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Parental Sexual Orientation and Children's Psychological Well-Being: 2013–2015 National Health Interview Survey

Jerel P. Calzo[1,2], **Vickie M. Mays**[3], **Charlotte Björkenstam**[4,9], **Emma Björkenstam**[5,6], **Kyriaki Kosidou**[7,8], and **Susan D. Cochran**[9]

[1]Division of Health Promotion and Behavioral Science, Graduate School of Public Health, San Diego State University, San Diego, California, USA

[2]Institute for Behavioral and Community Health, San Diego State University Research Foundation, San Diego, California, USA

[3]Departments of Psychology and Health Policy and Management, University of California Los Angeles, Los Angeles, California, USA

[4]Department of Clinical Neuroscience, Karolinska Institutet, Stockholm, Sweden

[5]Department of Public Health Science, Division of Social Medicine, Karolinska Institutet, Stockholm, Sweden

[6]Department of Community Health Sciences, Fielding School of Public Health, University of California Los Angeles, Los Angeles, California, USA

[7]Department of Public Health Science, Division of Public Health Epidemiology, Karolinska Institutet, Stockholm, Sweden

[8]Center for Epidemiology and Community Medicine, Stockholm County Council, Stockholm, Sweden

[9]Department of Epidemiology, Fielding School of Public Health, University of California Los Angeles, Los Angeles, California, USA

Abstract

Debate persists about whether parental sexual orientation affects children's well-being. This study utilized information from the 2013–2015 US, population-based National Health Interview Survey to examine associations between parental sexual orientation and children's well-being. Parents reported their children's (aged 4–17 years old, N=21,103) emotional and mental health difficulties using the short form Strengths and Difficulties Questionnaire (SDQ). Children of bisexual parents had higher SDQ scores than children of heterosexual parents. Adjusting for parental psychological distress (a minority stress indicator) eliminated this difference. Children of lesbian and gay parents did not differ from children of heterosexual parents in emotional and mental health difficulties, yet, the results among children of bisexual parents warrant more research examining the impact of minority stress on families.

Corresponding author: Jerel P. Calzo, PhD, MPH, San Diego State University Graduate School of Public Health, 5500 Campanile Dr., San Diego, CA 92182-4162. jcalzo@sdsu.edu. Phone: 619-594-2390. Fax: 619-594-6112.
DR. CHARLOTTE BJORKENSTAM (Orcid ID : 0000-0002-6212-3052)

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The shifting landscape of civil rights for lesbian, gay, bisexual (LGB) and other sexual minority populations in the United States has created unprecedented opportunities for sexual minority individuals to create families and raise children. Up to 6 million children and adults in the United States have an LGB parent, and nearly 220,000 children in the United States younger than 18 years of age are being raised by parents in a same-gender relationship (Gates, 2013, 2015). Despite copious research documenting that children raised by parents in same-gender relationships evidence few, if any, differences in psychological adjustment from their peers being raised by parents in heterosexual relationships (Gartrell & Bos, 2010; Wainright, Russell & Patterson, 2004) the potential effects of a parent's sexual orientation on children's well-being remains a source of continuing public and political debate (Cheng & Powell, 2015; Manning, Fettro, & Lamidi, 2014; Webb & Chonody, 2014). More than a third of Americans do not believe that LGB individuals should have the right to adopt a child (Gates, 2015). Such public opinion is indicative of the overall cultural context of sexual orientation-related stigma and minority stress (Meyer, 2003) that may constrain the formation of LGB-headed families, and potentially affect the developmental context for children raised in such families (Golombok & Badger, 2010; Ray & Gregory, 2001; Robitaille & Saint-Jacques, 2009). Because LGB parenthood is a polarizing topic, research investigating differential effects of parental sexual orientation on child health and social development may have important implications for informing adoption or custody decisions, as well as state and federal policy.

From a population health perspective, no single study or research approach can determine whether the well-being of children raised by parents in same-gender relationships differs from children raised by heterosexual parents. However, amassing a totality of evidence, which includes detecting consistency of results across an array of studies and study designs, (Keyes & Galea, 2014) can increase confidence in whether and in what ways parental sexual orientation is a relevant contributor to child health and social development. Two ways to contribute to this endeavor are to incorporate findings from studies that minimize potential sampling biases (e.g., by not recruiting volunteers or on the basis of sexual orientation) or that capture the experiences of parents and children who have previously received less attention in research (e.g., youth from single parent households; youth from households where the sexual orientations of parents may differ). The current study adopts both approaches by leveraging a new source of population data to examine the potential effects of parental sexual orientation on the wellbeing of children raised in both single and dual-parent households. In addition, the study examined whether indicators of parental minority stress contributed to associations between parental sexual orientation and children's wellbeing.

