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**DOI**

[10.1080/10826084.2022.2091145](https://doi.org/10.1080/10826084.2022.2091145)

**Publication date**

2022

**Document Version**

Final published version

**Published in**

Substance Use and Misuse

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[Link to publication](https://doi.org/10.1080/10826084.2022.2091145)

**Citation for published version (APA):**

Everett, B. G., Bos, H., Carone, N., Gartrell, N., & Hughes, T. L. (2022). Examining differences in alcohol and smoking behaviors between parenting and nonparenting lesbian women. *Substance Use and Misuse*, 57(9), 1442-1449. <https://doi.org/10.1080/10826084.2022.2091145>

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## Examining Differences in Alcohol and Smoking Behaviors between Parenting and Nonparenting Lesbian Women

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### ABSTRACT

**Background:** The transition to parenthood is a significant life event that has implications for health behaviors and health. Few studies have examined alcohol use and smoking by parenthood status (nonparent vs. parent) among women who identify as lesbian. **Methods:** This study used data from two longitudinal studies, the Chicago Health and Life Experiences of Women Study (n=135) and the U.S. National Longitudinal Lesbian Family Study (n=116), to compare problem drinking and cigarette smoking trajectories among lesbian-identified women by parenthood status. We used mixed models to investigate differences in problem drinking and cigarette smoking in three waves of data in each study. **Results:** Lesbian parents reported significantly less problem drinking, but not cigarette smoking, than nonparent lesbian women. When considering the interaction between parental status and time, problem drinking was significantly higher among nonparents than parents at each time interval. **Conclusions:** Parenthood was associated with positive changes in drinking among lesbian women; however, more research is needed to understand how to support smoking cessation among parenting lesbian women.

### KEYWORDS

Sexual minority women; alcohol; smoking; parenthood; sexual orientation

### Background

Multiple studies have documented that sexual minority women (e.g., lesbian and bisexual women) are more likely than heterosexual women to report problem drinking and cigarette smoking (Hughes, 2011; McCabe et al., 2019). Less research, however, has examined how life-course transitions, such as parenthood, impact drinking behaviors among lesbian women. To address this gap in research we used data from two longitudinal studies to compare problem drinking (using the CAGE 4-item scale to screen for drinking-related problems [Ewing, 1984; Mayfield et al., 1974]) and cigarette smoking in lesbian parents and lesbian nonparents.

Over the life course, problem drinking or hazardous drinking (a pattern of alcohol use that increases the risk of harmful consequences) (World Health Organization, 1994) typically decreases with age after peaking during late adolescence and early adulthood (Hughes et al., 2020; Lee & Sher, 2018). Scholars have argued that this trend reflects other life course transitions, broadly thought of as indicators of maturation (Pampel et al., 2014; Windle, 2020; Windle & Windle, 2018). In general, as individuals age, they take on new roles that are often incompatible with certain risk behaviors, such as hazardous drinking and cigarette smoking. Parenthood is one such role change linked to decreases in

alcohol use and smoking. Indeed, multiple studies have documented that the transition to parenthood is associated with reduced binge drinking behaviors and tobacco use (Borschmann et al., 2019; Martin et al., 2014; Windle & Windle, 2018). Pregnancy itself is a period during which most women abstain from or reduce their alcohol intake and quit smoking. One study found that when women were pregnant, alcohol use declined by 20% and that this reduction was sustained while the women's children lived at home (Staff et al., 2010). Another 30-year longitudinal study found that parents had 50% lower odds of a substance use disorder (including alcohol use disorder) than nonparents (Fergusson et al., 2012).

Much of the research on the mechanisms that link sexual minority status to problem drinking or smoking focuses on minority stressors, such as victimization and discrimination (Hughes et al., 2010, 2014; McCabe et al., 2019). Few studies have examined the impact of parenthood on the health behaviors of sexual minority women (Hughes et al., 2010). This gap is troubling given that roughly 37% of lesbian, gay, bisexual (LGB) adults have had a child in their lifetime (Gates, 2013). One national cross-sectional study found that not having children was associated with higher odds of at-risk drinking and illicit drug use among sexual minority women (Hughes et al., 2010).

