

Bowling Green State University
The Center for Family and Demographic Research

<http://www.bgsu.edu/organizations/cfdr>

Phone: (419) 372-7279 cfdr@bgsu.edu

2018 Working Paper Series

**SIBLING RELATIONSHIP QUALITY IN EARLY ADULTHOOD:
THE EFFECTS OF LIFE COURSE STATUSES**

Lindsey Aldrich

Kei Nomaguchi

Marshal Neal Fetto

Department of Sociology

Bowling Green State University

August 31, 2018

An earlier paper of this manuscript was presented at the 2017 Annual Meeting of Population Association of America, Chicago IL. This research is supported by the Center for Family and Demographic Research, Bowling Green State University, which has core funding from the Eunice Kennedy Shriver National Institute of Child Health and Human Development (NICHD; P2CHD050959). Corresponding author: Lindsey Aldrich (aldricl@bgsu.edu).

ABSTRACT

Objective: We examine how life course statuses, such as education, employment, romantic partnership, and parenthood, are related to sibling relationship quality during early adulthood and whether status similarities between siblings matter.

Background: Although research has shown that life course statuses affect parent-child relationships in early adulthood, little research has examined such effects on sibling relationships.

Method: Using the National Longitudinal Study of Adolescent to Adult Health ($N = 1,554$), we conduct ordinary least squares regression models to examine the associations between four life course statuses and five aspects of sibling relationship quality in early adulthood, controlling for sibling relationship quality in adolescence.

Results: Higher education is related to closer sibling relationships, such as more calls or emails and help seeking. In contrast, employment is related to distant sibling relationships such as fewer visits and less help seeking. When one sibling works full-time and the other sibling does not work, both siblings report less emotional closeness. Romantic partnership is related to distant sibling relationships such as fewer visits; and single respondents whose siblings are partnered report less emotional closeness despite reporting more calls or emails. Presence of children is related to more visits and childless respondents whose siblings have children report more calls or emails and more emotional closeness. Parent respondents whose siblings are childless, however, report fewer calls or emails and less help seeking.

Conclusion: Life course statuses can constrain or enhance sibling relationships depending on the type of such status and to the lesser extent status similarities between siblings.

Sibling Relationship Quality in Early Adulthood: The Effects of Life Course Statuses

Transition to adulthood, or emerging adulthood, which is often defined as the period between the ages of 18 to 25 years (Arnett, 2000), is a time in the life course when young people begin to acquire a series of life course statuses—moving away from their family of origin, pursuing higher education, starting full-time employment, beginning to live with a partner or getting married, and becoming a parent (Conger & Little, 2010; Whiteman, McHale, & Crouter, 2011). Prior research has shown that these major life course statuses influence parent-child relationships (Bucx, van Wel, & Knijn, 2012; Kaufman & Uhlenberg, 1998). Yet, little research has examined how these statuses influence sibling relationships in early adulthood (Whiteman et al., 2011). This is a critical gap in the literature, considering that a majority of adults in the United States have at least one sibling, and the relationships they have with their siblings are likely one of the longest-lasting relationships that they will experience (Milevsky & Heerwagen, 2013; Stocker, Lanthier, & Furman, 1997). Past research that focused on sibling relationship quality during the transition to adulthood has suggested that having a supportive sibling during this period can be beneficial for individuals' mental health and well-being (Conger & Little, 2010; Milevsky, 2005; Milevsky, Smooth, Leh, & Ruppe, 2005; Sherman, Lansford, & Volling, 2006; Van Volkom, Machiz, & Reich, 2011; Volling, 2003). Thus it is important to identify factors that are linked to sibling relationships during the transition to adulthood.

Drawing from the life course perspective (Elder, 1994) and role theories (Goode, 1960; Sieber, 1974), we used sibling data from the National Longitudinal Study of Adolescent to Adult Health (Add Health) to examine how major life course statuses that young people begin to acquire during early adulthood, such as college degrees, employment, marriage or cohabitation, and parenthood, were linked to five aspects of sibling relationship quality, including visits (i.e.,

seeing each other), calls or emails (i.e., talking on the telephone and sending or receiving letters or email), help seeking (i.e., turning for help on personal, school, or work problems), fights, and emotional closeness (i.e., feeling close). On the basis of the idea of homophily (Moen, Kim, & Hofmeister, 2001; Voorpostel, van der Lippe, Dykstra, & Flap, 2007), we also examined whether status similarities between siblings would be related to sibling relationship quality. By focusing on the life stage prior research tended to neglect, this paper advances the knowledge of sibling relationship quality over the life course. In addition, the findings of the present analysis advance research on the implications of life course statuses for family relationships.

Sibling Ties during the Transition to Adulthood

Although research concerning sibling ties has grown in recent years, much of it has focused on the periods of childhood, adolescence, and the mid- to later-years (e.g., Connidis & Campbell, 1995; Kim, McHale, Osgood, & Crouter, 2006; McHale, Updegraff, & Whiteman, 2012). Less research has investigated sibling relationship quality during the transition to adulthood (e.g., Conger & Little, 2010; Milevsky, 2005; Milevsky et al., 2005; Sherman et al., 2006; Van Volkom et al., 2011; Whiteman et al., 2011). Early adulthood is a unique life stage for sibling relationships as it is the time when siblings are establishing independence from parents and often times begin to live apart from one another for the first time (Shortt & Gottman, 1997; Whiteman et al., 2011). Thus, it is important to investigate the nature of sibling relationships and what factors are linked to close or distant sibling relationships during this life stage.

With regard to the nature of sibling relationships in early adulthood, past studies have investigated frequencies of visits, talking on the phone, or communicating via email (Milevsky, 2005; Milevsky et al., 2005; Stocker et al., 1997), giving or receiving emotional or instrumental help (Dolgin & Lindsay, 1999; Milevsky, 2005; Milevsky et al., 2005), conflict or rivalry (Shortt

& Gottman, 1997; Stocker et al., 1997), and emotional warmth or closeness (Milevsky, 2005; Milevsky et al., 2005; Van Volkom et al., 2011). We examine each of these aspects of sibling relationships separately, although some scholars have conceptualized contact as a predictor of emotional closeness (e.g., Stocker et al., 1997).

