

# Psychology of Sexual Orientation and Gender Diversity

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Online First Publication, March 7, 2019. <http://dx.doi.org/10.1037/sgd0000330>

### CITATION

Goldberg, A. E., Smith, J. Z., McCormick, N. M., & Overstreet, N. M. (2019, March 7). Health Behaviors and Outcomes of Parents in Same-Sex Couples: An Exploratory Study. *Psychology of Sexual Orientation and Gender Diversity*. Advance online publication. <http://dx.doi.org/10.1037/sgd0000330>

# Health Behaviors and Outcomes of Parents in Same-Sex Couples: An Exploratory Study

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Research exploring health behaviors and outcomes among sexual minorities has yet to include same-sex parents, who face additional stressors associated with parenthood. This exploratory study investigates self-reported health behaviors (regular exercise, sleep, and alcohol use) and outcomes (chronic health conditions, depression, and overall health) among 141 parents in same-sex couples ( $N = 83$  families) with adopted school-age children. Several predictors were investigated, including parent gender, number of children, parenting stress, marital status, and internalized homophobia (IH), controlling for education, income, and work hours. Findings showed that parenting stress and IH were most commonly associated ( $p < .05$ ) with health behaviors and outcomes, but functioned differently in women and men. Women with high stress had greater odds of exercising  $\geq 3$  days a week, but women with high IH had lower odds of exercising that much; vice versa in men. Additional findings among men were greater odds of depression than women; and, men with low IH more often slept  $< 7$  h a week and reported greater alcohol intake than those with high IH. Among parents generally, those with multiple children and those who were unmarried had lower odds of exercising  $\geq 3$  days a week, while those with high stress had greater odds of depression and of a chronic health condition. This study highlights the many areas requiring further research in the field of same-sex parent health.

### **Public Significance Statement**

Lesbian and gay parents are exposed to minority stress and parenting stress, which may have implications for their health behaviors and outcomes. The findings of this exploratory study show that parenting stress and internalized homophobia were often associated with parents' health behaviors and outcomes, but functioned differently in women and men. Additional findings of interest were that gay male parents were at greater odds of depression than lesbian mothers; and, among parents generally, those with multiple children and those who were unmarried were less likely to exercise, and those with high stress were more likely to be depressed and to have a chronic health condition.

*Keywords:* exercise, gay, health, lesbian, minority stress

The Department of Health and Human Services' Healthy People, 2020 initiative, launched in 2010, identified "LGBT parenting issues throughout the life course" as a pressing continuing issue in LGBTQ (lesbian, gay, bisexual, transgender, or queer) health that would need to be evaluated and addressed over the next decade (Office of Disease Prevention and Health Promotion, 2018). De-

spite this recent call, very little research has addressed health issues, behaviors, and outcomes of LGBTQ parents. This is particularly surprising given the growth in LGBTQ parenting research over the past decade (see Goldberg, Gartrell, & Gates, 2014), including several studies focusing on children's health in these families (e.g., Reczek, Spiker, Liu, & Crosnoe, 2016). The current exploratory study takes a first step in this direction, investigating health-related behaviors and outcomes among 141 parents in same-sex couples ( $N = 83$  families) with adopted school-age children. We examine how parenting-specific factors (parenting stress, multiple/no children) and sexual minority-specific factors (perceived community acceptance of same-sex parent families, being married or not, internalized homophobia) may be related to health behaviors (regular exercise, sleep, and alcohol use) and health outcomes (chronic health conditions, depressive symptoms, and overall health) among same-sex parents, using self-report data.

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## Sexual Minority-Specific Predictors of Health Behaviors and Outcomes

Some research, including population based data, has identified a number of health disparities between sexual minority and heterosexual adults, with sexual minorities typically being at greater risk for poor health outcomes as well as risky health behaviors—in large part because of the higher levels of discrimination, stigma, and stress that they experience (Jackson, Agénor, Johnson, Austin, & Kawachi, 2016). For example, sexual minorities have been found to be at elevated risk of substance use (Medley et al., 2016; Schuler, Rice, Evans-Polce, & Collins, 2018), with lesbian and bisexual (LB) women being at elevated risk of heavy drinking (Institute of Medicine, 2011; Jackson et al., 2016) and gay and bisexual (GB) men at elevated risk of abusing certain drugs (Institute of Medicine, 2011). Sexual minorities are also less likely to participate in moderate to vigorous physical activity, a finding that may in part be driven by lower levels of athletic self-esteem, at least in younger samples (Calzo et al., 2014). This is concerning in that exercise is an important health-promoting factor, with physical and mental health benefits, including weight control and improved mood and sleep, and reduced risks for negative health outcomes such as cardiovascular disease and diabetes (World Health Organization, 2010). Finally, sexual minorities have been found to sleep fewer hours per night (Li et al., 2017) and to have poorer sleep quality (Chen & Shiu, 2017; Li et al., 2017; Patterson, Tate, Sumontha, & Xu, 2018). Regarding mental health, sexual minority adults consistently show higher levels of depression than heterosexual adults, with bisexual people reporting the highest levels of symptoms (Ross et al., 2018).

Attempts to understand and explain LGB people's elevated risk for compromised health behaviors and outcomes have often focused on the unique stressors that they face as a result of their sexual minority status. For instance, according to minority stress theory (Meyer, 2003), the chronic stress that sexual minorities face because of sexual stigma is theorized to interfere with their health. Specifically, Meyer (2003) theorizes that minority stress that affects LGB people may manifest on a continuum of distal (i.e., objective events and environmental conditions) and proximal (i.e., subjective personal processes) stressors. Research suggests that these minority stressors are significant predictors of health outcomes in LGB people (Frost, Lehavot, & Meyer, 2015; Hatzenbuehler, 2014). However, research is scarce on whether and how these stressors operate differently or similarly among sexual minority parents, specifically, to predict health.

There is robust evidence that discrimination is associated with poorer mental and physical health outcomes among diverse groups (Calabrese, Meyer, Overstreet, Haile, & Hansen, 2015; Pascoe & Smart Richman, 2009; Williams & Mohammed, 2009), and the literature examining discrimination and physical health among sexual minorities is consistent with these findings. For instance, studies have found that distal minority stressors such as perceptions of prejudice in one's immediate neighborhood or community may be related to poorer overall health and a greater likelihood of experiencing a health problem (Frost et al., 2015; Huebner & Davis, 2007). By extension, living in a community that is more affirming or validating of one's sexual identity and/or same-sex relationships may confer health benefits. Kail, Acosta, and Wright (2015) found that same-sex couples in states with legally sanc-

tioned marriage rated their health more positively than same-sex couples in states with antigay constitutional amendments. In a longitudinal, nationally representative United States sample, Hatzenbuehler, McLaughlin, Keyes, and Hasin (2010) found that LGB people living in states that banned gay marriage reported greater levels of alcohol use disorder, mood disorder, generalized anxiety disorder, and psychiatric comorbidity than LGB people living in states without these discriminatory policies. In a rare study to examine distal minority stressors and mental health among sexual minority parents, Goldberg and Smith (2011) documented linkages between perceived neighborhood gay-friendliness and depressive symptoms in a sample of parents in same-sex couples with young children.

Marriage—that is, whether sexual minorities are married or not—is an internal (proximal) decision, yet one that carries recognition and resources at the distal level. Marriage can be considered to be at the intersection of distal and proximal, whereby it reflects the act of receiving government-sanctioned recognition of and material benefits associated with one's intimate relationship. Marriage may, therefore, buffer minority stress because it confers both social recognition and, via legal recognition, access to resources (e.g., health care and health insurance) that promote health (Buffie, 2011). Indeed, it may not just be living in a state or nation that legally recognizes same-sex unions that confers health benefits, but actually getting married. In turn, research demonstrates that married individuals in same-sex relationships report better health than their unmarried counterparts (Buffie, 2011; Wight, Leblanc, & Badgett, 2013), consistent with work on different-sex couples (Hu & Goldman, 1990), which may in part be related to access to better health care. A recent study found that married LG survey respondents were more likely to have health insurance and use health care than their unmarried counterparts (Elwood, Irvin, Sun, & Breen, 2017). Thus, in the contemporary United States, where marriage equality is a legal reality as of June 26, 2015, same-sex couples who marry may enjoy greater health than those who do not—both because of greater social validation of their relationships and access to federal benefits.

Internalized homophobia is a proximal stressor that refers to the adoption of negative feelings and beliefs about one's sexual identity toward the self and may affect the physical and mental health of sexual minorities directly, as well as interacting with distal stressors to impact health (Walch, Ngamake, Bovornusvakool, & Walker, 2016). Internalized homophobia has been linked to poorer physical health (Lick, Durso, & Johnson, 2013) and substance use (Jeffries & Johnson, 2018; Lick et al., 2013)—although interestingly, some work shows that it is unrelated to some indices of substance use (e.g., number of days consuming an alcoholic beverage) but related to others (e.g., number of days being very high or drunk; Amadio, 2006). Internalized homophobia has also been linked to eating disorder symptoms among gay men specifically, including bulimic behavior (Reilly & Rudd, 2006; Wiseman & Moradi, 2010), possibly via the mediating role of body shame and dissatisfaction (e.g., related to standards of physical attractiveness within gay male communities; Wiseman & Moradi, 2010). Internalized homophobia has also been linked to poorer mental health in LGB people (Berg, Munthe-Kaas, & Ross, 2016; Newcomb & Mustanski, 2010) and LGB parents specifically (Goldberg & Smith, 2011).

The current study examines several sexual minority-specific factors in relation to the health behaviors and outcomes of parents in same-sex couples. We examine parents' reports of how accepting their community is toward same-parent families, whether they are married or not, and their level of internalized homophobia. Perceptions of greater community acceptance and being married confer social and material resources that may translate to positive health behaviors and outcomes. We include internalized homophobia given its significance as a proximal stressor that may function (e.g., through its relationship to self-esteem; Berg et al., 2016) to undermine health-promoting behaviors and outcomes.

### Parenting-Specific Predictors of Health Behaviors and Outcomes

Research on parents' health has also highlighted the role of stress in their lives as a contributor to physical health. Becoming a parent introduces new challenges and opportunities as individuals or couples restructure their lives and take on additional responsibilities and roles (Cowan & Cowan, 2000). The presence of children can add stress to the family unit, particularly in the context of difficult family and life circumstances (Anderson, 2008; Deater-Deckard, 2004). Parenting-related stress has been linked to poorer health-promoting behaviors in general (Gill & Loh, 2010), including less physical activity (Stark & Brinkley, 2007) and poorer sleep (Gallagher, Phillips, & Carroll, 2010). Parenting stress has also been linked to poor overall physical health (Anderson, 2008; Cantwell, Muldoon, & Gallagher, 2014; Lee & Hsu, 2012) and mental health (e.g., depressive symptoms; Helgeson, Becker, Escobar, & Siminerio, 2012), with some work showing longitudinal associations between parenting stress and depression over time (Sakkalou, Sakki, O'Reilly, Salt, & Dale, 2018).

Significantly, parents incur incremental changes in overall workload and family related demands with every child that is added to the family (Kuo, Volling, & Gonzalez, 2017). This is perhaps especially the case when parents adopt, given that each child may have their own set of needs and challenges that are sometimes unknown at the time of placement (Goldberg, 2010; McGlone, Santos, Kazama, Fong, & Mueller, 2002). In turn, some research has found that, among adoptive mothers, having a greater number of children in the family is associated with poorer psychological well-being (Viana & Welsh, 2010). However, having multiple children may also operate as a protective factor in some domains: indeed, research generally finds that the presence of children per se is a deterrent to substance abuse (Fergusson, Boden, & John Horwood, 2012; Greene, Eitle, & Eitle, 2014). The current study will examine two parent-specific factors in relation to the health behaviors and outcomes of adoptive parents in same-sex couples: their reports of parenting stress, and whether they are parents of multiple children or only children.

### Demographic Predictors of Health Behaviors and Outcomes

The literature on adults in general is worth considering when evaluating potential predictors of health behaviors and health outcomes in sexual minority parents. Fewer resources (e.g., less education and income) are generally associated with fewer health-promoting behaviors (Macy, Chassin, & Presson, 2013), poorer

physical health (Haskell et al., 2007), and poorer mental health (Sareen, Afifi, McMillan, & Asmundson, 2011). Longer work hours have been linked to fewer hours of sleep (Åkerstedt, Fredlund, Gillberg, & Jansson, 2002), greater use of alcohol (Greene et al., 2014; Virtanen et al., 2015), and poorer overall health (Artazcoz, Cortes, Escriba-Aguir, Cascant, & Villegas, 2009; Bannai & Tamakoshi, 2014)—as well as less time to engage in leisure, including exercise (Haskell et al., 2007). Research on parents specifically points to structural constraints, such as longer work hours and a lack of child care, as impeding regular exercise (Pereira et al., 2007). This finding is of particular interest to health advocates (Dlugonski, Das, Martin, & Palmer, 2017), inasmuch as lower activity levels increase the risk of negative health outcomes, such as high blood pressure and obesity (Haskell et al., 2007), which can affect mortality—and, thus, children.

### The Current Study

The current exploratory study seeks to examine predictors of health-related behaviors and outcomes among 141 parents in same-sex couples ( $N = 83$  couples) with adopted school-age children. Of particular interest are parenting-specific factors and sexual minority-specific factors that may be related to health-related behaviors (regular exercise, sleep, and alcohol use) and outcomes (chronic health conditions, depressive symptoms, and overall health). Thus, we examine as predictors characteristics specific to the parenting context (parenting multiple adopted children vs. a single child; parenting stress) and characteristics specific to sexual minorities (female vs. male couple; perceived community acceptance of same-sex parent families; marital status; and internalized homophobia), controlling for education, income, and work hours. We also conduct exploratory interactions between couple gender and the five other substantive predictors of interest (multiple children, parenting stress, community acceptance, marital status, and internalized homophobia). Parents in general—and sexual minority parents specifically—may have different experiences based upon gender. For example, male same-sex couples tend to possess more material resources than female same-sex couples, as a result of the double wage advantage; yet at the same time, two-father families are vulnerable to additional scrutiny of their parenting abilities in that there is no woman present in the family unit (Goldberg et al., 2014). In turn, of interest is whether parental gender interacts with parenting and sexual minority-specific predictors in predicting health behaviors and outcomes. While this work is exploratory given the lack of existing research, the results can be a platform for future theory-building and research.