There are several reasons to believe that substance use may differ between parenting and non-parenting lesbian women in ways that do not reflect the heterosexual population. First, age-related declines in alcohol use among sexual minority women appear to be lower and slower than among heterosexual women (Hughes et al., 2006), and sexual minority women are more likely than their heterosexual peers to drink alcohol and smoke cigarettes prior to pregnancy (Limburg et al., 2020). Although many women quit or cut down on smoking during pregnancy, up to 75% return to smoking once pregnancy has ended (Görlitz & Tamm, 2020; Liu & Mumford, 2017; Orton et al., 2018). Second, studies have shown that depression, stress, and anxiety increase during parenthood, especially among parents of young children (Epifanio et al., 2015; Meier et al., 2018; Mirowsky & Ross, 2002; Musick & Michelmores, 2015; Pollmann-Schult, 2014). Women who experience depression are less likely to quit smoking during pregnancy (Mumford et al., 2014), more likely to resume smoking if they quit (Orton et al., 2018; Riaz et al., 2018), and more likely to increase drinking post-pregnancy (Liu & Mumford, 2017). Less research has examined how the transition to parenthood impacts sexual minority women. Third, research findings indicate that similar to heterosexual women, lesbian and gay parents experience declines in overall well-being during the transition to parenthood (Goldberg & Smith, 2011). For women in heterosexual relationships, some of this is due to unequal divisions of labor between men and women; women generally assume a larger proportion of parenting responsibility which negatively impacts the time they have to exercise, sleep, and engage in leisure activities (Bellows-Riecken & Rhodes, 2008; Meier et al., 2018; Musick et al., 2016). Research has shown that women in same-sex relationships report more equitable divisions of labor (Reczek, 2020; Reczek & Umberson, 2012) and that women in same-sex couples who have toddlers report equal engagement in parenting (Gartrell et al., 1999). Shared parenting may lead to greater well-being among women in same-sex relationships and lower risk of engaging in maladaptive coping involving alcohol or tobacco use.

Finally, sexual minority women also face unique challenges as parents; parenthood may expose them to new sources of discrimination via interactions with their child's school, medical providers, and social networks (Gartrell et al., 2000; Goldberg, 2014; Goldberg & Smith, 2011, 2014). Although studies show that the children of lesbian parents are as well-adjusted as children of heterosexual parents (Bos et al., 2008; Perrin et al., 2013), parenting lesbian women report concerns about the discrimination (both anticipated and actual) they face as parents and how their nontraditional family structure may expose their children to bullying and discrimination (Gartrell et al., 2000). Therefore, for some lesbian women the transition to parenthood is associated with additional identity-related stressors (Cao et al., 2016) that may increase the likelihood of using alcohol or tobacco as a coping mechanism. Indeed, many lesbian women of previous generations viewed

motherhood and lesbian identity as incompatible (Mamo, 2007). Adapting to the role of mother is a challenge faced by all women who become parents; however, for sexual minority women, successful adaptation may require additional resources and social support to manage sexual minority-related stressors (Cao et al., 2016). Finally, given the continued legal precarity of women in same-sex relationships' ability to form families, and increased scrutiny around their parenting abilities, lesbian women may actively avoid engaging in behaviors that may frame them as "bad parents."

However, the impact of parenthood on health behaviors such as alcohol and tobacco use among lesbian identified women is unclear. To better understand this, we used data from two longitudinal studies—the Chicago Health and Life Experiences of Women (CHLEW study) and the U.S. National Longitudinal Lesbian Family Study (NLLFS)—to compare problem drinking and smoking in parenting and non-parenting lesbian-identified women at three similar time intervals.

