

Family Structure and Child Health: Does the Sex Composition of Parents Matter?

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Abstract The children of different-sex married couples appear to be advantaged on a range of outcomes relative to the children of different-sex cohabiting couples. Despite the legalization of same-sex marriage in the United States, whether and how this general pattern extends to the children of same-sex married and cohabiting couples is unknown. This study examines this question with nationally representative data from the 2004–2013 pooled National Health Interview Survey (NHIS). Results reveal that children in cohabiting households have poorer health outcomes than children in married households regardless of the sex composition of their parents. Children in same-sex and different-sex married households are relatively similar to each other on health outcomes, as are children in same-sex and different-sex cohabiting households. These patterns are not fully explained by socioeconomic differences among the four different types of families. This evidence can inform general debates about family structure and child health as well as policy interventions aiming to reduce child health disparities.

Keywords Family structure · Marriage · Cohabitation · Same-sex families · Child health

Introduction

Children with different-sex married parents tend to have more positive developmental outcomes than children with different-sex cohabiting parents (see Brown 2006; Manning

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and Lamb 2003; McLanahan and Percheski 2008). During a historical era in which same-sex marriage is being furiously debated and core beliefs and values about family structure are changing rapidly, knowing how this pattern extends to children being raised by same-sex couples is important and timely, especially in the domain of children's health, which is both understudied and a major point of policy intervention (Potter 2012; Prickett et al. 2015; Rosenfeld 2010; see Manning et al. 2014 for a review). This endeavor is challenging, however, because few population-based studies sample sufficient numbers of same-sex married and cohabiting households while also including valid and reliable measurement of children's physical and mental health (see Gates et al. 2012). Consequently, the evidence about child health risks or benefits of parents' union formation—marriage versus cohabitation, same-sex versus different-sex—is incomplete, which may result in erroneous public policy, reduce the effectiveness of initiatives aiming to promote lifelong health, undermine future research in public health and family studies, and obscure critical components of intergenerational inequality in the United States.

To address this need, we use nationally representative pooled data from the 2004–2013 National Health Interview Survey (NHIS) to examine differences in multiple measures of children's physical (e.g., parent-rated health, activity limitations, school days lost) and mental health (e.g., emotional difficulties, child externalizing problems) according to parents' union status in both same- and different-sex families. The NHIS is the most appropriate population-based data set available for this endeavor, and it has been effectively used in research on same-sex family structure and adult health (Denney et al. 2013; Liu et al. 2013; Reczek et al. 2014; Ward et al. 2014). In particular, the ability to identify same-sex and different-sex cohabiting and married family structures via a household survey is a critical step forward in this research area, especially given the wide array of developmental outcomes among children to which these family structures can be linked in these data.

Linking Parental Marriage and Sex Composition With Children's Health

Decades of research have shown that children's developmental outcomes (e.g., cognitive skills, academic achievement, and socioemotional functioning) are heavily stratified by whether their parents are married or cohabiting (for reviews, see Amato 2005; Langton and Berger 2011; Manning and Lamb 2003). Because of long-standing heteronormative assumptions that a two-parent family consists of one man and one woman, family scholars are only now beginning to conceptualize the sex composition of the parental couple as a dimension of family structure. Only recently—with the spreading U.S. legalization of same-sex marriage culminating in nationwide recognition in 2015—have we been able to address the question of whether marriage has the same developmental advantages for same-sex couples and their children that it does among different-sex couples and their children. Recent population-based studies have begun to address this question, although they have been limited in key ways. Specifically, the most prominent studies in this area have generally been characterized by one or more of the following limitations: (1) difficulty with concretely identifying same-sex couples, (2) inability to differentiate between marriage and cohabitation among same-sex couples, (3) small sample sizes, and (4) limited measurement of developmental outcomes beyond academic/cognitive and socioemotional factors (Amato 2005; Gates et al. 2012; Potter 2012; Regnerus 2012; Rosenfeld 2010; Wainwright et al. 2004; see Manning et al. 2014 for a review).

Consider one of the first sets of national studies on children in same-sex families, which used data from the National Longitudinal Study of Adolescent to Adult Health (Add Health) (Wainright and Patterson 2006; Wainright et al. 2004). With only tiny numbers of gay male couples raising children in the sample and no legal same-sex marriage in any state during the data collection time frame, Wainright and colleagues focused on adolescents residing in 44 female same-sex cohabiting households. Findings revealed that these adolescents did not differ from their different-sex counterparts in 44 matched different-sex households on measures of self-esteem, psychological adjustment, delinquency, or substance use (Wainright and Patterson 2006; Wainright et al. 2004). This evidence of the no-difference hypothesis—the argument that children raised by same-sex couples do not differ from children raised by different-sex couples in any appreciable way—is limited by the exclusion of gay male families, the focus on adolescents only (i.e., not children), the lack of physical health information beyond health behavior, and the absence of a comparison between marriage and cohabiting same-sex couples.

A more recent study reached different conclusions. Drawing on population data from the New Family Structures Study (NFSS), this study found that 163 adult children (ages 18–35) who retrospectively reported that their mothers ever had a same-sex romantic partner had higher rates of marijuana use, cigarette use, and depression (but not physical health, anxiety, or happiness) than 919 adult children who were raised in different-sex married families (Regnerus 2012). Although improving the health measurement over past studies, this study was limited by its young adult sampling and retrospective design, focus on mothers, and ambiguity regarding parental marriage versus cohabitation (as well as children's actual living arrangements) (Gates et al. 2012; Siegel et al. 2013). Indeed, a subsequent analysis of the same data reported that significant differences in outcomes were almost entirely the result of misclassification of families headed by same-sex couples (Cheng and Powell 2015).

In sum, it is necessary to build on past research by expanding the literature on family structure and children's development to include the sex composition of parents, consistently differentiating between parental marriage and cohabitation, and exploring children's health. This requires population data on the physical and mental health of a sample of children and adolescents distributed across households headed by same-sex male, same-sex female, and different-sex couples who are married and cohabiting. The primary goal of this study is to marshal such data to examine a range of potential health differences among children living with two parents who are either married or cohabiting, and either of the same sex or different sexes.

Exploring the Role of Family Socioeconomic Resources

One of the most consistent themes of research on the effects of family structure on children's development is the important and policy-relevant role of parents' socioeconomic circumstances as both mediator and confounder in these effects (Artis 2007; Brown 2006; Eggebeen 2012; McLanahan and Percheski 2008). The secondary goal of this study, therefore, is to explore how socioeconomic circumstances are related to the links between the interplay of parents' marital status and sex composition and children's health.

Beginning with the basic associations among family structure, socioeconomic resources, and children's health among the different-sex couples with children who have historically made up almost all the families examined in studies in this area, we know that married couples in the United States have more socioeconomic resources (e.g., more money, higher educational attainment, steadier employment, access to benefits like health insurance) than cohabiting families. This difference reflects the selection of socioeconomically advantaged Americans into marriage but also the accumulation of resources within marriage through tax incentives, pooled income, specialized divisions of labor, and other mechanisms (Artis 2007; Bass and Warehime 2011; Brown 2006; Cooksey et al. 1997; Heck and Parker 2002; Lamb 2012; Manning and Lamb 2003; Manning and Lichter 1996; McLanahan 2004). These resources, in turn, influence children's health in the short and long term by enhancing parents' access to knowledge networks as well as their abilities to purchase health-promoting goods and services for children (e.g., quality care and education, healthy foods, permanent residence, mental health services, sports activities, preventive health care, educational health services) (Bergstrom 1997; Duncan et al. 1994). These resources also reduce the number and strength of the stressors that parents are exposed to and help buffer parents from any stressors that they do face, which reduces the odds that parents will be distracted from their positive parenting intentions (Brion et al. 2010; Brown 2006; Dunifon and Kowaleski-Jones 2002).

Turning to the question of how such patterns might be affected by also examining same-sex couples, socioeconomic resources could help to explain any observed differences between children raised by different-sex versus same-sex couples. Research has consistently shown that institutional disenfranchisement (e.g., restricted access to legal benefits of marriage), interpersonal stigma (e.g., homophobic treatment in schools and communities), and discrimination (e.g., unequal pay and hiring in labor market) limit the access of same-sex couples to valuable socioeconomic resources (Gates 2013; Heck et al. 2006; Meyer 2003; Wainright and Patterson 2006). For example, same-sex couples with children have lower annual household income (\$63,900 vs. \$74,000) and higher poverty rates (29 % vs. 11 %) than their different-sex counterparts (Ash and Badgett 2006; Badgett 2001; Burgoyne 2012; Gates 2013; Williams 2012). Same-sex couples with children are also less likely to have health insurance (Bass and Warehime 2011; Gonzales and Blewett 2013). As a result of socioeconomic disparities related to the sex composition of parents, children with same-sex parents have fewer health supports than otherwise similar children raised by a man and a woman. Indeed, one national study has shown that disparities between children raised by same-sex and different-sex parents in a key marker of child well-being—school adjustment—were primarily due to the socioeconomic differences between the two family structures (Rosenfeld 2010); other studies have shown that controlling for socioeconomic resources significantly attenuates observed disparities in children's outcomes related to the sex composition of parents (Gartrell and Bos 2010; Potter 2012; Regnerus 2012; Wainright and Patterson 2006). These findings, however, are clouded by the same data limitations discussed earlier.