Because of the paucity of data on same-sex parents' health-related behaviors and outcomes, we first explore the sample's health habits at a descriptive level. Then we focus on predicting the key health-related behaviors and outcomes, drawing from existing literatures on sexual minority adults, parents, and the general population, and theories of minority and parenting stress.

### Method

#### Description of the Sample

Data come from 83 families (141 parents, 76 women and 65 men; both members of 32 female couples, one member of 12



female couples; both members of 26 male couples, one member of 13 male couples), who were surveyed 8 years after they had adopted their first child. These same-sex parent families participated in a larger longitudinal study of adoptive families across the life cycle, who were recruited during the transition to parenthood (Goldberg & Smith, 2011). The mean family income for the sample was \$163,255 ( $SD = \$99,647$ ),  $Mdn = \$150,000$ ; range \$21,000–\$565,000). Family income differed by parent gender,  $B = 98,240.13$ ,  $SE = 12,795.57$ ,  $t(81) = -7.67$ ,  $p < .001$ . Two-father families ( $M = \$220,615$ ,  $SD = \$111,095$ ,  $Mdn = \$190,000$ ) were more affluent than two-mother families ( $M = \$114,197$ ,  $SD = \$52,085$ ,  $Mdn = \$110,000$ ), with family incomes almost twice that of two-mother families. This is consistent with national data indicating that male same-sex couples earn more than female same-sex couples, reflecting the gender wage gap (Badgett & Schneebaum, 2015). However, the incomes for the male couples are notably higher than estimates based on national survey data on same-sex adoptive parents, in which the mean annual incomes for female and male couples with adopted children were \$102,508 and \$102,331, respectively (Gates, Badgett, Macomber, & Chambers, 2007). The sample was highly educated: 28 participants (19.9%) had a medical or doctoral degree (i.e., MD/PhD/JD); 53 (37.6%) had a master's degree, 41 (29.1%) had a bachelor's degree, 17 (12.1%) had an associate's/some college, and two (1.4%) had a high school diploma/general equivalency diploma (GED). Parents worked an average of 35.24 h per week ( $SD = 16.53$ ), with work hours ranging from 0 to 80 h per week. Education and work hours did not differ by parent gender.

The average age of the oldest child was 9.36 years ( $SD = 2.47$ ); age did not differ by parent gender. Considering the oldest child only, most children were adopted via private domestic adoption ( $n = 53$ ; 63.8%); 20 (24.2%) were adopted via foster care and 10 (12%) were adopted internationally. Forty-three families (51.8%) adopted boys and 40 (48.2%) adopted girls. Since the original adoption, almost half of the families ( $n = 40$ ; 48.2%) had adopted additional children. Thirty-two had adopted one additional child, 6 adopted two, and 2 adopted three. Parents were mostly White ( $n = 127$ ; 90.1%) and children were mostly of color ( $n = 59$ ; 71.1%). Adoption type, child gender, multiple versus single child, parent race, and child race did not differ by parent gender.

Forty families (48.8%) lived in large central metropolitan areas (e.g., Boston, MA); 18 families (22.0%) lived in large fringe metro areas (e.g., Sausalito, CA); 18 families (22.0%) lived in medium metro areas (e.g., Duluth, MN); 3 families (3.7%) lived in small metro areas (e.g., Glens Falls, NY); 3 families (3.6%) lived in micropolitan areas; and 1 family (1.2%) lived in a rural, noncore area (Centers for Disease Control, National Center for Health Statistics, 2018; U.S. Census Bureau, 2013).<sup>1</sup> Geographic location did not differ by parent gender.

## Procedure

Participants were assessed approximately 8 years after becoming first-time parents via adoption. Inclusion criteria for the original study were that both partners must be first-time parents, and adopting for the first time. Parents were originally recruited from adoption agencies and LGBTQ organizations in the United States to participate in a study of the transition to adoptive parenthood.

These agencies were chosen because they were open to working with same-sex couples; LGBTQ organizations were chosen because they reached a large number of individuals.

Parents were recontacted 8 years postadoption and invited to complete an online survey that contained open- and closed-ended questions. Participants were surveyed 2015–2017—after the U.S. Supreme Court ruled that same-sex marriage is a legal right across all 50 states.

## Measures

**Dependent variables: Health behaviors.** All of our questions about physical health behaviors and outcomes (i.e., exercise, sleep, alcohol use, chronic health conditions, and overall health) are derived from the International Health and Behavior Survey (IHBS; see O'Donnell, Wardle, Dantzer, & Steptoe, 2006; Steptoe & Wardle, 1996, 2001), a questionnaire survey disseminated to over 19,500 adults in 24 countries between 1999 and 2001. The purpose of the survey was to assess the prevalence of health behaviors, attitudes and well-being using a standardized measure to enable direct comparisons across different countries and cultures, and findings from this study have been widely published (e.g., Allgöwer, Wardle, & Steptoe, 2001; Steptoe et al., 2002).

**Exercise.** Participants indicated how many days they had exercised per week; responses ranged from 0 to 7. The Centers for Disease Control and Prevention (CDC) and other major health organizations (e.g., the American Heart Association) recommend at least 150 min of moderate-intensity physical activity per week, or roughly 3 days per week (U.S. Department of Health and Human Services, 2018). In turn, participants exercising at least 3 days per week were coded as 1 (regular exercise;  $n = 90$ ; 63.8%); those who exercised two or fewer days were coded as 0 (infrequent exercise;  $n = 41$ ; 36.2%).

**Sleep.** Participants indicated how many hours of sleep they slept per night, on average. Informed by the National Sleep Foundation's (NSF) 2018 (National Sleep Foundation, 2018) guidelines for adults, wherein 7 to 9 h is the recommended amount of sleep for adults, this variable was recoded such that 0 = fewer than 7 h, and 1 = 7 to 9 h. No parents reported sleeping more than 9 h per night. A total of 92 parents (65.2% of the sample) were categorized as getting adequate sleep (1) and 49 (34.8%) were categorized as getting inadequate sleep (0).

**Alcohol use: Frequency and quantity.** Participants responded to two questions related to their alcohol use: (a) the number of days in the past 2 weeks they had consumed alcohol, and (b) the number

<sup>1</sup> Large central metro counties are those in metropolitan statistical areas (MSA) of 1 million+ population that contain the entire population of the largest principal city of the MSA, are completely contained in the largest principal city of the MSA, or contain at least 250,000 residents of any principal city of the MSA. Large fringe metro counties are counties in MSAs of 1 million+ population that do not qualify as large central. Medium metro counties are counties in MSAs of 250,000 to 999,999 population. Small metro counties are counties in MSAs of less than 250,000 population. Micropolitan counties are counties in micropolitan statistical areas. Noncore counties are nonmetropolitan counties that are not in a micropolitan statistical area.

of drinks they typically had in a single sitting. We treated these as separate outcomes.

#### **Dependent variables: Health outcomes.**

**Chronic health conditions.** Participants indicated whether they had any chronic health conditions (e.g., high blood pressure and diabetes). We coded this that 1 = *one or more chronic health conditions* ( $n = 38$ ; 27.0%), and 0 = *no chronic health conditions* ( $n = 103$ ; 73.0%).

**Depressive symptoms.** The Center for Epidemiologic Studies Depression Scale (CES-D; Radloff, 1977), a 20-item questionnaire, was administered to assess depressive symptoms within the last week. Participants responded to items such as "I felt that people disliked me" using a 4-point scale ranging from 0 (*rarely or none of the time*) to 3 (*most or all of the time*). We use a sum of all items. Higher scores indicate more symptoms. The CES-D has established validity and internal consistency. Cronbach's  $\alpha$  was .91.

**Overall health.** Participants indicated how healthy they were on a 1–5 scale, from 1 = *poor* to 5 = *excellent*. This variable was highly positively skewed with only one person (.7%) was rating themselves as in poor health and 12 people (8.5%) indicating fair health. In contrast, 19.9%, 40.4%, and 30.5% of parents rated themselves as in good, very good, and excellent health, respectively. Therefore, we coded this variable such that 1 = *good, very good, or excellent health* ( $n = 128$ , 90.8%), and 0 = *less than good (i.e., poor, fair) health* ( $n = 13$ , 9.2%).

#### **Independent variables: Parenting predictors.**

**Presence of multiple children.** Participants were initially interviewed during their first transition to adoptive parenthood and, thus, had at least one child. Since the initial interview, 69 parents (48.9%) had adopted at least one additional child (1); the remainder had one child (0).

**Parenting stress.** The Parenting Stress Index–Short Form (PSI-SF) was used to assess the perceived stress that adoptive parents were experiencing as a result of their parental roles (Abidin, 1995). Parents responded to 36 items on the PSI-SF along a 5-point scale, from 1 = *strongly agree* to 5 = *strongly disagree*. Items were reverse scored so higher scores equal more stress. The total stress score, which was obtained by adding all 36 items, reflects personal parental distress (e.g., "I feel trapped by my responsibilities as a parent"), stresses derived from the parent's interaction with the child (e.g., "I expected to have closer and warmer feelings for my child than I do, and this bothers me"), and stresses that result from the child's behaviors (e.g., "My child seems to cry or fuss more than most other children"). Internal consistency for the PSI-SF was high,  $\alpha = .88$ .

The total PSI score was used, as its subscales (i.e., parental distress, difficult parent–child interaction, and child difficulty) have not been shown to be consistent across validation studies (Reitman, Currier, & Stickle, 2002). However, as personal distress—a component of the PSI—was believed to tap a similar domain as depressive symptoms, we conducted follow-up analyses for this outcome (depression) using two of the subscales, PSI-Difficult Parent–Child Interaction and PSI-Child Difficulty. We did this to determine whether evaluating the role of parenting-related stress independently from parents' personal distress produced different findings in relation to depressive symptoms. Of

note is that the total PSI was highly correlated with depressive symptoms,  $r = .58$ ,  $p < .001$ , but not much higher than the Difficult Parent–Child Interaction or Child Difficulty subscales,  $r = .50$ ,  $p < .001$  and  $r = .52$ ,  $p < .001$ , respectively.

#### **Independent variables: Sexual minority-related predictors.**

**Gender.** Participant gender was coded such that 1 = *female* and 0 = *male*. No participants identified as trans.

**Community acceptance of same-sex parent families.** Participants were asked, "How accepting is your community of same-sex couples with children?" and given the following response options: (a) not at all accepting, (b) not very accepting, (c) neutral, (d) somewhat accepting, and (e) very accepting. This variable was highly skewed, with 95 participants (67.4%) describing their communities as very accepting, 36 (25.5%) as somewhat accepting, 6 (4.3%) as neutral, and 4 (2.8%) as not very accepting; no participants reported that their communities were not at all accepting. This variable was recoded such that 1 = *very accepting* ( $n = 95$ , 67.4%) and 0 = *anything less than very accepting* ( $n = 46$ , 32.6%); indeed, participants who indicated that their communities were somewhat accepting can be seen as simultaneously implying that there were instances, areas, or experiences that were not accepting.

**Marital status.** Participants were asked whether they were married to their partners (1;  $n = 108$ ; 76.6%) or not (0;  $n = 33$ ; 23.4%) when they were surveyed. All participants had access to marriage when they were surveyed (2015–2017).

**Commitment ceremony.** To disentangle the effects of being married from relationship commitment, we examined, in follow-up analyses, whether having had a commitment ceremony or another type of nonlegal relationship recognition event predicted health behaviors or outcomes. These two variables were not redundant or perfectly overlapping:  $n = 15$  (10.6%) of the sample had neither, 18 (12.8%) had a commitment ceremony but were not married, 58 (41.1%) were married but never had a ceremony, and 50 (35.5%) were married and had a ceremony.

**Internalized homophobia.** Internalized homophobia was assessed with a 9-item measure (Herek & Glunt, 1995). Items such as "If someone offered me the chance to be completely heterosexual, I would accept the chance" were administered with a 5-point response scale, ranging from 1 = *disagree strongly* to 5 = *agree strongly*. This measure has good convergent validity and good internal consistency (Herek, Gillis, Cogan, & Glunt, 1997). We used the sum of all items. Higher scores indicate higher internalized homophobia. One particularly extreme score was recoded to within three SDs of the mean, so as not to exert undue influence. The  $\alpha$  was .89.

#### **Independent variables: Control variables.**

**Education.** Parents' education was coded such that 1 = *less than a high school diploma or GED*, 2 = *high school diploma or GED*, 3 = *some college/an associates*, 4 = *college degree*, 5 = *master's degree*, and 6 = *PhD/JD/MD*.

**Family income.** Each parent reported an estimate of the annual family income (i.e., the combination of both partners' income), in dollars. This variable was transformed by taking the natural log, because of the large positive skew in the distribution.

**Hours working per week.** Parents' reports of their weekly hours in paid employment.

## Additional Questions About Participants' Health

We also asked parents a number of other health-related questions. Given the lack of data on sexual minority parents' health, and the exploratory nature of our investigation, we present these as descriptive data in the results. These included questions about what types of exercise participants engaged in, whether they wanted to exercise more often, whether they wanted to reduce their drinking, and descriptions of their current health conditions.

## Data Analysis/Analytic Strategy

As parents' reports were not independent, but nested in couples, it was necessary to account for their shared variance. To examine differences (e.g., by gender) in continuous variables, we used multilevel modeling (MLM), and for dichotomous and count variables we use generalizing estimating equations (GEE). MLM allows us to examine individual and dyad level variables, accounts for the extent of the shared variance, and provides accurate *SEs* for testing the regression coefficients relating predictors to outcome scores. MLM, however, produces unreliable estimates when used to examine dyadic data (e.g., couples) or other small groups, when a link function is required, such as when predicting categorical or count variables (Raudenbush, 2008). GEE accounts for the shared variance between individuals in a couple using a robust variance estimate (Loeys, Cook, De Smet, Wietzker, & Buysse, 2014), and has performed better than general linear multilevel models when tested on actor-partner interdependence models in samples over 50 couples (Loeys & Molenberghs, 2013).