Past studies have generally shown that during early adulthood, sibling relationships become less close and more distant than they were in adolescence (Conger & Little, 2010; Stocker et al., 1997; Whiteman et al., 2010; White, 2001). Not surprisingly, geographic distance has a significant influence on fewer visits, fewer fights, and less emotional closeness (Conger & Little, 2010; Milevsky et al., 2005; Lee, Mancini, & Maxwell, 1990), although some research has shown that distance is not related to emotional closeness among siblings (Milevsky & Heerwagen, 2013; Milevsky et al., 2005). Studies have also found that demographic characteristics, such as gender compositions, age differences, and birth order (Dolgin & Lindsay, 1999; Mikkelsen, Myers, & Hannawa, 2011; Milevsky et al., 2005), and family contexts, such as parents' marital relationships (Conger & Little, 2010; Milevsky, 2004; Riggio, 2001), are related to sibling relationship quality. As Conger and Little (2010) noted, to better understand sibling relationships that may be unique to early adulthood, more research is needed to investigate how life transitions that some individuals begin to experience during this life stage may affect their sibling relationships.

This paper examines how educational attainment, employment, marriage or cohabitation, and parenthood are related to frequencies of visits, calls or emails, fights, seeking help, and emotional closeness between siblings when siblings are aged 18 to 26. The concept of linked lives from a life course perspective (Elder, 1994; White, 2001) indicates that individuals' lives are connected with one another among close relationships and that life course statuses that one

family member acquires can affect the nature of his or her relationships with other family members. Past research has shown that life course statuses, such as intimate partnerships and parenthood, influence parent-child relationship quality (Bucx et al., 2012; Kaufman & Uhlenberg, 1998). Much less is known about how sibling relationships are affected by these life course statuses. Recently, using data from the 1988 National Survey of Families and Households, Spitze and Trent (2018) found that sibling relationship quality—measured by contact, giving or receiving help—was affected by life course transitions such as switching from part-time to full-time employment and forming a romantic union. Whereas their research examined a sample of a wider range of adults (ages 19 and above), the present analysis focused on early adulthood using data from the Add Health.

The Links Between Life Course Statuses and Sibling Relationship Quality

Past research on social roles has provided two contrasting ideas as to how major life course statuses, such as educational status, employment status, cohabitation or marriage, and parenthood, are related to sibling ties. The *role strain perspective* contends that a major social role demands its occupants to invest much time and energy, which prevents them from investing in other social roles (Goode, 1960). As White (2001) argued, sibling relationships may become secondary to other interpersonal relationships that young people begin to build during early adulthood such as those with romantic partners and their own children. According to this perspective, furthering one's education, employment hours, being married or cohabiting, and having a child all put constraints on an individual's time and energy for sibling relationships. In contrast, the *role expansion perspective*, or role enhancement or role accumulation perspective, contends that social roles bring in opportunities for individuals to expand economic resources and social contacts (Marks, 1977; Sieber, 1974). Individuals are able to use their time and energy

flexibly, and thus are able to do well fulfilling multiple responsibilities (Barnett & Hyde, 2001; Bianchi, 2000; Marks & MacDermid, 1996). These ideas suggest that life course statuses that are introduced during early adulthood, such as college degrees, employment, romantic partnerships, or parenthood, may facilitate individuals to maintain connections with their siblings.

As we will discuss in the next section, past empirical findings are mixed as to which perspective—role strain or role expansion—is more supported. Thus, we considered both possibilities. In the following, we discuss in more detail how each of these two perspectives predicts the association between educational status, employment, marriage or cohabitation, and parenthood, and sibling relationships:

Education. According to the role strain perspective, higher education, especially college degrees or more, tends to lead individuals toward more demanding jobs or positions (West, 2000), and thus it may negatively influence the amount of time and effort an individual has to put into other roles including keeping close relationships with siblings. In contrast, the role expansion perspective predicts that higher education creates more opportunities for siblings to connect through greater knowledge and material resources. Young adults may have more contact and seek more help from their siblings who successfully attained college degrees. Indeed, focusing on the parent-child relationship, Bucx and colleagues (2012) have shown that adult children's higher levels of education were related to more advice given from adult children to their parents. Findings on the association between education and sibling relationships have been mixed. Among adults ages 55 or older, Connidis and Campbell (1995) found that higher levels of education were related to greater levels of reported closeness toward their closest sibling, but less closeness with other siblings. Using data from the NSFH, White (2001) found that higher levels of education were related to less contact but more giving or receiving help between siblings,

whereas Spitze and Trent (2018) reported that higher levels of education were negatively related to giving support to siblings.

Employment. Consistent with the role strain perspective, U.S. workplace culture requires individuals to commit time and energy to their work (Frase & Gornick, 2013). Longer paid work hours is known as a key indicator of time crunch for individuals' family life (Nomaguchi, Milkie, & Bianchi, 2005). Although most research has focused on the effects of employment on one's relationship with children or spouses (e.g., Bianchi, 2000), it is possible that longer paid work hours are related to young adults' relationship quality with their siblings. Thus, employment would be related to less contact, less help seeking, more fights, and less emotional closeness among siblings. In contrast, the role expansion perspective contends that having employment will likely increase material resources—having a car, a cell phone, and internet access at home—which may create a greater opportunity for young adults to visit, call, or send email to their siblings, ask for help, and maintain emotional closeness. Little research has focused on the link between employment and sibling relationship quality during early adulthood. Among a small convenience sample of young adults collected in a northeastern rural university town, Milevsky and colleagues (2005) found that participants who were not working reported more positively on their sibling relationships. Spitze and Trent (2018) found that transitions from part-time to full-time work were related to fewer visits with siblings.

