

A National Examination of Breastfeeding Disparities Among
Sexual Orientation Subgroups of U.S. Women

By

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Background

The World Health Organization recommends that children are exclusively breastfed for the first six months of life and continue to be breastfed for two years or beyond.¹

Exclusive breastfeeding is the practice of only giving an infant breast milk, excluding other liquids and foods from their diet, which differs from breastfeeding involving complementary methods of feeding. Exclusive breastfeeding can have both short-term and long-term benefits, including healthier eating habits, reduced length of hospital stay, and better cognitive and behavioral development, among other benefits.² Furthermore, breastfeeding reduces the risk of type 2 diabetes and is associated with a reduction in the risk of overweight/obesity by 13% among mothers in high-income and low- or middle-income settings.³ The prevalence of breastfeeding initiation is 84.1% among U.S. women overall. However, breastfeeding rates can vary by sociodemographic status, including age, marital status, migration background, and ethnicity.

Breastfeeding initiation rates vary among subgroups of maternal race and ethnicity, ranging from 90.3% among Asian mothers to 73.6% among Black mothers, a 16.7 percentage point difference.⁴ There are also differences in breastfeeding duration among these groups. Breastfeeding trends among children in the United States from 2009 to 2015 showed that in 2015, non-Hispanic Black infants were less likely than infants of other racial/ethnic groups to be exclusively breastfed through six months (17.3%).⁵ One study of 1,636 mothers used hierarchical linear modeling to analyze data from the Community and Child Health Network study. This National Institutes of Health multisite, community-based participatory research project oversees Baltimore, Maryland;

Washington D.C.; and Lake County, Illinois.⁶ Results from this study demonstrate that Black mothers have the lowest rates of initiating, intending, and continuing breastfeeding compared to Spanish-speaking Hispanic mothers, English-speaking Hispanic mothers, and White mothers.⁶ Further, although Hispanic/Latina (H/L) breastfeeding rates are overall comparable to White breastfeeding rates in the United States (83% vs. 84%), rates at 6 months and 12 months are lower among H/L mothers compared to White mothers (45.6% vs. 57.9% and 25.7 vs. 36.1%, respectively).⁷ Although race and ethnicity have been well documented in relation to breastfeeding disparities, sexual orientation has been understudied.

To best analyze breastfeeding trends, it is important to consider the sexual orientation of mothers as a potential factor that may influence differences in breastfeeding. Past studies using data from the 2006 to 2017 the National Survey of Family Growth female pregnancy questionnaire examined sexual orientation subgroups: heterosexual women who only reported sex with men, heterosexual women who reported sex with women, bisexual women, and lesbian women. Data from logistic and multinomial regressions revealed that U.S. lesbian women's infants had lower odds of ever being breastfed (Odds Ratio (OR) = 0.55, 95% Confidence Interval(CI): 0.30, 0.99) and a lower relative risk of being breastfed for more than 6 months (Relative Risk Ratio (RRR) = 0.46, 95% CI: 0.22, 0.97), compared to heterosexual women who reported sex with men.⁸ Infants of heterosexual women who reported sex with women, a group distinct from lesbian-identified women, had a higher likelihood of ever breastfeeding (1.40; 95% CI: 1.12, 1.74) and higher relative risks (1.32; 1.02, 1.69) of breastfeeding more than six months, respectively.⁸ These results show that infants born to lesbian-identified mothers

had a lower likelihood than their heterosexual counterparts to breastfeed. Qualitative research with same-sex mothers found that they intended to breastfeed for at least a year; however, same sex mothers cited concerns about the need for inclusive and educated health practitioners as potential barriers.⁹ Lactation experiences of same-sex female couples highlight the need for LGBT+ competent care in an effort to remove structural barriers to motherhood and the encouragement of lactation.¹⁰

There have been several studies conducted over the years looking at race/ethnicity in relation to breastfeeding disparities. Yet, very few studies have examined sexual orientation as a factor resulting in possible disparities in breastfeeding. Therefore, the purpose of this study is to explore the relationship between sexual orientation in subgroups of U.S. women aged 15-49 years and exclusive breastfeeding duration, using the most updated data from the National Survey of Family Growth.

