Family Structure and Child Health: Where Do Children in Same-Sex Parent Families Fit?*

Justin T. Denney

Laura Freeman Cenegy

Rachel Tolbert Kimbro

Rice University

* Department of Sociology, MS-28, 6100 Main Street, Houston, TX 77005-1892

(jtdenney@rice.edu).

Abstract

Increasing family complexity over the last half-century has spurred the need for research on the implications for children of diverse family structures. In particular, research focused on the health and development of children in same-sex parent families is scarce. What evidence is available suffers from many shortcomings, including a lack of representative data. We use 14 years of the National Health Interview Survey (1998-2011) to identify children age 0 to 18 in married couple different-sex, same-sex couple, cohabiting different-sex couple, and single parent families. We examine the relationship between family type and the parent's perception of the child's overall health status while accounting for important covariates such as socioeconomic status, health insurance, and whether the child was adopted. The results suggest that children in same-sex families are similar to those in married families and children in different-sex cohabiting and single parent families have higher odds of poorer health.

Family Structure and Child Health: Where Do Children in Same-Sex Parent Families Fit?

The expansion of family configurations and increasing family instability over the last half-century has spurred the need for research on the implications for children living in complex family structures (Cherlin 2012). Family complexity and its impact on child health is a particularly nascent area of study, as researchers have yet to consider children living in many different family types—including children living with cohabiting, step, and same-sex parents, as well as children living in extended kin families. Until now, for convenience researchers typically put these family types into the ubiquitous, "other" family category, or lump all non-married parent families together in an "unmarried" category. This masking of complexity is partly due to sample size restrictions for ultra-fine family classifications in child-level data, but failing to account for these differences prevents researchers from fully understanding the mechanisms that connect family structure to child health.

Compared to the abundance of research on family structure and children's well-being (e.g. emotional, behavioral, and cognitive outcomes) (Brown 2010; McLanahan and Percheski 2008), far fewer studies have focused specifically on how family structure influences children's health (Conway and Li 2012). The few existing investigations into this relationship demonstrate the importance of disentangling various types of family structures (e.g. accounting for biological/non-biological parents, and parents' gender) and child health outcomes from general well-being (Bramlett and Brumberg 2007; Conway and Li 2012). That is, while research generally shows that children who live in married parent households fare best in terms of health (Bramlett and Brumberg 2007), there is significant variation in child health outcomes across non-traditional family structures, and not necessarily according to the expected pattern (Bramlett and Brumberg 2007; Conway and Li 2012). For example, as one might expect, in terms of health,

children in married parent families fare better than those in cohabiting families, and children in cohabiting families fare better than those in single parent households (Conway and Li 2009; Harknett 2009; Schmeer 2012). In other words, marriage seems to be most protective for children in terms of health, while children living in single parent families seem to experience the greatest health risk, and children in cohabiting families occupy some middle-ground. Yet, when parent gender and biological parenthood are accounted for, some evidence indicates that children in single father families fare just as well as those living with two married or cohabiting, biological parents in terms of health (Bramlett and Brumberg 2007; Conway and Li 2012). Curiously, the same advantage for children in single father families, as opposed to single mother families, is not exhibited in terms of children's educational or behavioral outcomes (Conway and Li 2012).

A flurry of scholarly activity, partially motivated by the Supreme Court's consideration of DOMA legislation and same-sex marriage, recently occurred surrounding the issue of the wellbeing of children who grow up with same-sex parents. The Wendy Manning-led, excellent Amicus Brief for the American Sociological Association (2013) summarized the small, existing literature on the children of same-sex parents. It concluded that there was no credible social science evidence to support the idea that children in same-sex parent families fared worse on any outcomes. In addition to the Supreme Court's focus on the issue, a controversial article was published in *Social Science Research* (Regnerus 2012) which made claims about lower well-being for children in same-sex families. Extensive backlash resulted within the scholarly community, largely revolving around the methods used to adjudicate children who were and were not in same-sex families (for a review, see Cohen 2013; Perrin, Cohen, Caren 2013). Although highly questionable methodological decisions were made in the Regnerus (2012)

study, the classification issue is a problem which has long plagued studies of same-sex children (Schumm 2012), for three reasons – first, because standard household and family surveys often do not contain the kinds of measures (household rosters including gender, and the relationship of everyone in the household to each other) needed to determine same-sex families; second, virtually no nationally-representative studies contain measures of sexual orientation, so even if roster and family structure data can identify same-sex adults living in the same household, we cannot be sure they are romantic partners; and finally, because of the lack of sufficient sample sizes, even in national data sets, to separate out and make estimates for the children of same-sex parents. In addition to data limitations, prior work on same-sex families often neglects to build a theoretical case for *why* we might expect differences (or similarities) across outcomes for children.