In the results, we first provide descriptive statistics regarding the types of exercise parents described doing. We also provide the breakdown of responses for predictor and outcome variables that were recoded for the regression analyses. We then examine differences in reports by parent gender, using MLM for continuous variables and GEE for categorical, ordinal, and count variables. Finally, we present the bivariate correlations among the predictors and outcomes (that do not take into account the dyadic nature of the data) to provide a rough sense of the relative magnitude of associations in a standardized form. We follow this up using MLM and GEE models to examine the significance of these bivariate relationships, using hypothesis tests that take into account the nesting of the data within couples.

We then present GEE models predicting health behaviors (exercise, sleep, and alcohol consumption) and health outcomes (health condition, depression, and overall health). For the binary outcomes, a binomial distribution was specified and a logit link function used. As the count variables (number of drinks; average number of drinks) had a variance greater than their mean, a negative binomial probability distribution was designated and a log link function was used. Continuous predictors were mean-centered. Dichotomous variables were dummy coded (0, 1). We conducted exploratory interactions between gender and each of the substantive predictors in relation to all seven outcomes. Interactions were tested by adding them all to the full model, and individually trimming them from the least significant to most significant (up to  $p < .10$ ) to create a more parsimonious model (variables were retained if their removal caused a significant predictor to fall out of significance). Given the lack of research in this area, we use  $p < .10$  as a cut-off for statistical significance

reporting; however, we identify findings with  $p \leq .05 < .10$  as trends.

## Results

### General Descriptive Data Regarding Health Behaviors

Regarding exercise, 24 participants (17.0% of the sample) reported that they were not getting any exercise at all. Twenty-seven (19.1%) exercised once or twice per week, and the remainder ( $n = 90$ ) exercised between three and six times per week, with none exercising 7 days per week. GEE analyses revealed no differences in number of days of exercise by parent gender. Most participants ( $n = 124$ ; 87.9%) wanted to increase their exercise. A GEE model for desire to increase exercise showed no significant differences by gender.

Participants were asked to list the types of exercise that they engaged in. Walking was most frequently endorsed (44.0% of sample), with women (44, 57.9%) reporting it more than men (18, 27.7%;  $B = 1.33$ ,  $SE = .38$ , Wald = 12.17,  $p < .001$ ,  $e^B = 3.79$ ). Running was also a popular form of exercise (19 men, 15 women; 24.1%), with no significant difference by gender. Weight lifting was popular (24.1% of sample), with men (21, 32.3%) reporting it more than women (13, 17.1%), at the level of a trend ( $B = -.79$ ,  $SE = .43$ , Wald = 3.40,  $p = .065$ ,  $e^B = .45$ ). Parents also listed cycling (22, 15.6%; 12 men, 18.5%; 10 women, 13.2%); swimming (17, 12.1%; 9 men, 13.8%; 8 women, 10.5%); elliptical (14, 9.9%; 9 men, 13.8%; 5 women, 6.6%); yoga (9, 6.4%; 2 men, 3.1%; 7 women, 9.2%); hiking (9; 6.4%; 4 men, 6.2%; 5 women, 6.6%); gardening/yard work (6, 4.3%; 1 man, 1.5%; 5 women, 6.6%), and other exercises (21, 14.9%; 9 men, 13.8%; 12 women, 15.8%), including skiing, golf, and playing sports with children. Separate GEE analyses for each category showed no significant differences by gender; however, the low power to detect differences in the rarely endorsed categories (e.g., yoga) should be taken into account.

Regarding sleep, on average, participants were getting 6.96 ( $SD = .86$ ,  $Mdn = 7$ ) hours of sleep per night. Notably, 49 (34.8%) were getting fewer than 7 h. The remainder (92, 65.2%) were getting 7–9 h, as recommended by the NSF. No participants reported getting more than 9 h. GEE analyses showed no differences by gender in hours of sleep.

Regarding alcohol use, 33 parents (23.4%) reported drinking on 0 days over the past 2 weeks; 25 (17.7%) drank on 1–2 days; 26 (18.4%) on 3–4 days; 13 (9.2%) on 5–6 days; 18 (12.7%) on 7–8 days; 13 (9.2%) on 9–10 days; 2 (1.4%) on 11–12 days; and 11 (7.8%) on 13–14 days. In terms of average drinks in a sitting, 32 (22.7%) said they typically had zero drinks; 50 (35.5%) had one; 42 (29.8%) had two; 13 (9.2%) had three; 2 (1.4%) had four; 1 (.7%) had five; and 1 (.7%) had seven drinks. Twenty-two participants (15.6%) wanted to reduce their drinking. Women drank on fewer days than men ( $M = 3.21$ ,  $SD = 3.58$  vs.  $M = 6.08$ ,  $SD = 4.43$ ;  $B = -.65$ ,  $SE = .18$ , Wald = 12.94,  $p < .001$ ,  $e^B = .52$ ), and consumed fewer drinks in one sitting, at the level of a trend ( $M = 1.61$ ,  $SD = 1.01$  vs.  $M = 1.18$ ,  $SD = 1.16$ ;  $B = -.28$ ,  $SE = .16$ , Wald = 2.96,  $p = .086$ ,  $e^B = .78$ ). Women (7, 9.2%) were also less likely than men (15, 23.1%) to want to cut down, at the level of a trend ( $B = -1.03$ ,  $SE = .56$ , Wald = 3.33,  $p = .068$ ,  $e^B = .36$ ).



Table 1  
Descriptive Statistics for Outcomes and Predictors

Variables	Full sample ( $n = 141$ ) $M (SD)$ or $N (%)$	Women ( $n = 76$ ) $M (SD)$ or $N (%)$	Men ( $n = 65$ ) $M (SD)$ or $N (%)$
<b>Outcomes</b>			
<b>Health behaviors</b>			
Exercise ( $\geq 3$ days/week)	90 (63.8%)	48 (63.2%)	42 (64.6%)
Sleep (7–9 h)	92 (65.2%)	48 (63.2%)	44 (67.7%)
No. days drank in past 2 weeks	4.51 $Mdn = 3$	5.33 (6.68) $Mdn = 2$	6.08 $Mdn = 5$
No. drinks in 1 sitting	1.37 $Mdn = 1$	1.14 $Mdn = 1$	1.63 $Mdn = 2$
<b>Health outcomes</b>			
Chronic health problems	38 (27.0%)	23 (30.3%)	15 (23.1%)
Overall good health	128 (90.8%)	67 (88.2%)	61 (93.8%)
Depressive symptoms	10.17 (8.42)	9.29 (7.99)	11.19 (8.84)
<b>Predictors</b>			
<b>Demographic controls</b>			
Education	4.62 (.98)	4.58 (.91)	4.68 (1.06)
Family income (natural log)	11.84 (.59)	11.53 (.50)	12.19 (.47)
Work hours	35.24 (16.53)	34.72 (15.19)	35.85 (18.07)
<b>Parenting</b>			
Multiple children	69 (48.9%)	31 (40.8%)	38 (58.5%)
Parenting stress	77.35 (24.33)	79.46 (23.06)	74.88 (25.70)
<b>Sexual minority</b>			
Gender (female)	76 (53.9%)	—	—
Accepting community	95 (67.4%)	49 (64.5%)	46 (70.8%)
Married	108 (76.6%)	56 (73.7%)	52 (80.0%)
Internalized homophobia	10.65 (4.05)	10.95 (4.68)	10.29 (3.16)

### General Descriptive Data Regarding Health Outcomes

Thirty-eight participants (27.0%) reported one or more chronic health conditions (15 men, 23.1%; 23 women, 30.3%); this did not differ by gender. The most common issues named were high blood pressure ( $n = 10$ ; 8 women, 2 men); obesity ( $n = 6$ ; 5 women, 1 man); back/neck pain ( $n = 6$ ; 3 women, 3 men); complications from major surgery ( $n = 5$ ; 4 women, 1 man); digestive disorders (e.g., colitis;  $n = 4$ ; 1 woman, 3 men); arthritis/joint pain ( $n = 4$ ; 2 women, 2 men); asthma ( $n = 4$ ; 3 women, 1 man); and diabetes ( $n = 4$ ; all women). All other issues (e.g., thyroid issues, sleep apnea, hepatitis B, hepatitis C, and cancer) were named by three or fewer participants.

### Descriptive Data on Predictors, Controls, and Outcomes Used in Regression Analyses

For descriptive data on the predictors, controls, and outcomes, for the full sample and by parent gender, see Table 1. GEE analyses showed that two of the seven outcomes differed by gender: the number of days participants drank in the past 2 weeks, and the typical number of drinks consumed in a single setting. Women drank on significantly fewer days than men,  $B = -2.94$ ,  $SE = .77$ ,  $t(77.73) = -3.79$ ,  $p < .001$ , and consumed fewer drinks in a single setting, on average, at the level of a trend,  $B = -.41$ ,  $SE = .22$ ,  $t(70.85) = -1.84$ ,  $p = .070$ .

For a correlation table of the predictors, controls, and outcomes, see Table 2. While these standardized estimates are based on analyses that do not take into account the dyadic nature of the data, they do provide a rough sense of the relative magnitude of associations. We do not report significance values for all of the correlations as the number of tests would lead to capitalizing on chance; however, we do conduct tests for sig-

nificant relationships (at  $p < .05$ ) among the six key predictors and also among the seven outcomes using the appropriate MLM or GEE models.

Among the predictors of interest, the only significant relationship was between having multiple children and parenting stress ( $B = 12.54$ ,  $SE = 4.24$ ,  $t(130.49) = 2.95$ ,  $p = .004$ ): having multiple children predicted more stress.

Among the outcomes, getting at least 7 h of sleep was associated with drinking on more days ( $B = 1.43$ ,  $SE = .65$ ,  $t(109.12) = 2.17$ ,  $p = .032$ ). Having a chronic health condition was related to a lesser likelihood of reporting overall good health ( $B = -2.03$ ,  $SE = .61$ ,  $Wald = 11.05$ ,  $p < .001$ ,  $e^B = .137$ ). Having a health condition was also related to more depressive symptoms ( $B = 4.13$ ,  $SE = 1.50$ ,  $t(130.06) = 2.75$ ,  $p = .007$ ). Finally, getting fewer than 7 h of sleep was related to more depressive symptoms ( $B = -4.29$ ,  $SE = 1.33$ ,  $t(112.97) = -3.22$ ,  $p = .002$ ).

### Regression Analyses: Predicting Health Behaviors and Health Outcomes

First, we examined three types of health behaviors: exercise (1 = *exercising at least 3 days per week*, 0 = *exercising on 0–2 days*), sleep (1 = *sleeping 7–9 h a night*, 0 = *sleeping fewer than 7 h per night*), and alcohol use, for which we separately examined both the number of days drank in the past 2 weeks and the average number of drinks in a single sitting. Second, we examined three health outcomes: chronic health conditions (1 = *presence*, 0 = *absence*), depressive symptoms, and overall health (1 = *good or better*, 0 = *less than good health*).

In all regression analyses, we entered as predictors the demographic controls (education, family income, and work hours), characteristics specific to the parenting context (number of children, parenting stress), and sexual minority-specific variables (fe-



Table 2  
Correlations Among Predictors and Outcomes

Variable	Educ	Inc	Wk	Mult	Stress	Fem	Marr	Accept	IH	Exerc	Sleep	Alc/2wks	Alc/sitting	Dep	Chron	Health
Educ	—															
Income	.19	—														
Wk	.17	-.05	—													
Multiple	-.07	.17	-.12	—												
Stress	.13	-.04	.06	.25	—											
Female	-.05	-.53	-.03	-.18	.09	—										
Married	-.06	.24	-.06	.14	-.11	-.07	—									
Accept	.01	.13	-.09	.11	-.05	-.07	.12	—								
IH	.10	-.10	.08	-.11	.07	.07	.001	-.15	—							
Exercise	.01	.14	.06	-.12	-.05	-.02	.21	.14	-.11	—						
Sleep	.01	.02	-.13	.09	-.17	-.05	.12	.03	.09	.07	—					
Alc/2wks	.23	.23	-.01	.20	.01	-.34	-.10	.09	-.10	.02	.20	—				
Alc/sitting	-.04	.12	.08	.11	-.16	-.22	-.10	-.03	-.06	-.11	.05	.43	—			
Dep.	-.05	-.08	.08	.14	.58	-.11	-.10	-.01	.07	-.13	-.24	-.02	-.06	—		
Chronic	.05	-.05	-.02	-.02	.21	.08	-.23	-.05	.06	-.11	.01	.09	-.11	.25	—	
Health	-.02	.04	-.001	.12	-.06	-.10	.06	.20	.01	.07	-.08	.04	-.11	-.09	-.30	—

Note. Educ = education; inc = income; wk = work hours; mult = multiple children; stress = parenting stress; fem = female; marr = married; accept = community acceptance; IH = internalized homophobia; exerc = exercise; sleep = sleep for average  $\geq 7$  hours/night; alc/2wks = number of days you drank in the last two weeks; alc/sitting = average number of drinks in one sitting; dep = depression; chron = chronic health conditions; health = overall health. Statistical significance is not indicated as the dyadic nature of the data makes both Pearson correlations inappropriate and multilevel modeling (MLM) estimates of variance biased (that makes the creation of standardized estimates problematic). Significant associations among the outcomes and among the predictors are presented in the text based on MLM and generalizing estimating equation (GEE) analyses.

male/male couple, community acceptance, marital status, and internalized homophobia). We followed up these analyses by adding a series of exploratory interactions, namely: Parent Gender  $\times$  Multiple Children; Parent Gender  $\times$  Parenting Stress; Parent Gender  $\times$  Community Acceptance; Parent Gender  $\times$  Marital Status; Parent Gender  $\times$  Internalized Homophobia. Finally, we present a parsimonious model from which all nonsignificant interactions and then other variables were trimmed from the least to most significant, retaining those variables whose removal causes another variable to fall out of significance. While we generally use “likelihood” terminology to express our results, all  $\beta$  estimates are based on odds ratios.