Methods

Data Source

We used data from the 2017-2019 National Survey of Family Growth (NSFG).¹¹ The NSFG collects survey data on family life, general and reproductive health, marriage and cohabitation, infertility, and the use of contraception among U.S. women aged 15-49 years using a national probability sampling strategy.¹¹ The 2017-2019 Female Respondent data and Female Pregnancy data were merged based on the case identification of the participants. There were 10,215 observations that were matched, with respondents in both the NSFG Female Respondent and NSFG Female Pregnancy files, and 2,432 observations that were not matched. Respondents were inapplicable to the variable

assessing any breastfeeding if the pregnancy did not result in a live birth, the child did not live with the respondent for at least two months, and the child is not currently 18 years or younger. Applicability for the sexual orientation variable corresponded to a random half sample of respondents. The analytic sample was narrowed down, excluding participants who were inapplicable for any breastfeeding outcomes (n=4,493), inapplicable for sexual orientation categories (n=2,621), and responded Don't know/Refused/Not ascertained to sexual orientation (n=176), resulting in 2,925 observations, as shown in *Figure 1*.

Exposures

The exposure of interest is sexual orientation. Sexual orientation was measured by asking respondents “Do you think of yourself as: Heterosexual or straight, Homosexual, gay, or lesbian, Or bisexual”. Categories include: 1: Heterosexual or straight; 2: Homosexual, gay, or lesbian; 3: Bisexual; 7: Not ascertained; 8: Refused; 9: Don't know. This variable was categorized to a dichotomous variable of heterosexual and homosexual or bisexual.

Outcome

There were three outcomes of interest: breastfeeding at all, breastfeeding exclusively for more than three months, and breastfeeding exclusively for six months. The NSFG collected data on the “breastfeeding at all” outcome by asking mothers “When your baby was an infant, have/did you breastfeed him/her at all?”, where participants were asked to provide a “yes” or “no” response to indicate their answer and that is how we analyzed it in our study. In order to assess exclusive breastfeeding duration, we used a variable that measures when the child was first fed something other than breastmilk. This variable

examined the age in months when the child was first fed non-breastmilk and was a continuous variable ranging from less than 1 month to 36 months (no respondents reported higher than that). In our analysis, we ran the prevalence between the variable assessing breastfeeding at all and the variable assessing both breastfeeding exclusivity outcomes. This prevalence was investigated to identify participants in the inapplicable data that were not included in the breastfeeding exclusivity variable due to no reported breastfeeding. We assessed the variable by re-coding it to the following outcomes: 0: Breastfed exclusively for ≥ 3 months; 1: Stopped breastfeeding exclusively before 3 months or never breastfed. We also evaluated this variable by examining breastfeeding exclusively for six or more months with the following outcomes: 0: Breastfed exclusively for ≥ 6 months; 1: Stopped breastfeeding exclusively before 6 months or never breastfed.

Covariates

We utilized chi-squared tests in STATA¹² to assess the presence of a statistically significant association between potential covariates and our predictor and outcome variables: sexual orientation, breastfeeding at all, breastfeeding exclusively for more than three months, and breastfeeding exclusively for more than six months. Subsequently, we conducted a multivariable regression analysis and adjusted for the following covariates: race/ethnicity, age, nativity, and marital status. Race/ethnicity was measured by asking participants about their race and whether or not they were of Hispanic origin. Re-coded categories include Non-Hispanic White, Non-Hispanic Black, Hispanic, and Non-Hispanic Other or Multiple Race. Age was assessed by the respondent's age at the

time of the interview and broken into the following categories: 15-29 years, 30-39 years old, and 40-49 years old. Nativity was assessed by the participant's response on whether or not they were born outside of the United States, and the categories in our study were as follows: Yes and No. Marital status was assessed using formal marital status categories and was included in this study using the following categories: Married, Divorced/Separated/Widowed, and Never been married.

We used descriptive statistics to assess the distribution of the exposures, outcomes, and covariates of interest among U.S. women aged 15-49 years. As part of our analysis:

1. We performed chi-squared tests to assess the relationship between potential covariates, predictor variables, and outcomes in our study.
2. We used descriptive statistics using survey data to perform cross-tabulations in order to compute prevalence.
3. We used logistic regression to examine the unadjusted odds of breastfeeding outcomes (breastfeeding at all, breastfeeding duration for 3 or more months, and breastfeeding duration for 6 or more months) among mothers who identified as homosexual/bisexual compared to mothers who identified as heterosexual.
4. Finally, we ran a multivariable logistic regression to assess the adjusted odds of each breastfeeding outcome among mothers who identified as homosexual/bisexual compared to mothers who identified as heterosexual while adjusting for the covariates: race/ethnicity, age, nativity, and marital status.