## Method

### Participants

The sample included 251 lesbian women—135 nonparents from the CHLEW and 116 parents from the NLLFS. The CHLEW is a 22-year longitudinal study of alcohol use and health among sexual minority women. We used data from the first three waves of the CHLEW, which took place in 2000–2001, 2004–2005, and 2010–2012. Although the CHLEW sample included lesbian women who were parents, the current study included only lesbian nonparents in CHLEW because women in the study were not asked to specify their children's ages; instead, they were asked how many children they had and how many under age 18 were living in the home. We used the most recent three waves of the NLLFS (i.e., 1997–2002, 2004–2009, and 2012–2017; Gartrell et al., 2018) in which the children of the parents were 10, 17, and 25 years old because the time frames of data collection were similar to those of the first three waves of CHLEW.

Table 1 presents the demographic characteristics of the sample. Most participants were White and in a committed relationship with a partner, and had a college degree or higher. The average age of participants in the first time interval was 40.3 years ( $SD=10.4$ ), 45.0 ( $SD=11.5$ ) in the second, and 52.3 years ( $SD=11.8$ ) in the third. The two groups (lesbian parents and nonparents) differed on nearly every demographic characteristic. Parents were significantly older, more likely than nonparents to be White, and had completed higher levels of education. At time interval 1, parents were significantly more likely to be in a coupled or committed relationship than nonparents. However, at time intervals 2 and 3, we found no significant differences in relationship status between nonparents and parents.

**Table 1.** Demographics for the total sample by parenthood status across the different time intervals.

	Total sample N=251		Lesbian nonparents n=135		Lesbian parents n=116		Lesbian nonparents versus parents	
	M (SD)	95% CI	M (SD)	95% CI	M (SD)	95% CI	t(df)	p
<b>Age</b>								
Time interval 1	40.3 (10.4)	39.0–41.6	35.7 (11.6)	33.7–37.6	45.7 (04.8)	44.8–46.6	9.1(249)	<.001
Time interval 2	45.0 (11.5)	43.6–46.5	38.5 (11.7)	36.5–40.5	52.6 (04.7)	51.7–53.5	12.2(249)	<.001
Time interval 3	52.3 (11.8)	50.8–53.8	45.4 (11.6)	43.4–47.4	60.4 (4.7)	59.5–61.2	13.7(249)	<.001
	n (%)	95% CI	n (%)	95% CI	n (%)	95% CI	$\chi^2$ (df)	p
<b>Race/ethnicity, n (%)</b>								
White	185 (73.7)	67.8–79.0	74 (54.8)	46.0–63.4	111 (95.7)	90.2–98.6		
People of color	66 (26.3)	21.0–32.2	61 (45.2)	36.6–54.0	5 (04.3)	01.4–09.8	53.8(1)	<.001
<b>Education, n (%)</b>								
Time interval 1								
No college degree	65 (25.9)	20.6–31.8	49 (36.3)	28.2–45.0	16 (13.8)	08.1–21.4	16.5(1)	<.001
College degree or higher	186 (74.1)	68.2–79.4	86 (63.7)	55.0–71.8	100 (86.2)	78.6–91.9		
Time interval 2								
No college degree	51 (20.3)	15.5–25.8	39 (28.9)	21.4–37.3	12 (10.3)	05.5–17.4	13.3(1)	<.001
College degree or higher	200 (79.7)	74.2–84.5	96 (71.1)	62.7–78.6	104 (89.7)	82.6–94.5		
Time interval 3								
No college degree	48 (19.1)	14.4–24.5	39 (28.9)	21.4–37.3	9 (7.8)	03.6–14.2	18.0(1)	<.001
College degree or higher	203 (80.9)	75.5–85.6	96 (71.1)	62.7–78.6	107 (92.2)	85.8–96.4		
<b>Relationship status n (%)</b>								
Time interval 1								
Couple	185 (73.7)	67.8–79.0	92 (68.1)	59.6–75.9	93 (80.2)	71.7–87.0	4.6(1)	.031
Single	66 (26.3)	21.0–32.2	43 (31.9)	24.1–40.4	23 (19.8)	13.0–28.3		
Time interval 2								
Couple	172 (68.5)	62.4–74.2	86 (63.7)	55.0–71.8	86 (74.1)	65.2–81.9	3.2(1)	.076
Single	79 (31.5)	25.8–37.6	49 (36.3)	28.2–45.0	30 (25.9)	18.2–34.8		
Time interval 3								
Couple	167 (66.5)	60.3–72.3	87 (64.4)	55.8–72.5	80 (69.0)	59.7–77.2	0.6(1)	.449
Single	84 (33.5)	27.7–39.7	48 (35.6)	27.5–44.2	36 (31.0)	22.8–40.3		