Existing Research on Effects of Parental Sexual Orientation on Child Health

To date, research that has investigated possible effects of parental sexual orientation on child health and social development outcomes has compared children raised in LGB-headed

families to those raised in heterosexual families on various indicators of typical and abnormal developmental outcomes (Gartrell, Bos, Peyser, Deck, & Rodas, 2012; Telingator & Patterson, 2008). Research has also typically relied on samples drawn using convenience sampling methods (e.g., targeted survey sampling, Crouch, Waters, McNair, Power, & Davis, 2014) or special populations (e.g., adoption agencies; Farr, Forssell, & Patterson, 2010; Farr & Patterson, 2013). Research comparing children raised in LGB-headed families to those raised in heterosexual families has found little or no differences regarding psychosocial adjustment, peer relations, romantic relationships, sexual behavior, school outcomes, substance use, delinquency, or victimization (Telingator & Patterson, 2008; Wainright & Patterson, 2006; Wainright, Russell, & Patterson, 2004). Moreover, late adolescent and young adult participants from lesbian-headed families have been found to report lower levels of depression, anxiety, hostility, and problematic alcohol use than their peers in heterosexual families (Golombok & Badger, 2010). The detection of positive developmental outcomes among children raised by parents in a same-gender relationship has been further explored in qualitative research, which has found that children of LGB parents may develop pride and positive coping strategies as a result of growing up in a nontraditional familial context (Titlestad & Pooley, 2014). Research that has found that children reared by parents in same-gender relationships fare worse on behavioral health outcomes has generally been called into question due to critical flaws in study design (e.g., measurement of family structure, health outcomes, inadequate adjustment for confounders) (Cheng & Powell, 2015; Manning, Fettro, Lamidi, 2014).

With regards to prevailing methods in study design, much of the research on the effects of parental sexual orientation has relied on convenience-based samples. For instance, Crouch and colleagues used a cross-sectional survey, the Australian Study of Child Health in Same-Sex Families, distributed in 2012 to a convenience sample of 390 parents from Australia who self-identified as same-sex attracted and had children aged 0–17 years (Crouch, Waters, McNair, Power, & Davis, 2014). Because sexual orientation information has not been collected consistently or systematically in population-based surveys used in developmental psychology research (Institute of Medicine of the National Academies, 2011), such recruitment methods are an essential launching point for identifying children raised by LGB parents. Analyses from targeted recruitment-based studies, such as Crouch et al. (2014), have found that, in comparison to children raised by parents who identify as heterosexual, children raised by parents who identify as LGB fare just as well as those children residing within heterosexual parent households over a wide array of well-being measures: academic performance (Manning, Fettro, & Lamidi, 2014; Wainright, Russell, & Patterson, 2004), social development (Gartrell, Bos, Peyser, Deck, & Rodas, 2012), psychological health (Gartrell & Bos, 2010), early sexual health (Perrin & Siegel, 2013), and substance abuse (Wainright & Patterson, 2006). However, despite rigorous matching (e.g., comparing children born to lesbian mothers who were previously married to men to children who have also experienced divorce, but have heterosexual parents) and adjustment for confounding, an enduring critique of these studies is that they may be susceptible to sampling bias (Telingator & Patterson, 2008).

Other studies have minimized potential sampling biases of convenience samples by drawing their information from U.S. Census data or population-based surveys, where parental sexual

orientation is measured indirectly through identifying the gender of partners in married and cohabiting couples (Wainright & Patterson, 2006; Wainright, Russell, & Patterson, 2004). Across these studies, the results are highly similar to findings derived from convenience sampling methods: children living in households with LGB or same-gender coupled parents seem to do as well psychologically as children with heterosexual or other-gender coupled parents (Gartrell, Bos, Peyser, Deck, & Rodas, 2012; Manning, Fettro, & Lamidi, 2014; van Rijn-van Gelderen, Bos, & Gartrell, 2015; Wainright, Russell, & Patterson, 2004).

Although utilizing such indirect methods to identify children in households with LGB or same-gender coupled parents may mitigate the sampling bias seen in earlier convenience sampling methods, these latter methods rely upon identification of parental sexual orientation in intact same-gender couples. Thus, it is possible that the experiences of some youth may not be reflected in the extant research literature. This may compromise the capacity to understand the myriad influences of sexual orientation on child development. An additional limitation is that prior convenience sampling methods and indirect sampling methods have led to an evidence base that is largely comprised of studies focusing on the experiences of children raised by lesbians and gay men; little information exists on the experiences of children raised by bisexual parents, or in households in which the caregivers are in a mixed orientation relationship (e.g., a bisexual father and heterosexual mother). Not all sexual minority parents in dual parent households exhibit congruent sexual orientations with their partners (Buxton, 1994; Gates, 2013; Kays & Yarhouse, 2010; Tornello & Patterson, 2012). Furthermore, due to the targeted sampling of couples, researchers may have missed opportunities to document the experiences of children who may be raised by single parents who identify as LGB.