**Exercise.** In predicting regular exercise, having multiple children was negatively related to the odds of exercising regu-

larly at the level of a trend ( $B = -.76$ ,  $SE = .42$ ,  $Wald = 3.22$ ,  $p = .073$ ,  $e^B = .47$ ; Table 3). Being married was positively related to exercising regularly ( $B = 1.01$ ,  $SE = .43$ ,  $Wald = 6.59$ ,  $p = .010$ ,  $e^B = 3.01$ ); the odds of exercising was three times as great among married participants compared with non-married participants.

**Sleep.** In predicting sleep, parenting stress was negatively related to sleep ( $B = -.02$ ,  $SE = .009$ ,  $Wald = 4.68$ ,  $p = .031$ ,  $e^B = .99$ ), whereby greater stress was related to a lower likelihood of getting at least 7 h of sleep. Internalized homophobia was positively related to sleep ( $B = .10$ ,  $SE = .06$ ,  $Wald = 2.76$ ,  $p = .097$ ,  $e^B = 1.11$ ), such that higher levels of internalized homophobia were associated with a greater likelihood of getting at least 7 h of sleep, at the level of a trend.

Table 3  
Predictors of Health Behaviors and Outcomes: Main Effects Models ( $N = 141$  Individuals in 83 Couples)

Predictors	Exercise $\geq 3$ days/week		Sleep 7–9 h		Alcohol, no. days drank		Alcohol, no. drinks/sitting		Health condition		Depressive symptoms	Overall (good) health	
	$B(SE)$	$e^B$	$B(SE)$	$e^B$	$B(SE)$	$e^B$	$B(SE)$	$e^B$	$B(SE)$	$e^B$	$B(SE)$	$B(SE)$	$e^B$
Intercept	-.22 (.56)	.80	.12 (.42)	1.13	1.53 (.20)***	4.61	.45 (.19)*	1.57	-.30 (.58)	.74	12.92 (1.65)***	.87 (1.25)	2.39
Education	-.05 (.20)	.95	.13 (.19)	1.14	.24 (.08)**	1.27	-.03 (.08)	.97	.09 (.21)	1.09	-.98 (.59)	-.11 (.36)	.90
Family income	.38 (.39)	1.46	-.04 (.42)	.96	.08 (.22)	1.08	-.01 (.17)	.99	-.19 (.46)	.83	-3.78 (1.26)**	.63 (.82)	1.88
Work hours	.01 (.01)	1.01	-.02 (.01)	.98	<.001 (.004)	1.00	.01 (.004)†	1.01	-.01 (.01)	.99	.02 (.03)	.01 (.02)	1.01
Multiple children	-.76 (.42)†	.47	.58 (.41)	1.78	.32 (.20)	1.37	.19 (.14)	1.21	-.11 (.44)	.89	-.62 (1.24)	.89 (.62)	2.44
Parenting stress	<.001 (.01)	1.00	-.02 (.01)*	.98	-.001 (.003)	1.00	-.01 (.003)†	.99	.02 (.01)*	1.02	.22 (.03)***	-.01 (.02)	.99
Gender (female)	.21 (.48)	1.24	-.09 (.42)	.91	-.50 (.23)*	.61	-.27 (.18)	.76	.09 (.47)	1.10	-5.67 (1.43)***	-.04 (.75)	.96
Married	1.10 (.43)*	3.01	.35 (.38)	1.42	-.19 (.18)	.82	-.14 (.18)	.87	-.98 (.45)*	.38	-.16 (1.42)	-.19 (.78)	.83
Accept community	.41 (.46)	1.51	.12 (.41)	1.13	.20 (.16)	1.22	.002 (.14)	1.00	-.08 (.42)	.92	1.11 (1.23)	1.24 (.65)†	3.47
Internalized H.	-.07 (.05)	.94	.10 (.06)†	1.11	-.02 (.02)	.98	-.01 (.02)	.99	.03 (.06)	1.03	.09 (.16)	.06 (.11)	1.06

Note. Internalized H. = internalized homophobia;  $e^B$  = exponentiated  $B$  (i.e., odds ratio). Outcomes are coded as 1 for yes and 0 for no. Gender is coded such that 1 = female and 0 = male. Family income has been transformed by taking the natural log. Lesbian/gay (LG) parent family-accepting community is coded so that 1 = very accepting and 0 = less than very accepting (i.e., not at all accepting, not very accepting, neutral, or somewhat accepting). Continuous and ordinal variables are mean centered.

†  $p < .10$ . \*  $p < .05$ . \*\*  $p < .01$ . \*\*\*  $p < .001$ .

**Alcohol use: Days drank.** In predicting number of days drank in the past 2 weeks, gender was significant, such that women in same-sex couples drank less than men in same-sex couples ( $B = -.50, SE = .23, Wald = 4.77, p = .029, e^B = .95$ ). Being more highly educated was positively associated with drinking ( $B = .24, SE = .08, Wald = 8.89, p = .003, e^B = 1.49$ ).

**Alcohol use: Drinks per sitting.** In predicting drinks per sitting, parenting stress was significant at the level of a trend, such that parents with higher levels of stress tended to drink less in a single sitting ( $B = -.005, SE = .003, Wald = 3.51, p = .061, e^B = .99$ ). Work hours were significant at the level of a trend ( $B = .008, SE = .004, Wald = 3.51, p = .061, e^B = 1.02$ ), such that working more hours was associated with drinking more in a single sitting.

**Chronic health condition.** In predicting the presence of chronic health conditions, parenting stress was positively related to the presence of such conditions ( $B = .02, SE = .009, Wald = 4.34, p = .037, e^B = 1.02$ ). Being married was negatively related to the presence of such conditions ( $B = -.98, SE = .45, Wald = 4.34, p = .031, e^B = .38$ ), whereby the odds of having a chronic health condition among married parents were less than half those of unmarried parents.

**Depression.** In predicting depressive symptoms, gender was related to depressive symptoms ( $B = -5.67, SE = 1.43, t(74.95) = -3.95, p < .001$ ), such that male parents reported more symptoms than female parents. Parenting stress was significantly related to depressive symptoms ( $B = .22, SE = .03, t(106.12) = 8.74, p < .001$ ), such that higher stress was associated with more symptoms. Finally, income was negatively related to symptoms ( $B = -3.78, SE = 1.26, t(89.94) = -3.01, p = .001$ ), such that parents with lower household incomes reported more symptoms.

**Overall health.** In predicting overall health, living in a community that was perceived as more accepting of same-sex parent families was related to a greater odds of having good or better health, at the level of a trend ( $B = 1.24, SE = .65, Wald = 3.70, p = .054, e^B = 1.06$ ).

**Exploratory Interactions**

We conducted a series of exploratory interactions (Gender  $\times$  Multiple Children; Gender  $\times$  Stress; Gender  $\times$  Acceptance; Gender  $\times$  Marital Status; Gender  $\times$  Internalized Homophobia) for each outcome. We added each of these separately to the full models, described above (Tables 4 and 5).

**Exercise.** We found that in predicting exercise, the Gender  $\times$  Parenting stress interaction was significant ( $B = .03, SE = .02, Wald = 2.83, p = .049, e^B = 1.03$ ). Graphing it revealed that for men, higher stress was associated with a lower likelihood of regular exercise—whereas for women, higher stress was related to a greater likelihood of regular exercise (see Figure 1). The Gender  $\times$  Internalized Homophobia interaction was significant ( $B = -.26, SE = .10, Wald = 6.62, p = .010, e^B = .77$ ). Graphing it showed that for female parents, lower internalized homophobia was related to a greater likelihood of regular exercise, whereas for male parents, higher internalized homophobia was related to a greater likelihood of regular exercise (see Figure 2). Multiple children was significantly related to exercise ( $B = -1.54, SE = .77, Wald = 3.98, p = .046, e^B = .97$ ), wherein parents of multiple children were less likely to exercise regularly. Being married was

Table 4  
Predictors of Health Behaviors With Exploratory Interactions ( $N = 141$  Individuals in 83 Couples)

Predictors	Exercise $\geq 3$ days/week		Sleep 7–9 h		Alcohol, no. days drank		Alcohol, no. drinks/sitting	
	Full $B(SE)$	Trimmed $B(SE)$	Full $B(SE)$	Trimmed $B(SE)$	Full $B(SE)$	Trimmed $B(SE)$	Full $B(SE)$	Trimmed $B(SE)$
Intercept	-.36 (.93)	.12 (.52)	.37 (.57)	.58 (.32) <sup>†</sup>	1.80 (.18) <sup>***</sup>	1.52 (.15) <sup>***</sup>	.41 (.16) <sup>*</sup>	.33 (.12) <sup>**</sup>
Education	-.05 (.20)		.07 (.20)		.26 (.08) <sup>**</sup>	.26 (.07) <sup>***</sup>	-.02 (.08)	
Family income	.57 (.41)		.08 (.43)		1.09 (.21)	1.30	-.03 (.18)	
Work hours	.01 (.01)		-.02 (.01)		.002 (.004)		.01 (.005)	
Multiple children	-1.54 (.77) <sup>*</sup>	.41	.30 (.76)	.73 (.39) <sup>†</sup>	1.13 (.17)	1.39	.22 (.14)	.17 (.14)
Parenting stress	-.01 (.01)	.99	-.02 (.02)	-.02 (.01) <sup>**</sup>	1.00 (.004)	1.00	-.004 (.003)	-.01 (.003) <sup>†</sup>
Gender (female)	.76 (1.17)	.86	-.16 (.89)	-.27 (.36)	-.102 (.32) <sup>**</sup>	.59	-.23 (.35)	-.25 (.16)
Married	1.49 (.72) <sup>*</sup>	3.85	.04 (.61)	.77	-.48 (.23) <sup>*</sup>	.62	-.12 (.17)	.78
Accept community	.95 (.78)	2.59	.54 (.68)		.23 (.19)	1.26	-.01 (.13)	.99
Intern H.	.08 (.08)	1.09	.30 (.13) <sup>*</sup>	.37 (.12) <sup>**</sup>	-.11 (.03) <sup>***</sup>	.90	-.07 (.03) <sup>*</sup>	.93
Gender $\times$ Multiple	1.05 (.96)	2.87	.47 (.92)		.40 (.35)	1.50	-.07 (.29)	.94
Gender $\times$ Stress	.03 (.02) <sup>*</sup>	1.03	<-.001 (.02)		.002 (.01)	1.00	-.002 (.01)	1.00
Gender $\times$ Intern H.	-.26 (.10) <sup>*</sup>	.78	-.25 (.15) <sup>†</sup>	-.33 (.13) <sup>*</sup>	.12 (.04) <sup>**</sup>	1.13	.08 (.04) <sup>*</sup>	.109

Note. Intern H. = internalized homophobia;  $e^B$  = exponentiated  $B$  (i.e., odds ratio). Outcomes coded as 1 for yes and 0 for no. Gender is coded such that 1 = female and 0 = male. Family income has been transformed by taking the natural log. Lesbian/gay (LG) parent family-accepting community is coded so that 1 = very accepting and 0 = less than very accepting (i.e., not at all accepting, not very accepting, neutral, or somewhat accepting). Continuous and ordinal variables are mean centered.  
<sup>†</sup>  $p < .10$ . <sup>\*</sup>  $p < .05$ . <sup>\*\*</sup>  $p < .01$ . <sup>\*\*\*</sup>  $p < .001$ .

Table 5

Predictors of Health Outcomes With Exploratory Interactions ( $N = 141$  Individuals in 83 Couples)

Predictors	Health condition				Overall (good) health			
	Main		Trimmed		Main		Trimmed	
	$B(SE)$	$e^B$	$B(SE)$	$e^B$	$B(SE)$	$e^B$	$B(SE)$	$e^B$
Intercept	.29 (1.06)	1.33	.14 (.67)	1.12	-.10 (.10)	.91	-.16 (.06)*	.85
Education	.06 (.23)	1.06			-.01 (.03)	.99		
Family income	-.15 (.49)	.86			.06 (.09)	1.06		
Work hours	-.01 (.01)	.99			.001 (.002)	1.00		
Multiple children	-1.04 (.72)	.35	-.96 (.66)	.38	.01 (.06)	1.01		
Parenting stress	.02 (.01)	1.02	.02 (.01)*	1.02	-.003 (.002)†	1.00	-.003 (.002)	1.00
Gender (female)	-.68 (1.21)	.51	-.50 (.69)	.61	-.19 (.17)	.83	-.05 (.05)	.95
Married	-1.47 (.88)†	.23	-1.09 (.48)*	.34	-.03 (.10)	.97		
Accept community	.29 (.79)	1.34			.04 (.08)	1.04	.12 (.07)†	1.13
Intern H.	-.03 (.10)	.97			.01 (.01)†	1.01		
Gender × Stress	-.004 (.02)	1.00			.005 (.002)*	1.00	.005 (.002)†	1.00
Gender × Multiple	1.57 (.86)†	4.78	1.41 (.82)†	4.08	.11 (.09)	1.12		
Gender × Married	.60 (1.10)	1.82			.06 (.15)	1.06		
Gender × Affirming	-.62 (.98)	.54			.11 (.15)	1.12		
Gender × Intern H.	.09 (.13)	1.09			-.01 (.02)	.99		

Note. Intern H. = internalized homophobia;  $e^B$  = exponentiated  $B$  (i.e., odds ratio). Outcomes are coded as 1 for *yes* and 0 for *no*. Gender is coded such that 1 = female and 0 = male. Family income has been transformed by taking the natural log. LG parent family-accepting community is coded so that 1 = very accepting and 0 = less than very accepting (i.e., not at all accepting, not very accepting, neutral, or somewhat accepting). Continuous and ordinal variables are mean centered.

†  $p < .10$ . \*  $p < .05$ .

also significantly related to exercise ( $B = 1.49$ ,  $SE = .72$ , Wald = 4.23,  $p = .040$ ,  $e^B = 1.07$ ), such that married parents were more likely to exercise regularly. In the trimmed model, the gender x parenting stress interaction became fully significant ( $p = .049$ ) and the Gender × Internalized Homophobia interaction remained significant ( $p = .020$ ). Having multiple children ( $p = .035$ ) and being married ( $p = .003$ ) retained their significance.

