



# Sexual Orientation and Gender Identity Among Donor-Conceived Offspring in the U.S. National Longitudinal Lesbian Family Study from Adolescence to Adulthood

Nicola Carone<sup>1</sup> · Esther D. Rothblum<sup>2,3</sup> · Audrey S. Koh<sup>4</sup> · Henny M. W. Bos<sup>5</sup> · Nanette K. Gartrell<sup>3,5</sup>

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## Abstract

**Introduction** Concerns about parents with minoritized sexual identities often focus on the belief that their children will be confused about their gender and report a non-heterosexual orientation compared to children reared by heterosexual parents. Yet, few longitudinal studies exist.

**Methods** Gender identity, gender expression, sexual orientation, and sexual experiences were examined in 75 U.S. donor-conceived offspring (39 assigned females at birth (AFAB) and 36 assigned males at birth (AMAB)) of lesbian parents, when the offspring had reached adulthood (ages 30–33). Additionally, 72 of these offspring (38 AFAB and 34 AMAB) had also completed surveys in adolescence (age 17, data collected 2004–2009) and emerging adulthood (age 25, data collected 2012–2017), which enabled us to examine the developmental pathways of their sexuality.

**Results** All AMAB offspring and 94.7% of AFAB offspring who identified as cisgender during adolescence continued to do so during emerging adulthood and adulthood. Over time, sexual orientation was more fluid than gender identity, and AFAB offspring were more fluid than AMAB offspring. Specifically, considering those who reported the same (heterosexual/straight; lesbian, gay/homosexual; or bisexual+) sexual orientation from adolescence through emerging adulthood to adulthood, 63.9% were AFAB and 82.4% were AMAB. More than half of AFAB offspring and 80.6% of AMAB offspring identified as heterosexual in adulthood, and the vast majority had had sex with a non-transgender man (86.5%) and a non-transgender woman (93.6%), respectively, in the last 5 years.

**Conclusions** This is the only study that has followed the biological offspring of lesbian parents from birth to adulthood, prospectively and longitudinally. The results indicate that offspring of lesbian parents are less likely to identify as transgender than the general public, but more likely to identify as LGB or queer.

**Policy Implications** As gender and sexual identity development significantly impacts well-being, creating supportive environments for offspring of lesbian parents and increasing public awareness of the connections among developmental milestones, health, and thriving are vital.

**Keywords** Gender identity · Sexual orientation · Gender expression · Donor-conceived offspring · Development of gender identity · Development of sexual orientation

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✉ Nicola Carone  
nicola.carone@uniroma2.it

<sup>1</sup> Department of Systems Medicine, University of Rome Tor Vergata, Via Montpellier 1, 00133 Rome, Italy

<sup>2</sup> Department of Women's Studies, San Diego State University, San Diego, CA, USA

<sup>3</sup> Williams Institute, UCLA School of Law, Los Angeles, CA, USA

<sup>4</sup> Department of Obstetrics, Gynecology and Reproductive Sciences, School of Medicine, University of California, San Francisco, CA, USA

<sup>5</sup> Sexual and Gender Diversity in Families and Youth, Development and Education, Faculty of Social and Behavioral Sciences, Research Institute of Child, University of Amsterdam, Amsterdam, The Netherlands

## Introduction

Concerns about parents with minoritized sexual identities<sup>1</sup> often focus on the belief that their children will be more likely to be confused about their gender and report a non-heterosexual orientation compared to children raised with heterosexual parents (Clarke, 2001; Gato & Fontaine, 2013). This implicitly suggests that daily exposure to two same-gender parents and parental socialization have a major influence on the origins of both gender identity and sexual orientation. Although this view is not supported by theories of gender and sexual development (e.g., Hines, 2015; Mustanski et al., 2014) and the gender identity and sexual orientation of offspring reared by parents with minoritized sexual identities have garnered considerable attention in research and public policy (Iowa Public Radio, 2023; NBC News, 2022), few longitudinal studies are available.

The present study examined the gender identity, gender expression, sexual orientation, and sexual experiences in a U.S. sample of adult offspring of lesbian parents who conceived through donor insemination. Also, it investigated the developmental pathways of their gender identity and sexual orientation from adolescence through emerging adulthood to adulthood. We will review the literature on (1) dimensions of gender identity and sexual orientation; (2) changes in gender identity and sexual orientation in the past decade; and (3) gender development and sexual orientation of offspring of lesbian parents across different developmental stages.

## Dimensions of Gender Identity and Sexual Orientation

Both gender identity and sexual orientation are shaped by the complex interplay between hormonal, genetic, non-social environmental (e.g., in utero influences), and social environmental (e.g., social learning, cognitive behavioral) factors (for a review, Hines, 2015; Mustanski et al., 2014). In this vein, the concept that gender identity (as well as other collective identities, such as ethnic identity) consists of multiple dimensions (gender self-categorization, gender centrality, felt same-gender typicality, felt other-gender typicality, gender contentedness, felt pressure for gender differentiation, gender frustration, intergroup bias) is now widely accepted (for a review, Perry et al., 2019).

<sup>1</sup> We use the term “parents with minoritized sexual identities” instead of “sexual minority parents” to emphasize the ongoing social construction of subordination. This choice also challenges the idea that parents with non-normative identities should necessarily be considered a separate and distinct category of parents (e.g., Hammack et al., 2013; Wingrove-Haugland & McLeod, 2021).

Among the various dimensions of gender identity, gender self-categorization refers to the process of labeling oneself as either female or male. In the case of most children, this decision follows a binary understanding consistent with their anatomical characteristics, represents the earliest-developing form of gender identity, and is commonly referred to as basic gender identity. Nearly all children label their gender by the age of 3, and by age 6, the majority understand the concept of conserved gender. This means they recognize that their gender remains constant despite superficial changes in appearance, such as clothing and hair length (Ruble et al., 2006). Because this aspect of gender identity usually is fully developed by age 6, it is rarely studied past that age (Perry et al., 2019). Yet, the idea that gender is a binary and fixed construct is currently changing, as shown by the recent report by the Williams Institute estimating the number of non-binary adults in the U.S. to be 1.2 million (Wilson & Meyer, 2021). This suggests that gender self-categorization in childhood may not reflect a person’s experience in later developmental stages.

Evidence has shown that sexual orientation is a continuous rather than categorical variable and encompasses diverse aspects, such as sexual identity, sexual behavior, and sexual attraction (Laumann et al., 2000). Moreover, while there may be a certain level of concordance between these dimensions, there may also be variations and inconsistencies (Fu et al., 2019). Several studies have found that, although the sexual orientation of many people remains quite stable over time, a certain degree of sexual fluidity exists, particularly in individuals assigned female at birth (AFAB) and among those who do not consider themselves exclusively heterosexual (Diamond, 2016; Katz-Wise & Todd, 2022).

## Changes in Gender Identity and Sexual Orientation in the Past Decade

In 2022, 7.2% of U.S. adults self-identified as lesbian, gay, bisexual, transgender (LGBT), or something other than heterosexual, such as pansexual, asexual, or queer, which was double the percentage from 2012, when Gallup polls first measured sexual orientation and gender identity (Gallup, 2023). The greatest share of LGBT adults—more than half, or 4.2% of all U.S. adults—identified as bisexual, while about one in five LGBT adults identified as gay, about one in seven as lesbian, and slightly fewer than one in 10 as transgender. Data from the Behavioral Risk Factor Surveillance Survey indicated that LGB identity increased from 3.4% in 2014–2015 to 5.5% in 2020–2021, with respondents in the age group 25–34 (9.7%) most likely to identify as LGB (Flores & Conron, 2023; Twenge et al., 2023). The greatest increases were found among individuals who were Hispanic, White, bisexual, or women and occurred in both liberal and conservative U.S. states.