Romantic Partnership. Consistent to the role strain perspective, researchers have called marriage a “greedy” institution that keeps individuals away from other social networks, including family members (Sarkisian & Gerstel, 2008). Research on parent-child relationships has found that partnered adult children are less likely than single adult children to give support or receive support from parents (Bucx et al., 2012; Sarkisian & Gerstel, 2008). In the similar

fashion, marriage and cohabitation may be related to less contact, less help seeking, or less emotional closeness with siblings. Alternatively, the role expansion perspective would argue that marriage or romantic relationships could bring siblings closer, in part because those who are involved in romantic partnerships or who are married tend to have more available resources (Simon & Barrett, 2010). Thus, those in romantic partnerships may be more likely to visit, talk to, or seek help from their siblings, and report greater emotional closeness with their siblings. Empirical research that examined romantic partnership status and sibling relationship quality has inconsistent results. Focusing on the mid- to later-life, several studies found that marriage or cohabitation was negatively related to contact and giving or receiving help among siblings in the United States (Connidis & Campbell, 1995; Spitze & Trent, 2018) as well as in the Netherlands (Voorpostel et al., 2007). In contrast, White (2001) found that getting married was not related to sibling contact nor receiving or giving advice. Connidis and Campbell (1995) found that marital status was not related to emotional closeness among siblings.

Parenthood. Children require adults to commit a great deal of time (Nomaguchi & Milkie, 2003). The role strain perspective would predict that being a parent would cause less sibling contact, asking for less help from siblings, more fights, and less emotional closeness between siblings, compared to individuals who do not have children. Prior research has shown that parenthood is related to decline in overall social contacts (Munch, McPherson, & Smith-Lovin, 1997) and reduced opportunities to provide support to parents (Bucx et al., 2012). In contrast, the role expansion perspective suggests that children create an opportunity to connect with others, especially their kin. A few studies have found that the transition to parenthood was related to an increase in contact with family members (Gallagher & Gerstel, 2001; Ishii-Kuntz & Secombe, 1989; Nomaguchi & Milkie, 2003) and receiving advice from parents (Bucx et al.,

2012) Thus, having children may be related to more contacts, closeness, and aid among siblings during early adulthood perhaps because of the excitement of becoming a new aunt or uncle. Empirical studies have produced inconsistent findings. In the middle and later adult years, Connidis and Campbell (1995) found that childless adults reported confiding in their siblings more than adults who had children, whereas there was little difference in sibling contact and receiving or giving help by parenthood. In contrast, White (2001) found that among adults aged 16 to 85, childless adults reported more contact with, more receiving help from, and giving help to their siblings. Similarly, with a Dutch data, Voorpostel and colleagues (2007) found that parenthood was related to giving advice to and showing interests in siblings among adults aged 18 to 80. Spitze and Trent (2018), however, found that parenthood was not related to sibling contacts or receiving or giving help.

Do Status Similarities Between Siblings Matter?

Much social psychological research has demonstrated the importance of homophily for close relationships (Merton, 1968). People who share similar values or statuses are more likely than those who differ in these areas to experience rewarding interactions and thus more likely to like each other (Homans, 1974). Although research on the role of homophily in family relationships has largely focused on marital relationships (Kalmijin, 1998; Moen et al., 2001), some studies have demonstrated that status similarity matters for sibling relationships as well (Eriksen & Gerstel, 2002; Voorpostel et al., 2007). Using a small sample of White or Black married women aged 25 to 70 living in a northeastern city and approximately half of their husbands who had at least one sibling, Eriksen and Gerstel (2002) found that similarities in parental status between siblings were not related to levels of sibling help except for practical help. Similarly, using Dutch data, Voorpostel and colleagues (2007) found that life course status

similarities had no strong relationship with sibling relationship quality except for parenthood where childless siblings seem to be more likely to give advice and show interests to each other. During early adulthood, when these life course transitions are still new, similarities in these experiences with siblings may make these siblings closer to each other as a source of support. Thus, we expected that life status similarities between siblings—in terms of higher education, employment, marriage or cohabitation, and parenthood—would be related to more visits, more calls or emails, more help seeking, fewer fights, and greater emotional closeness between siblings.

Possible Confounding Factors

All analyses were controlled for characteristics related to social statuses discussed above (i.e., education, employment, marriage or cohabitation, and parenthood) and the quality of sibling ties. These include: sibling type, (i.e., full biological, half-siblings, and step-siblings) (Milevsky & Heerwagen, 2013; Ryan, Franzetta, Schelar, & Manlove, 2009), gender composition of the sibling dyad (Dolgin & Lindsay, 1999; Milevsky et al., 2005), age and age-gap between siblings (Milevsky et al., 2005), geographic distance between siblings (Milevsky & Heerwagen, 2013; Milevsky et al., 2005), and race/ethnicity (Anderson & Payne, 2016; Ryan & Bauman, 2016). In addition, prior research has shown that perceived relationship quality varies by birth order (Dolgin & Lindsay, 1999; McHale, Bissell, & Kim, 2009; Milevsky et al., 2005), though in general younger siblings are more likely than older ones to have siblings who are already married or have children. In order to eliminate possible effects of characteristics in the earlier life stage, we also controlled for sibling relationship quality in adolescence.

THE PRESENT STUDY

Despite the importance of sibling relationship quality in influencing young adults' mental health, limited research has examined factors that are related to ties in sibling relationships in this life stage (Whiteman et al., 2011). In particular, little research has focused on how education, employment, marriage or cohabitation, and parenthood, are related to sibling relationship quality (Conger & Little, 2010). Drawing on the past research on the influences of social roles on individuals, we had two contrasting predictions. On the basis of the role strain perspective (Goode, 1960), we expected that higher levels of education, longer paid work hours, having a spouse or cohabiting partner, and having children would be related to fewer visits, fewer calls or emails, less help seeking, more fights, and less emotional closeness among siblings. In contrast, on the basis of the role expansion perspective (Sieber, 1974), we expected that higher levels of education, longer paid work hours, having a spouse or cohabiting partner, and being a parent would be related to more visits, more calls or emails, more help seeking, fewer fights, and greater emotional closeness among siblings. In addition, on the basis of the homophily thesis (Homans, 1974), we predicted that similarities in life course statuses between siblings would be related to more visits, more calls or emails, more help seeking, fewer fights, and greater emotional closeness among siblings.