**Sleep.** In predicting sleep, the interaction between gender and internalized homophobia was significant at the level of a trend ( $B = -.25$ ,  $SE = .15$ , Wald = 2.94,  $p = .086$ ,  $e^B = .78$ ). Graphing it revealed that male parents who reported higher levels of internalized homophobia were somewhat more likely to report getting at least 7 h of sleep than those reporting lower levels (see Figure 3). The main effect for internalized homophobia was significant and positive ( $B = .29$ ,  $SE = .13$ , Wald = 4.64,  $p = .019$ ,  $e^B = 1.73$ ). In the trimmed model, the interaction became significant

( $p = .015$ ), and the main effect of internalized homophobia retained its significance ( $p = .008$ ). Parenting stress also became fully significant: Parents reporting more stress were less likely to get at least 7 h of sleep ( $p = .006$ ). Multiple children emerged as significant at the level of a trend ( $p = .061$ ): parents of multiple children were more likely to get at least 7 h of sleep.

**Alcohol use: Days drank.** In predicting number of days that participants drank alcohol in the past 2 weeks, a significant Gender × Internalized Homophobia emerged ( $B = .12$ ,  $SE = .04$ , Wald = 9.53,  $p = .002$ ,  $e^B = 1.13$ ). Graphing it revealed that male parents with low levels of internalized homophobia drank on more days per week (see Figure 4). The main effect of internalized homophobia was significant and negative ( $B = -.11$ ,  $SE = .03$ ,

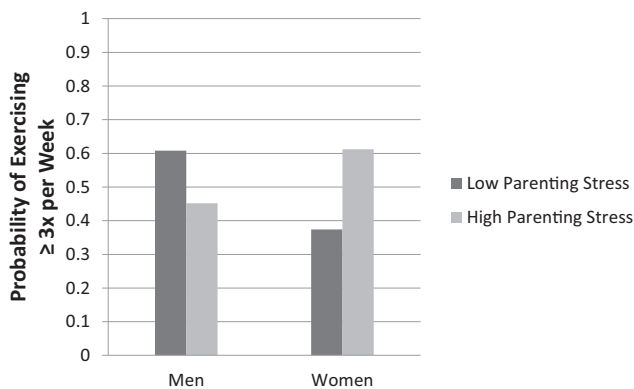


Figure 1. Interaction of Gender × Parenting Stress predicting exercise.

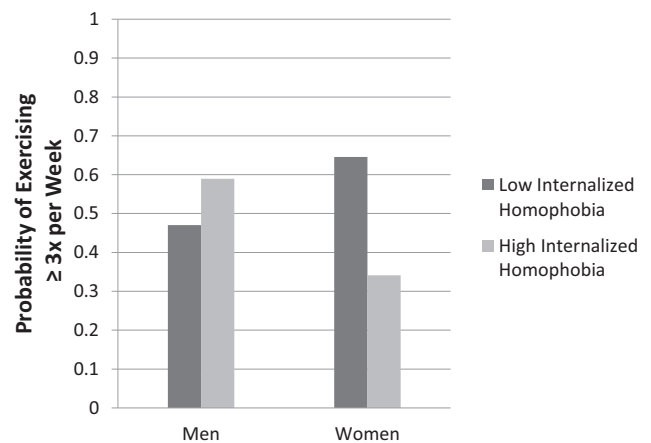


Figure 2. Interaction of Gender × Internalized Homophobia predicting exercise.

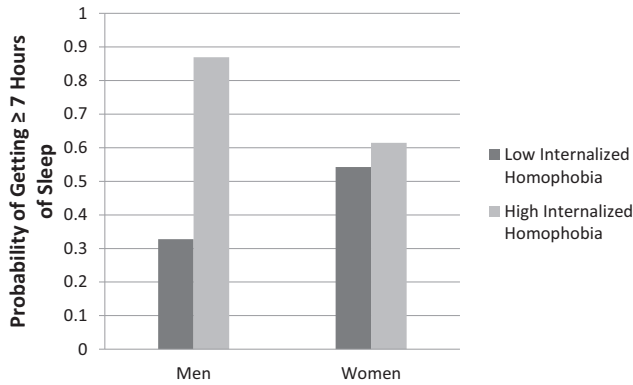


Figure 3. Interaction of Gender  $\times$  Internalized Homophobia predicting sleep.

Wald = 12.56,  $p = .001$ ,  $e^B = .36$ ), but must be interpreted in the context of the significant interaction. The main effect of gender was also significant, such that men reported drinking on more days than women ( $B = -1.02$ ,  $SE = .32$ , Wald = 10.37,  $p = .002$ ,  $e^B = 1.13$ ), but must be interpreted in the context of the interaction. Education was also related to drinking ( $B = .26$ ,  $SE = .08$ , Wald = 9.09,  $p = .003$ ,  $e^B = 1.29$ ), such that more educated parents drank on more days. In the trimmed model, the interaction remained significant ( $p = .013$ ), as did the main effects of internalized homophobia ( $p = .003$ ), gender ( $p = .004$ ), and education ( $p < .001$ ). Having multiple children became significant at the level of a trend ( $p = .055$ ) such that having more children was associated with drinking on more days.

**Alcohol use: Drinks per sitting.** In predicting average number of drinks per sitting, the Gender  $\times$  Internalized Homophobia interaction was significant ( $B = .08$ ,  $SE = .04$ , Wald = 4.59,  $p = .032$ ,  $e^B = 1.09$ ), indicating that, again, men with lower levels of internalized homophobia averaged more drinks per sitting (see Figure 5). The main effect of internalized homophobia was also significant and negative ( $B = -.08$ ,  $SE = .03$ , Wald = 4.91,  $p = .027$ ,  $e^B = .93$ ). In the trimmed model, the interaction continued to be significant ( $p = .011$ ) as did the main effect of internalized homophobia ( $p = .020$ ). Further, parenting stress emerged as

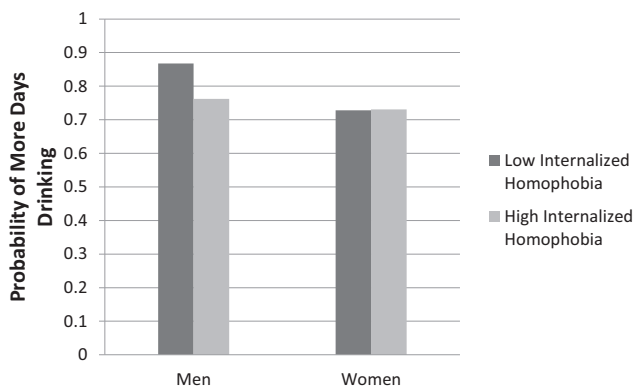


Figure 4. Interaction of Gender  $\times$  Internalized Homophobia predicting days drinking.

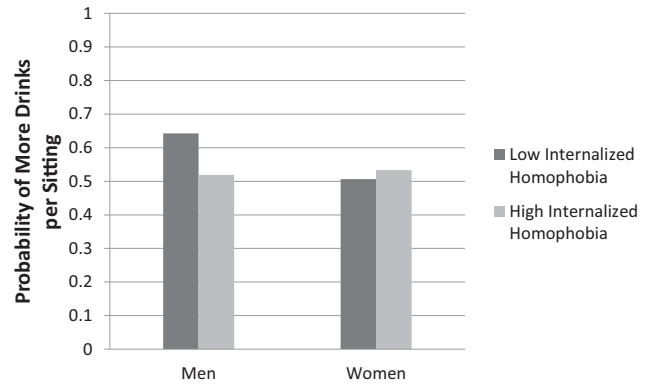


Figure 5. Interaction of Gender  $\times$  Internalized Homophobia predicting drinks per sitting.

significant at the level of a trend ( $p = .070$ ), such that higher levels of stress were related to fewer drinks per sitting.

**Health condition.** In predicting the presence of a chronic health condition, a significant Gender  $\times$  Multiple Children interaction emerged, at the level of a trend ( $B = 1.57$ ,  $SE = .86$ , Wald = 2.94,  $p = .070$ ,  $e^B = 3.28$ ), such that men with a single child were more likely to have a health condition than men with multiple children, whereas women with multiple children were less likely to have a health condition than women with a single child (see Figure 6). Marital status was also significant at the level of a trend ( $B = -1.47$ ,  $SE = .88$ , Wald = 2.75,  $p = .097$ ,  $e^B = .23$ ), such that married participants were less likely to have a health condition. In the trimmed model, the Gender  $\times$  Multiple Children interaction remained a trend ( $p = .086$ ), the effect of being married became fully significant ( $p = .024$ ), and parenting stress emerged as significant, such that parents with higher stress were more likely to have a health condition ( $p = .024$ ).

**Depression.** In predicting depressive symptoms, no significant interactions emerged.

**Overall health.** In predicting overall health, the interaction between gender and parenting stress was significant ( $B = .01$ ,  $SE = .002$ , Wald = 3.86,  $p = .049$ ,  $e^B = 1.01$ ). Graphing the interaction revealed that men with low parenting stress were more likely to report being in good or better health, whereas women with

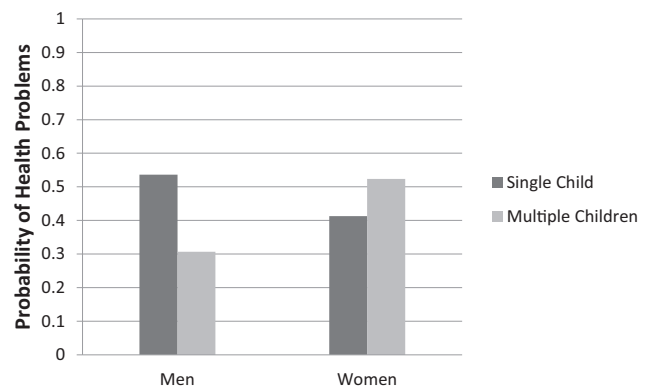


Figure 6. Interaction of Gender  $\times$  Multiple Children predicting health problems.



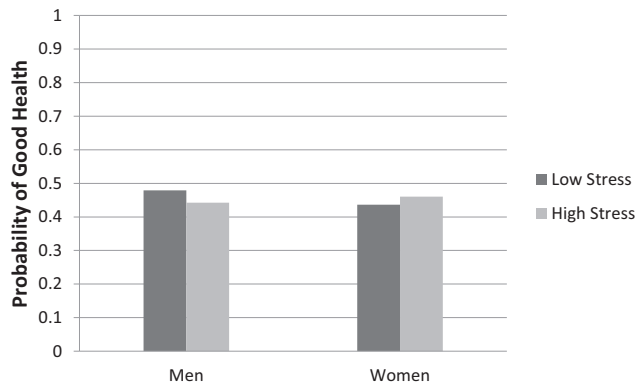


Figure 7. Interaction of Gender  $\times$  Parenting Stress predicting overall health.

low parenting stress were less likely to report being in good or better health (see Figure 7). Parenting stress was negatively related to overall health at the level of a trend ( $B = -.003$ ,  $SE = .002$ ,  $Wald = 2.88$ ,  $p = .090$ ,  $e^B = .99$ ). In the trimmed model, the interaction remained significant at the level of a trend ( $p = .053$ ). Parenting stress fell out of significance. The effect of living in a community that was more accepting of same-sex parents became significant at the level of a trend ( $p = .084$ ): parents in more accepting communities reported better health.

### Follow-Up Analyses

**Commitment ceremony.** To disentangle the effects of being legally married from relationship commitment, we conducted follow-up analyses to examine whether having had a commitment ceremony or another type of nonlegal relationship recognition event predicted the outcomes. When commitment ceremony was entered alone in the main models, it was not significant in predicting any outcome. When it was included with marital status, marital status functioned as it did when it was alone.

**Personal distress.** Because personal distress—a component of the PSI—was believed to tap a similar domain as depressive symptoms, we conducted follow-up analyses in predicting depressive symptoms, using the Child Difficulty and Difficult Parent–Child interaction subscales. We entered each subscale separately in the main model, with the total PSI scale removed, to evaluate whether examining parenting-related stress independently from parents’ personal distress produced different findings in relation to depressive symptoms. Both subscales were in the same direction as the total PSI scale and significant, but less so than the total PSI scale ( $p < .05$  for each).

### Summary of Findings

To summarize, men in same-sex couples reporting higher parenting stress were less likely to exercise regularly; whereas, women in same-sex couples reporting higher parenting stress were more likely to exercise. Men in same-sex couples reporting higher internalized homophobia were more likely to exercise; whereas, women in same-sex couples reporting higher internalized homophobia were less likely to exercise. Parents with multiple children and unmarried parents were less likely to exercise. Among

men only, lower levels of internalized homophobia were associated with a lower likelihood of sleeping at least 7 h. Also, parents with one child, and parents with greater parenting stress, were less likely to get at least 7 h of sleep. Among men only, parents with low levels of internalized homophobia tended to drink on more days and to drink more in one sitting. Parents with multiple children drank alcohol on more days. Whereas mothers of multiple children were more likely to report a chronic health condition, fathers of singletons were more likely to have a chronic health condition. Parents who reported greater parenting stress, and unmarried parents, were more likely to report a health condition. Parents with more parenting stress, and male parents, reported more depressive symptoms. Among male parents, those who reported lower parenting stress were more likely to report being in good health; the reverse was true for women. Parents who viewed their community as more accepting of same-sex parent families reported more positive assessments of their overall health.

### Discussion

The current exploratory study investigated the health-related behaviors and outcomes of parents in same-sex couples. This study is novel in that it is one of the first to explore these domains in a group that has rarely been studied, but who may have certain unique health-related risks and experiences because of both their status as both parents and sexual minorities.

At a descriptive level, we found that about 17% of the sample reported no physical exercise. This is slightly lower than the 27% of U.S. adults ages 45–64 reporting no physical activity in national survey data (United Health Foundation, 2018), but, notably, only about two thirds of parents were exercising three or more times per week, meeting most health guidelines’ recommendations (Centers for Disease Control, 2018). Almost 90% of parents wanted to exercise more, suggesting that they are aware of the physical and mental health benefits of exercise but perceive barriers to getting the amount of exercise they desire. Walking was the most frequently endorsed form of exercise, and, indeed, walking is widely recognized as an effective form of physical activity as it requires no special skills or facilities, and may more easily circumvent often cited barriers to exercise such as lack of time (Murtagh, Murphy, & Boone-Heinonen, 2010).