## Gender Development and Sexual Orientation of Offspring of Lesbian Parents Across Different Developmental Stages

### Childhood

Globally, research on the functioning of families headed by parents with minoritized sexual identities has significantly increased over the last few decades (Bos & Gartrell, 2020; Costa & Shenkman, 2020; Golombok, 2015; Patterson et al., 2021), but relatively few investigations have focused specifically on the sexuality and gender identity of offspring who were raised in these types of families. MacCallum and Golombok (2004) conducted a study comparing 25 families with two lesbian mothers, 38 families with a single heterosexual mother, and 38 families with two heterosexual parents in the UK. The results showed that sons in lesbian or single mother families displayed more feminine personality traits (but not fewer masculine traits) on the Children's Sex Role Inventory compared to sons in heterosexual two parent families. However, other studies focused on children's plans for traditionally masculine or feminine activities and occupations and found no significant differences between children in lesbian parent families and those in heterosexual two parent families, regardless of whether children were conceived through donor insemination (Brewaeys et al., 1997; Fulcher et al., 2008; Golombok et al., 2003) or were adopted (Farr et al., 2010, 2018; Golombok et al., 2014).

In the Netherlands, Bos and Sandfort (2010) investigated the gender development of 63 donor-conceived children with lesbian parents and 68 children with heterosexual parents, all aged between 8 and 12 years. The study focused on the five gender dimensions identified by Egan and Perry (2001): (a) gender typicality (how much the children felt they fit into their assigned gender), (b) contentedness with gender (how content the children were with their assigned gender), (c) pressure to conform (the influence of parental and peer pressure on adhering to gender stereotypes), (d) intergroup bias (whether the children viewed their gender as better than the other gender), and (e) children's anticipation of future heterosexual romantic involvement. Children in lesbian parent families experienced less pressure from their parents to conform to gender stereotypes, were less likely to anticipate future heterosexual romantic involvement, and showed less tendency towards intergroup bias, compared to children in heterosexual two parent families.

Similar results have been found by Carone et al. (2020) studying children's gender-typed toy play, gender-conforming and gender-non-conforming dress-up play, and gender-typed behavior among children aged 3–9 born to 40 lesbian mother families through donor insemination, 40 gay father families through surrogacy, and 40 heterosexual

parent families through unassisted conception. Gay fathers and heterosexual parents reported that their sons and daughters showed less gender flexibility in their activities and characteristics compared with reports by lesbian mothers. Gay fathers and heterosexual parents also reported higher scores on their children's gender-conforming dress-up play and amount of time playing with gender-conforming toys. However, regardless of family type, boys and girls were reported to exhibit limited engagement in gender-non-conforming dress-up play and to demonstrate reduced time playing with gender-non-conforming toys. When examining within each gender, boys and girls of gay fathers and those of heterosexual parents tended to display more masculine and feminine behaviors, respectively, compared to their counterparts in lesbian mother families.

Goldberg et al. (2012) observed gender-typed play behavior in early childhood and also found that the sons of lesbian parents were less masculine in their play than the sons of heterosexual or gay parents. Overall, these results could be attributed to the more flexible attitudes of lesbian parents towards their children's gender-related behavior (Fulcher et al., 2008). It is worth noting that all these studies focused on young children.

### Adolescence

Using data from the Wave I dataset (1994–1995) of the U.S. National Longitudinal Study of Adolescent to Adult Health (Add Health), Wainright et al. (2004) compared 44 adolescents who had parents with minoritized sexual identities with a demographically matched sample of 44 adolescents with heterosexual parents, all aged 12 to 18 years. There were no significant differences in the proportions of adolescents from both samples who had participated in sexual intercourse or recently engaged in romantic relationships. It is important to highlight that the comparison of same-sex attractions or same-sex romantic relationships was hindered by the small number of Add Health adolescents reported having such experiences. Also, the study lacked information about the parents' sexual identity, their methods of child conception, or how long the adolescents lived in a household headed by parents with a minoritized sexual identity.

### Emerging Adulthood

The initial examination of the sexual orientation of emerging adults raised by lesbian parents was based on data gathered in 1991–1992 in the UK by Golombok and Tasker (1996; Tasker & Golombok, 1995). In the second phase of their longitudinal study on post-divorce lesbian mother families, initiated when the children were 9.5 years old on average, 25 offspring of lesbian mothers and 21 of single heterosexual

mothers were interviewed when they were on average 23.5 years old. No significant differences were observed between the two family types regarding the proportions of offspring reporting same-sex attraction, identifying as lesbian/gay/bisexual, or indicating non-exclusively heterosexual orientation on the Kinsey scale. Two daughters of lesbian mothers identified as lesbian. Moreover, those who reported attraction to both females and males did not identify as bisexual. However, the research did reveal some noteworthy distinctions. Offspring from lesbian mother families were more likely to have engaged in same-sex sexual contact and to have thought about the likelihood of same-sex attraction or a same-sex sexual relationship.

In 2007, Goldberg surveyed a convenience sample of 46 adults (36 women and 10 men) with ages ranging from 19 to 50 years (mean age 30) and with lesbian, gay, or bisexual parents, most of whom resided in the United States. While many participants were raised by lesbian or bisexual mothers, the specifics of their mothers' paths to motherhood, such as biological, adoption, or fostering, were not specified. For those with gay fathers, almost none lived with them but maintained regular contact. Among the offspring, nearly one-third believed that sexuality is fluid and dynamic, existing along a continuum rather than conforming to a strict binary construct. Furthermore, they felt that their parents played a significant role in fostering more flexible concepts about sexuality and gender. Some participants stated that having a parent with a minoritized sexual identity allowed them to question their own sexuality, reevaluate binary constructs, and perceive the process of sexual exploration as a normal part of development.

More recently, González and López-Gaviño (2023) recruited 30 emerging adult offspring (mean age 24.7 years) reared in Spain by an openly lesbian mother or gay father to analyze sexual behavior, sexual attraction, and sexual self-identity over time as well as the possible influence of gender. Most participants were born into a previous heterosexual relationship, three of the women were adopted as children, and one man had been in permanent foster care for 10 years at the time of the interview. Of the young adults in the sample, 24 had lived with lesbian mothers and only six had grown up with gay fathers. Most participants identified as heterosexual only, although percentages varied between 87% for sexual behavior and 67% for sexual attraction and 60% for sexual self-identity. Also, gender differences were found for sexual attraction and self-identity, with men having a polarized profile (responses at both ends of the scale) and women reporting a less exclusive and more fluid sexuality.

The 2010 longitudinal UK study by Golombok and Badger (2010) was one of the few to explore offspring's involvement in romantic relationships and, if so, the partner's gender, when offspring of lesbian parents through donor insemination were 19 years old on average. The study involved

a volunteer sample of 18 individuals from lesbian mother families, 20 from single heterosexual mother families, and 32 from heterosexual two parent families, representing the third phase of a longitudinal investigation initiated when these offspring were around 6 years old. Offspring raised in female-headed households tended to initiate dating at a higher rate compared to their counterparts from families with heterosexual parents. Only one daughter of lesbian parents identified as bisexual, while all the other offspring identified as heterosexual. In sum, the literature on the gender development and sexual orientation of offspring with lesbian parents has often included offspring across age groups and has rarely been longitudinal. There has been relatively little research on the sexuality of adolescent and adult offspring, with studies either not specifying method of conception or combining offspring who were conceived through different methods of conception (biological, adoption, or insemination).

### **Sexual Orientation and Sexual Experiences of Offspring in the U.S. National Longitudinal Lesbian Family Study**

The U.S. National Longitudinal Lesbian Family Study (NLLFS) started in 1986 to follow prospectively a cohort of women identifying as lesbian who conceived children through donor insemination (Gartrell et al., 1996). As time has progressed, this first generation has reached adulthood (Gartrell, 2021; Koh et al., 2023). Thus, the current seventh wave of the NLLFS is a unique opportunity to examine the sexuality of these offspring as adults.