Note. Time interval 1: nonparents is based on the CHLEW data collection in wave 1 (2000–2001) and parents is based on the NLLFS data collection in wave 4 (1997–2002). Time interval 2: nonparents is based on the CHLEW data collection in wave 2 (2004–2009) and parents is based on the NLLFS data collection in wave 5 (2004–2009). Time interval 3: nonparents is based on the CHLEW data collection in wave 3 (2010–2012) and parents is based on the NLLFS data collection in wave 6 (2012–2017).

## Procedure

### Nonparents in the Chicago Health and Life Experiences of Women Study (CHLEW)

The first wave the CHLEW study occurred in 2000–2001 and included 447 lesbian-identified women. Follow-up assessments of the original sample took place in 2004–2005 and in 2010–2012. The present study describes data from these first waves as time intervals 1, 2, and 3, respectively. CHLEW participants were recruited using multiple strategies such as advertisements in local newspapers, announcements on websites, posting flyers in churches and bookstores, and formal and informal social networking with individuals and organizations. At baseline, women were eligible if they self-identified as lesbian, were 18 years old or older, and fluent in spoken English; in Wave 3, a supplemental sample of young (ages 18–24) sexual minority women, African American and Latina sexual minority women, and bisexual women were added. The current investigation included only CHLEW participants who identified as lesbian and were nonparents—and who participated in each of the first three waves and had no missing data on the demographic, alcohol, and smoking questions. Each wave of the CHLEW was reviewed and approved by the University of Illinois at Chicago Institutional Review Board.

### Parents from the U.S. National Longitudinal Lesbian Family Study (NLLFS)

In 1986, the NLLFS was initiated to follow a cohort of lesbian parent families, prospectively and longitudinally, from the

conception of the index offspring into their adulthood (Gartrell et al., 1996). NLLFS is the largest, longest-running, prospective study of planned lesbian families. The parents were among the first generation of lesbian-identified women to conceive children through donor insemination. Prospective parents were recruited for this community-based study when they were inseminating or pregnant. Study participation was solicited through ads placed in lesbian/gay newspapers and flyers distributed at women's bookstores and lesbian cultural events. Interested individuals were asked to contact the researchers by telephone. All callers who met the recruitment criteria—identifying as lesbian and pregnant or conceiving through donor insemination—were invited to participate. One hundred fifty-four prospective parents (84 birth mothers and 70 co-mothers) were interviewed in Wave 1 before the study was closed to new participants in 1992. These 84 planned lesbian families originally resided within 200 miles of Boston, San Francisco, or Washington, D.C. Subsequently, data were gathered from the parents when the index offspring were two years (Wave 2), five years (Wave 3), ten years (Wave 4), 17 years (Wave 5), and 25 years (Wave 6) old. Since there was a 5.5-year age gap between the youngest and oldest index offspring, each wave of data collection took five years to complete. At Wave 6 (2012–2017), 77 families remained in the study, a retention rate of 92%. Two families were excluded—one because the (index) offspring only partially completed the survey, and another because the protocol required the survey to be complete at age 25, and the child completed it at age 26, resulting in a wave 6 dataset of 131 parents (69 birth parents, 55 co-parents, and seven stepparents).