Beyond the epidemiologic relevance of having a more exhaustive measurement of sexual minority families in research, increasing inclusion of diverse types of sexual minority families is of substantive relevance for understanding how cultural and institutional stressors impact the lives of children raised by sexual minority parents. Under the minority stress model (Meyer, 2003), it may be possible that dual-parent same-gender couples and single-parent LGB families experience different levels of discrimination, victimization, and stress related to their sexual orientation. For example, single-parenthood among LGB adults may stem from divorce from a previous heterosexual relationship, or may arise from living in which opportunities to cohabitate and marry a same-gender partner are illegal or constrained by anti-gay stigma. In addition, bisexual parents must contend with experiencing more discrimination and victimization than their gay and lesbian peers (Balsam, Beauchaine, Mickey, & Rothblum, 2005; Björkenstam, Kosidou, Björkenstam, Dalman, Andersson, & Cochran, 2016; McClelland, Rubin, & Bauermeister, 2016; Meyer, 2003). All of these experiences may impact the mental health of LGB parents (e.g., elevating risk of depression; Meyer, 2003), which may affect the well-being of their children. Comparing the experiences of children raised by parents of different sexual orientations and taking into account the effects of dual- and single-parent households can further advance the understanding of the impact of parental sexual orientation and sexual minority stress on child development.

The Current Study

One potential solution to mitigating sampling bias and identifying a more diverse set of sexual minority families would be to directly assess sexual orientation in population-based surveys. As recommended in the landmark 2011 report by the Institute of Medicine, including measures of sexual orientation in general population health surveys can increase understanding of the diverse social and health experiences of sexual minorities (Institute of Medicine of the National Academies, 2011). Prior to the current study, none of the available US census or population-based surveys *directly* measured parental sexual orientation identity. This is an important gap in the literature, as using same-gender couple status to identify LGB parents in representative samples forces exclusion of single parent families (Wainright & Patterson, 2006; Wainright, Russell, & Patterson, 2004). Fortunately, the National Health Interview Survey (NHIS) (National Center for Health Statistics, 2014, 2015) recently began measuring sexual orientation identity in adults. This offered a unique opportunity to investigate the well-being of children being raised in families, both single and dual-parent, where the sexual orientation of one of their parents was known. In addition to comparisons between children raised by at least one heterosexual parent and children raised by at least one lesbian or gay parent, NHIS data also enabled examinations of possible differences in psychological well-being with children raised by at least one bisexual parent. In the current study, we utilized the new information on sexual orientation and mental health provided by NHIS to compare markers of psychological distress among children aged 4 to 17, as they relate to the sexual orientation of the children's parents. Consistent with prior research, we anticipated that children raised by LGB parents would show little evidence of differing from children raised by heterosexual parents on markers of psychological distress. In addition, we expected that any potential differences in child wellbeing may be due to sexual minority stress experienced by parents.

Methods

Participants

The NHIS is an annual, population-based household interview conducted by the National Center for Health Statistics (NCHS). Its purpose is to provide health information representative of the resident, civilian, noninstitutionalized U.S. population. Households are selected for participation by multistage area probability sampling methods. Each year, the NHIS employs a complex sampling design to draw its sample and conducts approximately 45,000 household-based interviews (see https:Vic/www.cdc.gov/nchs/nhis/about_nhis.htm for more information on overall study design). We used information drawn from three waves of the NHIS (2013–2015 NHIS) (National Center for Health Statistics, 2014, 2015). Initial data collection includes a brief household interview conducted with a referent adult. As households can contain more than one family, this is followed by a family interview conducted with a family referent adult (61% of the time this is also the household referent adult) who provides additional health information about each family member. Subsequently, a systematically sampled adult, age 18 years and older, is interviewed from within each family to generate a more complete health assessment. Since 2013, the sampled adult interview has included measurement of the sampled adult's sexual orientation identity

(Miller & Ryan, 2011). We pooled available data from three years of data collection: 2013–2015.

In families with children, one child under 18 years of age is also systematically selected for a health interview, completed by interviewing a parent or another knowledgeable adult. In 2013–2015, the health of 38,531 children was assessed by this method. For the current study, we excluded children where a sampled adult was not interviewed (n = 7,097) and where the sampled adult was not the child's parent (n = 2,885). Of the remaining 28,549 children, we also dropped from consideration cases where the parent's sexual orientation identity was not measured or reported as lesbian, gay, bisexual or heterosexual (n = 793) and where the child was younger than 4 years of age (n = 6,252) as the primary study outcome measure was administered only to those age 4 years and older. We excluded another 401 children who were missing responses to the study outcome questions. Thus, our final sample was comprised of 21,103 children. Due to the public availability of the NHIS dataset, this study was exempt from the *Institutional Review Board* (IRB) review requirements.

Measures

Parental sexual orientation—Sexual orientation identity of the child's parent was assessed by a single question in the sampled adult interview. We classified children into one of three groups: those where a parent responded affirmatively to a lesbian or gay identity (n = 149), a bisexual identity (n = 147) and those where a parent responded "straight, that is not gay/lesbian," indicative of a heterosexual identity (n = 20,807).