Still, in the absence of research that considers children in same-sex families, the existing literature identifies several mechanisms that may serve as useful starting points for speculation into how same-sex family structures influence child health. Socioeconomic status (SES), family stress processes, social support, parental time use, and selection, for example, have all been implicated for the relationship between family structure and child outcomes (see Brown 2010 for review). Given previous findings, we might expect children in same-sex and married parent families to experience similar circumstances with regard to SES and time use (i.e. time spent focusing on children's exercise versus television watching) (Carlson and Corcoran 2001). The SES of same-sex families, however, is still not well understood as persistent disadvantages may be present among sexual minorities who, in particular, live with children (Badgett, Durso, and Schneebaum 2013). Children in same-sex families, however, may indeed differ from children in married parent families in other regards, as same-sex children may experience greater exposure

to family stress processes and less social support (Brown 2010). We might further speculate that while one doesn't 'select' into same-sex partnerships the same way one might 'select' into cohabitation or divorce (Buckles and Price 2013), same-sex couples could, however, 'select' into being in a committed relationship. Given this possibility, there may be good reason to expect children in same-sex families to be similar to children in married parent families, because same-sex families must employ deliberation and intentionality in building a family. That said, the issue of stigma (Demo and Acock 1988) is likely to be a greater concern for children in same-sex than married parent families; and there is reason to suspect, for related reasons, that same-sex families might experience less extended kin social support as well. Considering the findings and limitations of past research, the current study builds the case that, partly due to the intentionality in building same-sex families (with the exception of children conceived in previous different-sex relationships), the possibility of less SES disadvantage in same-sex families (Valanis et al. 2000) as compared to, say, single parent families, and the overall movement toward increasing positive public opinion toward same-sex couples with children (Powell et al 2010), we should expect children living with same-sex parents to have outcomes more comparable to those of children living in married parent families than to those in cohabiting or single parent families.

In this paper, we utilize 14 years of nationally representative data, identifying same-sex families with children in an innovative manner described elsewhere (Denney, Gorman, and Barrera 2013; Hui, Reczek, and Brown 2013), to assess child health differences across multiple types of families. The large sample size and national representation of the data allows us to expand investigations into family structure and child health in ways which were not previously possible.

DATA and METHOD

The data come from combining the 1998 to 2011 years of the National Center for Health Statistics' (NCHS various years) National Health Interview Survey (NHIS). An unmarried partner category in the NHIS household roster allows us to examine various married and unmarried relationship types. There are no indicators of sexual attraction or identity in the NHIS, so partnerships are identified by matching the sex of respondent variable with the relationship to householder variable. Married couple households are identified by one male and one female reporting married status. Same-sex couples are identified by two men or women reporting as partners, and cohabiting different-sex couples as a man and a woman reporting as partners. Because the NHIS is a household level survey we are able to also establish whether or not children are living in the household. This additional information allows us to identify a fourth household type, single parent households. We use the full person files of the NHIS over the entire time frame to construct the household types and measures (described below) and then restrict our sample to children age 0 to 18 that live in one of the four household types described above. Our analytic sample includes nearly 400,000 children, including 282,010 in married different-sex families, 916 in same-sex families, 24,064 in different-sex cohabiting couple families, and 90,768 in single parent families.

The dependent measure is the parent's self-reported health of the child. This indicator of child health is available in the person-level files of the NHIS so it allows us to maximize our sample of children in same sex families. We follow convention and dichotomize the measure to indicate poor to good health, relative to very good to excellent health (see Bramlett and Blumberg 2007). We include relevant control measures to examine the association between family type and health among children. These controls include age, gender, race/ethnicity, the

number of children in the household, the region of residence, parent's educational attainment, the poverty status of the household, whether or not the child has health insurance, and the relationship of the child to his/her parents in the household.