All analyses were adjusted for the NSFG's complex survey design.

Results

The final analytic sample (n=2,925) consisted of 2,697 mothers (92.2%) who identified as heterosexual and 228 mothers (7.8%) who identified as homosexual/bisexual as shown in *Table 1*. These prevalence rates are consistent and representative of the national average according to data from the Pew Research Center Survey, with findings reporting around 7% of Americans identifying as lesbian, gay, or bisexual.¹³ In our sample, 52% of mothers fell below 199% of the federal poverty level, which is high compared to the national average of 28.4% of mothers.¹⁴ The majority of our sample (82%) was mothers who had completed high school and/or 1+ years of college/graduate school. When assessing exclusive breastfeeding, 52% of heterosexual mothers reported exclusively breastfeeding for less than three months, and 48% reported breastfeeding for 3 or more months. Among mothers who identified as homosexual/bisexual, 53% reported breastfeeding exclusively for less than three months, and 47% reported exclusively breastfeeding for three or more months.

Over half of participants identified as Non Hispanic White (NH White), 52% of heterosexual mothers and 56% of homosexual/bisexual mothers. There was a trend observed in age categories. The majority heterosexual mothers were in the 30-49 year old range and older category, and the majority of homosexual/bisexual mothers were in the 15-39 year old range and younger category. Very few participants reported being born outside of the United States, 20% of heterosexual mothers and 5.1% of

homosexual/bisexual mothers. The majority of heterosexual mothers were married (60%) while 44% of mothers who identified as homosexual/bisexual married and 44% of mothers who identified as homosexual/bisexual had never been married (44%).

We examined different breastfeeding outcomes: breastfeeding at all, breastfeeding exclusively for more than three months, and breastfeeding exclusively for more than six. Breastfeeding outcomes among heterosexual mothers and homosexual/bisexual mothers were comparable (**Table 2**). Over 70% of both heterosexual and homosexual/bisexual mothers have reported having breastfed in general. Breastfeeding exclusivity had similar prevalence as well, with over 40% of both heterosexual and homosexual/bisexual mothers reporting exclusively breastfeeding for three or more months and over 20% of both groups breastfeeding for six months or more.

The results from the multivariable regression for the odds of any breastfeeding were not statistically significant when comparing self-identified homosexual/bisexual mothers to heterosexual mothers (**Table 3**). After adjusting for race/ethnicity, age, nativity, and marital status, the odds of breastfeeding among self-identified homosexual/bisexual mothers compared to heterosexual mothers were not statistically significant.

The multivariable regression model assessing the odds of having breastfed exclusively for more than three months also found no statistical significance in the odds of having breastfed exclusively for more than three months among mothers who identified as homosexual/bisexual compared to heterosexual mothers. As in the previous outcome, there was no statistically significant association between the outcome,

exclusively breastfeeding for three months or more, and the predictor variable, sexual orientation.

The final outcome we assessed was the odds of exclusively breastfeeding for six or more months. Once again, there were no statistically significant results observed between the association of the sexual orientation variable and the outcome of exclusively breastfeeding for six or more months. Due to the lack of statistical significance, we cannot reliably report a positive or negative association between sexual orientation and all three breastfeeding outcomes.

Discussion

This study revealed that there is no statistically significant association between sexual orientation subgroups and breastfeeding outcomes in data from the 2017-2019 National Survey of Family Growth. The prevalence of exclusive breastfeeding for 3 or more months among mothers who identified as homosexual/bisexual was comparable to prevalence of exclusive breastfeeding for 3 or more months among heterosexual mothers; the same for all other breastfeeding outcomes in this study. We were not able to reliably report any positive or negative associations in the odds of exclusive breastfeeding among self-reported homosexual/bisexual mothers compared to heterosexual mothers due to the lack of statistical significance. Further, any breastfeeding, breastfeeding for three or more months, and breastfeeding exclusively for six or more months had similar results. All three breastfeeding outcomes resulted in no statistically significant association between the odds of the desired breastfeeding outcome in self-identified homosexual/bisexual mothers compared to heterosexual mothers, so we have no evidence to suggest that

sexual orientation is associated with differences in breastfeeding outcomes. Therefore, sexual orientation may not be a significant influential predictor for breastfeeding outcomes, and other possible predictors, such as age and nativity, may be more influential in determining breastfeeding practices.