Child well-being—Within each family a parent or another knowledgeable person provided a proxy assessment of the child's well-being using a 6-item version of the Strengths and Difficulties Questionnaire (SF-SDQ) (Bourdon, Goodman, Rae, Simpson, & Koretz, 2005), a widely-used screening instrument assessing children's emotional and mental health difficulties. The SF-SDQ includes 5 questions that are summed to create an SDQ score: 1) "*Is the child generally well behaved, usually does what adults request,*" 2) "*Does the child have many worries, or often seems worried,*" 3) "*Is the child often unhappy, depressed, or tearful,*" 4) "*Does the child gets along better with adults than with other children/youth,*" and 5) "*Does the child have good attention span, sees chores or homework through to the end.*" Answers to each item ("not true," "somewhat true," or "certainly true" of the child) are summed with reverse coding for two items for a measure of the child's difficulties. Scores range from 0–10. These scores are strongly predictive of the presence of a DSM-IV disorder in the child (Goodman & Goodman, 2009). A final SDQ item assesses the overall impact of a child's strengths and difficulties: "*Overall, do you think that [sampled child] has any difficulties in one or more of the following areas: emotions, concentration, behavior, or being able to get along with other people?*" Response options were: "no," "yes, minor difficulties," "yes, definite difficulties," and "yes, severe difficulties" (coded from 0 to 3). Elsewhere, parental responses of "yes, definite difficulties" or "yes, severe difficulties" have been found to be positively associated with higher rates of mental health and special education services utilization (Bourdon, Goodman, Raw, Simpson, Koretz, 2005; He, Burstein, Schmitz, & Merikangas, 2013; Pastor, Reuben, Duran, 2012; Simpson, Bloom, Cohen, Blumberg, Bourdon, 2005). Detailed information on the SF-SDQ can be found in

Appendix V of the 2004 NHIS Survey Description and on the SDQ website (National Center for Health Statistics, 2014, 2015).

Based on the recommendations of Ringeisen and colleagues (2015), a summary SDQ measure was created by summing items comprising the SDQ score and the impact item. This summary SDQ variable was utilized as the outcome variable in analyses as validation research has demonstrated that the SDQ score and impact item in tandem have enhanced predictability of child's mental health status than when either measure is used alone (Ringeisen, Aldworth, Colpe, Pringle, & Simile, 2015). Scores on the summary SDQ measure ranged from 0 to 13 (Cronbach $\alpha = 0.67$).

Parent psychological distress—Recent parental levels of psychological distress were assessed in the NHIS using the K-6 Distress Scale, a validated, 6-item screening instrument for non-specific psychological distress developed for non-clinical populations (Kessler et al., 2002). We use the K-6 Distress Scale to investigate the potential impact of minority stress on associations between parent sexual orientation and child well-being. Specifically, the measure asked in 6 sequential questions: "*During the past 30 days, about how often did you feel: (1) nervous?; (2) hopeless?; (3) restless or fidgety?; (4) so depressed that nothing could cheer you up?; (5) that everything was an effort?; (6) worthless?*" Response options were: "None of the time," "A little of the time," "Some of the time," "Most of the time," and "All of the time." The K-6 is scored in two ways. First, a total score is obtained by coding responses from 0 to 4 and summing across items; scores range from 0 to 24. Clinical cut-points have also been determined with scores of 13 and above identifying individuals at high risk of meeting diagnostic criteria for serious mental illness (Kessler et al., 2002). We dichotomized the measure using these cut-points to report prevalence of distress by groups of parents. However, in regression analyses to examine the contributions of parental psychological distress to the associations between parental sexual orientation and child well-being, we used the non-categorized K-6 score (Cronbach $\alpha = 0.66$).

Confounding variables—In the current study, confounding of associations between parental sexual orientation and child mental and behavioral functioning can arise from at least three sources. Guided by prior research (e.g., Manning, Fettro, & Lamidi, 2014), we addressed possible confounding due to parental and family differences by including several variables assessed in the sampled adult interview: parental gender (female vs. male), parental educational attainment (less than college vs. some college or more), parental cohabitation status (single parent vs. dual parent household as evidenced by co-residence with a spouse or cohabiting partner) and residential location as indexed by U.S. Census regions (Northeast, Midwest, South, and West). We also included several variables from the child interview to address possible confounding arising from children's status characteristics including gender, race or ethnicity (non-Hispanic white vs. other), and age. Because of potential differences in the lived experiences of children vs. adolescents who have parents in a same-gender relationship (e.g., an adolescent may be more susceptible than a child to peer bullying based on discrimination or sexual orientation-related stigma directed at the family) (Golombok & Badger, 2010; Ray & Gregory, 2001; Robitaille & Saint-Jacques, 2009), we coded age period in years (childhood: 4–11 years vs. adolescence: 12–17 years). Finally, the

source of information about the child (whether from the sampled parent or another knowledgeable person in the household) may also potentially bias study findings.