Data from the NLLFS parent interviews at Waves 4, 5, and 6 were used in the current investigation. After obtaining Sutter Health Institutional Review Board approval at each of these waves, parents were invited to be interviewed. They received an explanation of the purpose and procedure and an assurance of confidentiality before informed consent was obtained. The Wave 4 and 5 interviews were conducted by telephone, and the Wave 6 survey through a protected online platform. Parents at Waves 4 and 5 were not compensated, but each parent who completed the Wave 6 interview received a \$60 gift card. Data from lesbian parents in the NLLFS were included in the current study if they had no missing data on the demographic, alcohol use, or smoking variables. Of the 131 participants at Wave 6, 88.5% met these criteria, resulting in a sample of 116 NLLFS parents (65 birth parents, 50 co-parents, and one stepparent). In the present study, the data from these waves are described as time intervals 1 (wave 4), 2 (wave 5), and 3 (wave 6), respectively.

## Measures

### Demographics

Demographic characteristics included age, parenthood status (nonparent, parent), race/ethnicity (non-Latina/o and Hispanic was recoded as “White”; African American/Black, Latina/o or Hispanic, and other/mixed were recoded as “people of color”), education (no high school diploma and no general equivalency diploma, general equivalency diploma, high school graduate, and some college but no

college degree were recoded as “no college degree”; associate’s degree, bachelor’s or registered nurse degree, some graduate school but no graduate degree, master’s degree, and doctoral or law degree were recoded as “college degree or higher”), and relationship status (in couple, single).

### Problem drinking

We used the CAGE (Ewing, 1984; Mayfield et al., 1974), a 4-item scale, to assess indicators of problem drinking. CAGE is an acronym representing four questions that asked about: (1) trying to Cut down on drinking, (2) being Annoyed by others’ criticisms of one’s drinking, (3) feeling Guilty about drinking, and (4) needing an “Eye-opener” (i.e., drinking first thing in the morning). As shown in Table 2, the CHLEW and NLLFS surveys differed slightly in the wording of CAGE questions yet measured the same concepts. As in the original CAGE questionnaire, response options for each of the four questions were “no” (0) or “yes” (1). At each wave of data collection, the NLLFS asked about lifetime (ever) experiences for each of the four CAGE questions, whereas the CHLEW used the timeframe “ever” at baseline and “since your last interview” at subsequent waves. Problem drinking was constructed as the sum score of problem drinking behaviors from each wave’s four CAGE questions (range from 0 to 4).

### Cigarette smoking status

The smoking variable assessed current cigarette smoking. CHLEW participants were asked at each wave, “Do you

**Table 2.** Item descriptions across data sets.

Variable	CHLEW		NLLFS	
	Item	Answer categories	Item	Answer categories
CAGE 1	Have you ever felt you ought to cut down on your drinking? (W1 & WIII; since last interview?); Wondered if you had a drinking problem since last interview? (WII)	No (0)–Yes (1)	Have you ever tried to cut down the amount that you drink?	No (0)–Yes (1)
CAGE 2	People annoyed you by criticizing your drinking (ever? W1; since last interview? WII & WIII)	No (0)–Yes (1)	Have you ever been angry at a friend /partner/ family member who suggested you cut down?	No (0)–Yes (1)
CAGE 3	You felt bad or guilty about your drinking (ever? W1; since last interview? WII & WIII)	No (0)–Yes (1)	Have you ever felt guilty about the amount of alcohol that you drink?	No (0)–Yes (1)
CAGE 4	You took a drink as soon as you got up in the morning (ever? W1; since last interview? WII & WIII)	No (0)–Yes (1)	Have you ever had a drink when you wake up as an “eye-opener”?	No (0)–Yes (1)
Smoking	Do you currently smoke cigarettes?	No (0)–Yes (1)	Do you smoke cigarettes?	No (0)–Yes (1)

**Table 3.** Summary statistics on alcohol problem drinking and cigarette smoking by parenthood status, across the three time intervals.