For most measures, the NHIS has very low rates of missing data, generally less than 3%. However, some variables are missing considerable data. For example, the income to poverty ratio was missing 18% .Therefore, we employ multiple imputation techniques to estimate values for our multivariate analyses (Royston 2005). Our imputation includes a diverse set of predictors and estimates five sets of probable values for each missing value. The resulting data sets include a random component based on draws from the posterior predictive distribution of the missing data under a posited Bayesian model and, under the missing-at-random assumption, provide unbiased estimates of variance (Allison 2001). We estimate weighted logistic regression models on the multiply imputed data using the 'mim' command in Stata and present odds ratios.

RESULTS

Table 1 provides a descriptive assessment of children for the full sample and by the four different family types. Though 16% of the full sample of children fall into the poorer health category, there are differences by the type of family the child lives in. Only 14% of children in married different-sex families are reported in poorer health while nearly 18% in same-sex families and nearly 23% in cohabiting and single parent families fall into the poorer health category.
There are also some demographic differences in the make-up of children across family types. Nearly 70% of children in married couple families are white but just over half in same-sex and cohabiting families are white, and just over 40% of kids in single parent families are white.

Instead, almost a quarter of kids in same-sex families and one-third in single parent families are black.

Two to over three times the proportion of children in same-sex, cohabiting, and single parent families live in poverty, compared to 9% of children living in poverty in married couple families. Roughly 15% of children in different-sex married and cohabiting couple families have at least one parent who is foreign born while smaller proportions of kids in same-sex and single parent families have foreign born parents. Over 90% of children have some form of health insurance coverage with the lowest proportion (86%) among kids in different-sex cohabiting families. And finally, just over 2% of all the children in the sample were adopted but that proportion is nearly 15% in same-sex families.

(Table 1 about here)

Table 2 examines associations between household type and poorer health among children after progressively adjusting for relevant covariates. Model 1 serves as a baseline and shows that children in different-sex cohabiting and single parent families have 1.8 times the odds of poorer health compared to children in married couple families. Children in same-sex families have marginally higher odds as well. After adjusting for sociodemographic variables and region of residence, the odds of poorer health among children in same-sex households is no longer significantly different from children in married couple families. The odds for children in the other household types are attenuated in Model 2 but remain significantly higher than children in married families.

(Table 2 about here)

Model 3 includes indicators of parental education and foreign born status, as well as, household poverty. Including these measures reduces the odds for poorer health among kids in

cohabiting and single parent households by 40 to 50% (OR Model 2 – OR Model 3 / 1.0). The odds for children in same-sex households are slightly attenuated as well and remain statistically indistinguishable from children in married households. Finally, Model 4 accounts for health insurance status and the relationship of the child to the parents. Though adopted children and others (e.g. foster and step children) have elevated odds of reported poorer health, accounting for these has little effect on the relationship between household type and child health.

In Table 3, we preliminarily examine these associations by age of the child to see if there are some differences by stage of development. We will run more thorough interaction models before the conference but we do see a couple of patterns in these additional models. First, the odds for children in different-sex cohabiting families and single parent families are consistently elevated though the odds seem to increase with each stage of development among children in different-sex cohabiting families. The point estimates in these restricted samples for children in same-sex families have large standard errors (and thus confidence intervals) but show that there may be an elevated risk of poorer health among children age 6 to 12 and no elevation in odds among younger or older children.

(Table 3 about here)

DISCUSSION (in brief)

Family complexity in the U.S. and beyond is increasing. Though decades of research on family structure and child well-being document differences in varying family types, knowledge of the health of children in same-sex families remains limited. In this paper, we use multiple years of a national level survey in order to identify and assess the health of children in married different-sex, same-sex, cohabiting different-sex, and single parent families. Our analyses so far indicate that children in same-sex families are quite similar to children in married couple families. We

also find support for established health deficits for children in cohabiting and single parent families. In light of recent Supreme Court decisions and ongoing judicial and legislative action, it is imperative for the research and medical communities to come to a more clear understanding of the complex ways in which families influence the health of children.

REFERENCES

Allison, P.D. 2001. *Missing Data*: London: Sage University.

Badgett, M.V. Lee, Laura E. Durso, and Alyssa Schneebaum. 2013. "New Patterns of Poverty in the Lesbian, Gay, and Bisexual Community." UCLA School of Law: The Williams Institute.

Bramlett, Matthew D. and Stephen J. Blumberg. 2007. "Family Structure and Children's Physical and Mental Health." *Health Affairs* 26(2):549-558.