Importantly, socioeconomic resources might also factor into any observed differences in the benefits of parents' union status for children's health between same-sex and different-sex couples so that the socioeconomic stratification of children depends on the combination of parents' union statuses and sex composition. For example, evidence has suggested that when different-sex couples with children are separated by marital status, same-sex couples actually

come in between different-sex married couples and different-sex cohabiting couples in terms of income and educational attainment, although less clearly so in terms of health insurance (Badgett 2001; Black et al. 2000, 2007b; Gonzales and Blewett 2013; Heck et al. 2006; Williams 2012). Unfortunately, how separating same-sex couples by marital status (i.e., same-sex married and same-sex cohabiting) might affect the “rank ordering” of different-sex and same-sex couples on socioeconomic resources remains unclear at the population level. Yet, there is reason to believe that both same-sex couples who are married and those who are cohabiting fall in between different-sex married and cohabiting couples given that marriage provides less of a socioeconomic boost for same-sex couples than different-sex ones. Thus, married and cohabiting same-sex families would be more socioeconomically similar to one another. This similarity may reflect the fact that the modestly privileged benefits and protections that same-sex couples have gained in recent years through the legalization of marriage are artificially diluted—relative to those enjoyed by different-sex couples who marry—by a lack of benefits and protections for same-sex Americans in other areas of social life (Ash and Badgett 2006; Badgett et al. 2008; Black et al. 2007b; Burgoyne 2012; Gates 2013; Heck et al. 2006; Williams 2012).

Research Hypotheses

Based on past research, we pose four hypotheses—two for the primary aim about disparities in children’s health by parents’ union statuses and sex composition, and two for the secondary aim about the role of socioeconomic resources in these disparities.

Hypothesis 1 (H1): Children’s health will generally be similar among children whose parents have the same union status, regardless of whether those parents are same- or different-sex.

Hypothesis 2 (H2): For both same-sex and different-sex couples, parental marriage will be associated with healthier outcomes.

Hypothesis 3 (H3): Differences in socioeconomic resources will help to explain any observed differences between children raised by same-sex couples and different-sex couples.

Hypothesis 4 (H4): Differences in socioeconomic resources will do more to explain advantages in children’s health related to parental marriage in families headed by different-sex couples than same-sex couples.

Methods

Data

NHIS is a cross-sectional household survey conducted annually by the National Center for Health Statistics that is representative of the U.S. civilian noninstitutionalized population (Minnesota Population Center and State Health Access Data Assistance Center 2014). To increase the number of children in families headed by same-sex married and cohabiting couples, we pooled data from 2004 to 2013. Although we were

able to identify same-sex married and cohabiting individuals as far back as the 1997 survey year, we pooled data starting in 2004 because that was the first year that same-sex marriages were legalized in some states in the United States. Our additional analysis using all data from 1997 forward showed similar results (available upon request).

Significant, and appropriate, attention has been paid to measurement error in national surveys that include measures identifying same-sex couples, such as the American Community Survey (ACS) and the U.S. Census (Lofquist 2011, 2012; O'Connell et al. 2010). The NHIS sample of same-sex married individuals, however, is considered relatively more robust, valid, and reliable for several reasons. The ACS and the U.S. Census reported that initial counts of same-sex couples in their surveys greatly overestimated them because of measurement error (e.g., individuals in different-sex marriages mismarked their or their partner's sex on the form) (Black et al. 2007a; Lofquist 2011; O'Connell et al. 2010). Our percentages of same-sex married and cohabiting households in the NHIS sample matched the *corrected* rates of these family forms in the ACS and U.S. Census and are also similar to those rates reported by the Williams Institute (Gates 2013; Ward et al. 2014).

The NHIS includes both an in-depth file (termed the "sample child file") that contains a wide range of health information on one randomly selected child under the age of 18 residing in each household, and a full sample file ("person file") that includes less-comprehensive health information on every child under the age of 18 in the household. We used both the in-depth and full sample files depending on the availability of child well-being measures in each file. For the full sample, the pooled data from 2004–2013 included 216 children in households headed by same-sex married parents; 417 children in households headed by same-sex cohabiting parents; 151,438 children in households headed by different-sex married parents; and 14,976 children in households headed by different-sex cohabiting parents. For the in-depth files, these numbers are 108; 232; 73,291; and 7,721, respectively. Our final analytical sample varied across child health outcome variables due to age restrictions on some health measures as well as years in which the emotional health instruments were not administered. These variables are discussed in more detail in the following section.

Measures

The main family structure variable, *parental union status*, is a cross-classification of a binary indicators of whether parents are married and their same-sex composition. It comprises four categories: (1) different-sex married (reference), (2) same-sex married, (3) different-sex cohabiting, and (4) same-sex cohabiting. Same-sex family structures were identified when the "householder" and another household member reported the same gender and identified as "spouses" or "unmarried partners," respectively. The householder was asked a series of questions about each child residing in the home, including the health of the child, the child's relationship to the householder, and sociodemographic information. Data limitations prevented us from identifying single sexual minority parents prior to 2013.

Three measures captured children's physical health. First, *physical health status* was assessed by the adult householder (parent) who took the in-person survey with the question, "How do you rate your child's overall physical health?" (0 = excellent/very good, 1 = good/fair/poor). Parent-rated health is a valuable indicator for understanding

child overall health at the population level (Eiser and Morse 2001; Stein 2011), especially health disparities, and such binary coding is well-used in past studies (Shrivastava et al. 2014; Stein et al. 2010). Our additional analyses categorizing parent-rated health as (0 = excellent/very good/good, 1 = fair/poor) showed similar results (available upon request). Second, *activity limitations* are assessed by the adult householder who took the in-person survey with the question, “Is [child] limited in the kind or amount of play activities?” (0 = no, 1 = yes). Third, *lost school days* was measured by the question, “During the past 12 months, about how many days did [child] miss school because of illness or injury?” This variable was top-coded to the 95th percentile (12 days) to account for outliers and to correct for heteroskedasticity. This question is applicable to children aged 5 to 17.

Children’s mental health was measured in two ways. *Emotional difficulties* were measured by the question, “Do you think the child has difficulty with emotions, concentration, behavior?” (0 = no difficulties, 1 = minor difficulties, 2 = definite difficulties, 3 = severe difficulties). This question is applicable to children aged 4 to 17. *Behavioral problems* was measured by the question, “During the past six months, [child] is generally well behaved, usually does what adults request?” (0 = certainly true, 1 = somewhat true, 2 = not true). This question is applicable to children aged 4 to 17. Neither mental health variable was measured in 2008 or 2009. These child well-being measures are among those shown to be most clearly associated with family structure and family socioeconomic resources in previous research (Brown 2006; McLanahan and Percheski 2008). We assessed each outcome separately.

Other demographic covariates included *child gender*, *child race/ethnicity* (non-Hispanic white (reference), non-Hispanic black, Hispanic white, Hispanic black, other), *child age*, and *nativity status* (native-born (reference), foreign-born). We also controlled for *parents’ race/ethnicity composition* (both parents white (reference), both parents black, both parents other race, parents interracial), *parents’ mean age*, and *parents’ nativity status composition* (both U.S.-born (reference), one U.S.-born, both foreign-born). *Geographic region* (Northeast (reference), North Central/Midwest, South West) was also controlled because region may play an important role in child well-being and the social acceptance of same-sex marriage. For example, children in same-sex families living in the northeast may experience less social stigma and greater access to community-based resources than their counterparts in other regions (Hatzenbuehler et al. 2010). Because we pooled multiple years of data, we controlled *year of survey* (centered at 2004) in all models.

Research on different-sex families shows that a child’s biological relatedness to one, two, or no parents in their current household is associated with child well-being (Manning and Lamb 2003); biological relatedness is correlated with parental union status, wherein different-sex cohabitators are more likely than different-sex marrieds to have children who are not biologically related to both parents in the current household (Manning and Lamb 2003). Therefore, we also controlled for *biological status*: whether the child was biologically related to one or more parents (reference) or to neither, or whether the child’s relatedness was unspecified by the parents. From 1997 to 2012, the NHIS provided detailed data on the relatedness of children but also allowed parents to select “biological or adopted” as an ambiguous signifier of relatedness; since 2013, the “biological” and “adopted” categories were abandoned in the NHIS, and we code those cases as an “unspecified relatedness” category. “Stepchildren” and “foster children” (*n*

= 25 for same-sex married families; $n = 59$ for same-sex cohabiting families) were dropped from the same-sex family samples because we could not ascertain their relatedness to the nonreference parent. We note that the meaning of biological status may be entirely different in same- and different-sex cohabiting family structures given that no same-sex families can have two biological parents (Hequembourg 2004). Biological relatedness is strongly linked to sociocultural and socioeconomic factors that are highly correlated with union duration, quality, and stability among different-sex cohabitators but less so among same-sex couples (Manning and Lamb 2003; Manning et al. 2004). A model testing the interaction between same-sex parent families and biological relatedness was estimated (not shown), but the interaction was nonsignificant.