METHOD

Data

Add Health provided a nationally representative sample of students in grades 7-12 in 1995 (<http://www.cpc.unc.edu/projects/addhealth>). The sampling frame was comprised of stratified, random sample of all high schools in the United States. Eligible schools had an 11th grade and at least 30 enrolled students, or were a feeder school that had a 7th grade that sent on to high school. Wave I was collected in 1995 when the respondents were 12 to 17 years old; and

20,745 students participated in this wave with an in-depth at home interview. All adolescents in Grades 7 through 11 in Wave I and 12th graders who were part of the sibling pairs subsample were re-interviewed for Wave II in-home interviews ($n = 14,738$, 88.6%). Wave III was collected in 2001 and 2002 when the respondents were 18-26 years old and 15,170 (roughly 73%) participants were retained from the first wave of data collection (Harris et al., 2018).

The sample of the young adults used for the present analysis was drawn from the genetic sample in Wave III. The genetic sample was originally selected in Wave I as a sibling-pair sample where adolescents who reported having a twin, half sibling, step sibling, adopted sibling, or foster sibling between 11 and 20 years of age living in the household were included (Harris, Halpern, Haberstick, & Smolen, 2013). In addition, a probability sample of full-sibling pairs from all adolescents in the survey were included. Both of these paired siblings participated in the in-home interviews as individual respondents. One household could have more than one pair of siblings in the sample. The genetic sample in Wave I included 3,114 sibling dyads (i.e., 6,228 respondents). In Wave II, 2,218 sibling dyads (i.e., 4,436 respondents) were reinterviewed. As prior research has identified (e.g., McHale et al., 2009), there were a large amount of missing information in the Wave I genetic sample. Thus, we used Wave II, instead of Wave I, to measure sibling relationship quality in adolescence as a control. In Wave III, sibling data were no longer paired and 4,367 respondents were included (Carolina Population Center, 2003).

To select the analytical sample, we first removed 13 cases from the 4,367 respondents in Wave II genetic sample, because the respondent ID and the sibling ID were identical ($n = 4,354$). Then we sought to select respondents whose focal siblings were the same ones between Waves II and III. In both Waves II and III, respondents were asked to evaluate the quality of their relationship with each of their siblings including those who were not in the genetic sample; and

the focal siblings on whom the respondents answered when they were asked about the quality of relationship with their siblings were not always the same ones between Waves II and III. Using the respondent IDs and the sibling IDs, we found that of the 4,354 respondents, 2,463 respondents reported relationship quality with the same siblings in both Waves II and III. After excluding those with missing cases in any variables in the analyses, the sample was further reduced to $n = 2,137$. Finally, excluding 583 cases which did not have values in the weight variable (i.e., who were not in the core-longitudinal sample; Chen & Chantala, 2014), the analytical sample size was $N = 1,554$.

Those who were in the present sample were more likely than those who were dropped to have less than high school education or a 4-year college degree, less likely to be twins, more likely to live far from each other, and more likely to report fewer contacts with, less help seeking, and less emotional closeness with siblings, although they were similar in age and race/ethnicity (data not shown). We will discuss implications of the current sample characteristics for the interpretations of the findings in the discussion section. Although the present sample was not representative of young adults and siblings in the U.S. general population, it included both respondents' and their siblings' life courses statuses and other characteristics, which other large-scale, longitudinal national data did not provide.

Dependent Measures

The dependent variables were five aspects of *sibling relationship quality*, including visits, phone calls or emails, seeking help, fights, and emotional closeness. *Visits* was measured by the following question that was asked only when the respondents did not live with the focal siblings: "How often do you and he/she see each other?" (0 = *never*, 1 = *a few times a year*, 2 = *once or twice a month*, 3 = *once or twice a week*, 4 = *almost every day*). Those who lived with

the focal siblings were assigned “4”. *Phone calls or emails* was measured as the sum of the following two questions, which were also asked only when the respondents did not live with the focal siblings: (a) “How often do you and he/she talk on the phone?”; and (b) “How often do you send letters or e-mail or receive them from him/her?” (0 = *never*, 1 = *a few times a year*, 2 = *once or twice a month*, 3 = *once or twice a week*, 4 = *almost every day*). The scale ranged from 0 to 8. *Help seeking* was measured by the following question, “How often do you turn to him/her for help when you have personal problems, or problems at school or work?” (0 = *never*, 1 = *seldom*, 2 = *sometimes*, 3 = *often*, 4 = *very often*). *Fights* was measured by the question: “How often do you and {he/she} quarrel or fight?” (0 = *never*, 1 = *seldom*, 2 = *sometimes*, 3 = *often*, 4 = *very often*). *Emotional closeness* was measured by the question: “How close do you feel toward him/her?” (0 = *not at all close*, 1 = *not very close*, 2 = *somewhat*, 3 = *quite close*, 4 = *very close*).

Independent Measures

Education status was measured as five dummy variables—less than high school, high school diploma, some college education, in college, and bachelor’s degree or beyond—using the series of questions asking about the highest academic degrees the respondents received and several questions as to whether respondents were currently attending college and which year of college they were currently in. First, respondents who reported any year (1st to 5th or more) of college were assigned as “currently in college”. Then, among those who were not currently in college, respondents who reported “yes” to having received a bachelor’s degree were assigned as “bachelor’s degree or more”. Respondents who reported “yes” to having received associate degree or junior college, but not a bachelor’s degree were assigned as “some college”. Respondents who reported “yes” to having received a high school diploma, GED, or high school equivalency degree were assigned as “high school diploma”. Finally, respondents who reported

“no” to having receive a high school diploma, GED, and high school equivalency degree were assigned as “less than high school.”