Regarding sleep, more than one third of participants were getting less than 7 h of sleep per night, which is regarded as less than ideal by the NSF, inasmuch as inadequate sleep is associated with an increased risk for poor health, including cardiovascular disease and diabetes (Hagen, Mirer, Palta, & Peppard, 2013). In terms of alcohol use, the sample overall was not using high levels of alcohol—consistent with research showing that parenthood may result in reduced substance use (Fergusson et al., 2012). Men were more likely to want to cut down, consistent with the fact that their mean alcohol use was higher than women’s (i.e., they drank on more days and also consumed more alcohol in one sitting). The finding that men drank more, which is consistent with general research on sexual minority adults (Amadio, Adam, & Buleta, 2008), held up even after taking into account aspects of parenting and sexual minority-related characteristics in the regression analyses—although, as we discuss below, parent gender interacted with internalized homophobia to predict sleep in unexpected ways.

In predicting same-sex parents' health-related behaviors and outcomes, we were especially interested in the role of parenting and sexual minority-related stressors (controlling for income, education, and work hours). We documented some intriguing associations.

Beginning with the parenting-related domains, high parenting stress was associated with lesser likelihood of getting at least 7 h of sleep, a greater likelihood of a health condition, and increased depressive symptoms, for both male and female parents. Such findings are consistent with prior work demonstrating the negative toll that parenting stress can take on sleep (Gallagher et al., 2010; Lee & Hsu, 2012), mental health (Helgeson et al., 2012; Sakkalou et al., 2018) and overall physical health (Anderson, 2008; Lee & Hsu, 2012). Further, our findings support the extant literature on the connection between stress and health, which shows that exposure to chronic stress is associated with a variety of negative health outcomes such as increases in stress hormones, blood pressure, and cardiovascular disease (Schneiderman, Ironson, & Siegel, 2005). Of note is that we observed a negative relationship between parenting stress and number of days parents drank alcohol, at the level of a trend. Parents who were experiencing high levels of stress may be relying on other outlets to manage stress. Indeed, prior work suggests that parents rely on a range of coping strategies, both positive (e.g., self-care) and negative (e.g., overeating, substance abuse) to manage stress (Calero Plaza, Grau Sevilla, Martínez Rico, & Morales Murillo, 2017).

High levels of parenting stress appear to affect women and men in the sample differently, in relation to certain outcomes. High parenting stress was related to less likelihood of regular exercise for men, but not women. Why are fathers in same-sex couples more negatively affected by parenting stress with regard to certain aspects of their health—namely, exercise? Perhaps mothers in same-sex couples are more impacted in other domains, which we did not assess. It may also be that fathers in same-sex couples, who are vulnerable to critiques of their parenting based on sexual orientation and gender (Goldberg, 2012), internalize and cope with parenting stress differently, such that higher levels of stress lead them to engage in lower levels of overall activity, and other health behaviors—a theory that is consistent with work suggesting that stress affects sexual minority men and women differently (Hequembourg & Brallier, 2009). Yet, given that our findings are correlational, it is important to be cautious about causal interpretations. Perhaps engaging in exercise contributes to increased parenting stress for women but not men, as certain types of “self-care” and health-oriented activities are internalized differently by women and men because of gender socialization (Segar, Jayaratne, Hanlon, & Richardson, 2002).

Similarly, male parents with higher levels of parenting stress were less likely to report being in good health, whereas the reverse was true for female parents. Again, this finding points to potential differences in how female and male sexual minority parents experience and respond to stress. Female parents may respond to parenting stress by not only exercising, but engaging in other self-care behaviors that promote their health, including building formal and informal support networks and engaging in therapy, which are among the help-seeking activities that are more common among women than men (Liddon, Kingerlee, & Barry, 2018).

Having multiple children was associated with a lower likelihood of regular exercise and, at the level of a trend, drinking on more

days per week. Parenthood involves additional demands on time and workload—and the presence of multiple children may result in less time for exercise and self-care (Kuo et al., 2017), a scenario that is likely enhanced if children have special needs, such as developmental and behavioral challenges (Luijckx, van der Putten, & Vlaskamp, 2017)—that we did not examine but that are more likely among adopted children (Keyes, Sharma, Elkins, Iacono, & McGue, 2008). Regarding their higher alcohol use, parents of multiple children may have had less time, ease, and flexibility in time use than their one-child peers, possibly confining their evening and weekend activities to a greater degree and leading to a greater reliance on alcohol as a form of leisure. Significantly, the alcohol use of the same-sex parents in the sample was in the moderate range; very few can be characterized as anything other than low-risk (i.e., for alcohol dependence) drinkers (that in women is defined as seven or fewer drinks per week, and in men is defined as no more than 14 drinks per week; National Institute on Alcohol and Alcoholism, 2018). Surprisingly, having multiple children was related to getting more sleep—in contrast to other research documenting an inverse association between the number of children in the household and the quality of parents' sleep (Chapman et al., 2012), suggesting that perhaps only children may be more likely to have certain difficulties that interfere with parents' sleep (e.g., sleep problems of their own); or, perhaps, the sleeping arrangements of parents of multiple children may be different than those of parents of singletons (e.g., the latter may be more likely to cosleep, which is associated with poorer parent sleep quality; Teti, Shimizu, Crosby, & Kim, 2016). Of note is that we assessed sleep duration, and not sleep quality; different findings might have emerged had we used the latter index.

Having multiple children was associated with a greater likelihood of having a chronic health condition for women—but, the reverse was true for men, such that parents of only children were more likely to have a chronic health condition (with the interaction significant at the level of a trend). In that the data are cross-sectional, it is possible that some third variable is responsible for gay men both adopting just one child and also having a health condition. Alternately, it is possible that these men's health conditions predated their adopting children, and may have been a factor in their decision to adopt just one child. We did not ask specific questions about the time frame of parents' health problems; future work should assess chronicity and severity of health issues in a more fine-tuned manner.

Participants who were married were more likely to exercise and had a lower likelihood of having a health condition. Research has documented the health benefits of marriage for heterosexual and same-sex couples (Buffie, 2011; Fingerhut & Maisel, 2010). Marriage confers better access to health insurance and, thus, health care, as well as symbolic recognition of one's relationship, which often translates to higher levels of support by family and friends (Fingerhut & Maisel, 2010; Solomon, Rothblum, & Balsam, 2004), which may protect against the negative effects of minority stress and promote positive well-being (Goldberg & Smith, 2011; Solomon et al., 2004). Indeed, the general consensus by social scientists is that marriage positively impacts people's health regardless of the reality that healthier people may self-select into marriage (see Badgett, 2009; Buffie, 2011). This study adds to a body of work showing an association between marriage among sexual minorities and positive health outcomes (Kail et al., 2015),

although significantly, we did not document an association between marital status and mental health, as other studies have (Fingerhut & Maisel, 2010; Hatzenbuehler et al., 2010). Again, causality cannot be determined: it is possible that participants with chronic health conditions, for example, were less likely to marry their partners. Notably, the potential significance of marriage per se, rather than simply relationship commitment, in facilitating positive health outcomes is strengthened inasmuch as we found no association between having had a commitment ceremony and any aspect of sexual minority parents' health.

Internalized homophobia interacted with gender in some interesting ways, such that for female parents, lower levels of internalized homophobia were related to a greater likelihood of regular exercise, whereas for male parents, higher levels were related to a greater likelihood of exercise. This finding echoes prior work showing linkages between internalized homophobia and negative body image (Wiseman & Moradi, 2010) and bulimic behavior (Reilly & Rudd, 2006). In turn, it is possible that the linkage between internalized homophobia and exercise among men that we observed may be mediated by body consciousness, body shame, or some other dimension that captures the internalized pressures or ideals surrounding physical fitness in gay male communities (Wiseman & Moradi, 2010). Significantly, some work has found that adherence to gender roles is associated with internalized homophobia, among both female and male sexual minorities (Salvati, Pistella, & Baiocco, 2018). In turn, it is possible that women's low levels of internalized homophobia may reflect or be related to a rejection of traditional gender roles, which in turn facilitates their engagement in regular physical exercise.

Unexpectedly, internalized homophobia was also negatively related to alcohol use, and positively related to sleep, for men only. Why would gay men with lower levels of internalized homophobia be more likely to drink alcohol? Given the modest alcohol use overall in our sample, it is important not to treat our drinking outcomes as constituting valid indices of risk behavior. Men with low levels of internalized homophobia tend to have more of a connection to the LGBTQ community, more friends, and less fraught (more positive) relationships than men with high levels of internalized homophobia (Frost & Meyer, 2009). In turn, in light of research showing associations between moderate alcohol use and social networks, whereby moderate "social" drinkers have more friends on whom they can rely for emotional and practical support and feel more engaged in their communities (Dunbar et al., 2017), perhaps this linkage between internalized homophobia and alcohol use reflects or is intertwined with men's social networks, such that men with low internalized homophobia tend to engage in more social drinking with friends. Furthermore, other work suggests that associations between internalized homophobia and substance use depends on the type of substance and the nature of the question (e.g., number of days drank alcohol vs. number of days drunk or high; Amadio, 2006). Regarding the association between internalized homophobia and sleep, such that men with lower levels of internalized homophobia reported a lower likelihood of getting at least 7 h of sleep, perhaps the answer again lies with their social networks and community belongingness, which, although being of value and benefit, may also take time away from sleep.

Perceptions of greater community acceptance of same-sex parent families were related to a greater likelihood that parents rated themselves in good or better health, at the level of a trend. There

are likely a variety of mechanisms that might explain this association, which can be explained through the lens of minority stress (Meyer, 2003). Perceptions of greater community acceptance of same-sex parent families likely translate to less stress, anxiety, and worry surrounding the possibility of negative treatment or rejection of one's family, which constitute major minority stressors (Hatzenbuehler, 2014). Research has found that perceptions of one's community (e.g., perceived lack of safety) are linked to health outcomes in large-scale studies, even when objective indices of community environmental factors (e.g., walkability) are considered (Yoon & Kwon, 2014), suggesting the importance of assessing subjective perceptions, particularly when attempting to isolate environmental characteristics that may contribute to minority stress. It is also possible that a negativity bias is operating, whereby participants with a more negative "lens" view both their communities and health more negatively. More work is needed to better understand these mechanisms—and, our findings on perceptions of community acceptance must be viewed in the context of the fact that (a) overall, the sample was living in communities that they perceived as fairly accepting, and (b) our assessment of community acceptance was based on a single-item self-report measure; more specific aspects of the community (e.g., the local gym or fitness center) may be related to certain health behaviors and outcomes.

Parent gender operated in many interesting ways, often interacting with sexual minority-specific and parenting domains to shape health outcomes. An interesting find, there was one main effect for gender: male parents in same-sex relationships reported higher levels of depressive symptoms than female parents. Gay and bisexual male parents are often scrutinized in ways that their female counterparts are not: although all sexual minority parents are vulnerable to stigma, male sexual minority parents contend with the additional doubt and judgment associated with the absence of an "essential" female figure within the parental configuration (Goldberg, 2012). More research is needed to further articulate the unique mechanisms by which male parents in same-sex relationships experience elevated levels of psychological distress.

The current exploratory study represents a first step in describing the health behaviors and outcomes of parents in same-sex couples. It has a number of limitations, which impact the conclusions we can draw based on our findings. First, we used dichotomous, one-item measures for most predictors and outcomes, which may have limited our ability to detect certain effects. Certain items, such as our exercise item, inadequately captured the construct of interest: indeed, while we asked about number of days per week engaged in exercise, we did not ask about length of exercise session or minutes per week. Future work should provide standardized definitions to participants (e.g., asking about minutes per week of moderate/vigorous activity). A more nuanced, robust, multi-item measure of perceived community acceptance that included items assessing specific dimensions or subcommunities may have been more strongly linked to our outcomes. Also, we explored a limited number of health behaviors and outcomes. More precise examination of a diverse array of health-promoting behaviors (e.g., nutrition and diet; tobacco use) and health outcomes (e.g., blood pressure) among same-sex parents is needed. Also, our small sample size meant that we were limited in our ability to explore a large number of interactions. We could not test robust models of minority stress and its relationships to physical health



and mental health outcomes, wherein interactions between multiple distal and proximal stressors are explored in an effort to establish direct and indirect pathways to health (see Pachankis & Lick, 2018). Our study is exploratory and is aimed to provide preliminary findings that can be examined in greater depth in future model testing. Additionally, qualitative work can aim to explore how same-sex parents' sexual minority and parent statuses intersect to create unique stresses as well as what types of contexts and settings support health-promoting behaviors and outcomes in these groups.

Further, as our interactions are purely exploratory, findings concerning interactions should be viewed with particular caution—to inform the basis for future research, rather than leading to any firm conclusions. Finally, our data are cross-sectional, so causality cannot be inferred.

Our findings point to many provocative areas for future research, including much more attention to how minority stress impacts health among sexual minority parents—particularly those who occupy multiply marginalized statuses, such as sexual minority parents of color, who may, for example, experience racial-ethnic stigma in LGBTQ spaces, and LGBTQ stigma in their neighborhoods (McConnell, Janulis, Phillips, Truong, & Birkett, 2018). Additionally, more focus on interactions between various minority stressors (e.g., perceived discrimination; internalized homophobia) in relation to health behaviors and outcomes is needed. Qualitative studies that explore how sexual minority parents experience their health, what factors they perceive as influencing their health, and their health-related decision-making, are also needed. We did not assess the role of adoption-specific stressors as predictors; these are undoubtedly important to assess in sexual minority parents, especially given that they are much more likely to adopt their children than heterosexual parents (Goldberg et al., 2014). Future work should also examine other dimensions of health behaviors and outcomes—including objective physiological reactivity measures that have been linked to stress such as heart rate, blood pressure, and stress hormones (Schneiderman et al., 2005). Future work can more carefully scrutinize the interconnections among health behaviors and outcomes which we did not do in-depth given the sample size, exploratory nature of the study, and the number and complexity of the models that we did examine. In summary, our findings begin to address a gap in research on LGBTQ parents' health, and call for more attention to the mechanisms whereby stress, health behaviors, and health outcomes intersect among sexual minority parents.