Turning to our central explanatory mechanism, socioeconomic resources, we constructed four measures:

1. *Parents' mean education* (1 = never attended/kindergarten only, 2–13 = single grades 1–12, 14 = high school graduate, 15 = GED, 16 = some college, 17 = technical associate's degree, 18 = academic associate's degree, 19 = bachelor's degree, 20 = master's degree, 21 = professional degree, 22 = doctoral degree (mean of both parents)).
2. *Family poverty status* based on federal poverty thresholds from the U.S. Census Bureau that take into account self-reported total family income, family size, and the ages and number of children present (0 = not in poverty, 1 = in poverty; multiply imputed values for missing data).
3. *Parents' employment status* (both currently employed (reference), one employed, neither employed).
4. *Child insurance coverage* (0 = no health insurance coverage during the past 12 months, 1 = covered by at least one public or private health care insurance program during the past 12 months).

We chose these variables because they reflected the best-tested resources linked to child health. Supplementary analysis (available upon request) included other socioeconomic resources, such as household income, income from dividends, homeownership, income from welfare, and parent insurance coverage, as well as parents' self-rated health, but the results of these supplementary models were nearly identical to those presented here.

Analytic Strategy

We ran two sets of models to examine the associations between parents' union statuses and children's health. Model 1 included the dummy variables cross-classifying parental marriage and sex composition along with the demographic covariates, and Model 2 added the socioeconomic resource variables. Notably, we could not determine whether family socioeconomic factors were mediators of, or confounded with, the association between parents' union statuses and children's health because of the cross-sectional design of the data. All analyses were weighted to account for the inverse probability of selection into the sample and post-stratification based on age, race/ethnicity, and gender. The “svy” commands in Stata accounted for the complex nature of the NHIS sample design and the clustering of children

within families (StataCorp 2013). We used three types of regressions: binary logistic regression for binary outcomes, ordered logistic for ordinal outcomes, and ordinary least squares (OLS) for quasi-continuous outcomes.

Results

Descriptive Results

Table 1 shows descriptive statistics of the analyzed categorical (percentages) and continuous (means) variables, respectively, for the different-sex married, different-sex cohabiting, same-sex married, and same-sex cohabiting subsamples with tests for significant differences ($p < .05$) among the four focal family structures. Compared with different-sex married parents, different-sex cohabiting parents were significantly more likely to report poorer child health on all physical health indicators: good, fair, or poor health (21.6 % compared with 13.8 %); activity limitations (8.8 % compared with 6.8 %); and lost school days (mean = 3.1 days compared with 2.8 days). Different-sex cohabiting parents were also significantly more likely to report higher levels of emotional difficulties and worse child behavior than different-sex married parents. Compared with different-sex married parents, same-sex cohabiting parents were significantly more likely to report good, fair, or poor health (20.7 % compared with 13.8 %). Regarding mental health indicators, same-sex cohabiting parents were significantly more likely than different-sex married parents to report higher levels of child emotional difficulties and less likely to respond “certainly true” to the question about children being well-behaved (65.8 % compared with 79.1 %). Same-sex married parents were significantly more likely than different-sex married parents to report “not true” that their child was well-behaved (13.1 % compared with 2.3 %).

These results suggest that children fall at different points along the spectrum of health according to the combination of their parents’ marital statuses and sex composition and depending on the dimension of health being considered. In the most general terms, children of different-sex married parents fared better than children of same-sex cohabiting and different-sex cohabiting parents on physical health measures, while children of same-sex married parents showed little significant difference from children of different-sex married parents. The physical health measure with the fewest differences was activity limitations, on which only children of different-sex cohabiting parents differed significantly from children in different-sex married families. Same-sex married parents reported the fewest lost school days to illness or injury: on average, with reporting 1.4 less lost days than same-sex cohabitants and 0.9 less lost days than different-sex cohabitants. Different-sex cohabiting parents also reported more lost school days than different-sex married parents. Regarding mental health, there were relatively few group differences on child behavior compared with emotional difficulties, but together they suggest that children of different-sex married parents seem to fare better than children of other families, followed by the children of same-sex married, then different-sex cohabiting, and finally same-sex cohabiting parents.

Table 1 Weighted percentages and means for analyzed variables by union status ($n = 167,047$)

	Same-Sex Married		Same-Sex Cohabiting		Different-Sex Married		Different-Sex Cohabiting	
	Unweighted $n = 216$		Unweighted $n = 417$		Unweighted $n = 151,438$		Unweighted $n = 14,976$	
	% or Mean	SE	% or Mean	SE	% or Mean	SE	% or Mean	SE
Categorical Measures (%)								
Physical health status								
Good/fair/poor	18.5	4.8	20.7*	3.0	13.8 ^b	0.2	21.6*	0.6
Activity limitations dummy code								
Limited	8.3	2.2	10.8	2.0	6.8	0.1	8.8*	0.3
Emotional difficulties [‡]								
None	81.8 ^b	5.4	58.2 ^{*a}	5.6	83.3 ^b	0.2	72.5 ^{*b}	0.9
Some	9.6 ^b	4.1	26.5 ^{*a}	4.8	12.6 ^b	0.2	19.6 ^{*a}	0.8
Definite	8.5	3.9	9.9*	3.0	3.2 ^b	0.1	6.0*	0.5
Severe	0.0 ^{*b}	0.0	5.3 ^{*a}	2.1	0.8 ^{a,b}	0.1	2.0 ^{*a}	0.3
Child well-behaved ^{‡‡}								
Certainly true	67.8	6.0	65.8*	5.1	79.1 ^b	0.3	67.2*	1.0
Somewhat true	19.1	5.2	27.7	4.7	18.6	0.3	27.5*	0.9
Not true	13.1*	4.5	6.6	2.8	2.3 ^a	0.1	5.3*	0.6
Family relatedness								
No biological parents	10.2*	3.2	6.6*	1.7	0.5 ^{a,b}	0.0	1.4 ^{*a,b}	0.1
One or more biological parents	83.3 ^{*b}	3.7	71.0 ^{*a}	3.2	90.6 ^{a,b}	0.1	87.4 ^{*b}	0.5
Unspecified relatedness	6.5 ^b	2.1	22.4 ^{*a}	3.0	8.9 ^b	0.1	11.1 ^{*a,b}	0.5
Child sex								
Female	55.3	4.1	48.3	2.9	48.6	0.2	49.0	0.5
Child race/ethnicity								
Non-Hispanic white (ref.)	56.0	5.1	57.1*	3.6	65.0 ^b	0.3	49.6 ^{*b}	0.9
Non-Hispanic black	17.5*	3.6	19.1*	3.3	7.5 ^{a,b}	0.2	15.0*	0.6
Hispanic white	19.2	3.8	12.3*	2.2	17.9 ^b	0.3	24.6 ^{*b}	0.8
Hispanic black	0.8	0.6	1.8	1.3	0.5	0.0	1.2*	0.1
Other race	6.5	2.5	9.6	2.3	9.1	0.2	9.6	0.5
Child foreign-born								
Foreign-born	11.5 ^{*b}	2.9	1.9 ^{*a}	0.7	4.9 ^{a,b}	0.1	2.5 ^{*a}	0.2
Parental racial composition								
Both white (ref.)	68.2*	4.8	67.2*	3.7	77.9 ^{a,b}	0.3	66.5*	0.8
Both black	16.6*	3.6	17.8*	3.1	7.1 ^{a,b}	0.2	13.8*	0.6
Both other race	4.1	2.3	2.6*	1.1	5.9 ^b	0.1	4.2*	0.4
Interracial	11.0	3.5	12.5	2.6	9.1	0.1	15.4*	0.6
Parents' nativity status								
Both U.S.-born (ref.)	75.3 ^b	4.7	90.7 ^{*a}	2.0	72.3 ^b	0.3	76.4 ^{*b}	0.8
One U.S.-born	7.4	2.3	6.1	1.7	9.2	0.1	8.2*	0.4
Both foreign-born	17.3 ^b	4.2	3.2 ^{*a}	1.2	18.4 ^b	0.3	15.4 ^{*b}	0.7

Table 1 (continued)