Previous literature reported that infants of women who identified as lesbian had a lower relative risk of being breastfed for more than 6 months compared to infants of heterosexual women (Relative Risk Ratio (RRR)= 0.46, 95% CI: 0.22, 0.97) . This study used data from the 2006 to 2017 NSFG data files and was therefore able to analyze a larger sample size (n=18,509) allowing for more statistical power. Additionally, same-sex mothers have reported intentions of wanting to breastfeed, but also described structural barriers, such as a healthcare system that is not LGBT+ competent.^{9,10} An LGBT+ competent healthcare system entails practitioners using inclusive language, tailoring lactation information to reflect different family structures, and including non gestational parents in the provision of care.¹⁰ Our study did not find associations between breastfeeding outcomes and sexual orientation. Nonetheless, that does not discount the lived experiences of individuals in sexual orientation subgroups and there is still more research to be conducted with regard to sexual orientation and breastfeeding.

This paper attempted to advance research in regard to breastfeeding outcomes, including disparities in exclusive breastfeeding as well any breastfeeding, among sexual orientation minority groups. Although we were not able to produce statistically significant results, these findings signify the need to address this area in the future. Addressing the issues and disparities that sexual orientation minority groups face is

important in order to promote health equity, increase cultural sensitivity, and promote overall well-being.

Strengths

Some of the strengths of this study include using the most recent data available and the use of different breastfeeding outcomes to assess both breastfeeding in general and duration of exclusive breastfeeding outcomes. This recency allowed our study to examine breastfeeding outcomes that were both exclusive and non-exclusive and assess different time points of exclusive duration, allowing for a more comprehensive understanding of breastfeeding beyond one set of binary outcomes. Additionally, this study adjusted for covariates, resulting in the reaffirmation of the strength of association between some of the important variables and exclusive breastfeeding outcomes.

Limitations

Limitations of this study include that due to the low sample size in the non-heterosexual categories, all sexual orientation minorities had to be consolidated into one. Thus, we were not able to assess any nuances among sexual orientation minorities. Another limitation of this study was that the participants were required to be in both the female pregnancy and female respondent files, which were processed through case identification. This restriction could have resulted in missing data among the participants who did not have a matching identifier in both files. When assessing breastfeeding for six or more months, the sample size for the outcome of breastfeeding for six or more months among self-identified homosexual/bisexual mothers was small, limiting the statistical power.

Next Steps/Directions for Future Research:

Future research should address the gaps in representation of sexual orientation minority groups in breastfeeding studies in order to further assess breastfeeding disparities. The lack of representation among sexual minorities in breastfeeding studies points towards potential public health interventions that examine sexual orientation in the context of various health issues and advocates for more diverse samples. More qualitative studies could give us greater insights into common or unique experiences that parents in sexual orientation minority groups face.

Conclusion

Breastfeeding plays a crucial role in the health of both mothers and infants. We expected to see differences among sexual orientation subgroups due to past studies resulting in different relative risks⁸ and the barriers to a competent healthcare system as has been revealed by same sex mothers^{9,10}. Although the results of this study did not reveal a difference in breastfeeding outcomes among sexual orientation subgroups, we identified groups who are less likely to breastfeed at all, exclusively for three or more months, and exclusively for six or more months, such as mothers of NH Other/Mixed Race and those who were not born outside of the United States. We also found that marital status and age had an impact on breastfeeding outcomes, but the impact varied by outcome. Future research should attempt to diversify their study population in relation to sexual orientation in order to better assess these subgroups in breastfeeding research and further investigate the associations between these predictors and outcomes. Further, in the future,

a focus on qualitative research can help address common themes that parents in sexual minority subgroups face in order to get a more holistic understanding of breastfeeding experiences.