To measure status similarities between siblings, we created 13 dummy variables of combinations of respondents’ and their siblings’ education status, including (a) both respondents and siblings having less than high school, (b) respondents having less than high school and siblings having a higher level, (c) both respondents and siblings having a high school diploma (reference), (d) respondents having high school diploma and siblings having a lower level, (e) respondents having high school diploma and siblings having a higher level, (f) both respondents and siblings having some college education, (g) respondents having some college education and siblings having a lower level, (h) respondents having some college education and siblings having a higher level, (i) both respondents and siblings being in college, (j) respondents being in college and siblings having a lower level, (k) respondents being in college and siblings having a higher level, (l) both respondents and siblings having a Bachelor’s degree or more, and (m) respondents having a Bachelor’s degree or more and siblings having a lower level.

Employment status was measured by the question, “How many hours a week do you usually work at this job?” Responses ranged from 0 to 90. Prior research has suggested that people tend to overestimate their work hours and that extreme values could result in biased estimates (Hamermesh, Frazis, & Stewart, 2005). To avoid such bias, the extremely high values of work hours were top coded into the 95th percentile. Then we created three categories of employment status including (a) not working for pay, (b) working part-time (< 35 hours per week), and (c) working full-time (35 or more hours per week). To incorporate sibling similarities in employment status, we created 9 dummy variables of a combinations of respondents’ and their siblings’ employment status, including (a) both respondents and siblings did not work

(reference), (b) respondents did not work, siblings worked part-time, (c) respondents did not work, siblings worked full-time, (d) both respondents and siblings worked part-time, (e) respondents worked part-time, siblings did not work, (f) respondents worked part-time, siblings worked full-time, (g) both respondents and their siblings worked full-time, (h) respondents worked full-time, siblings did not work, and (i) respondents worked full-time, siblings worked part-time. For supplemental analyses, we broke down these 9 dummy variables into four dummy variables by combining part-time and full-time employment statuses, including (a) both respondents and their siblings did not work (reference), (b) respondents worked, their siblings did not work, (c) respondents did not work, their siblings worked, and (d) both respondents and their siblings worked.

Romantic partnership status was measured using a dichotomous variable where respondents or their siblings who were married or living with a romantic partner were coded 1 and others were coded 0. To incorporate sibling similarities, we created four dummy variables, including (a) both respondents and their siblings living with a spouse or partner, (b) only respondents living with a spouse or partner, (c) only their siblings living with a spouse or partner, (d) neither respondents nor their siblings were living with a spouse or partner (reference). For supplemental analyses, we distinguished marriage from cohabitation, creating 9 dummy variables.

Parenthood status was measured using a dichotomous variable where respondents or their siblings who had children living in the household were coded as 1 and others were coded as 0. To include information on sibling similarities, we created four dummy variables, including (a) both respondents and their siblings had children, (b) only respondents had children, (c) only siblings had children, and (d) neither respondents nor their siblings had children (reference).

Control Measures

Sibling relationship type was comprised of comprised of four dummy variables indicating whether the respondent's focal sibling is a full-biological, non-twin sibling (reference), a half-sibling, a step-sibling, or a twin. *Gender composition* of the sibling dyad was comprised of four dummy variables, (a) both respondents and siblings were women (sister/sister, reference), (b) both the respondents and siblings were men (brother/brother), (c) respondents were men and siblings were women (brother/sister), and (d) respondents were women and siblings were men (sister/brother). *The respondents' age* is measured in years. *Age-gap between siblings* was measured as dummy variables including (a) 0 year, non-twins (reference), (b) 1 or 2 years, (c) 3 or more years, and (d) twins. The respondent's birth order was measured as dummy variables including (a) older (reference), (b) younger, (c) same-age (non-twins), and (d) twins. The respondents' *race/ethnicity* was comprised of four dummy variables indicating whether the respondent identifies as White (reference), Black, Hispanic, or other races. *Geographic distance* was measured by the question, "How far in travel time do you and he/she live from one another?" Because living together might be qualitatively different from living apart even if they lived within a ten-minute distance, we created three dummy variables including (a) live together (reference), (b) within an hour apart, and (c) an hour or more.

Three aspects of *sibling relationship quality in adolescence*, emotional closeness, frequency of fights, and time spent together, measured in Wave II, were included as a control. About 7% of the analytical sample had missing values in these questions. In order to avoid losing these vases, we created a dummy variable for those who were missing information about sibling relationship quality in adolescence. Then each of the three aspects of sibling relationship quality in adolescence was measured by a dichotomous variable. *Low emotional closeness* was measured

by the question, “How often do you feel love for {Name of the focal sibling}?” Those who reported “never”, “seldom”, or “sometimes” were coded as 1 and those who reported “often” or “very often” were coded as 0. *Frequent fights* was a dichotomous variable based on the question, “How often do you and {Name of the focal sibling} quarrel or fight?” Those who reported “very often” or “often” were coded as 1 and those who reported “sometimes”, “seldom”, or never were coded as 0. Time together was a dichotomous variable based on the question, “How much time do you and {Name of the focal sibling} spend together?” Those who reported “a lot” were coded as 1 and those who reported “none”, “a little”, or “some” were coded as 0.

Analytic Strategy

We used ordinary-least-squared (OLS) regression models to examine the association between social statuses—education, employment, relationship status, and parenthood—and the five aspects of sibling relationship quality. The nonindependence sampling design (i.e., school-based) of the Add Health as well as the matched sibling sample (i.e., two siblings share same household characteristics) required a statistical correction to account for standard error inflation. Thus, all analyses used SAS PROC Surveymean and PROC Surveyreg and weighted to account for the sampling design (Siller & Tompkins, 2006).