	Same-Sex Married		Same-Sex Cohabiting		Different-Sex Married		Different-Sex Cohabiting	
	Unweighted <i>n</i> = 216		Unweighted <i>n</i> = 417		Unweighted <i>n</i> = 151,438		Unweighted <i>n</i> = 14,976	
	% or Mean	SE	% or Mean	SE	% or Mean	SE	% or Mean	SE
Region								
Northeast (ref.)	29.6*	4.6	20.2	3.2	17.0 ^a	0.3	15.9 ^a	0.6
North Central/Midwest	19.0	4.6	22.5	3.4	24.0	0.4	26.0*	0.9
South	31.0	5.0	35.3	3.9	34.8	0.5	33.4	0.9
West	20.5	4.0	22.0	3.0	24.2	0.5	24.7	0.8
Parents' employment status								
Both parents employed (ref.)	61.7	5.3	56.3	4.4	58.4	0.3	50.4* ^a	0.8
One parent employed	36.3	5.2	36.6	4.3	38.2	0.3	40.3*	0.8
Neither parent employed	2.0 ^b	1.2	7.1 ^a	2.3	3.4	0.1	9.3* ^a	0.4
Household poverty status								
In poverty	14.7	4.4	21.9*	3.7	11.1 ^b	2.0	28.9* ^a	0.8
Child insurance								
Insured	88.2	3.1	93.9	1.4	92.4	0.2	89.4* ^b	0.5
Continuous Measures (mean)								
Lost school days	2.2 ^b	0.3	3.6 ^a	0.5	2.8	0.0	3.1* ^a	0.1
Survey year	1.9* ^b	0.2	4.5 ^a	0.2	4.5 ^a	0.0	5.0* ^{a,b}	0.0
Child's age	8.7	0.5	8.7	0.4	8.9	0.0	7.3* ^{a,b}	0.1
Parent's mean age	39.0 ^b	0.8	36.7* ^a	0.7	39.1 ^b	0.0	33.2* ^{a,b}	0.1
Parent's mean education	15.8	0.3	16.0	0.2	16.1	0.0	14.2* ^{a,b}	0.1

Note: Survey statistics are shown for the full sample unless otherwise noted.

* Collected only for the in-depth sample children aged 4–17, not collected during 2008–2009; statistics are for this subsample.

** Collected for the in-depth sample children aged 5–17; statistics are for this subsample.

**p* < .05 (compared with different-sex married)

^a *p* < .05 (compared with same-sex married)

^b *p* < .05 (compared with same-sex cohabiting)

Regression Results: Child Health by Parental Union Status

Beginning with Hypotheses 1 and 2, Model 1 compares children of same-sex and different-sex married and cohabiting couples on health outcomes adjusting only for basic sociodemographic covariates. Children of different-sex cohabitators were disadvantaged on each physical health measure (Tables 2, 3, and 4) compared with the children of different-sex married parents. On average, the children of different-sex cohabiting parents were more likely to experience worse parent-rated health (odds ratio (OR) = 1.62, *p* < .001; Table 2), more likely to have activity limitations (OR = 1.39, *p* <

0.001; Table 3), and experienced more lost school days ($b = 0.38, p < .001$; Table 4) than children with different-sex married parents. This same pattern extended to mental health. The odds of reporting both emotional difficulties ($OR = 1.82, p < .001$; Table 5) and behavior problems ($OR = 1.66, p < .001$; Table 6) were higher for the children of different-sex cohabiting parents than the children of different-sex married parents. Our additional analysis obtained by rotating the parental union status reference groups (numbers not shown but available upon request; significant differences noted in Tables 3–6) suggest that the children of different-sex cohabitators also experienced more lost school days compared with the children of same-sex married parents ($p < .05$; Table 4). Regarding physical health, the children of same-sex cohabitators faced disadvantages relative to the children of different-sex married parents in parent-rated health ($OR = 1.61, p < .05$; Table 2); they also experienced mental health disadvantages compared with the children of different-sex married parents on emotional difficulties ($OR = 3.04, p < .001$; Table 5) and behavioral problems ($OR = 1.84, p < .05$; Table 6). Our additional analyses switching the parental union status reference groups (numbers not shown, but significant differences noted in tables) suggest that same-sex cohabitators' children also faced a significant disadvantage compared with same-sex married parents' children on lost school days ($b = 1.28$ (not shown), $p < .05$; Table 4) and emotional difficulties ($OR = 2.97$ (not shown), $p < .05$; Table 5). Finally, children of same-sex married parents were disadvantaged relative to the children of different-sex married parents in terms of behavioral problems ($OR = 2.04, p < .05$; Table 6).

Overall, these results support both Hypotheses 1 and 2, as the children of parents with the same marital status experienced similar health regardless of whether they are from same-sex or different-sex families. Exceptions to the general pattern exist: on lost school days and emotional difficulties, same-sex married parents report advantaged child health compared with same-sex cohabiting parents; same-sex married parents report worse child behavior than different-sex married parents. Parental marriage is universally associated with healthier outcomes among the children of different-sex parents and generally associated with healthier outcomes among children of same-sex parents. Different-sex married parents reported better child health in all examined outcomes than different-sex cohabiting parents, and they also reported significantly higher child self-rated health, fewer behavioral problems, and fewer emotional difficulties than same-sex cohabiting parents; same-sex married parents reported fewer lost school days and emotional difficulties compared with same-sex cohabiting parents.

The Role of Socioeconomic Status

Model 2 added the set of socioeconomic resource variables. Even after we controlled for these variables, the disadvantages faced by the children of different-sex cohabitators compared with the children of different-sex married parents remained: poor parent-rated health ($OR = 1.27, p < .001$; Table 2), activity limitations ($OR = 1.19, p < .001$; Table 3), average school days lost ($b = 0.27, p < .001$; Table 4), emotional difficulties ($OR = 1.65, p < .001$; Table 5), and behavioral problems ($OR = 1.45, p < .001$; Table 6). Socioeconomic resources accounted for only part of the variation in health outcomes between children of different-sex cohabiting and different-sex married couples. Additionally, socioeconomic resources accounted for the difference between children of different-sex cohabitators relative to the children of same-sex married parents

Table 2 Estimated odds ratios from binary logistic regression models of parent-rated health on family structure ($n = 166,983$)

Variable	Model 1		Model 2	
	Odds Ratio	SE	Odds Ratio	SE
Family Structure (ref. = different-sex married)				
Same-sex married	1.22	0.41	1.19	0.41
Same-sex cohabiting	1.61*	0.31	1.47*	0.29
Different-sex cohabiting	1.62***	0.06	1.27***	0.05
Demographics				
Child female (ref. = child male)	0.95***	0.01	0.94***	0.01
Child age	1.05***	0.00	1.04***	0.00
Child race (ref. = non-Hispanic white)				
Child non-Hispanic black	1.77***	0.19	1.50***	0.16
Hispanic white	2.07***	0.08	1.42***	0.06
Hispanic black	1.99***	0.27	1.38*	0.19
Other	1.54***	0.11	1.32***	0.10
Child foreign-born (ref. = child native-born)	0.87***	0.03	0.84***	0.03
Parents' mean age	0.99***	0.00	1.00	0.00
Parents' racial composition (ref. = both white)				
Both black	1.02	0.11	1.12	0.13
Both other race	1.00	0.09	1.33**	0.12
Interracial	0.71***	0.03	0.85***	0.04
Parent's nativity (ref. = both native-born)				
One parent foreign-born	1.06	0.04	1.08	0.05
Both parents foreign-born	1.44***	0.06	0.98	0.04
Family relatedness (ref. = two biological parents)				
One or more biological parents	0.54***	0.06	0.56***	0.06
Unspecified parentage	0.49***	0.06	0.52***	0.06
Region (ref. = Northeast)				
North Central/Midwest	1.07	0.05	1.01	0.05
South	1.05	0.04	0.98	0.04
West	1.01	0.05	0.93	0.04
Survey Year	0.98***	0.00	0.98**	0.00
Socioeconomic Resources				
Parents' mean education			0.88***	0.00
Parents' employment (ref. = both employed)				
One parent employed			1.16***	0.03
Neither parent employed			1.69***	0.09
In poverty			1.48***	0.05
Child insured			0.98	0.04

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

Table 3 Estimated odds ratios from binary logistic regression models of activity limitations on family structure ($n = 166,825$)

Variable	Model 1		Model 2	
	Odds Ratio	SE	Odds Ratio	SE
Family Structure (ref. = different-sex married)				
Same-sex married	1.13	0.31	1.15	0.32
Same-sex cohabiting	1.40	0.32	1.31	0.30
Different-sex cohabiting	1.39***	0.06	1.19***	0.05
Demographics				
Child female (ref. = child male)	0.53***	0.01	0.53***	0.01
Child age	1.03***	0.00	1.03***	0.00
Child race (ref. = non-Hispanic white)				
Child non-Hispanic black	1.63***	0.20	1.52**	0.18
Hispanic white	1.11*	0.05	0.99	0.04
Hispanic black	1.40*	0.21	1.22	0.19
Other	1.18*	0.09	1.12	0.08
Child foreign-born (ref. = child native-born)	0.91	0.06	0.94	0.07
Parents' mean age	1.01***	0.00	1.02***	0.00
Parents' racial composition (ref. = both white)				
Both black	0.58***	0.07	0.59***	0.07
Both other race	0.72**	0.07	0.78**	0.07
Interracial	1.01	0.05	1.06	0.05
Parent's nativity (ref. = both native-born)				
One parent foreign-born	0.82***	0.04	0.82***	0.04
Both parents foreign-born	0.46***	0.02	0.38***	0.02
Family relatedness (ref. = two biological parents)				
One or more biological parents	0.39***	0.04	0.41***	0.04
Unspecified parentage	0.37***	0.04	0.39***	0.05
Region (ref. = Northeast)				
North Central/Midwest	0.80***	0.03	0.80***	0.03
South	0.66***	0.03	0.65***	0.03
West	0.71***	0.03	0.70***	0.03
Survey Year	1.02***	0.01	1.02***	0.01
Socioeconomic Resources				
Parents' mean education			0.96***	0.01
Parents' employment (ref. = both employed)				
One parent employed			1.33***	0.04
Neither parent employed			2.10***	0.12
In poverty			1.38***	0.06
Child insured			1.47***	0.08