	Lesbian nonparents		Lesbian parents	
	(CHLEW)		(NLLFS)	
	<i>n</i> = 135		<i>n</i> = 116	
	EMMs (SD)	95% CI	EMMs (SD)	95% CI
Alcohol problem drinking				
Time interval 1	0.24 (0.11)	0.01–0.46	–0.44 (0.10)	–0.63–0.25
Time interval 2	0.33 (0.11)	0.12–0.54	–0.53 (0.10)	–0.72–0.33
Time interval 3	0.44 (0.10)	0.26–0.63	–0.62 (0.12)	–0.86–0.38
	<i>adj OR</i>	95% CI	<i>adj OR</i>	95% CI
Cigarette smoking				
Time interval 1	<0.01	<0.01–0.01	<0.01	<0.01–<0.01
Time interval 2	<0.01	<0.01–0.02	<0.01	<0.01–<0.01
Time interval 3	<0.01	<0.01–<0.01	<0.01	<0.01–<0.01

Note. EMMs = Estimated marginal means (keeping constant other effects in the mixed model to the mean). Adj OR = adjusted odd ratios.



**Table 4.** Differences over time in alcohol problem drinking and cigarette smoking between nonparents and parents (N=251).

	Alcohol problem drinking			Cigarette smoking		
	Estimate (S.E.)	df	Benjamini-Hochberg adjusted <i>p</i> value	Estimate (S.E.)	exp(B)	Benjamini-Hochberg adjusted <i>p</i> value
<i>Fixed effects</i>						
Intercept	0.50 (0.14)	271	.008	-8.85 (1.08)	<0.01	.008
Parenthood status	-0.86 (0.14)	220	.004	-2.14 (1.34)	0.12	.218
Time	0.15 (0.06)	637	.022	-1.87 (0.75)	0.15	.048
Parenthood status*Time	-0.29 (0.06)	608	.003	-0.10 (1.12)	0.90	.926
Education	-0.03 (0.10)	678	.857	-1.38 (1.05)	0.25	.301
Age	-0.03 (0.08)	271	.985	-0.38 (0.65)	0.68	.640
Race/Ethnicity	-0.32 (0.15)	234	.054	-1.57 (1.31)	0.21	.305
Relationship status	0.02 (0.05)	637	.763	1.38 (0.64)	3.96	.083
<i>Random effects</i>						
	S.D.		Variance	SD		Variance
Intercept	0.97		0.95	9.72		94.39
Study site	0.79		0.63	19.43		377.64
Residual	0.46		0.21	1		1
<i>R</i> <sup>2</sup> conditional			0.79			0.97

Note. Study site=CHLEW sample vs. NLLFS sample. The Benjamini-Hochberg adjusted *p* value was used to control false positives over the multiple tests. Cigarette smoking was dummy coded as: 0=No, 1=Yes. Parenthood status was dummy coded as: 1=Nonparent, 2=Parent. Race/ethnicity was dummy coded as: 1=White, 2=People of color. Education was dummy coded as: 1=No college degree, 2=College degree or higher. Relationship status was dummy coded as: 1=In couple, 2=Single.

currently smoke cigarettes,” and NLLFS participants were asked, “Do you smoke cigarettes.” Response options (0=no, 1=yes) were the same in the CHLEW and the NLLFS.

## Analyses

We conducted data analyses using R software (Bates et al., 2015) and set the level of significance for all tests at  $\alpha = .05$  (two-tailed). Also, we used the Benjamini-Hochberg adjusted *p* values to control false positives over the multiple tests (Benjamini & Hochberg, 1995). Preliminarily, as we included only CHLEW and NLLFS participants who had no missing data on the demographic, alcohol, and smoking questions, we checked whether data were missing at random and whether cases with missing data differed from cases without missing data on key demographics (i.e., age, race/ethnicity, education, and relationship status).

Then, given the data's nested structure (i.e., each participant responding to the same question across three time intervals), we adjusted the error variance using mixed models. Specifically, we used one linear mixed model to investigate potential differences in problem drinking between nonparents and parents across the three time intervals, with the restricted maximum likelihood (REML) as a method of estimation; while we used one generalized mixed model to investigate potential differences in cigarette smoking (no/yes) between nonparents and parents, with the residual pseudo-likelihood as a method of estimation. For each model we used the spatial power covariance model to account for the unequal-spaced time intervals; also, in both models we included the study site (i.e., CHLEW sample vs. NLLFS sample) as a random effect to account for any site-to-site variability. Finally, we modeled the probability of cigarette smoking in the generalized logistic mixed model.