Analyses

Following NHIS recommendations, all analyses were conducted using statistical software, in this case SUDAAN (Research Triangle Institute, 2012), that incorporates both design information and sampling weights (http://www.cdc.gov/nchs/nhis.htm, 2015). In initial analyses, we investigated differences in parental and child backgrounds using Wald χ^2 tests for categorical measures. For interval scaled measures we used a linear regression model with a single predictor (sexual orientation of the parent). These effects were evaluated by the Wald χ^2 statistic with Satterthwaite correction for the degrees of freedom. In some instances, we also report a measure of effect size (Cohen's *d*). Next, we used multiple regression to evaluate possible associations between parental sexual orientation and child psychological well-being in four nested models: 1) an initial model using sexual orientation of the parent as a single predictor while adjusting only for child informant (parent vs. other) (Model A), 2) a second model further adjusting for confounding due to child characteristics (child's gender, age and race) (Model B), 3) a third model additionally adjusting for parental and family characteristics (parental gender, educational attainment, and cohabitation status, and residential region) (Model C), and finally 4) a fourth model additionally adjusting for parental psychological distress to investigate the potential influence of minority stress on child well-being (Model D). For each model, we investigated sexual orientation effects using two a-priori contrasts (heterosexual vs. gay or lesbian, and heterosexual vs. bisexual) evaluated by the Wald χ^2 statistic with Satterthwaite correction. We report results of these tests as well as standardized estimates of slope (*b*) and their standard errors. In some instances, we also provide 95% confidence intervals (CI) or standard errors (SE) of our estimates. All statistical tests were evaluated using the criterion of $p < 0.05$.

Results

Most children in the 2013–2015 NHIS sample were living with a sampled parent who identified as heterosexual during the parental interview (weighted percent= 98.7%; 95% CI: 98.5%–98.9%). Less than 1% (0.7%; 95% CI: 0.5%–0.8%) were living with at least one parent who reported a lesbian or gay sexual orientation and approximately the same percent of children were living with at least one parent who reported a bisexual sexual orientation (0.6%; 95% CI: 0.5%–0.8%) (see Table 1). While the three groups of children did not substantially differ from each other in their gender ($p = 0.76$) or race or ethnicity ($p = 0.71$), those with a lesbian or gay parent were somewhat older than those with heterosexual or bisexual parents ($p = 0.05$). Children with a lesbian or gay or bisexual parent were also more likely than children with a heterosexual parent, to be living in a family where the sampled parent was female ($p < 0.001$) and a single parent ($p < 0.001$). Nearly 42% (41.8%; 95% CI: 31.9%–52.5%) of children with a lesbian or gay parent resided in a same-gender partnered household and 10.8% (95% CI: 3.0%–6.2%) of children with a lesbian or gay parent resided in a different-gender partnered household. Only 0.02% (n=7; 95% CI: 0.01%–0.05%) of children with a heterosexual parent resided in a same-gender partnered household while 71.0% (95% CI: 70.1%–71.9%) of children with a heterosexual parent lived in a different-

gender partnered household. In contrast, few children with a bisexual parent lived in a same-gender partnered household (3.2%; 95% CI: 1.1%–8.5%) though a sizeable minority lived in a different-gender partnered household (36.2%; 95% CI: 26.8%–46.5%). There were no statistically significant differences between the three groups of children regarding their region of residence ($p = 0.68$) or parental educational attainment ($p = 0.42$). Children of lesbian, gay, or bisexual parents were more likely than children of heterosexual parents to have their data reported by their referent parent rather than a different adult in the household ($p = 0.02$). This is consistent with the sexual orientation difference in single vs. dual-parented households described previously.

Parents also varied in their reports of past month psychological distress with bisexual parents demonstrating substantially higher levels of distress ($m = 6.86$, SE = 0.65), than either lesbian or gay ($m = 2.74$, SE = 0.41, Cohen's $d = 0.78$) or heterosexual parents ($m = 2.65$, SE = 0.04, Cohen's $d = 0.83$) (both $p < 0.001$). Indeed, more than 20% of bisexual parents evidenced distress levels exceeding the standard cut-off score for a probable diagnosable psychiatric disorder. An a priori contrast comparing gay or lesbian vs. heterosexual parents failed to reveal appreciable differences in distress levels ($p = 0.82$, Cohen's $d = 0.02$). Overall, parental distress was positively associated with children's SDQ summary scores ($r = 0.27$, $p < 0.001$).