During the fifth wave of the NLLFS in 2004–2009, when the 78 participating adolescent offspring were 17 years old, they were asked to complete an online questionnaire encompassing various aspects of their sexual identity and lifetime sexual behavior, including age of first sexual experience, heterosexual and same-sex sexual contact, contraception use, and pregnancy (Gartrell et al., 2011). Among the AFAB adolescents, 18.9% self-identified within the bisexual spectrum, compared with 2.7% of the AMAB adolescents. None of the AFAB adolescents identified as predominantly-to-exclusively homosexual, but 5.4% of the AMAB adolescents did. Comparing the NLLFS offspring to age- and gender-matched adolescents from the National Survey of Family Growth, several distinctions were observed. The NLLFS offspring were notably older at the time of their first heterosexual contact. Furthermore, daughters of lesbian mothers displayed a higher likelihood of having engaged in same-sex contact and having used emergency contraception, but were less likely to have experienced pregnancy compared to their peers (Gartrell et al., 2012). Taken together, these findings indicate that daughters of lesbian parents are more likely to engage in same-sex behavior and identify as bisexual.



When the NLLFS offspring reached 25 years of age, 76 participants took part in the sixth wave in 2012–2017 and were compared to 76 demographically matched individuals from the National Survey of Family Growth (NSFG) (Gartrell et al., 2019). While most respondents in both samples identified as “heterosexual or straight,” the results revealed significant differences between the offspring of lesbian parents and their matched counterparts from the population-based survey. The AFAB and AMAB offspring of lesbian parents displayed a notably higher likelihood of reporting same-sex attraction, identifying as sexual minorities, and having engaged in same-sex experiences compared to their peers from the NSFG. These results imply that the adult offspring of lesbian parents may exhibit greater diversity in sexual identity, attraction, and expression compared to their counterparts. Furthermore, it is plausible that being raised in a family or community environment that accepts sexual minority relationships could lead the offspring to be more open-minded and less limited in their future involvement in heterosexual romantic relationships (Biblarz & Stacey, 2010).

Of note, there have been no published reports focusing on the gender identity of NLLFS offspring, although this item was included in both the fifth- and sixth-wave surveys. In addition, the seventh wave of the NLLFS with 75 offspring, conducted in 2021–2022 when the offspring were between the ages of 30 and 33 years, included measures of sexual orientation and gender identity when the offspring were adults. This is particularly relevant in light of evidence suggesting that sexual identity tends to stabilize at a later age among predominantly heterosexual individuals (Calzo et al., 2017). Moreover, gender self-categorization, which involves identifying oneself as female, male, or something beyond the traditional gender binary, represents one of the fundamental dimensions of gender identity (Perry et al., 2019).

Finally, the longitudinal and prospective NLLFS offers a unique opportunity to examine the developmental trajectories of both the gender identity and sexual orientation of these individuals from adolescence (age 17, Wave 5), through emerging adulthood (age 25, Wave 6), and into adulthood. A total of 72 offspring completed surveys at all three time periods.

## Method

### Participants

The 75 participants at Wave 7 were 30–33-year-old donor-conceived adults ( $M=30.93$ ,  $SD=0.92$ ), whose lesbian parents enrolled in the ongoing community-based U.S. NLLFS between 1986 and 1992, while inseminating or pregnant

**Table 1** Wave 7 NLLFS offspring socio-demographic information in adulthood ( $N=75$ )

Variable	<i>N</i>	%
<b>Race/ethnicity</b>		
People of color <sup>a,b</sup>	7	9.3
White	68	90.7
<b>Educational level</b>		
Some college	7	9.3
College degree	38	50.7
More than college	30	40.0
<b>Ongoing committed relationship, yes</b>	59	78.7
<b>Have children, yes</b>	8	10.7
<b>Donor types</b>		
<i>Anonymous</i>		
Unknown	20	26.7
Contacted through DI registry	7	9.3
<i>Open identity</i>		
Unknown	15	20.0
Contacted since age 18	9	12.0
<i>Known since childhood</i>	24	32.0
	<i>M</i>	<i>SD</i>
<b>Age</b>	30.9	0.9

<sup>a</sup>Based on Wave 6 information.

<sup>b</sup>African American/Black:  $n=3$ , Latina/or Hispanic:  $n=1$ , other or mixed:  $n=3$ .

with these index offspring. Of the 75 offspring, 39 were AFAB, while 36 were AMAB; offspring were mostly White, college graduates, and in a partnered relationship. Complete demographic information is shown in Table 1.

### Procedure

The Sutter Health Institutional Review Board approved the study (SHIRB no. 20.070-2; IRBNet no. 348911-21). The U.S. NLLFS has prospectively followed a cohort of lesbian-parent families from the offspring’s conception, through childhood, and into adulthood (Gartrell et al., 1996). During Wave 1, prospective lesbian parents were solicited for participation through notices in lesbian/gay periodicals, women’s bookstores, and at lesbian events. Because of the length of the recruitment phase, there was a 5.5-year difference between the birth of the youngest and oldest index offspring. The parents have been surveyed in seven waves since 1992 with the offspring surveyed since age 10 (Gartrell & Bos, 2010; Gartrell et al., 2005, 2018). The NLLFS had 84 planned lesbian-parent families at the onset and 75 families still participating at Wave 7, yielding a 90% family retention rate (Gartrell, 2021).

At Wave 7 in 2021–2022, each offspring received an email describing the study’s purpose and procedure, including its voluntary and confidential nature. After obtaining informed consent, the survey was conducted through a protected online survey (i.e., Qualtrics) between March 2021 and November 2022. Participants received a \$60 gift card as a compensation for their participation. For details about procedure at Waves 5 and 6, see Gartrell (2021).

## Measures

In the 18 years spanning the three waves of data collection, information about gender identity and sexual orientation has expanded greatly (Krueger et al., 2020; Tate et al., 2013), and we modified items accordingly. Offspring were asked the following questions:

### At Wave 7

**Sex assigned at birth** “On your original birth certificate, was your sex assigned as female or male?”

**Gender identity** “Do you currently describe yourself as a man, woman, or transgender?” The follow-up question for any who checked “transgender” was “Are you...?” (trans woman/male-to-female; trans man/female-to-male, non-binary/genderqueer; none of the above).

**Gender expression** “Do you consider yourself to be a cross-dresser?” (yes, no); “A person’s appearance, style, or dress may affect the way people think of them. On average, how do you think people would describe your appearance, style, or dress?” (choices were very feminine/mostly feminine; somewhat feminine/equally feminine and masculine/somewhat masculine; mostly masculine/very masculine); “A person’s mannerisms, such as the way they walk or talk, may affect the way people think of them. On average, how do you think people would describe your mannerisms?” (choices were very feminine/mostly feminine; somewhat feminine/equally feminine and masculine/somewhat masculine; mostly masculine/very masculine).

**Sexual orientation** “Which of the following best describes your current sexual orientation?” (straight/heterosexual; lesbian; gay; bisexual; queer; same-gender loving; other, specify).

**Sexual experiences** “Have you had sex with anyone in the last 5 years? By sex, we mean any activity you personally define as sexual activity” (yes; no); “If Yes, in the last 5 years, who did you have sex with? (Please check all that apply)” (women, non-transgender; men, non-transgender; transgender women/male-to-female; transgender men/female-to-male; I have not had sex with anyone in the last 5 years).

### At Wave 6

**Gender identity** “What is your current gender identity?” (female, male, transgender female; transgender male; other).

**Sexual orientation** “Do you think of yourself as...” (heterosexual/straight; lesbian, gay, or homosexual; bisexual).

### At Wave 5

**Gender identity** “How do you categorize your gender?” (female, male, androgynous).

**Sexual orientation** “How do you identify sexually?” (exclusively heterosexual; predominantly heterosexual, incidentally homosexual; predominantly heterosexual, but more than incidentally homosexual; equally heterosexual and homosexual; predominantly homosexual, but more than incidentally heterosexual; predominantly homosexual, incidentally heterosexual; exclusively homosexual).

## Data Analysis

All analyses were conducted using the SPSS software (version 28). Descriptive data (number of respondents and percentages) on gender identity, gender expression, sexual identity, sexual experiences, and developmental pathways of gender identity and sexual orientation across adolescence (Wave 5), emerging adulthood (Wave 6), and adulthood (Wave 7) were presented separately for AFAB and AMAB offspring.