All analyses included the following predictors: group (nonparents versus parents), linear time intervals (i.e., whether problem drinking or cigarette smoking status changed over time following a linear relationship), and the interaction between these variables (i.e., groups\*linear time intervals). Preliminary analyses showed that nonparents and parents differed significantly on age, race/ethnicity,

education, and relationship status; therefore, these variables were entered in the analyses as covariates. When a significant interaction was found, we conducted a simple effects analysis to aid interpretation of the interaction.

## Results

Preliminary missing data analysis indicated that, for both CHLEW and NLLFS participants, data were missing at random and that cases with missing data did not differ from cases without missing data on race/ethnicity, education, and relationship status. For each time interval, estimated marginal means and standard deviations (for problem drinking), odd ratios (for cigarette smoking status), and confidence intervals for the nonparent group and the parent group are displayed in Table 3. Findings from mixed models for continuous (i.e., problem drinking) and dichotomous (i.e., cigarette smoking) dependent variables are summarized in Table 4.

### Problem drinking

After controlling for age, education, race/ethnicity, and relationship status, a linear mixed model indicated that both parenthood status and time interval had a significant main effect on problem drinking, with nonparents reporting more problem drinking than parents. Problem drinking increased linearly over the three time intervals (see also Table 4). Also, the interaction between parenthood status and (linear) time interval was statistically significant. To interpret this interaction, we ran a simple effects analysis, showing that problem drinking was higher among nonparents than parents at each time interval (Time interval 1: estimate = -0.67, *SE* = 0.14,  $p < .001$ ; Time interval 2: estimate = -0.86, *SE* = 0.15,  $p < .001$ ; and Time interval 3: estimate = -1.07, *SE* = 0.15,  $p < .001$ ).

### Cigarette smoking status

The generalized mixed model showed that, after controlling for age, education, race/ethnicity, and relationship status, the likelihood of reporting smoking among women decreased over

time. Neither parenthood status nor the interaction between parenthood status and time intervals were significant.

## Discussion

This study longitudinally investigated differences in problem drinking and cigarette smoking between parenting and non-parenting lesbian women. We found that parents reported lower total problem drinking (CAGE) scores over time, indicating that problem drinking decreased linearly at each time interval. However, we found no differences in smoking trajectories by parenting status.

In many regards, these results reflect those found among women in the general population. Previous research has found that individuals who have already reduced drinking or smoking behaviors, or do not drink or smoke, are more likely to self-select into certain social roles such as parenting (Lee & Sher, 2018; Windle, 2020). For example, women with problem drinking have been found to delay pregnancy (Waldron et al., 2008). Thus, differences in certain health behaviors across parenthood status may be as much about the transition to parenthood as the person who decides to make that transition. Bias in selection into parenthood may function slightly differently among lesbian women who face additional barriers to life course transitions traditionally thought of as part of the “maturation” process, including marriage and parenting. It was not until 2015 that same-sex marriage was legalized throughout the United States, and there are still significant barriers to family formation in many states, including bans on same-sex adoption and adequate financial support for assisted reproductive technologies.

Our results showed that among lesbian women in the study who reported low levels of problem drinking, parents were more likely than nonparents to maintain these lower levels of problematic drinking over time. However, we did not observe significant declines over time in smoking among parenting lesbian women. This result may reflect the challenges that mothers face in changing their health behaviors during the transition to parenthood. Although many women alter their health behaviors during pregnancy, most cannot sustain these changes past the postpartum period. For example, the overwhelming majority of women who quit smoking during pregnancy resume smoking after an infant’s birth (Görlitz & Tamm, 2020; Liu & Mumford, 2017; Orton et al., 2018). In this regard, parenting lesbian women are no different than their heterosexual peers. However, one study found that sexual minority women are more likely to smoke before transitioning to parenthood (Limburg et al., 2020), increasing the overall prevalence of parenting sexual minority women who are smokers. Addressing the unique factors that contribute to sexual orientation-related disparities in tobacco use early in life is critical to reducing smoking during the transition to parenthood among lesbian women.