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

Table 4 Estimated regression coefficients from OLS regression models of lost school days on family structure ($n = 142,453$)

Variable	Model 1		Model 2	
	<i>b</i>	SE	<i>b</i>	SE
Family Structure (ref. = different-sex married)				
Same-sex married	-0.44 ^b	0.35	-0.41 ^b	0.34
Same-sex cohabiting	0.84 ^a	0.44	0.78 ^a	0.44
Different-sex cohabiting	0.38 ^{***a}	0.08	0.27 ^{***}	0.08
Demographics				
Child female (ref. = child male)	0.12 ^{**}	0.03	0.11 ^{**}	0.03
Child age	0.02 ^{***}	0.01	0.02 ^{***}	0.01
Child race (ref. = non-Hispanic white)				
Child non-Hispanic black	-0.54 ^{**}	0.19	-0.59 ^{**}	0.19
Hispanic white	-0.28 ^{***}	0.06	-0.42 ^{***}	0.06
Hispanic black	-0.39	0.22	-0.53 [*]	0.21
Other	-0.30 ^{**}	0.10	-0.34 ^{**}	0.10
Child foreign-born (ref. = child native-born)	-0.22 ^{**}	0.06	-0.23 ^{**}	0.07
Parents' mean age	-0.01 [*]	0.00	0.00	0.00
Parents' racial composition (ref. = both white)				
Both black	-0.43 [*]	0.19	-0.41 [*]	0.19
Both other race	-0.16	0.13	-0.05	0.13
Interracial	0.15 [*]	0.07	0.19 ^{**}	0.07
Parent's nativity (ref. = both native-born)				
One parent foreign-born	-0.22 ^{**}	0.07	-0.22 ^{**}	0.07
Both parents foreign-born	-0.78 ^{***}	0.06	-0.92 ^{***}	0.06
Family relatedness (ref. = two biological parents)				
One or more biological parents	0.46 [*]	0.19	0.52 ^{**}	0.19
Unspecified parentage	0.40 [*]	0.20	0.48 [*]	0.20
Region (ref. = Northeast)				
North Central/Midwest	-0.17 ^{**}	0.06	-0.18 ^{**}	0.06
South	-0.09	0.06	-0.11	0.06
West	-0.02	0.06	-0.05	0.06
Survey Year	-0.01	0.01	-0.01	0.01
Socioeconomic Resources				
Parents' mean education			-0.04 ^{***}	0.01
Parents' employment (ref. = both employed)				
One parent employed			0.31 ^{***}	0.04
Neither parent employed			0.83 ^{***}	0.11
In poverty			0.09	0.06
Child insured			0.08	0.06
Constant	20.26	12.99	22.26	12.98

^a Different from same-sex married ($p < .05$)^b Different from same-sex cohabiting ($p < .05$)* $p < .05$; ** $p < .01$; *** $p < .001$

regarding average school days lost (comparing Models 1 and 2 in Table 4). Socioeconomic resources accounted for only part of the variation in health outcomes faced by the children of same-sex cohabitators compared with the children of different-sex married parents. All significant differences observed between same-sex cohabiting families and different-sex married families, in particular in parent-rated health (OR = 1.47, $p < .05$; Table 2), emotional difficulties (OR = 2.89, $p < .001$; Table 5), and behavioral problems (OR = 1.73, $p < .05$; Table 6), persisted after controlling for SES. After SES was controlled, the children of same-sex cohabiting parents were disadvantaged compared with the children of same-sex married parents in lost school days ($b = 1.18$ (not shown), $p < .05$; Table 4) and emotional difficulties (OR = 2.71 (not shown), $p < .05$; Table 5). Additionally, after SES was controlled, the children of same-sex cohabiting parents experienced a disadvantage relative to the children of different-sex cohabiting parents regarding emotional difficulties (OR = 1.75 (not shown), $p < .05$; Table 5). Finally, children of same-sex married parents continued to experience a disadvantage compared with the children of different-sex married parents on behavior (OR = 2.16, $p < .05$; Table 6) even after we accounted for socioeconomic resources.

In sum, accounting for socioeconomic resources explained few differences between children raised by different-sex couples and same-sex couples, failing to support Hypotheses 3 and 4. Different-sex cohabiting parents did not differ from same-sex married parents on lost school days, but most significant associations from the prior model remained after socioeconomic resources were controlled. Additionally, adding socioeconomic controls revealed significant differences between same-sex cohabiting families and different-sex cohabiting families on emotional difficulties and increased the point estimate of same-sex married parents reporting worse child behavior relative to different-sex married parents. Although most point estimates were reduced after we included socioeconomic controls, there was little evidence that they explained differences between same-sex and different-sex families for most outcomes. Furthermore, socioeconomic controls did not explain the marital status differences between different-sex families better than they explained the differences between same-sex families.

Discussion

A long-standing body of research has shown that children residing with different-sex married parents experience better mental and physical health than the children living with different-sex cohabiting parents. Yet, previous population-based work has focused on different-sex parent families, ignoring same-sex cohabiting and especially same-sex married parent families. This body of research also focuses on children's cognitive skills, academic achievement, and socioemotional functioning rather than mental and physical health outcomes, which are also important indicators of functioning (for reviews, see Amato 2005; Manning and Lamb 2003). The present study used data from the pooled NHIS to examine differences in a wide range of children's physical and mental well-being outcomes within and across households headed by same-sex and different-sex married and cohabiting couples. The NHIS is one of the first nationally representative studies identifying children in families headed by two parents of the same sex who are married or cohabiting (Reczek et al. 2014). The first goal of the study is to test whether the child health advantage of parental marriage differs across families

Table 5 Estimated odds ratios from ordinal logistic regression models of emotional difficulties on family structure ($n = 146,849$)

Variable	Model 1		Model 2	
	Odds Ratio	SE	Odds Ratio	SE
Family Structure (ref. = different-sex married)				
Same-sex married	1.02 ^b	0.42	1.06 ^b	0.44
Same-sex cohabiting	3.04*** ^a	0.79	2.89*** ^a	0.76
Different-sex cohabiting	1.82***	0.09	1.65*** ^b	0.09
Demographics				
Child female (ref. = child male)	0.66***	0.02	0.65***	0.02
Child age	1.04***	0.00	1.04***	0.00
Child race (ref. = non-Hispanic white)				
Child non-Hispanic black	1.51*	0.25	1.43*	0.24
Hispanic white	0.89*	0.04	0.80***	0.04
Hispanic black	1.46*	0.28	1.34	0.25
Other	1.20*	0.11	1.16	0.11
Child foreign-born (ref. = child native-born)	0.99	0.07	1.01	0.07
Parents' mean age	0.99**	0.00	1.00	0.00
Parents' racial composition (ref. = both white)				
Both black	0.58**	0.10	0.58**	0.10
Both other race	0.61***	0.07	0.66***	0.07
Interracial	1.07	0.06	1.11	0.07
Parent's nativity (ref. = both native-born)				
One parent foreign-born	0.85**	0.04	0.86**	0.04
Both parents foreign-born	0.55***	0.03	0.47***	0.03
Family relatedness (ref. = two biological parents)				
One or more biological parents	0.34***	0.06	0.34***	0.06
Unspecified parentage	0.27***	0.05	0.28***	0.05
Region (ref. = Northeast)				
North Central/Midwest	1.15**	0.05	1.15**	0.05
South	1.13**	0.05	1.12**	0.05
West	1.14*	0.05	1.10	0.05
Survey Year	0.99	0.01	0.99	0.01
Socioeconomic Resources				
Parents' mean education			0.96***	0.01
Parents' employment (ref. = both employed)				
One parent employed			1.17***	0.04
Neither parent employed			1.74***	0.12
In poverty			1.25***	0.07
Child insured			1.16**	0.06
Cut 1	-12.12	11.53	-14.37	-14.37
Cut 2	-10.56	11.53	-12.80	-12.80

Table 5 (continued)

Variable	Model 1		Model 2	
	Odds Ratio	SE	Odds Ratio	SE
Cut 3	-8.97	11.54	-11.20	-11.20

^a Different from same-sex married ($p < .05$)

^b Different from same-sex cohabiting ($p < .05$)

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

headed by different-sex and same-sex married and cohabiting parents. Because SES is one of the most important family advantages for children, the second goal of the study attends to the role of socioeconomic resources in this advantage of parental marriage. In following sections, we explain and theorize on the meaning, implications, and limitations of our findings.

