6	85.9			
	50+	6.7	0.0	6.7	86.7			
	Total	4.7	26.7	1.8	66.8			
OG-received	18–29	5.8	33.1	3.6	57.5	71.97	<.001	.169
	30–39	0.0	14.4	0.5	85.1			
	40–49	1.6	14.1	3.1	81.3			
	50+	6.7	0.0	6.7	86.7			
	Total	4.2	26.9	2.9	66.0			
PVI	18–29	9.6	84.5	0.3	5.7	66.31	<.001	.040
	30–39	0.5	86.5	0.9	12.1			
	40–49	1.6	71.9	4.7	21.9			
	50+	6.7	73.3	6.7	13.3			
	Total	6.9	83.9	0.9	8.3			
PAI-receptive	18–29	37.5	59.2	0.2	3.1	77.89	<.001	.045
	30–39	17.3	75.7	0.0	7.0			
	40–49	14.1	71.9	1.6	12.5			
	50+	33.3	60.0	6.7	0.0			
	Total	31.1	63.9	0.4	4.6			
MA-performed	18–29	49.8	34.9	3.3	12.1	134.79	<.001	.289
	30–39	16.7	41.4	3.7	38.1			
	40–49	15.6	42.2	3.1	39.1			
	50+	13.3	26.7	13.3	46.7			

(*Continued*)

Table 4. (*Continued*)

% Respondents Answering *Yes* to Each Behavior	Age	No One	Men Only	Women Only	Men and Women	χ^2	*p*	Cramer's *V*
	Total	39.3	36.7	3.5	20.5			
MA-received	18–29	31.6	50.4	2.5	15.5	106.12	<.001	.245
	30–39	7.5	50.0	3.7	38.8			
	40–49	9.4	46.9	1.6	42.2			
	50+	13.3	26.7	13.3	46.7			
	Total	24.2	49.7	2.9	23.2			
OA-performed	18–29	67.0	22.8	2.2	8.0	70.60	<.001	.238
	30–39	41.8	30.0	2.8	25.4			
	40–49	46.9	28.1	3.1	21.9			
	50+	33.3	26.7	6.7	33.3			
	Total	59.3	24.9	2.5	13.3			
OA-received	18–29	50.1	39.1	1.7	9.1	117.86	<.001	.236
	30–39	20.6	43.0	3.3	33.2			
	40–49	28.1	39.1	4.7	28.1			
	50+	20.0	26.7	13.3	40.0			
	Total	41.2	39.8	2.5	16.5			
ST-performed	18–29	35.3	21.2	17.4	26.1	89.27	<.001	.143
	30–39	11.2	17.7	14.4	56.7			
	40–49	14.1	18.8	18.8	48.4			
	50+	13.3	20.0	20.0	46.7			
	Total	27.9	20.2	16.9	35.0			
ST-received	18–29	22.6	36.3	9.6	31.6	107.41	<.001	.143
	30–39	4.2	25.6	3.3	67.0			
	40–49	7.8	23.4	9.4	59.4			
	50+	13.3	20.0	20.0	46.7			
	Total	17.2	32.7	8.3	41.8			

$V = .15$–$.20$) with age were found for MB-performed and -received, OB-performed, and OG-performed and -received. The associations are very weak and negligible (Cramer's $V < .15$) for the remaining associations.

Discussion

To our knowledge, this is the first study to compare attitudes about which behaviors constitute having 'had sex' for self-identified bisexual women and men across age groups. As with other populations that have been studied (i.e., heterosexual women and men, lesbian women, gay men, and women who have sex with men and women), for the bisexual women and men in this sample there was no universal agreement about which behaviors do and do not constitute having 'had sex.' However, as would be expected, some behaviors are more likely to be labelled as 'sex' than others.

Regardless of gender and age, more than nine out of 10 bisexual women and men in this sample considered PVI to be sex. This is consistent with findings from other predominantly heterosexual samples in the United States (Sanders et al., 2010; Sanders & Reinisch, 1999), Australia (Richters & Song, 1999), the United Kingdom (Pitts & Rahman, 2001), and Canada (Randall & Byers, 2003). Interestingly, for this bisexual sample more than 90% overall considered anal intercourse to count as sex. This contrasts with previous findings from predominantly

heterosexual samples in the United States in which approximately 80% considered PAI as sex, meaning that one in five answered they would not say they had sex if the most intimate behavior they engaged in was penile penetration of the anus (Sanders et al., 2010; Sanders & Reinisch, 1999). Gay men from the United States and United Kingdom were also reported to be more likely than heterosexuals to count PAI as sex (Hill et al., 2010). As would be expected, far fewer considered deep kissing, or manual or oral breast stimulation, to be sex. Overall, roughly one third of this bisexual sample considered manual genital stimulation to be sex and slightly more than one half considered oral genital activity to be sex.