Additional resources may be necessary to help parenting lesbian women quit smoking. These interventions should be specific to the unique challenges faced by lesbian women. For example, social support is critical for reducing stress among parents, including those in same-sex relationships (Goldberg & Smith, 2014). The transition to parenthood is

a challenging time during which many women experience increased risk of depression and social isolation (Simon & Caputo, 2019). These challenges may be exacerbated among lesbian women who are less likely than heterosexual women to have the support of their families (Graham & Barnow, 2013).

Parenting lesbian women may also be reluctant to seek support and treatment to address alcohol problems or smoking due to stigma and potential legal issues; for example, some may fear that seeking help for alcohol problems will further stigmatize and frame them as “bad mothers.” Previous research has documented that women who use substances during pregnancy face high levels of stigma that serve as barriers to help-seeking and behavioral change (Terplan et al., 2015). Studies with heterosexual women have found that mothers avoid substance abuse treatment due to concerns about forfeiture of their legal rights as parents (Greenfield et al., 2007; Hammarlund et al., 2018; Yonkers & K, 2012) and that these concerns are more pronounced among racial/ethnic minority women (Roberts & Nishimoto, 2006). Similar concerns likely exist among lesbian women. Interventions to support help seeking among lesbian mothers should take into consideration these additional fears and concerns.

This study has several limitations that should be considered when evaluating the results. First, data are from two separate samples of lesbian women recruited in different geographic locations (the Chicago Metropolitan area/Midwest and the metropolitan areas of Boston, Washington, D.C., and San Francisco). However, we adjusted for sociodemographic differences across these studies and included the study site as a random variable to control for regional differences. Importantly, significant differences in the mean ages of our sample may indicate that our results are conservatively biased; that is, research has shown that sexual minority women between ages 45 and 55 are at the highest risk of alcohol use disorders. In the first two study intervals our sample of lesbian parents was significantly older than the sample of nonparents and fell into the highest risk, 45 to 55 years, age category. Thus, observed differences in findings are likely to be conservative estimates. Second, both samples were recruited in large urban areas and may not be generalizable to the experiences of lesbian women in other geographic locations, including more rural settings. Third, this study focused on lesbian-identified women. Experiences and health behaviors of bisexual women and other sexual minority women may differ from those of lesbian women. Fourth, race/ethnicity and education were recoded each into two response categories due to the small cell sizes. This did not allow to examine potential differences by race/ethnicity or education in a more nuanced way. Additionally, there were some slight differences in the wording of CAGE questions between the two study samples; however, the items tap into the same concepts included in the CAGE items.

## Conclusions

Despite these limitations, findings from this study add to the limited body of knowledge on the relationship between parenthood and health by focusing on lesbian women. The

results suggest distinct baseline differences in alcohol problems and smoking status by parenthood status. However, parenthood status was not associated with declines in smoking over time. Supporting positive changes in health behaviors is essential for all women; however, more research is needed to understand the unique challenges to behavior change among parenting lesbian identified women.

## Acknowledgement

The authors would like to express gratitude to the women who participated in the CHLEW and the NLLFS studies.

## Declaration of interest

The content is the sole responsibility of the authors and does not necessarily represent the official views of NIH.

## Funding

This work was supported by a National Institute on Alcohol Abuse and Alcoholism (NIAAA)/National Institutes of Health (NIH) Research Grant (R01 AA13328; T. L. Hughes, Principal Investigator) from the NIAAA/NIH. Dr. Everett's work on this manuscript was supported by work was supported by a Eunice Kennedy Shriver National Institute of Child Health and Human Development R01HD091405. The NLLFS received small grants from the Gill Foundation, the Lesbian Health Fund of the Gay Lesbian Medical Association, Horizons Foundation, and the Roy Scrivner Fund of the American Psychological Association to cover a portion of the cost of Waves 4 and 5 (1997–2009), and no funding for Wave 6.

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