The Role of Parental Union Status in Child Health

We first compared child health differences across sex composition holding marital status constant. Our findings suggest that child well-being in same-sex and different-sex married families is remarkably similar, and child well-being is also similar in same-sex and different-sex cohabiting families (consistent with Hypothesis 1). Our study is among the first to test the same-sex married group relative to the different-sex married group, taking an important step in marriage theory to suggest that regardless of sex composition, children raised within the same marital status experience similar health. This similarity is likely due to long-tested selection and marital resource effects that are associated with child well-being by marital status across sex composition (see Manning et al. 2014 for review). One exception to the support for Hypothesis 1 is that same-sex married parents were more likely than different-sex married parents to report behavior problems in children. Still, overall, this pattern suggests that child health differences within the same parental union status are limited, in line with Hypothesis 1.

Turning to Hypothesis 2, results showed child health disadvantages among children with cohabiting parents (relative to married) regardless of sex composition of the parents (consistent with Hypothesis 2). Different-sex cohabiting parents reported disadvantaged child health compared with different-sex married parents on all child health indicators. Children of same-sex cohabitators were more disadvantaged on measures of parent-rated health, emotional difficulties, and behavioral problems relative to the children of different-sex married parents. Moreover, the children of both same-sex cohabiting and different-sex cohabiting households appear to be disadvantaged relative to the children of same-sex married parents on measures of school days lost and emotional difficulties (consistent with Hypothesis 2). Taken together, these findings suggest that for many child health indicators, the health advantage of parental marriage did not differ by whether parents were the same or different sex. It has been long argued that access to marriage would provide many of the same child well-being benefits to the same-sex community as it has to the different-sex community (Herek 2006; Meezan

Table 6 Estimated odds ratios from ordinal logistic regression models of child behavior on family structure ($n = 136,882$)

Variable	Model 1		Model 2	
	Odds Ratio	SE	Odds Ratio	SE
Family Structure (ref. = different-sex married)				
Same-sex married	2.04*	0.68	2.16*	0.71
Same-sex cohabiting	1.84*	0.48	1.73*	0.46
Different-sex cohabiting	1.66***	0.08	1.45***	0.07
Demographics				
Child female (ref. = child male)	0.70***	0.02	0.69***	0.02
Child age	0.99**	0.00	0.98***	0.00
Child race (ref. = non-Hispanic white)				
Child non-Hispanic black	1.63**	0.27	1.52*	0.25
Hispanic white	1.19***	0.05	0.94	0.05
Hispanic black	1.65*	0.33	1.38	0.28
Other	1.21*	0.11	1.11	0.10
Child foreign-born (ref. = child native-born)	0.98	0.06	0.97	0.06
Parents' mean age	0.98***	0.00	0.99**	0.00
Parents' racial composition (ref. = both white)				
Both black	0.61**	0.10	0.62**	0.10
Both other race	0.64***	0.07	0.75*	0.08
Interracial	0.96	0.06	1.06	0.07
Parent's nativity (ref. = both native-born)				
One parent foreign-born	0.95	0.05	0.97	0.05
Both parents foreign-born	0.97	0.05	0.74***	0.04
Family relatedness (ref. = two biological parents)				
One or more biological parents	0.55***	0.09	0.59**	0.10
Unspecified parentage	0.42***	0.07	0.45***	0.08
Region (ref. = Northeast)				
North Central/Midwest	1.13*	0.06	1.11*	0.06
South	1.16**	0.05	1.11*	0.05
West	1.13*	0.06	1.09	0.05
Survey Year	0.99	0.01	1.00	0.01
Socioeconomic Resources				
Parents' mean education			0.92***	0.00
Parents' employment (ref. = both employed)				
One parent employed			1.04	0.03
Neither parent employed			1.37***	0.11
In poverty			1.16**	0.06
Child insured			0.97	0.05
Cut 1	-10.53	10.37	-4.62	10.41
Cut 2	-8.15	10.37	-2.22	10.41

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

and Rauch 2005), and our findings suggest that there may be some level of “marital boost” experienced by same-sex married families. In this way, access to marriage may bolster the health of children whose parents choose to marry but may leave children who have cohabiting parents at a relative disadvantage. Over time, as same-sex marriage becomes more widespread and institutionalized, this difference may increase to be similar to that of the advantage enjoyed by the children of different-sex married parents over their peers with different-sex cohabiting parents.

The Role of Family Socioeconomic Resources in Child Health

Previous research has suggested that SES is a “fundamental cause” of illness and poor health (Bradley and Corwyn 2002; Link and Phelan 1995), so we tested hypotheses pertaining to the expected effect of family SES on child health (Artis 2007; Brown 2006; Eggebeen 2012; McLanahan and Percheski 2008). Although estimates of group differences were almost universally reduced, most significant associations between parents’ union statuses and children’s health remained after accounting for SES. In fact, the only significant results that SES reduced to nonsignificance were the differences between same-sex married and different-sex cohabiting parents’ children in lost school days and emotional difficulties. In two cases, however, controlling for SES actually revealed or increased significant differences among the focal family types. For example, the addition of SES revealed a heightened risk of same-sex cohabiting parents’ children compared with those of different-sex cohabiting parents on emotional difficulties and of same-sex married parents’ children compared with different-sex married parents on poor child behavior. Taken together, these findings are inconsistent with Hypothesis 3 that differences in SES explain any observed differences between children raised by same-sex couples and children raised by different-sex couples. Additionally, they are inconsistent with Hypothesis 4 that differences in SES better explain the marital health advantage in different-sex families than those in same-sex families.

These findings do not necessarily contradict the fundamental role of SES on child health; rather, they reveal that the role of SES is more complex and varies across parental marital status and sex composition. Point estimates of group differences by parental union status are indeed mostly reduced, suggesting that SES plays a role but does not fully explain most differences; SES explains this difference only in the comparison of different-sex cohabiting and same-sex married. Notably, the relatively little explanatory power of SES may be because family groups in this study generally resemble one another on SES; SES mostly changed comparisons related to the different-sex cohabiting families relative to the same-sex married because different-sex cohabiting families are the most disadvantaged on resources and same-sex married families are the most advantaged on resources. Additionally, the newfound disadvantages for same-sex married families (on child behavior) and same-sex cohabiting families (on emotional difficulties) after SES is accounted for suggests that the higher SES of same-sex families are protective of some child outcomes (inconsistent with Hypothesis 3).

For most of our comparison groups, though, socioeconomic indicators were unable to explain significant findings. Other aspects of of SES indicators could be more significant (e.g., wealth; Brown 2006); future work should address this possibility. Yet, family theory offers other possible explanatory factors—most notably, family stability and commitment, which are not measurable in our study (Amato 2005;

Lamb 2012; Lansford et al. 2001). Research on different-sex families suggests that as an “incomplete institution” (Nock 1995), cohabiting relationships are more likely to dissolve and are of shorter duration than marital relationships (Manning 2004; Manning and Brown 2006; Smock 2000); relationship stability is related to child development, especially early in life (Albrecht and Teachman 2003; Cavanagh and Huston 2008; DeLeire and Kalil 2002; Sun and Li 2004; Videon 2002). Previous literature has suggested that parental stability and commitment are highly important to child health (Amato 2005; Lamb 2012; Lansford et al. 2001) and thus are important to consider when comparing the impact of families on child health. Given the socioeconomic similarity among same-sex cohabiting, same-sex married, and different-sex married families, stability may be even more important when comparing child health outcomes across these groups. Among same-sex parents, marriage may serve as a proxy for stability and commitment due to embedded institutional roles and support systems (Cherlin 2004), which would confer a health advantage to same-sex (and different-sex) married families relative to same-sex cohabiting families (Lau 2012; Reczek et al. 2009; Rosenfeld 2014). Cohabitation, as an incomplete institution, could confer health disadvantages to children relative to the more complete institution of marriage that are largely independent of the impact of socioeconomic resources. Same-sex cohabitators, however, have long had forms of ceremonial and legal commitment (Reczek et al. 2009) that may provide more institutional benefits compared with different-sex cohabitators, who have institutional access to marriage but select out for other reasons (Cheng and Powell 2015; Manning et al. 2014).

Social stigma also likely plays a role in these observed differences in addition to stability and commitment. Social approval theory suggests that families historically outside the norm of traditional legal marriage—such as same-sex unions and different-sex cohabitators—are stigmatized, which leads to stigma-driven stress in children and adults. Such stigma results in a reduction in social support, social respect, positive community and family environments, and access to services and programs (Crosnoe and Wildsmith 2011). In turn, same-sex families and different-sex cohabitators may lack access to the social and institutional mechanisms, such as state- and local-run marriage, and mental- and physical health-promoting services. Through this pathway, social stigma and disapproval may translate directly into deleterious health effects for the children of same-sex families—one that marriage may alleviate to some extent. Although same-sex married and cohabiting families both face stigma, marriage may bolster social approval and institutional access to services, and thus child health. If this is true, the same-sex marital boost will likely exacerbate the differences between families headed by same-sex cohabiting couples and same-sex married couples as more couples obtain access to same-sex marriage with recent changes in U.S. marriage laws (e.g., Herek 2006).