On average, children in the survey were rated as having only minor difficulties in functioning as evidenced by their SDQ summary scores ($m = 1.82$, SE = 0.02). However, this differed by sexual orientation of the sampled parent (see Table 2). In a priori contrasts, while comparisons of children with heterosexual ($m = 1.81$, SE = 0.02) vs. gay or lesbian ($m = 2.08$, SE = 0.22) parents was not supportive of differences above chance levels ($p = 0.23$, Cohen's $d = 0.12$), the same was not true for children with heterosexual vs. bisexual parents ($m = 2.76$, SE = 0.02, $p < 0.001$, Cohen's $d = 0.41$). In initial models (Model A) adjusting only for child informant, children with a bisexual parent scored higher than those with a heterosexual parent on the total SDQ summary score. In contrast, ratings of children with a lesbian or gay parent did not differ significantly from those with a heterosexual parent. Additional adjustment for either child characteristics (Model B) or child and parental characteristics (Model C) did not appreciably alter these effects. Thus, adjusted models were generally consistent with our expectations that children of LGB parents would not differ from children of heterosexual parents on SDQ outcomes in that effects are present only for children with at least one bisexual parent. Finally, we examined whether there were significant differences across the three parental sexual orientation groups after adjusting for our indicator of minority stress—parental psychological distress (Model D). As expected, these analyses eliminated the sexual orientation effect, such that ratings of children, regardless of the sexual orientation of their sampled parent, did not differ significantly in their summary SDQ scores.

Discussion

Concerns that children growing up in households with LGB parents are harmed by the experience have found little empirical support (Bos, Van Balen, & Van den Boom, 2007; Chan & Patterson, 1998; Golombok & Badger, 2010), with only a few exceptions (Sullins,

2015). Our results provide further reassurance that such concerns about children being raised in same-gender partnered households appear unwarranted. Using information available in a US national, representative dataset, we found little evidence that LGB-parented families (i.e., parental sexual orientation, by itself) negatively impacts children's psychological well-being. Furthermore, we were able to investigate a broader array of LGB-parented families than has previously been possible in population-based research. While earlier population-based studies were restricted to comparing children living in dual-parent households—due to the need to use same-gender coupled status to identify LGB families—the NHIS, with its recently added measurement of adults' sexual orientation, allowed us to also include children who were being raised by single parents and by LGB parents living in different-gender partnered households. This sampling method enabled us to detect that children raised by an LGB parent were more likely than those with a heterosexual parent to be living with a single parent, a finding which replicates previous, population-based research in Canada that detected that sexual minority mothers were less likely to be in a relationship than heterosexual mothers (Julien, Jouvin, Jodoin, L'archeveque, & Chartrand, 2008). Findings such as these provide insights into the diverse experiences of children growing up in LGB-parented families. Possible interpretations of the high, within-group prevalence of LGB single parents could be that LGB parents are less likely than heterosexual parents to marry or live with their partners, or that single parent households represent situations in which an LGB parent experienced divorce from a previous heterosexual relationship. However, research also suggests that policies that constrain LGB individuals' capacities to form families (e.g., inability to marry earlier), anti-gay stigma, and social isolation could also explain this result (American Academy of Pediatrics, 2013; American Medical Association, 2009).

Bisexual parents were more likely than heterosexual parents to report that their children had emotional and mental health difficulties. The NHIS provides insufficient data to contextualize this finding, yet it may be possible to interpret this result within the context of existing literature and the minority stress framework. Prior research has found that bisexuals in general experience greater levels of psychological distress than lesbians or gay men and heterosexual individuals (replicated here), which may be related to social rejection and stigmatization of bisexuality experienced from lesbians, gay men, and heterosexuals (Balsam, Beauchaine, Mickey, & Rothblum, 2005; Björkenstam, Kosidou, Björkenstam, Dalman, Andersson, & Cochran, 2016; Jorm, Korten, Rodgers, Jacomb, & Christensen, 2002; Julien et al., 2008). Approximately 61% of children of bisexual parents were being raised in single parent households (compared to 47% of children of lesbian or gay parents and 29% of children with heterosexual parents), which could indicate elevated exposure to social rejection among bisexual parents. Over one-third of bisexual parents were living with a partner of a different gender, which could create a context in which they experience biphobia from current partners, and/or lesbians and gay men (Dyar, Feinstein, & London, 2014). In addition, bisexual parents in different-gender relationships may experience "invisibility" about their identity, which may serve as an additional source of minority stress (Ross, Siegel, Dobinson, Epstein, & Steele, 2012). It is possible that these factors may elevate bisexual parents' psychological distress, which could impact their children's well-being. Indeed, in the current study, bisexual parents reported higher levels of recent

psychological distress in comparison to heterosexual parents. Furthermore, consistent with a minority stress interpretation, after adjusting for elevated psychological distress among bisexual parents, the emotional and mental health difficulty differences between the children of bisexual and heterosexual parents disappeared. These findings warrant more research examining what factors lead to great psychological distress among bisexual parents, such as minority stress, and mitigating those factors in order promote positive child outcomes.

Nearly 11% of lesbian or gay parents resided in a different-gender partnered household and 0.02% of heterosexual parents resided in a same-gender partnered household. Whereas prior research relied on identifying LGB parents through the recruitment of intact couples, NHIS included a measure of parental sexual orientation identity, which enabled the identification of potential mixed-orientation partnered households. Given the base rate of lesbian or gay parents in the NHIS, it is important to consider potential misclassification as a contributor to this finding. However, previous research indicates that not all sexual minority parents in dual parent households exhibit congruent sexual orientations with their partners (Buxton, 1994; Gates, 2013; Kays & Yarhouse, 2010; Tornello & Patterson, 2012). More research is required to explore the formation and prevalence of mixed-orientation parented households, and their impact on child development.