Across most studies on this topic, there is perhaps the most disagreement about whether oral genital behavior constitutes having 'had sex.' Variation in what behaviors people count as sex is well-documented (Binson & Catania, 1998; Bogart et al., 2000; Carpenter, 2001; Gute et al., 2008; Hill et al., 2010; Horowitz & Spicer, 2013; Rawlings et al., 2006; Richters & Song, 1999; Sanders et al., 2010; Sanders & Reinisch, 1999; Sewell & Strassberg, 2015). The current findings are consistent with that literature and extend it to explicitly document variation among bisexual women and men in attitudes regarding which behaviors constitute having 'had sex'.

Such findings have important methodological implications for questionnaire-based studies and population estimates of sexual behavior and identities and have clinical ramifications for interviewing clients or patients. For example, the recent report from the National Survey of Family Growth (NSFG) 2011–2013 (Copen et al., 2016) reported almost 3 times as many women (17.4%) as men (6.2%) age 18 to 44 had ever had same-sex contact in their lifetime. However, as the authors point out, the nature of the questions was different for women and men. Women were counted as having same-sex behavior if they answered *yes* to giving or receiving oral sex or if they "had any sexual experience of any kind with another female." Men were only asked if they had given or received oral or anal sex with another male. Men were not asked about "any sexual experience of any kind" with another male. Therefore, the behaviors that counted for same-sex behaviors were more extensive for women than for men. Women's same-sex behavior in NSFG was counted based on each woman's own personal criteria of what behaviors she consider to be a "sexual experience of any kind"; whereas men's same sex behavior was defined by the researchers' criteria of having engaged in oral-genital sex or penile-anal intercourse only. This difference in criteria most certainly contributed to the higher estimates of same-sex behavior for women than men. Compared to younger bisexual people, proportionally more older bisexual women and men considered the following behaviors as having 'had sex': manual and oral breast stimulation, manual and oral genital stimulation, manual and oral anal stimulation, and use of sex toys. The association between age and considering a behavior to be 'sex' was strongest (moderate to strong using Cramer's *V*) for manual and oral genital behaviors for both genders, manual and oral anal behavior for both genders, and use of sex toys for

men only. Younger people in the current study and the Sanders et al. (2010) study were not less likely to count PVI or PAI as sex. These two studies suggest that younger people are more oriented to defining sex in more phallocentric and heteronormative terms.

Controlling for age, proportionally more bisexual men than bisexual women considered deep kissing, and manual and oral breast stimulation, to be 'sex.' This finding further highlights the potential for underestimating the prevalence of same-sex sexual behavior among bisexual men if their own criteria are not considered. Significantly more bisexual women than bisexual men counted penile-vaginal intercourse, receptive anal intercourse, and use of sex toys as having "had sex" when age was controlled in the analyses. The strength of association of age with these attitudes was stronger for men regarding manual and oral genital stimulation, manual and oral anal stimulation, and sex toy use. To our knowledge there has only been one other study that systematically evaluated age effects in relation to these attitudes. It also found stronger age effects among men than women in its representative, predominately heterosexual, sample (Sanders et al., 2010). Older and younger people may well interpret questions about sexual histories using different behavioral criteria and the degree of this variation may be stronger for men than women. This suggests that across age group comparisons for behaviorally nonspecific questions about sexual history may be contaminated by differential interpretation of the questions across age groups. Further, within age group comparisons across gender may be similarly tainted.