Our study extends previous research on this topic by including multiple mental and physical health measures that provide a broad indication of overall child well-being across family structures, but some important limitations need consideration in interpreting our conclusions. First, our approach to identifying same-sex couples risked misclassification bias because of miscoded parent sex (Black et al. 2007a), although these risks were somewhat reduced by the face-to-face computer-assisted interviews in the NHIS. Second, these data span a rapidly changing legal, political, and social landscape in the late twentieth and early twenty-first century United States (Moore and Stambolis-Ruhstorfer 2013; Rosenfeld 2014). For example, legal barriers varied by state across our survey years,

limiting access to marriage for many couples in our study. Same-sex marriage was legal in 2004 in Massachusetts but was explicitly illegal in more than 30 states by 2008 and federally illegal until 2015 (Moore and Stambolis-Ruhstorfer 2013; Rosenfeld 2014). Notably, although changes to the survey first allowed for the identification of “same-sex married” households in 1997, the vast majority of such households occurred after 2004. Third, the cross-sectional pooled data that we used provide a “snapshot” of U.S. households at the time of the survey; they do not include nonresidential children, nor should they be used to assume causality. Fourth, we did not have data on unobserved confounds in the association between family structure and child well-being, such as stability, parenting practices, relationship quality, or relationship selection factors. Fifth, the NHIS lacks important variables such as stigma and discrimination that likely play a role in child well-being in households headed by same-sex families (Meyer 2003).

Issues pertaining to sample size and selection also deserve attention. Because of our small sample of same-sex married couples, we could not reliably test gender differences across groups, which may affect children’s well-being as well as socioeconomic resources through the gender pay gap (Carlson 2006). The NHIS lacked a sexual orientation variable during all study years but 2013, so we also could not identify single gay- and lesbian-parented families, nor could we make claims about whether same-sex parents in this study identified as gay and lesbian. Finally, we controlled for biological relatedness with the best available measure, but this measure could be greatly improved in future surveys. The relatively smaller sample size also limits our ability to address differences between foster and adopted children (Farr et al. 2010) and no data are available on age of adoption/foster care; these limitations should be accounted for when interpreting our results. Moreover, because of heteronormative survey questions that assumed a “mother” and a “father” for each child, we had to extrapolate relatedness for same-sex families from data on one parent. Additionally, from 2013 onward, the NHIS does not differentiate between “biological” and “adopted” children, making it impossible to measure the biological relatedness of many children and parents after that point.

Despite these limitations, our results contribute to the understanding of the linkages among family structure and child health. Government agencies (e.g., Institute of Medicine), professional scientific organizations (e.g., American Sociological Association, National Council on Family Relations), and leading scholars have noted that the current nonrepresentative understanding of same-sex families and child well-being presents a major obstacle to designing efficient research, policies, and programs. This study addresses that gap with robust, nationally representative evidence showing that regardless of parents’ sex composition and socioeconomic status, cohabiting families are disadvantaged in terms of child health outcomes (Brown and Manning 2009). Taken together, these findings suggest that the marital advantages promoting child health in different-sex couples extend, at least partially, to same-sex families. Same-sex parenting itself is associated with few child well-being disadvantages compared with different-sex parenting, but the unique combination of stigmatized same-sex relationships and a relative lack of social and institutional resources may create socially driven health disadvantages for same-sex families relative to different-sex married families. Future research should explore underlying causes of health among children in diverse family structures. Further determination of the interplay among family structure and child well-being that include same-sex families will direct health services toward the fundamental culprits of child well-being disparities.

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References

- Albrecht, C., & Teachman, J. D. (2003). Childhood living arrangements and the risk of premarital intercourse. *Journal of Family Issues*, *24*, 867–894.
- Amato, P. R. (2005). The impact of family formation change on the cognitive, social, and emotional well-being of the next generation. *Marriage and Child Wellbeing*, *15*, 75–96.
- Artis, J. E. (2007). Maternal cohabitation and child well-being among kindergarten children. *Journal of Marriage and Family*, *69*, 222–236.
- Ash, M. A., & Badgett, M. V. L. (2006). Separate and unequal: The effect of unequal access to employment-based health insurance on same-sex and unmarried different-sex couples. *Contemporary Economic Policy*, *24*, 582–599.
- Badgett, M. V. L. (2001). *Money, myths, and change: The socioeconomic lives of lesbians and gay men*. New York: New York University Press.
- Badgett, M. V. L., Gates, G. J., & Maisel, N. C. (2008). Registered domestic partnerships among gay men and lesbians: The role of socioeconomic factors. *Review of Socioeconomics of the Household*, *6*, 327–346.
- Bass, L. E., & Warehime, N. (2011). Family structure and child health outcomes in the United States. *Sociological Inquiry*, *81*, 527–548.
- Bergstrom, T. (1997). A survey of theories of the family. In M. R. Rosenzweig & O. Stark (Eds.), *Handbook of population and family socioeconomics* (pp. 21–79). Amsterdam, The Netherlands: Elsevier.
- Black, D., Gates, G., Sanders, S., & Taylor, L. (2000). Demographics of the gay and lesbian population in the United States: Evidence from available systemic data sources. *Demography*, *37*, 139–154.
- Black, D., Gates, G., Sanders, S., & Taylor, L. (2007a). *The measurement of same-sex unmarried partner couples in the 2000 U.S. Census* (Working Paper Series, No. CCPR-023-07). Los Angeles: California Center for Population Research.
- Black, D. A., Sanders, S. G., & Taylor, L. J. (2007b). The economics of lesbian and gay families. *Journal of Socioeconomic Perspectives*, *21*, 53–70.
- Bradley, R. H., & Corwyn, R. F. (2002). Socioeconomic status and child development. *Annual Review of Psychology*, *53*, 371–399.
- Brion, M.-J., Victora, C., Matjasevich, A., Horta, B., Anselmi, L., Steer, C., . . . Davey Smith, G. (2010). Maternal smoking and child psychological problems: Disentangling causal and non-causal effects. *Pediatrics*, *126*, e57–e65. doi:10.1542/peds.2009-2754
- Brown, S. L. (2006). Family structure transitions and adolescent well-being. *Demography*, *43*, 447–461.
- Brown, S. L., & Manning, W. D. (2009). Family boundary ambiguity and the measurement of family structure: The significance of cohabitation. *Demography*, *46*, 85–101.
- Burgoyne, S. (2012). *Demographic profile of same-sex parents* (NCFMR Family Profiles Report No. FP-12-15). Bowling Green, OH: National Center for Family and Marriage Research. Retrieved from <http://ncfmr.bgsu.edu/pdf/file115683.pdf>
- Carlson, M. J. (2006). Family structure, father involvement, and adolescent behavioral outcomes. *Journal of Marriage and Family*, *68*, 137–154.
- Cavanagh, S. E., & Huston, A. C. (2008). The timing of family instability and children's social development. *Journal of Marriage and Family*, *70*, 1258–1270.
- Cheng, S., & Powell, B. (2015). Measurement, methods, and divergent patterns: Reassessing the effects of same-sex parents. *Social Science Research*, *52*, 615–626.
- Cherlin, A. J. (2004). The deinstitutionalization of American marriage. *Journal of Marriage and Family*, *66*, 848–861.
- Cooksey, E. C., Menaghan, E. G., & Jekielek, S. M. (1997). Life-course effects of work and family circumstances on children. *Social Forces*, *76*, 637–665.