Despite the methodological advance afforded by NHIS, four possible study limitations warrant discussion in contextualizing the results. First, methods of statistical decision-making, including those used in the current study, cannot prove that no differences exist (proof of the ‘null hypothesis’). Thus, while we tested for the existence of differences, but could not find them in some cases, we cannot prove that minor differences do not exist. However, the robustness of non-findings across different previous studies and varied study designs increasingly provides reassurance that whatever differences might exist between children raised in LGB-parented families and those raised in heterosexual families are likely to be very small if they exist at all. Second, the NHIS presently includes a relatively small number of children with LGB parents, limiting statistical power and the possibility to perform further comparisons, such as between single and dual parent families, between female or male-headed families or between biological, adoptive and step-parents. The low number of children with LGB parents is an artifact of the sampling design of NHIS, given that NHIS was not designed to purposively recruit LGB families. Despite the low number, one advantage is that the NHIS reduces sampling bias related to sexual orientation. Over time, with annual accumulation of additional cases in the NHIS data set, statistically significant differences may emerge. However, whether these differences will have clinical significance is unclear. Of note, the great majority of children with LGB parents in the present study evidenced typical levels of psychological well-being. Third, as with many large-scale health surveillance surveys with limited capacity for detailed psychological assessments, the NHIS employs brief screening measures to detect probable clinical difficulties in children’s psychological adjustment using information obtained from knowledgeable adult informants. More extensive measurement, including additional mental health measures or direct assessment of the child, could provide a more nuanced view of children’s psychological adjustment without the possible bias injected by use of a proxy informant. Fourth, to what extent children in the NHIS sample, or others in their environment for that matter, were aware of their parent’s sexual orientation is unknown.

Unlike earlier population-based surveys (Wainright & Patterson, 2006; Wainright, Russell, & Patterson, 2004) where sexual orientation was determined by the presence of a same-gender partner, in the NHIS, many LGB parents were single and may not have disclosed their sexual orientation to others. If awareness by the child is essential for any impact of parental sexual orientation, it is possible that the effects of sexual orientation on children's well-being, whether harmful or beneficial, may have been underestimated (Gartrell & Bos, 2010; van Rijn-van Gelderen, Bos, & Gartrell, 2015).

Despite these limitations, the results of the current study provide further support for de-stigmatization of parenting by sexual minority adults. As with other researchers, we did not detect differences in measures of well-being among children raised by a lesbian or gay parent vs. those raised by a heterosexual parent. However, the lack of differences on psychological well-being does not necessarily indicate that these children have a similar life experience overall compared to their peers raised by heterosexual parents. Prior research indicates that children raised by sexual minority parents are often exposed to anti-gay stigma directed at them and their parents (Golombok & Badger, 2010; Ray & Gregory, 2001), as well as social stigmatization of their family structure (Robitaille & Saint-Jacques, 2009). It is possible that the greater emotional distress and behavioral problems reported among the children of bisexual parents in the current study may be related, in part, to this social stigma. In addition, emerging research also indicates that children of LGB parents also cite the nontraditional family structure as a source of strength, pride, and positive coping strategies in the face of adversity (Titlestad & Pooley, 2014). Though discrimination and victimization experiences were not assessed in the current study, the findings overall are consistent with the growing body of research highlighting the overall resilience of children raised by sexual minority parents. Subsequent waves of data from NHIS, and additional data from other population-based surveys that systematically collect data on the sexual orientation of parents, can further elucidate relevant disparities and risk mechanisms.

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Table 1

Characteristics of Sampled Children, Ages 4 to 17 Years, and Their Sampled Parent, by Parental Sexual Orientation, 2013–2015 National Health Interview Survey