Such age and gender differences in which behaviors are considered to be 'sex,' highlights the risk for misclassification bias in research and sexual history taking (Sanders et al., 2010). It is important to acknowledge that conceptualizations of behaviors as sexual are socially constructed and informed by identity and behavioral history in an interactive fashion. An individual's behavior informs identity through the lens of interpretation on whether a particular behavior 'counts' as 'sex' or not. On the other hand, an individual's sexual identity informs that interpretation. As there are cultural and subcultural variations across history, geography, and community in the norms and messaging about the meaning of behaviors, one's intersectional identity is important as well in informing interpretation of behaviors and one's use of sexual identity labels. For bisexual men, the most commonly reported sexual behaviors with partners of both genders were manual and oral genital behaviors (~80%), deep kissing and manual breast stimulation (~70%), and oral breast stimulation (60%). Approximately one third reported having engaged in insertive anal intercourse with men and women and another one fourth reported it only with male partners. Age was significantly associated with having engaged in all behaviors except deep kissing, although the precise nature of the relationship varied. Compared to older age groups, fewer bisexual men in the 18 to 29 age group had engaged in all behaviors except deep kissing. In other words, the older age cohorts reported more sexual experiences of various kinds.

For bisexual women, the most commonly reported sexual behaviors with partners of both genders were deep kissing (almost 90%), manual and oral breast stimulation and manual genital stimulation (~80%), and oral genital (~70%). PVI and PAI with men only were reported by 84% and 64%, respectively. Roughly one fourth reported it only with male partners. Age was significantly associated with having engaged in all behaviors except kissing, with older cohorts having had more experience. However, the strength of the associations of behavior histories with age were generally weaker than those for men.

In summary, compared to older bisexual men and women, the youngest age groups (18–29) reported less sexual experience and were less likely to count a number of behaviors as sex; and correlations with age were stronger for men than women on a number of items. However, this pattern is not limited to this bisexual sample (see Sanders et al., 2010). In addition to the methodological implications discussed above, what might these age and gender effects in attitudes and behaviors mean? In the absence of longitudinal data it is difficult to know whether age differences reflect developmental change or cohort effects. The present study has data only on current bisexual identification and current attitudes and only on lifetime behavioral histories. Additionally, in this bisexual sample, the men were generally older than the women.

Is it the case, perhaps particularly for men, that accumulated experience is necessary for bisexual identification and this accounts for the men in our sample being older? Our data cannot answer this question given that all study participants were selected on the basis of self-identifying as bisexual and that behavior and identity questions do not cover the same reporting period. According to the NSFG (Copen et al., 2016), younger women were the most likely to identify as bisexual, but there were no significant differences across age groups in bisexual identification among men. The prevalence of same-sex behavior did not vary significantly for men or women across age groups, though the percentages of women and men reporting various sexual behaviors with opposite-sex partners generally increased with age. Therefore, NSFG data do not support the notion that older men (or women) are more likely to identify as bisexual or that increasing sexual experience over time is associated with a greater likelihood of bisexual identification.

Limitations

Although this study demonstrates the breadth of variability in sex attitudes and behavioral experiences among a relatively large sample of bisexual women and men in the United States, it is not without limitations. First, study participants represent a convenience sample of self-identified bisexual women and men and thus results may not be generalizable to all bisexual people. This may be particularly important given a growing body of research that suggests diversity within the umbrella of bisexual identification (see Barker et al., 2012; Galupo, Davis, Grynkiewicz, & Mitchell, 2014). Additionally, the sample consists of predominantly young,

White, bisexual women and men; bisexual women and men of color may not necessarily share the sex attitudes or experiences reported in this study (Galupo, Mitchell, & Davis, 2015). Subsequent research examining the sex attitudes and behavioral experiences of bisexual people of color is greatly needed. This may be particularly important for understanding bisexual health disparities, given that bisexuals of color face unique challenges and social stressors associated with having intersecting sexual and racial/ethnic minority statuses (Harper, Jernewall, & Zea, 2004; Nabors et al., 2001; Galupo, 2011; Galupo et al., 2015). Further, studies examining the breadth of bisexual identities, including the use of multiple self-labels and bisexual experience across different sexual and gender identities is needed to understand the full spectrum of attitudes and behaviors that comprise those who identify as bisexual (Galupo et al., 2014; Galupo et al., 2015). This is important to note given that the current study focuses solely cisgender, bisexually identified women and men based on binary categorical inclusion criteria for sexual orientation and gender that is not necessarily representative of the full range of diversity in bisexual experience (Galupo et al, 2014; Galupo et al., 2015). Second, the present study relies on self-report questionnaire methodologies; thus recall biases may influence the accuracy of self-reporting. This may be particularly pertinent among older groups of bisexual women and men when reporting lifetime sexual behaviors as they may be reporting on more distal events, and/or relying on longer recall periods than younger cohorts. Third, current identity and attitudes about which behaviors constitute having 'had sex' were assessed, whereas behavioral histories represented lifetime experience. Fourth, the attitudes were not evaluated separately for sex with men and sex with women. Future research would benefit from more detailed assessments of contemporary identification, attitudes, and behaviors and/or lifetime identification history with respect to behaviors as well as the assessment of attitudes based on gender of partners.