RESULTS

The descriptive statistics for variables were presented in Table 1. The average score of the frequency of visits was 2.64 with the range from 0 to 4. The average score of the frequency of calls or emails was 4.24 with the range from 0 to 8. Compared to the frequency of contacts, siblings were much less likely to report seeking for help from siblings ($M = 1.80$) or fighting ($M = 1.17$). The average score of emotional closeness was 2.99 with the range from 1 to 4. In regard

to life course statuses, for educational attainments, a large share of the respondents had a high school diploma (35%, i.e., 16 + 4 + 15). Another large group was those who were currently in college (30%). For employment status, close to half (52%) of the respondents were working full-time; and 29%, the largest group, of the respondents reported both they and their siblings were working full-time. Approximately 8% of the respondents reported neither they nor their siblings were currently working for pay. For romantic partnership status, close to a half of the respondents (43%) reported neither they nor their siblings were married or living with a partner; whereas 15% reported both of them were married or living with a partner. Finally, 54% of the respondents reported that neither they nor their siblings had children; whereas 15% reported both of them had children.

[Table 1 around here]

The results from the OLS regressions that examined the association between social statuses and five aspects of sibling relationship quality are presented in Table 2. First we looked at education. Overall the pattern of findings suggest that higher levels of education were related to better sibling relationship quality. For example, compared with respondents who had a high school diploma and whose siblings also had a high school diploma (i.e., “R high school, S same”—the omitted reference group), respondents who had some college education, regardless of their sibling’s level of education, reported more visits. Respondents who had some college education or higher reported more communication with their siblings through phone and email regardless of their siblings’ educational attainment, except for one group where respondents and their siblings both had some college education. Two groups, one where respondents were in college and their siblings had a bachelor’s degree and the other where respondents and their siblings both had a bachelor’s degree, reported seeking more help from siblings. Respondents

who had some college education and whose siblings had a higher level of education as well as respondents who were in college and whose siblings had a higher or lower level of education, reported fewer fights and more emotional closeness with their siblings. In contrast, respondents who did not have a high school diploma and whose siblings also did not finish high school reported less close sibling relationships—fewer visits, less communication through phone calls or emails, less help seeking, and less emotional closeness. All in all, the pattern of findings supported the role expansion perspective for the effects of higher levels of education on sibling relationship quality.

In contrast, findings for the effects of employment on sibling relationships appeared to support the role strain perspective. Compared with the respondents who did not work and whose siblings also did not work, only two groups indicated a closer sibling relationship: respondents who worked full-time and their siblings also worked full-time and respondents who did not work, but their siblings worked full time reported more frequent communication through telephone or writing. Even these groups reported less help seeking which indicates less closeness. Other groups showed either no difference or a more distant sibling relationship, especially fewer visits and less help seeking. Two groups where one sibling worked full-time and the other sibling did not work (“R non-employed, S full-time” and “R full-time, S non-employed”) reported less emotional closeness as well as less help seeking. In supplemental analyses (not shown), we combined part-time and full-time statuses and created four groups—both respondents and their siblings not working, respondents working while their siblings were not working, respondents not working while their siblings were working, and both respondents and their siblings working. The patterns of findings were similar to those presented here.

Employed respondents, regardless of their siblings' employment status, reported fewer visits, less help seeking, and fewer fights between siblings.

The findings for the frequency of fights appeared to require reconsideration of the meaning of this measure. Employed respondents, regardless of their siblings' employment status, reported significantly *fewer* fights than non-employed respondents whose siblings also did not work. This was the opposite direction of association from the one that the role strain perspective predicted (more fights). It could be that fewer fights might reflect two different situations: one where siblings had a less strained relationship and the other where siblings did not contact with each other and thus did not have an opportunity to fight. The findings for the effects of employment on fights between siblings showed the latter possibility.

Turning to the effects of romantic partnerships on sibling relationships, the findings also suggested support for the role strain perspective rather than the role expansion perspective. Compared with single respondents whose siblings were also single, partnered siblings, regardless of their siblings' partnership status, reported fewer visits and fewer fights. Single respondents whose siblings were living with a romantic partner reported more calls or emails, fewer fights, and less emotional closeness. In supplemental analyses (not shown), we examined marriage and cohabitation separately. The patterns of findings were very similar between marriage and cohabitation, suggesting that living with a romantic partner influences sibling relationship quality.

Finally, the effects of parenthood on sibling relationships depended on the aspect of sibling relationship quality and whose perspective was used to evaluate the sibling relationship quality. In terms of the frequency of visits, compared to childless respondents whose siblings were also childless, all other three groups where respondents or their siblings, or both, had

children reported more visits. This finding suggests that the presence of children created more opportunities for siblings to visits with each other, supporting the role expansion perspective. For other aspects of sibling relationship quality, findings varied. Respondents who had children and whose siblings were childless reported fewer calls or emails, less help seeking, and fewer fights, suggesting support for the role strain perspective. In contrast, childless respondents whose siblings had children reported a closer relationship with their siblings—more calls or emails and more emotional closeness between siblings, supporting the role expansion perspective.

[Table 2 around here]

DISCUSSION

This paper examined the association between major life course statuses that reflect life transitions during emerging adulthood—i.e., higher education, employment, marriage or cohabitation, and parenthood—and five aspects of sibling relationship quality. We had two different sets of predictions. The role strain theory (Goode, 1960) led us to expect that higher education, full-time employment, marriage or cohabitation, and parenthood would be related to fewer visits, fewer calls or emails, less help seeking, more fights, and less emotional closeness in sibling relationships. In contrast, the role expansion perspective (Sieber, 1974) predicted that higher education, full-time employment, marriage or cohabitation, and parenthood would be related to more visits, more calls or emails, more help seeking, fewer fights, and more emotional closeness in sibling relationships. On the basis of the homophily theory (Homans, 1974), we also considered whether sibling status similarities would be related to closer sibling relationships during this life stage. Our findings suggest that whether the role strain or role expansion perspective is useful depends on the type of life course status; and sibling status similarities are less important than the homophily perspective expects.