	Lesbian or Gay Parent (n = 149)		Bisexual Parent (n = 147)		Heterosexual Parent (n = 20,807)		
Characteristics	**%**	**(SE)**	**%**	**(SE)**	**%**	**(SE)**	***p*[1]**
Child characteristics							
Gender							.77
Male	48.4	(4.7)	47.8	(5.5)	50.8	(0.5)	
Female	51.6	(4.7)	52.2	(5.5)	49.2	(0.5)	
Age, in years							.05
4–11	46.1	(4.9)	64.0	(5.8)	57.4	(0.5)	
12–17	53.9	(4.9)	36.0	(5.8)	42.6	(0.5)	
Race or ethnicity							.71
Other	47.6	(5.4)	41.1	(5.5)	44.4	(0.6)	
Non-Hispanic White	52.4	(5.4)	58.9	(5.5)	55.6	(0.6)	
Sampled parent and family characteristics							
Parental gender							<.0001
Male	23.1	(4.0)	13.5	(3.4)	39.6	(0.4)	
Female	76.9	(4.0)	86.5	(3.4)	60.4	(0.4)	
Parental educational attainment					.42		
High school or less	31.2	(5.3)	37.3	(5.3)	38.0	(0.5)	
Some college or more	68.8	(5.3)	62.7	(5.3)	62.0	(0.5)	
Number of parents living in household					<.0001		
1 parent in household	47.3	(5.5)	60.7	(5.2)	29.0	(0.5)	
2 parents in household	52.7	(5.5)	39.3	(5.2)	71.0	(0.5)	
Region of residence							.68
Northeast	17.2	(3.6)	10.5	(3.0)	14.7	(0.4)	
Midwest	22.6	(4.5)	28.5	(5.3)	23.7	(0.5)	
South	30.3	(5.1)	40.6	(5.7)	37.9	(0.6)	
West	20.0	(4.0)	20.3	(4.3)	23.8	(0.4)	
Parental distress, past 30 days					.02		

	Lesbian or Gay Parent (n = 149)		Bisexual Parent (n = 147)		Heterosexual Parent (n = 20,807)		
Characteristics	**%**	**(SE)**	**%**	**(SE)**	**%**	**(SE)**	***p*[1]**
K-6 score[2] below 13	97.0	(1.3)	79.0	(5.4)	96.5	(0.2)	
K-6 score 13 or above	3.1	(1.3)	21.0	(5.4)	3.5	(0.2)	
Child informant							.02
Other family member	43.2	(5.3)	23.0	(5.1)	34.4	(0.4)	
Sampled parent	56.8	(5.3)	77.0	(5.1)	65.6	(0.4)	

Note: Weighted percent and standard error (SE) are displayed

[1]Statistical significance evaluated by Wald χ^2 tests.

[2]Distress was assessed in NHIS using the K-6 Distress Scale (Kessler et al., 2002), a validated instrument for measuring nonspecific psychological distress.

Table 2

Association Between Parental Sexual Orientation and Children's Emotional and Mental Health Difficulties[a] at Ages 4–17 Years Old, 2013–2015 National Health Interview Survey

	Model A[1]	Model B[2]	Model C[3]	Model D[4]
Predictors	**β (SE)**	**β (SE)**	**β (SE)**	**β (SE)**
Child characteristics				
Gender				
Male		REF	REF	REF
Female		−0.33 (0.04)***	−0.33 (0.04)***	−0.33 (0.04)***
Age, in years				
4–11		REF	REF	REF
12–17		0.23 (0.04)***	0.19 (0.04)***	0.20 (0.04)***
Race or ethnicity				
Other		REF	REF	REF
Non-Hispanic White		0.18 (0.04)***	0.30 (0.04)***	0.27 (0.04)***
Sampled parent and family characteristics				
Sexual orientation				
Heterosexual	REF	REF	REF	REF
Lesbian or gay	0.28 (0.22)	0.27 (0.22)	0.19 (0.22)	0.21 (0.23)
Bisexual	0.93 (0.25)***	0.94 (0.24)***	0.78 (0.24)**	0.26 (0.22)
Parental gender				
Male			REF	REF
Female			0.13 (0.04)**	0.03 (0.04)
Parental educational attainment				
High school or less			REF	REF
Some college +			−0.26 (0.04)***	−0.18 (0.04)***
Number of parents living in household				
1 parent			REF	REF
2 parents			−0.41 (0.04)***	−0.29 (0.04)***

	Model A[1]	Model B[2]	Model C[3]	Model D[4]
Predictors	**β (SE)**	**β (SE)**	**β (SE)**	**β (SE)**
Region of residence				
Northeast			REF	REF
Midwest			0.17 (0.06)**	0.12 (0.06)
South			0.10 (0.06)	0.08 (0.06)
West			−0.02 (0.06)	−0.06 (0.06)
Parental distress				0.14 (0.01)***
Child informant				
Other family member	REF	REF	REF	REF
Sampled parent	0.15 (0.04)***	0.16 (0.04)***	0.07 (0.04)	0.05 (0.04)

Note. N = 149 children with a lesbian or gay parent; 147 with a bisexual parent; and 20,807 with a heterosexual parent. REF = referent; Estimates derived from linear regression models regressing the child's emotional and mental health difficulties measure on sexual orientation, child informant source and additional confounders as noted in each model.

** $p < .01$,

*** $p < .001$

[a]Measured using the short form of the Strength and Difficulties Questionnaire Scale (Bourdon, Goodman, Rae, Simpson, & Koretz, 2005)

[1]Model A: Crude (unadjusted) except for child informant source.

[2]Model B: With additional adjustments for: child's gender, age and race or ethnicity.

[3]Model C: With additional adjustments for: parental gender, parental educational attainment, number of parents in household, and region of residence.

[4]Model D: With additional adjustment for: recent parental psychological distress.