Brief of Amicus Curiae American Sociological Association in Support of Respondent Kristin M. Perry and Respondent Edith Schlain Windsor, Hollingsworth v. Perry, No. 12-144, United States v. Windsor, No. 12-307.

Brown, Susan L. 2010. "Marriage and Child Well-Being: Research and Policy Perspectives." *Journal of Marriage and Family* 72(5):1059-1077.

Buckles, Kasey S. and Joseph Price. 2013. "Selection and the Marriage Premium for Infant Health." *Demography* 50(4):1315-1339.

Carlson, Marcia J. and Mary E. Corcoran. 2001. "Family Structure and Children's Behavioral and Cognitive Outcomes." *Journal of Marriage and Family* 63(3):779-792.

Cherlin, Andrew J. 2012. "Goode's *World Revolution and Family Patterns*: A Reconsideration at Fifty Years." *Population and Development Review* 38(4):577-607.

Cohen, Phillip. 2013. "Regnerus Affair Timeline, with Maze." http://familyinequality.wordpress.com/2013/08/06/regnerus-affair-timeline-with-maze/

Conway, Karen Smith and Minghua Li. 2010. "Family Structure and Child Outcomes: A High Definition, Wide Angle 'Snapshot'." *Review of Economics of the Household* 10(3):345-374.

Demo, David H. and Alan C. Acock. 1988. “The Impact of Divorce on Children.” *Journal of Marriage and Family* 50(3):619-648.

Denney, Justin T., Bridget K. Gorman, and Christina B. Barrera. 2013. “Families, Resources, and Adult Health Where Do Sexual Minorities Fit?.” *Journal of Health and Social Behavior* 54(1):46-63.

Harknett, Kristen. 2009. “Why are Children with Married Parents Healthier? The Case of Pediatric Asthma.” *Population Research and Policy Review* 28:347-365.

Liu, Hui, Corinne Reczek, and Dustin Brown. 2013. "Same-Sex Cohabitors and Health: The Role of Race-Ethnicity, Gender, and Socioeconomic Status." *Journal of Health and Social Behavior* 54:25-45.

McLanahan, Sara and Christine Percheski. 2008. “Family Structure and the Reproduction of Inequalities.” *Annual Review of Sociology* 34:257-276.

NCHS. various years. "1998-2011 National Health Interview Surveys: Core Data." US Department of Health and Human Services. Hyattsville, MD.

Perrin, Andrew J., Phillip N Cohen, and Neal Caren. 2013. “Are Children of Parents Who Had Same-Sex Relationships Disadvantaged? A Scientific Evaluation of the No-Differences Hypothesis.” *Journal of Gay & Lesbian Mental Health* 17(3): 327-336.

Powell, Brian, Catherine Bolzendahl, Claudia Geist, and Lala Carr Steelman. 2010. *Counted Out: Same-sex Relations and Americans' Definitions of Family*. New York: Russell Sage Foundation.

Regnerus, Mark. 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(4): 752-770.

Royston, Patrick. 2005. "Multiple imputation of missing values: update." *The Stata Journal* 5:188-201.

Schmeer, Kammi K. 2012. “Family Structure and Obesity in Early Childhood.” *Social Science Research* 41:820-832.

Schumm, W. R. 2012. “Methodological Decisions and the Evaluation of Possible Effects of Different Family Structures on Children: The New Family Structures Survey (NFSS).” *Social Science Research.*

Valanis, Barbara. G., Deborah J. Bowen, Tamsen Bassford, Evelyn Whitlock, Pamela Charney, and Rachel A. Carter. 2000. “Sexual Orientation and Health: Comparisons in the Women's Health Initiative Sample.” *Archives of Family Medicine* 9(9):843.

Table 1. Descriptives for the Full Sample, and by Household Type of child, Ages 0 to 18.[a]