For consistency, to present developmental pathways of gender identity across each wave, answer categories were recoded as “Cisgender” or “Transgender” based on whether or not the offspring identified their gender the same as the sex they were assigned at birth. To present developmental pathways of sexual orientation across each wave, Wave 6 answer categories were used as a reference because they allowed recoding of both Wave 5 and Wave 7 answers as consistently as possible across the three waves. Therefore, Wave 5 answers were coded as follows: “Exclusively heterosexual; Predominantly heterosexual, incidentally homosexual” = “Heterosexual/straight”; “Predominantly heterosexual, but more than incidentally homosexual; Equally heterosexual and homosexual; Predominantly homosexual, but more than incidentally heterosexual” = “Bisexual”; “Predominantly homosexual, incidentally heterosexual; Exclusively homosexual” = “Lesbian, gay, or homosexual.” Wave 7 answers were recoded as follows: “Straight/heterosexual” = “Heterosexual/straight”; “Bisexual; Queer; Same-gender loving; Other” = “Bisexual+”; “Lesbian; Gay” = “Lesbian, gay, or homosexual.”

## Results

### Gender Identity, Gender Expression, Sexual Orientation, and Sexual Experiences Among NLLFS Adult Offspring

For the sake of brevity, only the most frequent answer is reported in the text. Full descriptives are displayed in Table 2. Among the 39 AFAB offspring and 36 AMAB offspring, 94.9% ( $n=37$ ) and 100.0% ( $n=36$ ), respectively, identified as cisgender. In terms of gender expression, none of the AFAB offspring considered themselves a cross-dresser, while 5.6% of AMAB offspring did. About three-fourths (74.4%,  $n=29$ ) of AFAB offspring and almost all AMAB offspring (91.7%,  $n=33$ ) perceived their appearance as mostly or very feminine and as mostly or very masculine, respectively, while more than half (59.0%,  $n=23$ ) of AFAB offspring and more than two-thirds (69.4%,  $n=25$ ) of AMAB offspring perceived their mannerism as mostly or very feminine and as mostly or very masculine, respectively.

Regarding their sexual orientation, more than half (56.4%,  $n=22$ ) of AFAB offspring and four out of five (80.6%,  $n=29$ ) AMAB offspring identified as straight/heterosexual. The large majority of AFAB (94.9%,  $n=37$ ) and AMAB (86.1%,  $n=31$ ) offspring had sex in the last 5 years, of whom 86.5% ( $n=32$ ) had sex with a non-transgender man and 93.6% ( $n=29$ ) with a non-transgender woman, respectively.

### Developmental Pathways of NLLFS Offspring's Gender Identity and Sexual Orientation from Adolescence Through Emerging Adulthood to Adulthood

Among the 72 (38 AFAB and 34 AMAB) offspring for whom data on gender identity were available at all three time points, 94.7% ( $n=36$ ) and 100.0% ( $n=34$ ), respectively, who identified as cisgender during adolescence continued to do so during emerging adulthood and adulthood. Across the three waves, sexual orientation was more fluid than gender identity. Specifically, considering those who reported the same (heterosexual/straight, lesbian, gay/homosexual, or bisexual+) sexual orientation from adolescence through emerging adulthood to adulthood, about two-thirds (63.9%,  $n=23$ ) were AFAB offspring and about four fifths (82.4%,  $n=28$ ) were AMAB offspring. Full results are displayed in Table 3.

## Discussion

### Gender Identity of Offspring with Lesbian Parents

The present study represents the first longitudinal investigation of gender identity and sexual orientation among offspring born into planned lesbian parent families through

donor insemination, collecting data in adolescence (17 years), emerging adulthood (25 years), and adulthood (30–33 years). The results indicated that all AMAB adult offspring and most AFAB adult offspring of NLLFS lesbian parents identified as cisgender (except for two identifying as non-binary). These figures are lower than the most recent Gallup poll (2023) data, which found that about one in 10 of the 7.2% U.S. adults identifying as LGBT reported a transgender identity.

NLLFS offspring reported a more nuanced gender expression than their gender identity, with AFAB offspring perceiving themselves as more fluid than AMAB offspring, particularly in terms of their appearance (e.g., style, dress). While 74.4% of AFAB offspring perceived their appearance as very feminine or mostly feminine, and 91.7% of AMAB offspring perceived their appearance as very masculine or mostly masculine, differences in NLLFS offspring's mannerism (e.g., the way of walking or talking) were less marked between genders. More specifically, 41.0% of AFAB offspring and 30.6% of AMAB offspring perceived their mannerism as somewhat feminine, equally feminine and masculine, or somewhat masculine. Finally, none of the AFAB offspring considered themselves a cross-dresser, while 5.6% of AMAB offspring did. Overall, these results confirm that gender identity and gender expression do not perfectly overlap, and therefore, how NLLFS offspring present their gender does not dictate the gender with which they identify (Hines, 2015).

Looking at the developmental pathways of gender identity from adolescence through emerging adulthood to adulthood, 94.7% of NLLFS AFAB offspring and all NLLFS AMAB offspring reported a cisgender identity across the three time points, suggesting a strong continuity in the gender with which they identify. To the best of our knowledge, no previous research has examined the stability of a cisgender identity across lifespan development, regardless of offspring's family type, while most attention has been devoted to investigating the stability of a transgender identity (Karrington, 2022; Newhook et al., 2019; Steensma & Cohen-Kettenis, 2019; Zucker, 2019). Whether such a lack of previous research represents an indicator of "cissupremacist assumptions" about gender development (Salinas-Quiroz & Sweder, 2023, p. 1), meaning that a cisgender identity is necessarily assumed to be stable across the life span and therefore, there is no need to confirm it through investigations, merits further reflection.

### Sexual Orientation of Offspring with Lesbian Parents

Regarding NLLFS adult offspring's sexual orientation, 59.0% of AFAB offspring and 80.6% of AMAB offspring reported a straight/heterosexual orientation. Among the rest, 28.2% of AFAB offspring and 5.6% of AMAB offspring

**Table 2** Wave 7 NLLFS offspring reports on gender identity, gender expression, sexual orientation, and sexual experiences in adulthood, by sex assigned at birth ( $N=75$ )

	<i>N</i>	<i>%</i>
<b>Assigned female at birth</b>	39	
<b>Gender identity</b>		
Cisgender woman	37	94.9
Non-binary <sup>a</sup>	2	5.1
<b>Gender expression</b>		
<i>Self-consideration as a cross-dresser</i>		
Yes	0	0.0
No	39	100.0
<i>Self-perception of appearance</i>		
Very feminine/Mostly feminine	29	74.4
Somewhat feminine/Equally feminine and masculine/Somewhat masculine	7	18.0
Mostly masculine/ Very masculine	3	7.7
<i>Self-perception of mannerism</i>		
Very feminine/Mostly feminine	23	59.0
Somewhat feminine/Equally feminine and masculine/Somewhat masculine	16	41.0
Mostly masculine/Very masculine	0	0.0
<b>Sexual orientation</b>		
Straight/heterosexual	22	56.4
Lesbian	1	2.6
Bisexual	5	12.8
Queer	11	28.2
<b>Sexual experiences</b>		
<i>Sex in the last five years</i>		
Yes	37	94.9
No	2	5.1
<i>Gender of the sexual partner(s) in the last five years (multiple answers were possible) (n=37)</i>		
Women, Non-Transgender	13	35.1
Men, Non-Transgender	32	86.5
Transgender Women, Male-to-Female	3	8.1
Transgender Men, Female-to-Male	4	10.8
<b>Assigned male at birth</b>	36	
<b>Gender identity</b>		
Cisgender man	36	100.0
<b>Gender expression</b>		
<i>Self-consideration as a cross-dresser</i>		
Yes	2	5.6
No	34	94.4
<i>Self-perception of appearance</i>		
Very feminine/Mostly feminine	0	0.0
Somewhat feminine/Equally feminine and masculine/Somewhat masculine	3	8.3
Mostly masculine/Very masculine	33	91.7
<i>Self-perception of mannerism</i>		
Very feminine/Mostly feminine	0	0.0
Somewhat feminine/Equally feminine and masculine/Somewhat masculine	11	30.6
Mostly masculine/Very masculine	25	69.4
<b>Sexual orientation</b>		
Straight/heterosexual	29	80.6
Gay	2	5.6
Bisexual	2	5.6
Queer	2	5.6
Other <sup>b</sup>	1	2.8
<b>Sexual experiences</b>		
<i>Sex in the last five years</i>		
Yes	31	86.1
No	5	13.9
<i>Gender of the sexual partner(s) in the last five years (multiple answers were possible) (n=31)</i>		
Women, Non-Transgender	29	93.6
Men, Non-Transgender	4	12.9
Transgender Women, Male-to-Female	0	0.0
Transgender Men, Female-to-Male	1	3.2