For the effects of higher education on sibling relationships, our findings suggest support for the role expansion perspective rather than the role strain perspective. Compared to sibling pairs where both had a high school diploma only, sibling pairs where at least one sibling had a higher level of education reported more frequent communication through telephone or email between siblings. In contrast, siblings where both dropped out of high school reported fewer visits, less frequent communication through telephone or email, less help seeking, and less emotional closeness. Our findings are consistent with prior research on parent-child relationships by Bucx and colleagues (2012) using Dutch data, where the authors found that higher levels of education were related to more providing help to parents, although they did not focus on this life course status and thus did not discuss reasons for this finding. Although we were unable to investigate why this was the case, we could speculate possible reasons. Prior research has shown that people with higher SES are more likely than those with lower SES to report more positive sibling relationships, perhaps because there are enough resources for all siblings (Conger, Conger, & Elder, 1994). It is possible that college education provides siblings with more resources, including psychological maturity, which may keep the relationships among siblings connected.

In contrast, employment is generally related to less close sibling relationships, supporting the role strain perspective. Employed siblings, regardless of the other siblings' employment status, report fewer visits, less help seeking, and fewer fights, suggesting they have fewer opportunities to spend time with each other. The finding that employment is related to fewer fights is inconsistent with our expectation when considering the role strain perspective, but perhaps siblings do not have an opportunity to fight when they do not have contact with each other. It is noteworthy that although it reduces time interacting with each other, employment is

not related to emotional closeness. One exception is that when one sibling is not working while the other sibling is working full-time. This finding is consistent with the idea of the importance of homophily, which suggests that disparities in life course statuses between siblings would be related to less close relationships (Eriksen & Gerstel, 2002). Much prior research has examined how employment is related to parent-child relationships in different life stages (e.g., Aquilino, 1997; Bianchi, 2000). More research is needed to investigate how employment is related to sibling relationships across different life stages.

Marriage and cohabitation also show support for the role strain perspective. Compared with siblings who were both single, siblings who were living with a romantic partner reported fewer visits and fewer fights between siblings regardless of the other sibling's partnership status. Single respondents whose siblings are living with a romantic partner are more likely to report less emotional closeness than their counterparts whose siblings are also single. These findings are consistent with prior findings for sibling relationships over the wider range of adult life course or in mid- or later-life (Cannidis & Campbell, 1995; Spitze & Trent, 2018; Voorpostel et al., 2007) and for parent-child relationships (Bucx et al., 2012; Sarkisian & Gerstel, 2008). Sarkisian and Gerstel (2008) argued that marriage is a "greedy" institution that demands individuals' full-commitment, and could undermine individuals' other social relationships including relationships with members of their family of origin. The findings of the present analysis suggest support for their argument in case of sibling relationships. Marriage and partnerships are considered a primary, or an ideal, source of intimacy, companionship, and personal growth in U.S. society (Cherlin, 2004). Partnered individuals are likely pooling resources and investing a great deal of their time and emotional energy into their romantic partner. Thus, partnered young adults are likely to be less dependent on their family of origin,

including seeking less social support from their siblings (Bucx et al., 2012). This may be why we found that single siblings reported more phone calls and emails with their partnered siblings—the single sibling still considers their partnered sibling a primary source of social support and therefore makes an effort to maintain that relationship.

Findings for the effects of parenthood on sibling relationships are mixed. We found that when both siblings have children, they report more visits, but less help seeking. When only one sibling has children, the childless sibling reports more visits, more calls or emails, and more emotional closeness, whereas the parent sibling reports more visits, but fewer calls or emails, less help seeking, and fewer fights between siblings. The finding that parenthood is related to less help seeking to siblings but related to more visits and fewer fights suggests that siblings are more likely to visit with each other not for the purpose of receiving or giving help, but to see their nieces or nephews or to have their children see their aunts and uncles. This finding is consistent with prior research that emphasizes the role that children play in motivating family members to stay connected (Nomaguchi & Milkie, 2003). At the same time, we found that parents are less likely than non-parents to seek help from their siblings, and if their siblings are childless, they are also less likely to call or email their childless siblings, which suggests that parenting constrains sibling ties. This is consistent with White's (2001) findings, using a sample of adults aged 18 to 85, that parental status was related to less contact and exchange among siblings. Together, the contrasting effects of parenthood on sibling relationships go along with the idea that parenthood brings both strains and benefits to adults' lives (Nomaguchi & Milkie, 2003).

All in all, our findings suggest that whether the role strain or the role expansion perspective is more useful in understanding the effects of life course statuses on sibling

relationships depends on the kinds of life course statuses and, to the lesser extent, sibling status similarities. To make a general conclusion, however, we need future research that will examine more nuanced differences in life course statuses. For example, we only focused on marriage and cohabiting partnerships, but some young adults may have already married and gotten divorced. Prior research has shown that getting divorced is related to an increase in sibling contact and exchange (White, 2001). When transitions like marriage or cohabitation are reversed, sibling relationships could once again become a primary source of social support. We were unable to examine this possibility, because the individuals in the present study are still in the emerging adulthood life stage and very few of them have experienced a marriage and then subsequent divorce. Another area for future research is to examine variation in the effects of life course statuses on sibling relationships by different context and social groups such as birth order, gender composition of siblings, race-ethnicity, nativity, or multiple roles (e.g., romantic partnership and parenthood). Finally, the present analysis used single-item measures of sibling relationship quality, which is not ideal. Multiple questions regarding key aspects of sibling relationships should be included in future survey research.

The present analyses have other limitations. First, even though the genetic sample of the Add Health provided the rich longitudinal data of matched siblings, including both siblings' life course statuses and evaluations of sibling relationship quality, the sample was not representative; and there were many mismatches between Waves II and III in the focal siblings with whom the respondents answered about their relationship quality. Because of the data limitation, we were unable to examine the influences of life course status on changes in sibling relationship quality fully, even though we controlled the analysis for sibling relationship quality in adolescence. Future research that uses a more representative sample of sibling dyads would help better

understand the associations between life course statuses and sibling relationships. Second, the average age of the respondents at the time of Wave III interview was 21.8 years old. Many of the respondents of the present analysis were too young to finish their Bachelor's degrees or advanced degrees, get married, or have children. Close to a half (43%) of the sample were single and more than half (54%) did not have children. Many respondents in the present sample will form a romantic union and have children later, which we were unable to examine in the present analysis. Because adults with higher levels of education are more likely than adults with lower levels of education to postpone union formation and childbearing (Cherlin, 2010; Kennedy & Bumpass, 2008), the present analyses did not capture the effects of life course statuses on sibling relationships among adults with higher levels of education fully. Unfortunately, Wave IV, when the respondents were in their late 20s to early 30s and are more likely to have achieved the life course statuses we analyzed in the present analyses, did not include detailed information about sibling relationship quality. Future research that examines the effects of life course statuses and sibling relationship quality during a wider span of young adulthood is warranted.