## References

- Abidin, R. R. (1995). *Parenting stress index* (3rd ed.). Lutz, FL: PAR.
- Åkerstedt, T., Fredlund, P., Gillberg, M., & Jansson, B. (2002). Work load and work hours in relation to disturbed sleep and fatigue in a large representative sample. *Journal of Psychosomatic Research, 53*, 585–588. [http://dx.doi.org/10.1016/S0022-3999\(02\)00447-6](http://dx.doi.org/10.1016/S0022-3999(02)00447-6)
- Allgöwer, A., Wardle, J., & Steptoe, A. (2001). Depressive symptoms, social support, and personal health behaviors in young men and women. *Health Psychology, 20*, 223–227. <http://dx.doi.org/10.1037/0278-6133.20.3.223>
- Amadio, D. M. (2006). Internalized heterosexism, alcohol use, and alcohol-related problems among lesbians and gay men. *Addictive Behaviors, 31*, 1153–1162. <http://dx.doi.org/10.1016/j.addbeh.2005.08.013>
- Amadio, D., Adam, T., & Bulezta, K. (2008). Gender differences in alcohol use and alcohol related problems: Do they hold or lesbians and gay men. *Journal of Gay & Lesbian Social Services, 20*, 315–327. <http://dx.doi.org/10.1080/10538720802310717>
- Anderson, L. S. (2008). Predictors of parenting stress in a diverse sample of parents of early adolescents in high-risk communities. *Nursing Research, 57*, 340–350. <http://dx.doi.org/10.1097/01.NNR.0000313502.92227.87>
- Artazcoz, L., Cortès, I., Escribà-Agüir, V., Cascant, L., & Villegas, R. (2009). Understanding the relationship of long working hours with health status and health-related behaviours. *Journal of Epidemiology and Community Health, 63*, 521–527. <http://dx.doi.org/10.1136/jech.2008.082123>
- Badgett, M. V. L. (2009). *When gay people get married: What happens when societies legalize same-sex marriage*. New York, NY: New York University Press. <http://dx.doi.org/10.18574/nyu/9780814791141.001.0001>
- Badgett, M. V. L., & Schneebaum, A. (2015). *The impact of wage equality on sexual orientation poverty gaps*. Los Angeles, CA: Williams Institute.
- Bannai, A., & Tamakoshi, A. (2014). The association between long working hours and health: A systematic review of epidemiological evidence. *Scandinavian Journal of Work, Environment & Health, 40*, 5–18. <http://dx.doi.org/10.5271/sjweh.3388>
- Berg, R. C., Munthe-Kaas, H. M., & Ross, M. W. (2016). Internalized homonegativity: A systematic mapping review of empirical research. *Journal of Homosexuality, 63*, 541–558. <http://dx.doi.org/10.1080/00918369.2015.1083788>
- Buffie, W. C. (2011). Public Health implications of same-sex marriage. *American Journal of Public Health, 101*, 986–990. <http://dx.doi.org/10.2105/AJPH.2010.300112>
- Calabrese, S. K., Meyer, I. H., Overstreet, N. M., Haile, R., & Hansen, N. B. (2015). Exploring discrimination and mental health disparities faced by Black sexual minority women using a minority stress framework. *Psychology of Women Quarterly, 39*, 287–304. <http://dx.doi.org/10.1177/0361684314560730>
- Calzo, J. P., Roberts, A. L., Corliss, H. L., Blood, E. A., Kroshus, E., & Austin, S. B. (2014). Physical activity disparities in heterosexual and sexual minority youth ages 12–22 years old: Roles of childhood gender nonconformity and athletic self-esteem. *Annals of Behavioral Medicine, 47*, 17–27. <http://dx.doi.org/10.1007/s12160-013-9570-y>
- Cantwell, J., Muldoon, O. T., & Gallagher, S. (2014). Social support and mastery influence the association between stress and poor physical health in parents caring for children with developmental disabilities. *Research in Developmental Disabilities, 35*, 2215–2223. <http://dx.doi.org/10.1016/j.ridd.2014.05.012>
- Centers for Disease Control. (2018). *Physical activity guidelines*. Retrieved from [https://health.gov/paguidelines/second-edition/pdf/Physical\\_Activity\\_Guidelines\\_2nd\\_edition.pdf](https://health.gov/paguidelines/second-edition/pdf/Physical_Activity_Guidelines_2nd_edition.pdf)
- Centers for Disease Control, National Center for Health Statistics. (2018). *CHS urban-rural classification scheme for counties*. Retrieved from [www.cdc.gov/nchs/data\\_access/urban\\_rural.htm](http://www.cdc.gov/nchs/data_access/urban_rural.htm)
- Chapman, D. P., Wheaton, A. G., Perry, G. S., Sturgis, S. L., Strine, T. W., & Croft, J. B. (2012). Household demographics and perceived insufficient sleep among U.S. adults. *Journal of Community Health, 37*, 344–349. <http://dx.doi.org/10.1007/s10900-011-9451-x>
- Chen, J. H., & Shiu, C. S. (2017). Sexual orientation and sleep in the U. S.: A national profile. *American Journal of Preventive Medicine, 52*, 433–442. <http://dx.doi.org/10.1016/j.amepre.2016.10.039>
- Cowan, C. P., & Cowan, P. A. (2000). *When partners become parents: The big life change for couples*. Mahwah, NJ: Erlbaum.
- Deater-Deckard, K. (2004). Parenting stress and the parent. In K. Deater-Deckard (Ed.), *Parenting stress* (pp. 27–54). New Haven, CT: Yale University Press. <http://dx.doi.org/10.12987/yale/9780300103939.003.0002>
- Dlugonski, D., Das, B. M., Martin, T. R., & Palmer, A. (2017). Collective efficacy, physical activity, and health outcomes among mothers. *Family*



- & *Community Health*, 40, 316–323. <http://dx.doi.org/10.1097/FCH.000000000000162>
- Dunbar, R., Launay, J., Wlodarski, R., Robertson, C., Pearce, E., Carney, J., & MacCarron, P. (2017). Functional benefits of (modest) alcohol consumption. *Adaptive Human Behavior and Physiology*, 3, 118–133. <http://dx.doi.org/10.1007/s40750-016-0058-4>
- Elwood, W. N., Irvin, V. L., Sun, Q., & Breen, N. (2017). Measuring the influence of legally recognized partnerships on the health and well-being of same-sex couples: Utility of the California Health Interview Survey. *LGBT Health*, 4, 153–160. <http://dx.doi.org/10.1089/lgbt.2015.0085>
- Fergusson, D. M., Boden, J. M., & John Horwood, L. (2012). Transition to parenthood and substance use disorders: Findings from a 30-year longitudinal study. *Drug and Alcohol Dependence*, 125, 295–300. <http://dx.doi.org/10.1016/j.drugalcdep.2012.03.003>
- Fingerhut, A., & Maisei, N. (2010). Relationship formalization and individual and relationship well-being among same-sex couples. *Journal of Social and Personal Relationships*, 27, 956–969. <http://dx.doi.org/10.1177/0265407510376253>
- Frost, D. M., Lehavot, K., & Meyer, I. H. (2015). Minority stress and physical health among sexual minority individuals. *Journal of Behavioral Medicine*, 38, 1–8. <http://dx.doi.org/10.1007/s10865-013-9523-8>
- Frost, D. M., & Meyer, I. H. (2009). Internalized homophobia and relationship quality among lesbians, gay men, and bisexuals. *Journal of Counseling Psychology*, 56, 97–109. <http://dx.doi.org/10.1037/a0012844>
- Gallagher, S., Phillips, A. C., & Carroll, D. (2010). Parental stress is associated with poor sleep quality in parents caring for children with developmental disabilities. *Journal of Pediatric Psychology*, 35, 728–737. <http://dx.doi.org/10.1093/jpepsy/jsp093>
- Gates, G., Badgett, M. V. L., Macomber, J. E., & Chambers, K. (2007). *Adoption and foster care by gay and lesbian parents in the United States*. Washington, DC: The Urban Institute. <http://dx.doi.org/10.1037/e690872011-001>
- Gill, R. M., & Loh, J. M. (2010). The role of optimism in health-promoting behaviors in new primiparous mothers. *Nursing Research*, 59, 348–355. <http://dx.doi.org/10.1097/NNR.0b013e3181ed6b11>
- Goldberg, A. E. (2010). The transition to adoptive parenthood. In T. W. Miller (Ed.), *Handbook of stressful transitions across the life span* (pp. 165–184). New York, NY: Springer. [http://dx.doi.org/10.1007/978-1-4419-0748-6\\_9](http://dx.doi.org/10.1007/978-1-4419-0748-6_9)
- Goldberg, A. E. (2012). *Gay dads: Transitions to adoptive fatherhood*. New York, NY: NYU Press. <http://dx.doi.org/10.18574/nyu/9780814732236.001.0001>
- Goldberg, A. E., Gartrell, N., & Gates, G. J. (2014). *Research report on LGB-parent families*. Los Angeles, CA: Williams Institute, UCLA School of Law.
- Goldberg, A. E., & Smith, J. Z. (2011). Stigma, social context, and mental health: Lesbian and gay couples across the transition to adoptive parenthood. *Journal of Counseling Psychology*, 58, 139–150. <http://dx.doi.org/10.1037/a0021684>
- Greene, K. M., Eitle, T. M. N., & Eitle, D. (2014). Adult social roles and alcohol use among American Indians. *Addictive Behaviors*, 39, 1357–1360. <http://dx.doi.org/10.1016/j.addbeh.2014.04.024>
- Hagen, E. W., Mirer, A. G., Palta, M., & Peppard, P. E. (2013). The sleep-time cost of parenting: Sleep duration and sleepiness among employed parents in the Wisconsin Sleep Cohort Study. *American Journal of Epidemiology*, 177, 394–401. <http://dx.doi.org/10.1093/aje/kws246>
- Haskell, W. L., Lee, I. M., Pate, R. R., Powell, K. E., Blair, S. N., Franklin, B. A., . . . the American College of Sports Medicine, & the American Heart Association. (2007). Physical activity and public health: Updated recommendation for adults from the American College of Sports Medicine and the American Heart Association. *Circulation*, 116, 1081–1093. <http://dx.doi.org/10.1161/CIRCULATIONAHA.107.185649>
- Hatzenbuehler, M. L. (2014). Structural stigma and the health of lesbian, gay, and bisexual populations. *Current Directions in Psychological Science*, 23, 127–132. <http://dx.doi.org/10.1177/0963721414523775>
- 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. <http://dx.doi.org/10.2105/AJPH.2009.168815>
- Helgeson, V. S., Becker, D., Escobar, O., & Siminerio, L. (2012). Families with children with diabetes: Implications of parent stress for parent and child health. *Journal of Pediatric Psychology*, 37, 467–478. <http://dx.doi.org/10.1093/jpepsy/jsr110>
- Hequembourg, A. L., & Brallier, S. A. (2009). An exploration of sexual minority stress across the lines of gender and sexual identity. *Journal of Homosexuality*, 56, 273–298. <http://dx.doi.org/10.1080/00918360902728517>
- Herek, G. M., Gillis, J. R., Cogan, J. C., & Glunt, E. K. (1997). Hate crime victimization among lesbian, gay, and bisexual adults. *Journal of Interpersonal Violence*, 12, 195–215. <http://dx.doi.org/10.1177/088626097012002003>
- Herek, G. M., & Glunt, E. K. (1995). Identity and community among gay and bisexual men in the AIDS era: Preliminary findings from the Sacramento Men's Health Study. In G. M. Herek & B. Greene (Eds.), *AIDS, identity, and community* (Vol. 2, pp. 55–84). Thousand Oaks, CA: Sage. <http://dx.doi.org/10.4135/9781483326917.n4>
- Hu, Y. R., & Goldman, N. (1990). Mortality differentials by marital status: An international comparison. *Demography*, 27, 233–250. <http://dx.doi.org/10.2307/2061451>
- Huebner, D. M., & Davis, M. C. (2007). Perceived antigay discrimination and physical health outcomes. *Health Psychology*, 26, 627–634. <http://dx.doi.org/10.1037/0278-6133.26.5.627>
- Institute of Medicine. (2011). *The health of lesbian, gay, bisexual, and transgender people: Building a foundation for better understanding*. Washington, DC: The National Academies Press. Retrieved from <https://www.ncbi.nlm.nih.gov/books/NBK64798/>
- Jackson, C. L., Agénor, M., Johnson, D. A., Austin, S. B., & Kawachi, I. (2016). Sexual orientation identity disparities in health behaviors, outcomes, and services use among men and women in the United States: A cross-sectional study. *BMC Public Health*, 16, 807. <http://dx.doi.org/10.1186/s12889-016-3467-1>
- Jeffries, W. L., IV, & Johnson, O. D. (2018). Internalized homonegativity and substance use among U.S. men who have sex with men only (MSMO) and men who have sex with men and women (MSMW). *Substance Use & Misuse*, 53, 559–564. <http://dx.doi.org/10.1080/10826084.2017.1347185>
- Kail, B. L., Acosta, K. L., & Wright, E. R. (2015). State-level marriage equality and the health of same-sex couples. *American Journal of Public Health*, 105, 1101–1105. <http://dx.doi.org/10.2105/AJPH.2015.302589>
- Keyes, M. A., Sharma, A., Elkins, I. J., Iacono, W. G., & McGue, M. (2008). The mental health of U.S. adolescents adopted in infancy. *Archives of Pediatrics & Adolescent Medicine*, 162, 419–425. <http://dx.doi.org/10.1001/archpedi.162.5.419>
- Kuo, P. X., Volling, B. L., & Gonzalez, R. (2017). His, hers, or theirs? Coparenting after the birth of a second child. *Journal of Family Psychology*, 31, 710–720. <http://dx.doi.org/10.1037/fam0000321>
- Lee, S.-Y., & Hsu, H.-C. (2012). Stress and health-related well-being among mothers with a low birth weight infant: The role of sleep. *Social Science & Medicine*, 74, 958–965. <http://dx.doi.org/10.1016/j.socscimed.2011.12.030>
- Li, P., Huang, Y., Guo, L., Wang, W., Xi, C., & Lu, C. (2017). Is sexual minority status associated with poor sleep quality among adolescents? Analysis of a national cross-sectional survey in Chinese adolescents. *British Medical Journal Open*, 7, e017067.
- Liddon, L., Kingerlee, R., & Barry, J. (2018). Gender differences in preferences for psychological treatment, coping strategies, and triggers to help-seeking. *British Journal of Clinical Psychology*, 57, 42–58.