Percentages may not equal 100 due to rounding

<sup>a</sup>The two offspring assigned female at birth who responded “transgender” indicated on a follow-up question “How would you describe your gender identity in your own words?” that they identified themselves as “gender nonbinary”

<sup>b</sup>Answer: “It’s complicated”



**Table 3** Developmental pathways of NLLFS offspring gender identity and sexual orientation from adolescence (W5) through emerging adulthood (W6) to adulthood (W7) ( $N=72$  who completed surveys at all three time periods)

	Total <sup>a</sup> ( $N=72$ )	Assigned female at birth ( $n=38$ )	Assigned male at birth ( $n=34$ )
<b>Gender identity</b>			
Cisgender W5 → cisgender W6 → cisgender W7	70 (97.2)	36 (94.7)	34 (100.0)
Cisgender W5 → cisgender W6 → transgender W7	1 (1.4)	1 (2.6)	0 (0.0)
Androgynous W5 → cisgender W6 → transgender W7	1 (1.4)	1 (2.6)	0 (0.0)
	<b>Total<sup>a</sup> (<math>N=70</math>)</b>	<b>Assigned female at birth (<math>n=36</math>)</b>	<b>Assigned male at birth (<math>n=34</math>)</b>
<b>Sexual orientation</b>			
	<i>n</i> (%)	<i>n</i> (%)	<i>n</i> (%)
Heterosexual/straight W5 → heterosexual/straight W6 → heterosexual/straight W7	45 (64.3)	19 (52.8)	26 (76.5)
Lesbian/gay/homosexual W5 → lesbian/gay/homosexual W6 → lesbian/gay/homosexual W7	2 (2.9)	0 (0.0)	2 (5.9)
Bisexual W5 → bisexual W6 → bisexual+ W7	4 (5.7)	4 (11.1)	0 (0.0)
Heterosexual/straight W5 → heterosexual/straight W6 → bisexual+ W7	7 (10.0)	4 (11.1)	3 (8.8)
Heterosexual/straight W5 → bisexual W6 → heterosexual/straight W7	2 (2.9)	1 (2.8)	1 (2.9)
Heterosexual/straight W5 → bisexual W6 → bisexual+ W7	5 (7.1)	4 (11.1)	1 (2.9)
Heterosexual/straight W5 → bisexual W6 → lesbian/gay/homosexual W7	1 (1.4)	1 (2.8)	0 (0.0)
Heterosexual/straight W5 → lesbian/gay/homosexual W6 → bisexual+ W7	1 (1.4)	1 (2.8)	0 (0.0)
Bisexual W5 → heterosexual/straight W6 → heterosexual/straight W7	1 (1.4)	1 (2.8)	0 (0.0)
Bisexual W5 → heterosexual/straight W6 → bisexual+ W7	1 (1.4)	0 (0.0)	1 (2.9)
Bisexual W5 → lesbian/gay/homosexual W6 → bisexual+ W7	1 (1.4)	1 (2.8)	0 (0.0)

<sup>a</sup>Only offspring who had complete data at W5, W6, and W7 were included. W5 = 17 years. W6 = 25 years. W7 = 30–33 years. Percentages may not equal 100 due to rounding. At W7, bisexual+ included offspring who identified as bisexual, queer, or other

identified as queer, 12.8% of AFAB offspring and 5.6% of AMAB offspring as bisexual, and 2.6% of AFAB offspring and 5.6% of AMAB offspring as lesbian or gay, respectively. One AMAB offspring declared that their sexual orientation “was complicated.” In that regard, more offspring reported a minoritized sexual orientation than data from the general public (Flores & Conron, 2023; Gallup, 2023; Twenge et al., 2023).

These results echo previous research in several ways. First, most offspring of lesbian parents identify as heterosexual (Gartrell et al., 2011, 2019; Golombok & Badger, 2010; Golombok & Tasker, 1996; González & López-Gaviño, 2023; Tasker & Golombok, 1995), and that has been the case in adolescence, emerging adulthood, and adulthood. Second, more NLLFS AFAB offspring than NLLFS AMAB offspring report a bisexual orientation, similar to when they were aged 17 (Gartrell et al., 2011) and 25 (Gartrell et al., 2019). Research by others has shown that women demonstrate more fluidity in their sexual orientation than men (Diamond, 2016; Katz-Wise & Todd, 2022). Third, the recent population-based research of Twenge et al. (2023) indicates that LGB orientation increased in the U.S. from 2014 to 2022, particularly among those who identify

as bisexual. The highest percentage of LGB identity was among the 25–34 age group, comparable to the ages of the NLLFS offspring.

The sexual orientation of the NLLFS adult offspring and the gender of their sexual partner(s) presented some variations. Specifically, considering all sexual partners of NLLFS AFAB offspring in the last 5 years, 86.5% were non-transgender men, 35.1% were non-transgender women, 10.8% were transgender men, and 8.1% were transgender women. In a similar vein, for NLLFS AMAB offspring, 93.6% of their sexual partners were non-transgender women, 12.9% were non-transgender men, and 3.2% were transgender men. Again, the greater variability in the gender of sexual partners for NLLFS AFAB offspring is consistent with previous research showing that sexual responsiveness can be situationally triggered, and particularly some women, regardless of their sexual identity, may experience attraction to women or men, depending on the circumstances (Diamond, 2007). Also, mostly heterosexual cisgender women periodically experience same-sex attractions even though they see themselves as heterosexual (Diamond, 2007).

Overall, these results suggest that, in the context of a prevailing heterosexual orientation, what does seem to be

specific to offspring of lesbian parents is a larger degree of freedom in recognizing their attraction to people of the same gender, along with a greater degree of flexibility for integrating these experiences into their self-identity. This was also found in previous NLLFS research (Gartrell et al., 2019) and by other research groups (e.g., Bos & Sandfort, 2010; Golombok & Badger, 2010; González & López-Gaviño, 2023).

Variability in sexual orientation across the lifespan was found more in AFAB offspring than AMAB offspring across ages 17, 25, and 30–33, with 63.9% of AFAB offspring and 82.4% of AMAB offspring reporting an unchanging (heterosexual/straight, lesbian, gay/homosexual, or bisexual+) sexual orientation. The greater variability in NLLFS AFAB offspring's sexual orientation corresponds with Diamond's (2016) results about sexual fluidity in women. In line with previous research, however, for the entire sample, heterosexuality was the most stable identity (Mock & Eibach, 2012).

The variation in sexual orientation among NLLFS AFAB offspring may indicate a supportive upbringing that valued understanding and acceptance of sexual exploration without judgment. These AFAB adult offspring may be at the forefront of a social phenomenon emerging in younger generations (Flores & Conron, 2023; Twenge et al., 2023), characterized by increased acceptance of same-sex relationships and a growing number of adults openly acknowledging same-sex attractions or experiences (Gallup, 2023). Consequently, these individuals may be leading a broader societal movement towards a more liberated and freer expression of gender expression and sexual orientation compared to previous generations.