Figure 1. Analytic Sample Diagram

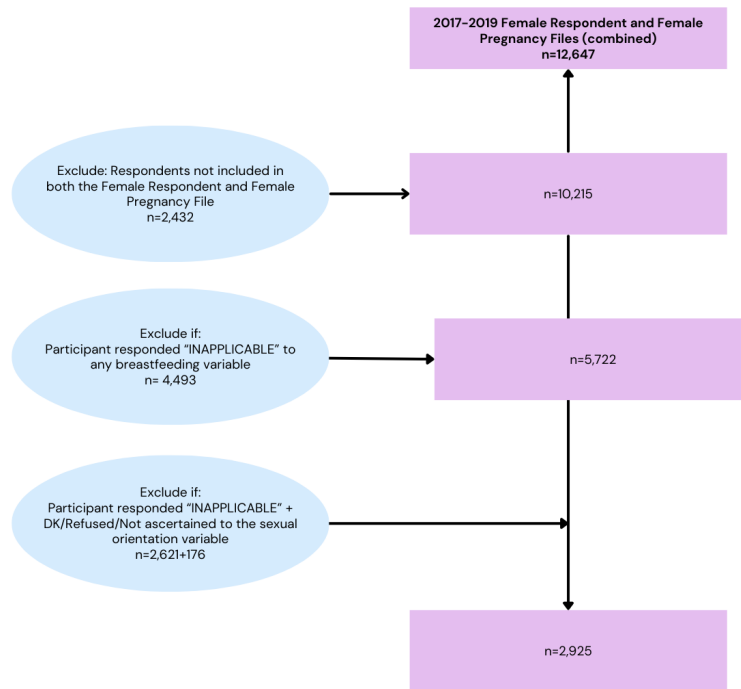


Table 1. Demographic Characteristics of Mothers by Sexual Orientation, NSFG 2017-2019

Table 1. Characteristics of Mothers by Sexual Orientation				
	Heterosexual (n=2,697)	Homosexual/Bisexual (n=228)	chi-square	p-value
Race			36.101	p<0.001
Non Hispanic White	1,060 (52%)	109 (56%)		
Non Hispanic Black	517 (12%)	57 (20%)		
Hispanic	912 (27%)	49 (16%)		
Non Hispanic Other/Mixed Race	208 (9.2%)	13 (8.7%)		
Age			12.305	p<0.001
15-29 years old	613 (16%)	68 (29%)		
30-39 years old	1,415 (50%)	147 (66%)		
40-49 years old	669 (34%)	13 (5.4%)		
Nativity			164.71	p<0.001
Yes	587 (20%)	19 (5.1%)		
No	2,110 (80%)	209 (95%)		
Marital Status			83.927	p<0.001
Married	1,306 (60%)	69 (44%)		
Divorced/Separated				
Widowed	502 (17%)	43 (16%)		
Never Been Married	886 (24%)	116 (44%)		

Table 2. Breastfeeding Rates by Sexual Orientation, NSFG 2017-2019

Table 2. Breastfeeding Rates by Sexual Orientation				
	Heterosexual (n=2,697)	Homosexual/Bisexual (n=228)	chi-square	p-value
Breastfeeding At All			0.0007	p-value=0.979
Yes	1,954 (76%)	165 (75%)		
No	743 (24%)	63 (25%)		
Breastfeeding Exclusivity			1.8110	p-value=0.178
Less than 3 months/ Not at all	1,522 (52%)	127 (53%)		
3+ months	1,175 (48%)	101 (47%)		
Breastfeeding Exclusivity			0.0041	p-value=0.949
Less than 6 months/ Not at all	2,135 (78%)	173 (72%)		
6+ months	562 (22%)	55 (28%)		

Table 3. Crude and Adjusted Odds Ratios of Breastfeeding Outcomes, NSFG 2017-2019

Table 3: Unadjusted/Adjusted Odds Ratios of Breastfeeding Outcomes		
	OR (95% CI)	Adjusted OR (95% CI) ¹
<u>Any Breastfeeding</u>		
<u>Sexual Orientation</u>		
Heterosexual	1.00 (ref)	1.00 (ref)
Homosexual/Bisexual	1.03 (0.63-1.70)	0.70 (0.42-1.17)
<u>Breastfeeding Exclusivity for 3+ Months</u>		
<u>Sexual Orientation</u>		
Heterosexual	1.00 (ref)	1.00 (ref)
Homosexual/Bisexual	1.03 (0.61-1.74)	0.76 (0.43-1.36)
<u>Breastfeeding Exclusivity for 6+ Months</u>		
<u>Sexual Orientation</u>		
Heterosexual	1.00 (ref)	1.00 (ref)
Homosexual/Bisexual	0.75 (0.38-1.48)	0.56 (0.28-1.13)

*p-value significant: $p < 0.05$

¹ Model adjusting for covariates: race/ethnicity, age, nativity, marital status

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