- Lick, D. J., Durso, L. E., & Johnson, K. L. (2013). Minority stress and physical health among sexual minorities. *Perspectives on Psychological Science*, 8, 521–548. <http://dx.doi.org/10.1177/1745691613497965>
- Loeys, T., Cook, W., De Smet, O., Wietzker, A., & Buysse, A. (2014). The actor-partner interdependence model for categorical dyadic data: A user-friendly guide to GEE. *Personal Relationships*, 21, 225–241. <http://dx.doi.org/10.1111/perc.12028>
- Loeys, T., & Molenberghs, G. (2013). Modeling actor and partner effects in dyadic data when outcomes are categorical. *Psychological Methods*, 18, 220–236. <http://dx.doi.org/10.1037/a0030640>
- Luijckx, J., van der Putten, A. A. J., & Vlaskamp, C. (2017). Time use of parents raising children with severe or profound intellectual and multiple disabilities. *Child: Care, Health and Development*, 43, 518–526. <http://dx.doi.org/10.1111/cch.12446>
- Macy, J. T., Chassin, L., & Presson, C. C. (2013). Predictors of health behaviors after the economic downturn: A longitudinal study. *Social Science & Medicine*, 89, 8–15. <http://dx.doi.org/10.1016/j.socscimed.2013.04.020>
- McConnell, E. A., Janulis, P., Phillips, G., II, Truong, R., & Birkett, M. (2018). Multiple minority stress and LGBT community resilience among sexual minority men. *Psychology of Sexual Orientation and Gender Diversity*, 5, 1–12. <http://dx.doi.org/10.1037/sgd0000265>
- McGlone, K., Santos, L., Kazama, L., Fong, R., & Mueller, C. (2002). Psychological stress in adoptive parents of special-needs children. *Child Welfare*, 81, 151–171.
- Medley, G., Lipari, R., Bose, J., Cribb, D., Kroutil, L., & McHenry, G. (2016). *Sexual orientation and estimates of adult substance abuse and mental health*. Retrieved from [https://www.samhsa.gov/data/sites/default/files/NSDUH-SexualOrientation-2015/NSDUH-SexualOrientation-2015.pdf](https://www.samhsa.gov/data/sites/default/files/NSDUH-SexualOrientation-2015/NSDUH-SexualOrientation-2015/NSDUH-SexualOrientation-2015.pdf)
- 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. <http://dx.doi.org/10.1037/0033-2909.129.5.674>
- Murtagh, E. M., Murphy, M. H., & Boone-Heinonen, J. (2010). Walking: The first steps in cardiovascular disease prevention. *Current Opinion in Cardiology*, 25, 490–496. <http://dx.doi.org/10.1097/HCO.0b013e32833ce972>
- National Institute on Alcohol and Alcoholism. (2018). *Drinking levels defined*. Retrieved from [www.niaaa.nih.gov/alcohol-health/overview-alcohol-consumption/moderate-binge-drinking](http://www.niaaa.nih.gov/alcohol-health/overview-alcohol-consumption/moderate-binge-drinking)
- National Sleep Foundation. (2018). *National Sleep Foundation recommends new sleep times*. Retrieved from <https://sleepfoundation.org/press-release/national-sleep-foundation-recommends-new-sleep-times/page/0/1>
- Newcomb, M. E., & Mustanski, B. (2010). Internalized homophobia and internalizing mental health problems: A meta-analytic review. *Clinical Psychology Review*, 30, 1019–1029. <http://dx.doi.org/10.1016/j.cpr.2010.07.003>
- O'Donnell, K., Wardle, J., Dantzer, C., & Steptoe, A. (2006). Alcohol consumption and symptoms of depression in young adults from 20 countries. *Journal of Studies on Alcohol*, 67, 837–840. <http://dx.doi.org/10.15288/jsa.2006.67.837>
- Office of Disease Prevention and Health Promotion. (2018). *Lesbian, gay, bisexual, and transgender health*. Retrieved from <https://www.healthypeople.gov/2020/topics-objectives/topic/lesbian-gay-bisexual-and-transgender-health>
- Pachankis, J. E., & Lick, D. J. (2018). Sexual minority stigma and health. In B. Major, J. Dovidio, & B. Link (Eds.), *The Oxford handbook of stigma, discrimination, and health* (pp. 477–498). Oxford, United Kingdom: Oxford University Press.
- Pascoe, E. A., & Smart Richman, L. (2009). Perceived discrimination and health: A meta-analytic review. *Psychological Bulletin*, 135, 531–554. <http://dx.doi.org/10.1037/a0016059>
- Patterson, C. J., Tate, D. P., Sumontha, J., & Xu, R. (2018). Sleep difficulties among sexual minority adults: Associations with family relationship problems. *Psychology of Sexual Orientation and Gender Diversity*, 5, 109–116. <http://dx.doi.org/10.1037/sgd0000264>
- Pereira, M. A., Rifas-Shiman, S. L., Kleinman, K. P., Rich-Edwards, J. W., Peterson, K. E., & Gillman, M. W. (2007). Predictors of change in physical activity during and after pregnancy: Project Viva. *American Journal of Preventive Medicine*, 32, 312–319. <http://dx.doi.org/10.1016/j.amepre.2006.12.017>
- Calero Plaza, J., Grau Sevilla, D., Martínez Rico, G., & Morales Murillo, C. (2017). Parenting stress and coping strategies in mothers of children receiving early intervention services. *Journal of Child and Family Studies*, 26, 3192–3202. <http://dx.doi.org/10.1007/s10826-017-0802-9>
- Radloff, L. S. (1977). The CES-D Scale: A self-report depression scale for research in the general population. *Applied Psychological Measurement*, 1, 385–401. <http://dx.doi.org/10.1177/014662167700100306>
- Raudenbush, S. W. (2008). Many small groups. In J. de Leeuw & E. Meijer (Eds.), *Handbook of multilevel analysis* (pp. 207–236). New York, NY: Springer. [http://dx.doi.org/10.1007/978-0-387-73186-5\\_5](http://dx.doi.org/10.1007/978-0-387-73186-5_5)
- Reczek, C., Spiker, R., Liu, H., & Crosnoe, R. (2016). Family structure and child health: Does the sex composition of parents matter? *Demography*, 53, 1605–1630. <http://dx.doi.org/10.1007/s13524-016-0501-y>
- Reilly, A., & Rudd, N. A. (2006). Is Internalized homonegativity related to body image? *Family and Consumer Sciences Research Journal*, 35, 58–73. <http://dx.doi.org/10.1177/1077727X06289430>
- Reitman, D., Currier, R. O., & Stickle, T. R. (2002). A critical evaluation of the Parenting Stress Index-Short Form (PSI-SF) in a head start population. *Journal of Clinical Child and Adolescent Psychology*, 31, 384–392. [http://dx.doi.org/10.1207/S15374424JCCP3103\\_10](http://dx.doi.org/10.1207/S15374424JCCP3103_10)
- Ross, L. E., Salway, T., Tarasoff, L. A., MacKay, J. M., Hawkins, B. W., & Fehr, C. P. (2018). Prevalence of depression and anxiety among bisexual people compared to gay, lesbian, and heterosexual individuals: A systematic review and meta-analysis. *Journal of Sex Research*, 55, 435–456. <http://dx.doi.org/10.1080/00224499.2017.1387755>
- Sakkalou, E., Sakki, H., O'reilly, M. A., Salt, A. T., & Dale, N. J. (2018). Parenting stress, anxiety, and depression in mothers with visually impaired infants: A cross-sectional and longitudinal cohort analysis. *Developmental Medicine & Child Neurology*, 60, 290–298. <http://dx.doi.org/10.1111/dmcn.13633>
- Salvati, M., Pistella, J., & Baiocco, R. (2018). Gender roles and internalized sexual stigma in gay and lesbian persons: A quadratic relation. *International Journal of Sexual Health*, 30, 42–48. <http://dx.doi.org/10.1080/19317611.2017.1404542>
- Sareen, J., Afifi, T. O., McMillan, K. A., & Asmundson, G. J. (2011). Relationship between household income and mental disorders: Findings from a population-based longitudinal study. *Archives of General Psychiatry*, 68, 419–427. <http://dx.doi.org/10.1001/archgenpsychiatry.2011.15>
- Schneiderman, N., Ironson, G., & Siegel, S. D. (2005). Stress and health: Psychological, behavioral, and biological determinants. *Annual Review of Clinical Psychology*, 1, 607–628. <http://dx.doi.org/10.1146/annurev.clinpsy.1.102803.144141>
- Schuler, M. S., Rice, C. E., Evans-Polce, R. J., & Collins, R. L. (2018). Disparities in substance use behaviors and disorders among adult sexual minorities by age, gender, and sexual identity. *Drug and Alcohol Dependence*, 189, 139–146. <http://dx.doi.org/10.1016/j.drugaldep.2018.05.008>
- Segar, M., Jayaratne, T., Hanlon, J., & Richardson, C. R. (2002). Fitting fitness into women's lives: Effects of a gender-tailored physical activity intervention. *Women's Health Issues*, 12, 338–347. [http://dx.doi.org/10.1016/S1049-3867\(02\)00156-1](http://dx.doi.org/10.1016/S1049-3867(02)00156-1)
- Solomon, S. E., Rothblum, E. D., & Balsam, K. F. (2004). Pioneers in partnership: Lesbian and gay male couples in civil unions compared with those not in civil unions and married heterosexual siblings. *Journal of Family Psychology*, 18, 275–286. <http://dx.doi.org/10.1037/0893-3200.18.2.275>

- Stark, M. A., & Brinkley, R. L. (2007). The relationship between perceived stress and health-promoting behaviors in high-risk pregnancy. *The Journal of Perinatal & Neonatal Nursing, 21*, 307–314. <http://dx.doi.org/10.1097/01.JPN.0000299788.01420.6e>
- Step toe, A., & Wardle, J. (1996). The European health and behavior survey: The development of an international study in health psychology. *Psychology & Health, 11*, 49–73. <http://dx.doi.org/10.1080/08870449608401976>
- Step toe, A., & Wardle, J. (2001). Health behaviour, risk awareness and emotional well-being in students from Eastern Europe and Western Europe. *Social Science & Medicine, 53*, 1621–1630. [http://dx.doi.org/10.1016/S0277-9536\(00\)00446-9](http://dx.doi.org/10.1016/S0277-9536(00)00446-9)
- Step toe, A., Wardle, J., Cui, W., Bellisle, F., Zotti, A. M., Baranyai, R., & Sanderman, R. (2002). Trends in smoking, diet, physical exercise, and attitudes toward health in European university students from 13 countries, 1990–2000. *Preventive Medicine, 35*, 97–104. <http://dx.doi.org/10.1006/pmed.2002.1048>
- Teti, D. M., Shimizu, M., Crosby, B., & Kim, B. R. (2016). Sleep arrangements, parent-infant sleep during the first year, and family functioning. *Developmental Psychology, 52*, 1169–1181. <http://dx.doi.org/10.1037/dev0000148>
- United Health Foundation. (2018). *American's health rankings in 2017*. Retrieved from <https://www.americashealthrankings.org/explore/annual/measure/Sedentary/state/ALL>
- U.S. Census Bureau. (2013). *Metropolitan and micropolitan statistical areas*. Retrieved from <https://www.census.gov/programs-surveys/metro-micro.html>
- U.S. Department of Health & Human Services. (2018). *Physical activity guidelines for Americans* (2nd ed.). Retrieved from <https://health.gov/paguidelines/second-edition/>
- Viana, A. G., & Welsh, J. A. (2010). Correlates and predictors of parenting stress among internationally adopting mothers: A longitudinal investigation. *International Journal of Behavioral Development, 34*, 363–373. <http://dx.doi.org/10.1177/0165025409339403>
- Virtanen, M., Jokela, M., Nyberg, S. T., Madsen, I. E. H., Lallukka, T., Ahola, K., . . . Kivimäki, M. (2015). Long working hours and alcohol use: Systematic review and meta-analysis of published studies and unpublished individual participant data. *British Medical Journal, 350*, g7772.
- Walch, S. E., Ngamake, S. T., Bovornusvakool, W., & Walker, S. V. (2016). Discrimination, internalized homophobia, and concealment in sexual minority physical and mental health. *Psychology of Sexual Orientation and Gender Diversity, 3*, 37–48. <http://dx.doi.org/10.1037/sgd0000146>
- Wight, R. G., Leblanc, A. J., & Lee Badgett, M. V. (2013). Same-sex legal marriage and psychological well-being: Findings from the California Health Interview Survey. *American Journal of Public Health, 103*, 339–346. <http://dx.doi.org/10.2105/AJPH.2012.301113>
- Williams, D. R., & Mohammed, S. A. (2009). Discrimination and racial disparities in health: Evidence and needed research. *Journal of Behavioral Medicine, 32*, 20–47. <http://dx.doi.org/10.1007/s10865-008-9185-0>
- Wiseman, M. C., & Moradi, B. (2010). Body image and eating disorder symptoms in sexual minority men: A test and extension of objectification theory. *Journal of Counseling Psychology, 57*, 154–166. <http://dx.doi.org/10.1037/a0018937>
- World Health Organization. (2010). *Global recommendations on physical activity for health*. Geneva, Switzerland: Author.
- Yoon, N.-H., & Kwon, S. (2014). The effects of community environmental factors on obesity among Korean adults: A multilevel analysis. *Epidemiology and Health, 36*, e2014036. <http://dx.doi.org/10.4178/epih/e2014036>

Received December 20, 2018

Revision received January 8, 2019

Accepted January 8, 2019 ■