## Limitations and Strengths

The study results should be interpreted in the context of their limitations. First, although it is the largest, longitudinal, and longest-running study of intended lesbian-parent families and their offspring, the socio-demographic composition of the NLLFS sample (predominantly White and well-educated) makes them non-representative of all donor-conceived offspring of lesbian parents. Second, due to potential variations in gender expression and minoritized gender and sexual identities and same-sex sexual experiences based on factors such as race/ethnicity, education, and income (Johns et al., 2013; Perry et al., 2019), it is essential to replicate this study using an intersectional approach and a broader, more diverse sample from the general population. Third, both gender identity and sexual orientation are multidimensional, and each of their dimensions should be measured in the same study to gain a comprehensive understanding of gender- and sexual-related experiences in adult offspring reared in diverse families. In this vein, a larger sample size would allow more detailed analysis of

potential explanatory factors or analysis of the potential direction of gender identity and sexual orientation change rather than just presence or absence of change.

The above limitations notwithstanding, a unique strength of the NLLFS is that it is the only study that has prospectively and longitudinally studied the biological offspring of lesbian parents from birth to adulthood, with a 90% family retention rate over more than 30 years (Gartrell, 2021). Also, this is the first report on the developmental pathways of gender identity and sexual orientation across three different developmental stages (i.e., adolescence, emerging adulthood, adulthood) in offspring of lesbian parents. Because the topic of parents with minoritized sexual identities rearing children is so highly debated and emotionally charged, empirical data on aspects of offspring development are vitally important (Biblarz & Stacey, 2010).

## Conclusion and Policy Implications

Lesbian parents were historically stigmatized for rearing children, with the assumption that the children would be confused about their gender and develop a non-heterosexual orientation (Clarke, 2001; Gato & Fontaine, 2013). The results of the present study indicate that offspring of lesbian parents are less likely to identify as transgender than the general public, but more likely to identify as LGB or queer (Flores & Conron, 2023; Gallup, 2023; Twenge et al., 2023) even though the majority identify as heterosexual. Research on NLLFS offspring from previous waves has also shown that they develop in a healthy manner (Gartrell et al., 2018; Koh et al., 2019) and possess efficient coping skills to deal with stigmatization (Bos et al., 2020, 2021; Carone et al., 2022).

Much of the research on offspring with lesbian parents has focused on young children. The present study is unique in following offspring into adolescence and adulthood. Individuals display variation in the timing of reaching crucial milestones in their sexual orientation development, such as the age at which they first identify as part of a minoritized sexual identity group (Bishop et al., 2023). As the present study has shown, fluctuations in sexual orientation can continue from adolescence into adulthood. These identities might evolve over time due to several factors. These factors include societal and political influences that may constrain the expression of different identities in women and men (e.g., greater acceptance of same-sex-oriented attractions and non-binary gender identity among females compared to males), sex-related distinctions in biological processes governing sexual arousal and attraction, awareness of attractions to individuals of the same and/or other genders, and the ongoing process of integrating identity with experiences in sexual and romantic relationships (Diamond, 2007; Mustanski et al., 2014).

In this vein, exploring the similarities and differences in developmental trajectories of gender identities in offspring of lesbian parents, as well as determining the ages at which individuals start identifying with various gender identity categories, including cisgender, and whether these patterns change over time is key for promoting their well-being. This is important, because starting in 2024, the U.S. government and Medicare are requiring that medical settings ask patients about their sexual orientation and gender identity (Centers for Medicare & Medicaid Services, 2023).

The NLLFS offspring, conceived in the 1980s, grew up at a time when their lesbian parents were stigmatized for their own sexual orientation and had little support from their families of origin, society in general, and even from the lesbian communities (Bradford et al., 2013). They reached adolescence and emerging adulthood as the culture in the U.S. became more affirming of LGBTQ+ identities and rights, including the legalization of same-sex marriage. But now, as adults, NLLFS offspring are seeing the emergence of laws in a number of U.S. states that target people with minoritized gender and sexual identities. In this regard, the results may have implications for policymakers and practitioners working in the health disparities field, who can design effective health promotion programs and contribute to create supportive environments for offspring of LGBTQ+ parents, regardless of their gender identity and sexual orientation.

The present study included data from the adolescence and emerging adulthood of the NLLFS offspring. Considering that experiences during these developmental phases significantly influence later well-being and given that adolescence is a period marked by increased awareness of identity, sexuality, and gender, it is imperative to establish environments where adolescents with lesbian parents feel secure and supported. Emphasizing the implementation of safe school policies, inclusive and accurate sex education, and fostering positive peer relationships becomes crucial to ensure that these individuals are well-prepared to handle potential teasing related to their minoritized sexual or gender identities. Simultaneously, recognizing and supporting adults with lesbian parents as they navigate the formation of their sexual and gender identities are essential, particularly considering the limited representation of their experiences.

Similarly, given the legal and societal backlash against LGBTQIA+ issues in the U.S. and globally, it is crucial to continue longitudinal studies that examine how the gender identity and sexuality of offspring with lesbian parents (and, more in general, offspring with parents with minoritized sexual identities) may change over time and whether such changes affect their adjustment. This research can shed light on when minority stress (Meyer, 1995) processes may arise and help determine the appropriate timing for providing social support. Longitudinal investigations provide

promising opportunities for future research and also contribute to increasing public awareness of the connections between developmental milestones, health, and thriving.

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**Data Availability** The data reported in this article are not publicly available and this study was not preregistered. Requests to access the dataset should be directed to the principal investigator Dr. Nanette K. Gartrell.

**Code Availability** Not applicable.

## Declarations

**Conflict of Interest** The authors declare no competing interests.

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## References

- Biblarz, T. J., & Stacey, J. (2010). How does the gender of parents matter? *Journal of Marriage and Family*, 72(1), 3–22. <https://doi.org/10.1111/j.1741-3737.2009.00678.x>
- Bishop, M. D., Mallory, A. B., & Russell, S. T. (2023). Sexual minority identity development: Latent profiles of developmental milestones in a national probability sample. *Psychology of Sexual Orientation and Gender Diversity*, 10(4), 622–637. <https://doi.org/10.1037/sgd0000569>
- Bos, H. M. W., & Gartrell, N. K. (2020). Lesbian-mother families formed through donor insemination. In A. E. Goldberg & K. R. Allen (Eds.), *LGBTQ-parent families: Innovations in research and implications for practice*, 2nd ed. (pp. 25–44). Springer. [https://doi.org/10.1007/978-3-030-35610-1\\_2](https://doi.org/10.1007/978-3-030-35610-1_2).
- Bos, H. M. W., Carone, N., Rothblum, E. D., Koh, A., & Gartrell, N. (2021). Long-term effects of homophobic stigmatization during adolescence on problem behavior in emerging adult offspring of lesbian parents. *Journal of Youth and Adolescence*, 50(6), 1114–1125. <https://doi.org/10.1007/s10964-020-01364-1>
- Bos, H. M. W., Koh, A. S., van Beusekom, G., Rothblum, E. D., & Gartrell, N. K. (2020). Meaning in life as a moderator between homophobic stigmatization and coping styles in adult offspring from planned lesbian-parent families. *Sexuality Research & Social Policy*, 17(4), 594–606. <https://doi.org/10.1007/s13178-019-00417-w>
- Bos, H. M. W., & Sandfort, T. G. (2010). Children's gender identity in lesbian and heterosexual two-parent families. *Sex Roles*, 62, 114–126. <https://doi.org/10.1007/s11199-009-9704-7>
- Bradford, J., Ryan, C., Rothblum, E., & Honnold, J. (2013). "I have never slept with a man, and there is no star rising in the east": Lesbians, bisexual women, and pregnancy before insemination. *Journal of GLBT Family Studies*, 9(5), 492–511. <https://doi.org/10.1080/1550428X.2013.826160>