- Crosnoe, R., & Wildsmith, E. (2011). Nonmarital fertility, family structure, and the early school achievement of young children from different race/ethnic and immigration groups. *Applied Developmental Science, 15*, 156–170.
- Deleire, T., & Kalil, A. (2002). Good things come in threes: Single-parent multigenerational family structure and adolescent adjustment. *Demography, 39*, 393–413.
- Denney, J. T., Gorman, B. K., & Barrera, C. B. (2013). Families, resources, and adult health: Where do sexual minorities fit? *Journal of Health and Social Behavior, 54*, 46–63.
- Duncan, G. J., Brooks-Gunn, J., & Klebanov, P. K. (1994). Economic deprivation and early childhood development. *Child Development, 65*, 296–318.
- Dunifon, R. E., & Kowaleski-Jones, L. (2002). Who's in the house? Race differences in cohabitation, single-parenthood and child development. *Child Development, 73*, 1249–1264.
- Eggebeen, D. J. (2012). What can we learn from studies of children raised by gay or lesbian parents? *Social Science Research, 41*, 775–778.
- Eiser, C., & Morse, R. (2001). Can parents rate their child's health-related quality of life? Results of a systematic review. *Quality of Life Research, 10*, 347–357.
- 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*, 164–178.
- Gartrell, N., & Bos, H. (2010). U.S. National Longitudinal Lesbian Family Study: Psychological adjustment of 17-year-old adolescents. *Pediatrics, 126*, 28–36.
- Gates, G. J. (2013). *LGBT parenting in the United States* (Research brief). Los Angeles, CA: Williams Institute, UCLA School of Law. Retrieved from <http://williamsinstitute.law.ucla.edu/wp-content/uploads/LGBT-Parenting.pdf>
- Gates, G. J., et al. (2012). Letter to the editors and advisory editors of *Social Science Research*. *Social Science Research, 41*, 1350–1351.
- Gonzales, G., & Blewett, L. A. (2013). Disparities in health insurance among children with same-sex parents. *Pediatrics, 132*, 703–711.
- Hatzenbuehler, M. L., McLaughlin, K. A., Keyes, K. M., & Hasin, D. S. (2010). The impact of institutional discrimination on psychiatric disorders in lesbian, gay, and bisexual populations: A prospective study. *American Journal of Public Health, 100*, 452–459.
- Heck, J. E., Sell, R. L., & Gorin, S. S. (2006). Health care access among individuals involved in same-sex relationships. *American Journal of Public Health, 96*, 1111–1118.
- Heck, K. E., & Parker, J. D. (2002). Family structure, socioeconomic status, and access to health care for children. *Health Services Research, 37*, 173–186.
- Hequembourg, A. L. (2004). Unscripted motherhood: Lesbian mothers negotiating incompletely institutionalized family relationships. *Journal of Social and Personal Relationships, 21*, 739–762.
- Herek, G. M. (2006). Legal recognition of same-sex relationships in the United States: A social science perspective. *American Psychologist, 61*, 607–621.
- Lamb, M. E. (2012). Mothers, fathers, families, and circumstances: Factors affecting children's adjustment. *Applied Developmental Science, 16*, 98–111.
- Langton, C. E., & Berger, L. M. (2011). Family structure and adolescent physical health, behavior, and emotional well-being. *Social Service Review, 85*, 323–357.
- Lansford, J. E., Ceballo, R., Abbey, A., & Stewart, A. (2001). Does family structure matter? A comparison of adoptive, two-parent biological, single-mother, stepfather, and stepmother households. *Journal of Marriage and Family, 63*, 840–851.
- Lau, C. Q. (2012). The stability of same-sex cohabitation, different-sex cohabitation, and marriage. *Journal of Marriage and Family, 74*, 973–988.
- Link, B. G., & Phelan, J. C. (1995). Social conditions as fundamental causes of disease. *Journal of Health and Social Behavior, 35*, 80–94.
- Liu, H., Reczek, C., & Brown, D. (2013). Same-sex cohabitators and health: The role of gender, race-ethnicity, and socioeconomic status. *Journal of Health and Social Behavior, 54*, 25–45.
- Lofquist, D. (2011). *Same-sex couple households* (American Community Survey Briefs No. 10–03). Washington, DC: U.S. Census Bureau. Retrieved from <http://www.census.gov/prod/2011/pubs/acsbr10-03.pdf>
- Lofquist, D. (2012, May). *Same-sex couples' consistency in reports of marital status*. Paper presented at the annual meeting of the Population Association of America, San Francisco, CA. Retrieved <http://www.census.gov/hhes/samesex/files/Lofquist.PAA.paper.pdf>
- Manning, W. D. (2004). Children and the stability of cohabiting couples. *Journal of Marriage and Family, 66*, 674–689.

- Manning, W. D., & Brown, S. L. (2006). Children's economic well-being in married and cohabiting parent families. *Journal of Marriage and Family*, *68*, 345–362.
- Manning, W. D., Fetto, M. N., & Lamidi, E. (2014). Child well-being in same-sex parent families: Review of research prepared for American Sociological Association amicus brief. *Population Research and Policy Review*, *33*, 485–502.
- Manning, W. D., & Lamb, K. A. (2003). Adolescent well-being in cohabiting, married, and single-parent families. *Journal of Marriage and Family*, *65*, 876–893.
- Manning, W. D., & Lichter, D. T. (1996). Parental cohabitation and children's economic well-being. *Journal of Marriage and the Family*, *58*, 998–1010.
- Manning, W. D., Smock, P. J., & Majumdar, D. (2004). The stability of cohabiting and marital unions for children. *Population Research and Policy Review*, *23*, 135–159.
- McLanahan, S. S. (2004). Diverging destinies: How children fare under the second demographic transition. *Demography*, *41*, 607–627.
- McLanahan, S., & Percheski, C. (2008). Family structure and the reproduction of inequalities. *Annual Review of Sociology*, *34*, 257–276.
- Meezan, W., & Rauch, J. (2005). Gay marriage, same-sex parenting, and America's children. *Future of Children*, *15*(2), 97–115.
- Meyer, I. H. (2003). Prejudice, social stress, and mental health in lesbian, gay, and bisexual populations: Conceptual issues and research evidence. *Psychological Bulletin*, *129*, 674–697.
- Minnesota Population Center and State Health Access Data Assistance Center (2014). *Integrated Health Interview Series: Version 5.0* [Data set]. Minneapolis: University of Minnesota.
- Moore, M. R., & Stambolis-Ruhstorfer, M. (2013). LGBT sexuality and families at the start of the twenty-first century. *Annual Review of Sociology*, *39*, 491–507.
- Nock, S. L. (1995). A comparison of marriages and cohabiting relationships. *Journal of Family Issues*, *16*, 53–76.
- O'Connell, M., Lofquist, D., Simmons, T., & Lugalla, T. (2010, April). *New estimates of same-sex couple households from the American Community Survey*. Paper presented at the annual meeting of the Population Association of America, Dallas, TX. Retrieved from http://www.census.gov/hhes/samesex/files/SS_new-estimates.pdf
- Potter, D. (2012). Same-sex parent families and children's academic achievement. *Journal of Marriage and Family*, *74*, 556–571.
- Prickett, K. C., Martin-Storey, A., & Crosnoe, R. (2015). A research note on time with children in different and same-sex two-parent families. *Demography*, *52*, 905–918.
- Reczek, C., Elliot, S., & Umberson, D. (2009). Commitment without marriage: Union formation among long-term same-sex couples. *Journal of Family Issues*, *30*, 738–756.
- Reczek, C., Liu, H., & Spiker, R. (2014). A population-based study of alcohol use in same-sex and different-sex unions. *Journal of Marriage and Family*, *76*, 557–579.
- Regnerus, M. (2012). How different are the adult children of parents who have same-sex relationships? Findings from the New Family Structures Study. *Social Science Research*, *41*, 752–770.
- Rosenfeld, M. J. (2010). Nontraditional families and childhood progress through school. *Demography*, *47*, 755–775.
- Rosenfeld, M. J. (2014). Couple longevity in the era of same-sex marriage in the United States. *Journal of Marriage and Family*, *76*, 905–918.
- Shrivastava, A., Murrin, C., & Kelleher, C. C. (2014). Preschoolers' parent-rated health disparities are strongly associated with matters of adiposity in the Lifeways Cohort Study Children. *British Medical Journal Open*, *4*, e005328. doi:10.1136/bmjopen-2014-005328.
- Siegel, B. S., Perrin, E. C., & the Committee on Psychosocial Aspects of Child and Family Health (2013). Promoting the well-being of children whose parents are gay or lesbian. *Pediatrics*, *131*, 827–830.
- Smock, P. J. (2000). Cohabitation in the United States: An appraisal of research themes, findings, and implications. *Annual Review of Sociology*, *26*, 1–20.
- Stein, R. E. K. (2011). A measured approach to child health. *Academic Pediatrics*, *11*, 240–246.
- Stein, R. E. K., Siegel, M. J., & Bauman, L. J. (2010). Double jeopardy: What social risk adds to biomedical risk in understanding child health and child healthcare utilization. *Academic Pediatrics*, *10*, 165–171.
- Sun, Y., & Li, Y. (2004). Children's well-being during parents' marital disruption process: A pooled time-series analysis. *Journal of Marriage and Family*, *64*, 472–488.
- Videon, T. M. (2002). The effects of parent-adolescent relationships and parental separation on adolescent well-being. *Journal of Marriage and Family*, *64*, 489–503.
- Wainright, J. L., & Patterson, C. J. (2006). Delinquency, victimization, and substance use among adolescents with female same-sex parents. *Journal of Family Psychology*, *20*, 526–530.

- 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.
- Ward, B. W., Dahlhamer, J. M., Galinsky, A. M., & Joestl, S. S. (2014). *Sexual orientation and health among U.S. adults: National Health Interview Survey, 2013* (National Health Statistics Reports No. 77). Hyattsville, MD: National Center for Health Statistics.
- Williams, S. (2012). *Child poverty in the United States, 2010* (NCFMR Family Profiles Report, No. FP-12-17). Bowling Green, OH: National Center for Family and Marriage Research. Retrieved from http://ncfmr.bgsu.edu/pdf/family_profiles/file115686.pdf