	Full	Married couple	Same sex couple	Cohabiting couple	Single parent
N	397,758	282,010	916	24,064	90,768
Dependent Measure					
Child health poor to good (very good to excellent, ref)	16.3	13.8	17.8	22.5	22.9
Independent Measures					
Age (mean)	9.0	8.9	8.9	7.4	9.8
Gender (male)	51.2	51.4	47.4	52.8	50.4
Race / ethnicity					
Non-Hispanic White	62.3	68.7	53.5	53.3	42.9
Non-Hispanic Black	13.9	7.9	23.7	17.2	33.4
Non-Hispanic Other	5.2	5.7	3.6	4.1	3.7
Hispanic	18.4	17.4	18.4	25.1	19.8
Children in household (mean)	2.3	2.4	2.5	2.3	2.2
Region					
Northeast	17.7	17.7	21.4	16.6	18.0
Midwest	24.7	24.9	21.8	26.9	23.3
South	35.3	34.3	34.0	33.3	39.1
West	22.3	23.1	22.8	23.2	19.6
Parent's education[b] (mean)	2.7	2.9	2.8	2.1	2.5
Household in poverty	15.5	9.0	18.5	22.7	35.8
At least one parent foreign born	13.6	15.0	9.8	15.7	8.3
Has health insurance	90.7	91.3	91.2	86.2	89.7
Child adopted	2.2	2.4	14.9	0.7	1.5

Source: 1998-2011 National Health Interview Survey.

[a] Proportions unless otherwise noted

[b] 1 = less than high school; 2 = high school or GED; 3 = some college; 4 = Bachelors; 5 = Graduate degree; Average education calculated for two parent families

Table 2. Logistic Regression Odds Ratios Predicting Poor to Good Health, Ages 0 to 18.[a]

	Model 1		Model 2		Model 3		Model 4	
Household type (married diferent sex, ref)								
Same sex	1.35	+	1.22		1.17		1.12	
Different Sex cohabitors	1.81	***	1.72	***	1.26	***	1.27	***
Single Parent	1.85	***	1.56	***	1.15	***	1.19	***
Age			1.03	***	1.04	***	1.04	***
Gender (male)			1.06	**	1.06	**	1.06	**
Race / ethnicity (white, ref)								
Non-Hispanic Black			1.86	***	1.52	***	1.51	***
Non-Hispanic Other			1.57	***	1.46	***	1.46	***
Hispanic			2.30	***	1.38	***	1.38	***
Num. Children in household			1.13	***	1.03	**	1.02	*
Region (West, ref)								
Northeast			1.02		1.07	*	1.07	*
Midwest			1.10	***	1.10	**	1.09	**
South			1.05	*	1.01		1.01	
Parent's education					0.71	***	0.71	***
Household poverty (not in, ref)								
Poor					2.06	***	2.07	***
Near poor					1.64	***	1.65	***
At least one parent foreign born					1.07	*	1.09	**
Has health insurance							1.04	
Relationship to parent (biological, ref)								
Adopted							1.41	***
Other							1.23	***

Source: 1998-2011 National Health Interview Survey.

+ $p < 0.10$; * $p < 0.05$; ** $p < 0.01$; *** $p < 0.001$

[a] Model results on multiple imputation data set.

Table 3. Logistic Regression Odds Ratios Predicting Poor to Good Health, By Age Group.[a]

	Age 0 to 5		Age 6 to 12		Age 13 to 18	
Household type (married diferent sex, ref)						
Same sex	0.65		1.72	+	1.09	
Different Sex cohabitors	1.23	***	1.27	***	1.37	***
Single Parent	1.22	***	1.20	***	1.16	***
Age	1.06	***	1.03	**	1.05	***
Gender (male)	1.18	***	1.13	***	0.93	*
Race / ethnicity (white, ref)						
Non-Hispanic Black	1.37	***	1.63	***	1.51	***
Non-Hispanic Other	1.61	***	1.56	***	1.27	**
Hispanic	1.35	***	1.49	***	1.31	***
Num. Children in household	1.09	***	1.00		0.99	
Region (West, ref)						
Northeast	1.05		1.05		1.09	+
Midwest	1.14	*	1.11	*	1.04	
South	1.04		0.99		0.99	
Parent's education	0.72	***	0.70	***	0.70	***
Household poverty (not in, ref)						
Poor	1.98	***	2.06	***	2.17	***
Near poor	1.61	***	1.66	***	1.67	***
At least one parent foreign born	1.18	***	1.07		1.03	
Has health insurance	1.20	**	1.06		0.96	
Relationship to parent (biological, ref)						
Adopted	1.31		1.62	***	1.31	*
Other	1.33	**	1.26	***	1.20	***

Source: 1998-2011 National Health Interview Survey.

+ $p < 0.10$; * $p < 0.05$; ** $p < 0.01$; *** $p < 0.001$

[a] Model results on multiple imputation data set.