- Brewaeyns, A., Ponjaert, I., van Hall, E. V., & Golombok, S. (1997). Donor insemination: Child development & family functioning in lesbian mother families. *Human Reproduction*, *12*, 1349–1359. <https://doi.org/10.1093/humrep/deh581>
- Calzo, J. P., Masyn, K. E., Austin, S. B., Jun, H. J., & Corliss, H. L. (2017). Developmental latent patterns of identification as mostly heterosexual versus lesbian, gay, or bisexual. *Journal of Research on Adolescence*, *27*, 246–253. <https://doi.org/10.1111/jora.12266>
- Carone, N., Gartrell, N. K., Rothblum, E. D., Koh, A. S., & Bos, H. M. W. (2022). Helicopter parenting, emotional avoidant coping, mental health, and homophobic stigmatization among emerging adult offspring of lesbian parents. *Journal of Family Psychology*, *36*(7), 1205–1215. <https://doi.org/10.1037/fam0001020>
- Carone, N., Lingiardi, V., Tanzilli, A., Bos, H. M., & Baiocco, R. (2020). Gender development in children with gay, lesbian, and heterosexual parents: Associations with family type and child gender. *Journal of Developmental & Behavioral Pediatrics*, *41*(1), 38–47. <https://doi.org/10.1097/DBP.0000000000000726>
- Centers for Medicare & Medicaid Services (2023). *New sexual orientation and gender identity (SOGI) questions on the marketplace application*. Retrieved from <https://www.cms.gov/files/document/sogi-questions-marketplace-application.pdf>
- Clarke, V. (2001). What about the children? Arguments against lesbian and gay parenting. *Women's Studies International Forum*, *24*(5), 555–570.
- Costa, P. A., & Shenkman, G. (2020). LGBTQ-parent families in non-Western contexts. In A. E. Goldberg & K. R. Allen (Eds.), *LGBTQ parent families: Innovations in research and implications for practice* (2nd ed., pp. 319–336). Springer. [https://doi.org/10.1007/978-3-030-35610-1\\_20](https://doi.org/10.1007/978-3-030-35610-1_20)
- Diamond, L. M. (2007). A dynamical systems approach to the development and expression of female same-sex sexuality. *Perspectives on Psychological Science*, *2*, 142–161. <https://doi.org/10.1111/j.1745-6916.2007.00034.x>
- Diamond, L. M. (2016). Sexual fluidity in male and females. *Current Sexual Health Reports*, *8*(4), 249–256. <https://doi.org/10.1007/s11930-016-0092-z>
- Egan, S. K., & Perry, D. G. (2001). Gender identity: A multidimensional analysis with implications for psychosocial adjustment. *Developmental Psychology*, *37*, 451–463. <https://doi.org/10.1037/0012-1649.37.4.451>
- Farr, R. H., Bruun, S. T., Doss, K. M., & Patterson, C. J. (2018). Children's gender-typed behavior from early to middle childhood in adoptive families with lesbian, gay, and heterosexual parents. *Sex Roles*, *78*, 528–541. <https://doi.org/10.1007/s11199-017-0812-5>
- Farr, R. H., Forssell, S. L., & Patterson, C. J. (2010). Parenting and child development in adoptive families: Does parental sexual orientation matter? *Applied Developmental Science*, *14*(3), 164–178. <https://doi.org/10.1080/10888691.2010.500958>
- Flores, A. R., & Conron, A. E. (2023). *Adult LGBT population in the United States*. The Williams Institute, UCLA. Retrieved from <https://williamsinstitute.law.ucla.edu/publications/adult-lgbt-pop-us/>
- Fu, T., Herbenick, D., Dodge, B., Owens, C., Sanders, S. A., Reece, M., & Fortenberry, J. D. (2019). Relationships among sexual identity, sexual attraction, and sexual behavior: Results from a nationally representative probability sample of adults in the United States. *Archives of Sexual Behavior*, *48*(5), 1483–1493. <https://doi.org/10.1007/s10508-018-1319-z>
- Fulcher, M., Sutfin, E. L., & Patterson, C. J. (2008). Individual differences in gender development: Associations with parental sexual orientation, attitudes, and division of labor. *Sex Roles*, *58*(5–6), 330–341. <https://doi.org/10.1007/s11199-007-9348-4>
- Gallup (2023). *U.S. LGBT Identification Steady at 7.2%*. Retrieved from: <https://news.gallup.com/poll/470708/lgbt-identification-steady.aspx>
- Gartrell, N. K. (2021). Overview of the 35-year US National Longitudinal Lesbian Family Study and its 92% retention rate. *Journal of GLBT Family Studies*, *17*(3), 197–213. <https://doi.org/10.1080/1550428X.2020.1861573>
- Gartrell, N. K., & Bos, H. M. W. (2010). US National longitudinal lesbian family study: Psychological adjustment of 17-year-old adolescents. *Pediatrics*, *126*(1), 28–36. <https://doi.org/10.1542/peds.2009-3153>
- Gartrell, N. K., Bos, H. M. W., & Goldberg, N. G. (2011). Adolescents of the U.S. National Longitudinal Lesbian Family Study: Sexual orientation, sexual behavior, and sexual risk exposure. *Archives of Sexual Behavior*, *40*, 1199–1209. <https://doi.org/10.1007/s10508-010-9692-2>
- Gartrell, N. K., Bos, H. M. W., & Goldberg, N. G. (2012). New trends in same-sex sexual contact for American adolescents? [Letter to the Editor]. *Archives of Sexual Behavior*, *41*, 5–7. <https://doi.org/10.1007/s10508-011-9883-5>
- Gartrell, N. K., Bos, H. M. W., & Koh, A. S. (2018). National longitudinal lesbian family study—Mental health of adult offspring. *The New England Journal of Medicine*, *379*(3), 297–299. <https://doi.org/10.1056/NEJMc1804810>
- Gartrell, N. K., Bos, H. M. W., & Koh, A. S. (2019). Sexual attraction, sexual identity, and same-sex sexual experiences of adult offspring in the US National Longitudinal Lesbian Family Study. *Archives of Sexual Behavior*, *48*, 1495–1503. <https://doi.org/10.1007/s10508-019-1434-5>
- Gartrell, N. K., Deck, A., Rodas, C., Peyser, H., & Banks, A. (2005). The National Lesbian Family Study: 4 Interviews with the 10-year-old children. *The American Journal of Orthopsychiatry*, *75*(4), 518–524. <https://doi.org/10.1037/0002-9432.75.4.518>
- Gartrell, N. K., Hamilton, J., Banks, A., Mosbacher, D., Reed, N., Sparks, C. H., & Bishop, H. (1996). The National Lesbian Family Study: 1 Interviews with prospective mothers. *The American Journal of Orthopsychiatry*, *66*(2), 272–281. <https://doi.org/10.1037/h0080178>
- Gato, J., & Fontaine, A. M. (2013). Anticipation of the sexual and gender development of children adopted by same-sex couples. *International Journal of Psychology*, *48*(3), 244–253. <https://doi.org/10.1080/00207594.2011.645484>
- Goldberg, A. E. (2007). (How) does it make a difference? Perspectives of adults with lesbian, gay, and bisexual parents. *American Journal of Orthopsychiatry*, *77*, 550–562. <https://doi.org/10.1037/0002-9432.77.4.550>
- Goldberg, A. E., Kashy, D. A., & Smith, J. Z. (2012). Gender-typed play behavior in early childhood: Adopted children with lesbian, gay, and heterosexual parents. *Sex Roles*, *67*, 503–515. <https://doi.org/10.1007/s11199-012-0198-3>
- Golombok, S. (2015). *Modern families: Parents and children in new family forms*. Cambridge University Press.
- Golombok, S., & Badger, S. (2010). Children raised in mother-headed families from infancy: A follow-up of children of lesbian and single heterosexual mothers, at early adulthood. *Human Reproduction*, *25*, 150–157. <https://doi.org/10.1093/humrep/dep345>
- Golombok, S., Mellish, L., Jennings, S., Casey, P., Tasker, F., & Lamb, M. E. (2014). Adoptive gay father families: Parent–child relationships and children's psychological adjustment. *Child Development*, *85*(2), 456–468. <https://doi.org/10.1111/cdev.12155>
- Golombok, S., Perry, B., Burston, A., Murray, C., Mooney-Somers, J., Stevens, M., & Golding, J. (2003). Children with lesbian parents: A community study. *Developmental Psychology*, *39*(1), 20–33. <https://doi.org/10.1037/0012-1649.39.1.20>
- Golombok, S., & Tasker, F. (1996). Do parents influence the sexual orientation of their children? Findings from a longitudinal study of lesbian families. *Developmental Psychology*, *32*(1), 3–11. <https://doi.org/10.1037/0012-1649.32.1.3>