Conclusion and implications

Our findings extend the literature by documenting the diversity of sex attitudes and behavioral experience across various age cohorts of bisexual women and men. Significant age and gender effects were found. With the exceptions of deep kissing, penile-vaginal intercourse, and penile-anal intercourse, the youngest age groups (18–29) of both genders were significantly less likely to count all other behaviors (i.e., manual and oral breast stimulation, manual and oral genital stimulation, manual and oral anal stimulation, and use of sex toys) as having 'had sex'. For a number of items (manual and oral genital stimulation, manual and oral anal stimulation, and sex toy use) correlations with age were stronger for men than women. The youngest age groups of bisexual men and women were also significantly less like to report having experienced each of the behaviors assessed.

The age and gender differences in attitudes about which behaviors are considered to be 'sex' provide compelling evidence of the risk for misclassification bias in

research and both research and clinical sexual history taking when behaviorally nonspecific questions are asked. Additionally, they suggest that researchers, educators, and clinicians should avoid making assumptions about shared meaning and labelling of behaviors among bisexual men and women. Further, as with previous studies examining what behaviors constitute having 'had sex,' special attention should be given to individual-level conceptualizations of what constitutes 'sex', as they are not consistent within any given gender, sexual orientation, age group, and/or culture (Binson & Catania, 1998; Bogart et al., 2000; Carpenter, 2001; Gute et al., 2008; Hill et al., 2010; Horowitz & Spicer, 2013; Rawlings et al., 2006; Richters & Song, 1999; Sanders et al., 2010; Sanders & Reinisch, 1999; Sewell & Strassberg, 2015). Therefore, clear behaviorally-specific terminology is necessary for the greatest accuracy in sexual history taking, sexually transmitted infections (STI) and human immunodeficiency virus (HIV) research, sexual health promotion, and sex education, especially when a wide age range of participants will be assessed.

Note

1. In the original survey (dated 2007), we collected binary gender/sex information with this question. The questionnaire was posted online (as described in the text) with open participation, although we specifically recruited for sexual orientation diversity. We used the reported wording because the general population is not well-acquainted with concepts of sex and gender as non-binary, and because of debates about the overlaps and distinctions of the concepts of sex and gender, the term "assigned" sex or gender, the use of the term "cis" as a modifier of gender, and the emergence of newer self-identities such as "queer" and "non-gendered" (which may be seen by the public as offensive terms). We considered wording the parenthetical as "assigned male/female at birth" instead of "born male/female" and chose the wording we thought would be the least confusing to the majority of the people taking the survey. Further, we recognize that contemporary notions of sex and gender extend beyond such simple bifurcations, and have defined "sex" as the indication assigned at birth. We acknowledge that categorization does not necessarily represent the full spectrum of gender experience and identity, and this has been noted as a study limitation. As sex and gender categories continue to proliferate, additional approaches for assessing and including gender/sex variation are needed in survey research.

Notes on contributors

Brandon J. Hill, PhD, is executive director of the Center for Interdisciplinary Inquiry and Innovation in Sexual and Reproductive Health (Ci3) at the University of Chicago and research fellow at the Kinsey Institute for Research in Sex, Gender, and Reproduction at Indiana University.

Stephanie A. Sanders, PhD, is provost professor in the Department of Gender Studies and associate director of The Kinsey Institute for Research in Sex, Gender, and Reproduction at Indiana University.

June M. Reinisch, PhD, is director emeritus and senior research fellow at The Kinsey Institute for Research in Sex, Gender, and Reproduction at Indiana University, president of R2 Science

Communications, Inc., and vice president of scientific affairs and director of acquisitions and new exhibitions for the Museum of Sex (New York, NY).

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