- González, M., & López-Gaviño, F. (2023). What about the sexual orientation of the offspring of lesbian and gay parents? A multidimensional, time and gender-based answer. *Journal of Homosexuality*, 70(13), 3051–3074. <https://doi.org/10.1080/00918369.2022.2086750>
- Hammack, P. L., Mayers, L., & Windell, E. P. (2013). Narrative, psychology, and the politics of sexual identity in the United States: From “sickness” to “species” to “subject.” *Psychology and Sexuality*, 4(3), 219–243. <https://doi.org/10.1080/19419899.2011.621131>
- Hines, M. (2015). Gendered development. In M. E. Lamb & R. M. Lerner (Eds.), *Handbook of child psychology and developmental science: Socioemotional processes* (pp. 842–887). John Wiley & Sons, Inc. <https://doi.org/10.1002/9781118963418.childpsy320>
- Iowa Public Radio (2023). *Central Iowa families worry anti-LGBTQ legislation will further isolate children*. Retrieved from: <https://www.iowapublicradio.org/ipr-news/2023-03-13/central-iowa-families-worry-anti-lgbtq-legislation-will-further-isolate-children>.
- Johns, M. M., Zimmerman, M., & Bauermeister, J. A. (2013). Sexual attraction, sexual identity, and psychosocial wellbeing in a national sample of young women during emerging adulthood. *Journal of Youth and Adolescence*, 42, 82–95. <https://doi.org/10.1007/s10964-012-9795-2>
- Karrington, B. (2022). Defining desistance: Exploring desistance in transgender and gender expansive youth through systematic literature review. *Transgender Health*, 7(3), 189–212. <https://doi.org/10.1089/trgh.2020.0129>
- Katz-Wise, S. L., & Todd, K. P. (2022). The current state of sexual fluidity research. *Current Opinion in Psychology*, 101497. <https://doi.org/10.1016/j.copsyc.2022.101497>
- Koh, A. S., Rothblum, E. D., Bos, H. M. W., Carone, N., & Gartrell, N. K. (2023). Sperm donor relations among adult offspring conceived via insemination by lesbian parents. *Journal of Reproductive and Infant Psychology*. Advance online publication. <https://doi.org/10.1080/02646838.2023.2227867>
- Koh, A. S., Bos, H. M., & Gartrell, N. K. (2019). Predictors of mental health in emerging adult offspring of lesbian-parent families. *Journal of Lesbian Studies*, 23(2), 257–278. <https://doi.org/10.1080/10894160.2018.1555694>
- Krueger, E. A., Divsalar, S., Luhur, W., Choi, S. K., & Meyer, I. H. (2020). *TransPop – U.S. transgender population health survey (methodology and technical notes)*. Retrieved from <https://www.transpop.org/s/TransPop-Survey-Methods-v18-FINAL-copy.pdf>.
- Laumann, E. O., Gagnon, J. H., Michael, R. T., & Michaels, S. (2000). *The social organization of sexuality: Sexual practices in the United States*. University of Chicago Press.
- MacCallum, F., & Golombok, S. (2004). Children raised in fatherless families from infancy: A follow-up of children of lesbian and single heterosexual mothers at early adolescence. *Journal of Child Psychology and Psychiatry*, 45(8), 1407–1419. <https://doi.org/10.1111/j.1469-7610.2004.00324.x>
- Meyer, I. H. (1995). Minority stress and mental health in gay men. *Journal of Health and Social Behavior*, 36(1), 38–56. <https://doi.org/10.2307/2137286>
- Mock, S. E., & Eibach, R. P. (2012). Stability and change in sexual orientation identity over a 10-year period in adulthood. *Archives of Sexual Behavior*, 41, 641–648. <https://doi.org/10.1007/s10508-011-9761-1>
- Mustanski, B., Kuper, L., & Greene, G. J. (2014). Development of sexual orientation and identity. In D. L. Tolman, L. M. Diamond, J. A. Bauermeister, W. H. George, J. G. Pfaus, & L. M. Ward (Eds.), *APA handbook of sexuality and psychology, Vol. 1. Person-based approaches* (pp. 597–628). American Psychological Association. <https://doi.org/10.1037/14193-019>
- Newhook, J. T., Pyne, J., Winters, K., Feder, S., Holmes, C., Tosh, J., Sinnott, M.-L., Jamieson, A., & Pickett, S. (2019). A critical commentary on follow-up studies and “desistance” theories about transgender and gender-nonconforming children. In R. J. Watson & J. F. Veale (Eds.), *Today’s transgender youth* (pp. 98–110). Routledge.
- NBC News (2022). *The gaping hole in how we talk about the harmful effects of anti-LGBTQ laws*. Retrieved from: <https://www.nbcnews.com/think/opinion/straight-kids-lgbtq-parents-face-unique-kind-challenge-right-now-rcna38768>.
- Patterson, C. J., Farr, R. H., & Goldberg, A. E. (2021). *LGBTQ+ parents and their children*. Policy brief. National Council on Family Relations.
- Perry, D. G., Pauletti, R. E., & Cooper, P. J. (2019). Gender identity in childhood: A review of the literature. *International Journal of Behavioral Development*, 43(4), 289–304. <https://doi.org/10.1177/0165025418811129>
- Ruble, D. N., Martin, C. L., & Berenbaum, S. A. (2006). Gender development. In W. Damon, R. M. Lerner, & N. Eisenberg (Eds.), *Handbook of child psychology: Vol. 3. Social, emotional, and personality development* (pp. 858–932). John Wiley.
- Salinas-Quiroz, F., & Sweder, N. (2023). Authentic gender development in non-binary children. *Frontiers in Sociology*, 8, 1177766. <https://doi.org/10.3389/fsoc.2023.1177766>
- Steensma, T. D., & Cohen-Kettenis, P. T. (2019). A critical commentary on “A critical commentary on follow-up studies and ‘desistance’ theories about transgender and gender non-conforming children.” In R. J. Watson & J. F. Veale (Eds.), *Today’s transgender youth* (pp. 111–116). Routledge.
- Tasker, F., & Golombok, S. (1995). Adults raised as children in lesbian families. *American Journal of Orthopsychiatry*, 65(2), 203–215. <https://doi.org/10.1037/h0079615>
- Tate, C. C., Ledbetter, J. N., & Youssef, C. P. (2013). A two-question method for assessing gender categories in the social and medical sciences. *Journal of Sex Research*, 50(8), 767–776. <https://doi.org/10.1080/00224499.2012.690110>
- Twenge, J. M., Wells, B. E., & Le, J. (2023). *Increases in LGB identification among US adults, 2014–2021*. Advance online publication. <https://doi.org/10.1007/s13178-023-00874-4>
- Wainright, J. L., Russell, S. T., & Patterson, C. J. (2004). Psychosocial adjustment, school outcomes, and romantic relationships of adolescents with same-sex parents. *Child Development*, 75, 1886–1898. <https://doi.org/10.1111/j.1467-8624.2004.00823.x>
- Wilson, B. D. M., & Meyer, I. H. (2021). *Nonbinary LGBTQ adults in the United States*. Williams Institute. Retrieved from: <https://williamsinstitute.law.ucla.edu/wp-content/uploads/Nonbinary-LGBTQ-Adults-Jun-2021.pdf>
- Wingrove-Haugland, E., & McLeod, J. (2021). Not “minority” but “minoritized.” *Teaching Ethics*, 21(1), 1–11. <https://doi.org/10.5840/tej20221799>
- Zucker, K. J. (2019). The myth of persistence: Response to “A critical commentary on follow-up studies and ‘desistance’ theories about transgender and gender non-conforming children.” In R. J. Watson & J. F. Veale (Eds.), *Today’s transgender youth* (pp. 117–131). Routledge.

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