Sibling relationships are, like parent-child relationships, close relationships that many people maintain throughout their entire life. The present analysis examined various aspects of sibling relationship quality—visits, calls or emails, help seeking, fights, and emotional closeness—during early adulthood, a period when siblings start living apart and acquire social statuses such as higher education, paid work, cohabitation and marriage, and parenthood. College degree attainments are related to more calls and emails as well as more help seeking, suggesting support for the role expansion perspective. Employment is related to fewer visits and less help seeking, suggesting support for the role strain perspective. Romantic partnerships are related to fewer visits; and when only one sibling is partnered, the unpartnered sibling report more emails

and calls but less emotional closeness. Parental status shows more support for the role expansion perspective in terms of visits. For other aspects of sibling relationships, findings vary. When only one of them have children, the parent sibling reports fewer calls or emails and less help seeking to their siblings, indicating role strain than expansion, whereas the childless sibling reports more calls or emails and higher emotional closeness, suggesting role expansion. In all, results suggest that life course statuses can both hinder and foster the quality of sibling relationships. Future research is warranted to further advance knowledge on the role of sibling relationships relative to other social roles and relationships during early adulthood.

REFERENCES

- Anderson, L., & Payne, K. K. (2016). Median age at first marriage, 2014. Family profiles, FP-16-07. Bowling Green, OH: National Center for Family & Marriage Research.
<http://www.bgsu.edu/ncfmr/resources/data/family-profiles/anderson-payne-median-age-first-marriage-fp-16-07.html>
- Aquilino, W. S. (1997). From adolescent to young adult: A prospective study of parent-child relations during the transition to adulthood. *Journal of Marriage and the Family*, 59(3), 670-686.
- Arnett, J. J. (2000). Emerging adulthood: A theory of development from the late teens through the twenties. *American Psychologist*, 55(5), 469-480.
- Barnett, R. C., & Hyde, J. S. (2001). Women, men, work, and family. *American Psychologist*, 56(10), 781- 796.
- Bianchi, S. M. (2000). Maternal employment and time with children: Dramatic change or surprising continuity? *Demography*, 37(4), 401-414.
- Bucx, F., van Wel, F., & Knijn, T. (2012). Life course status and exchanges of support between young adults and parents. *Journal of Marriage and Family*, 74(1), 101-115.
- Carolina Population Center (2003). *National Longitudinal Study of Adolescent Health Wave III, Sibling Code Book. April 2003*. University of North Carolina at Chapel Hill. Retrieved from <http://www.cpc.unc.edu/projects/addhealth/documentation/restricteduse/datasets>.
- Chen, P., & Chantala, K. (2014). *Guidelines for analyzing Add Health data*. March 2014. Carolina Population Center, University of North Carolina at Chapel Hill. Retrieved from http://www.cpc.unc.edu/projects/addhealth/documentation/guides/wt_guidelines_20161213.pdf

- Cherlin, A. J. (2004). The deinstitutionalization of American marriage. *Journal of Marriage and Family*, 66(4), 848-861.
- Cherlin, A. (2010). Demographic trends in the United States: A review of research in the 2000s. *Journal of Marriage and Family*, 72(3), 403-419.
- Conger, K. J., Conger, R. D., & Elder Jr, G. H. (1994). Sibling relations during hard times. In R. D. Conger & G. H. Elder (Eds.), *Families in troubled times: Adapting to change in rural America* (pp. 235 – 252). New York: de Gruyter.
- Conger, K.J., & Little, W.M. (2010). Sibling relationships during the transition to adulthood. *Child Development Perspectives*, 4(2), 87-94.
- Connidis, I.A., & Campbell, L.D. (1995). Closeness, confiding, and contact among siblings in middle and late adulthood. *Journal of Family Issues*, 16(6), 722 - 745.
- Dolgin, K.G., & Lindsay, K.R. (1999). Disclosure between college students and their siblings. *Journal of Family Psychology*, 13(3), 393-400.
- Elder Jr, G.H. (1994). Time, human agency, and social change: Perspectives on the life course. *Social Psychology Quarterly*, 57(1), 4-15.
- Eriksen, S., & Gerstel, N. (2002). A labor of love or labor itself: Care work among adult brothers and sisters. *Journal of Family Issues*, 23(7), 836-856.
- Frase, P., & Gornick, J.C. (2013). The time divide in cross-national perspective: The work week, education and institutions that matter. *Social Forces*, 91(3), 697-724.
- Gallagher, S.K., & Gerstel, N. (2001). Connections and constraints: The effects of children on caregiving. *Journal of Marriage and Family*, 63(1), 265-275.
- Goode, W.J. (1960). A theory of role strain. *American Sociological Review*, 25(4), 483-496.

- Hamermesh, D. S., Frazis, H., & Stewart, J. (2005). Data watch: The American time use survey. *Journal of Economic Perspectives*, 19(1), 221-232.
- Harris, K.M., Halpern, C.T., Haberstick, B.C., & Smolen, A. (2013). The National Longitudinal Study of Adolescent Health (Add Health) sibling pairs data. *Twin Research and Human Genetics*, 16(1), 391-398.
- Harris, K.M., Halpern, C.T., Whitsel, E., Hussey, J., Tabor, J., Entzel, P., et al. (2018). *National longitudinal study of adolescent health: research design*. Retrieved from <http://www.cpc.unc.edu/projects/addhealth/design>
- Homans, G. C. (1974). *Social behavior: Its elementary forms*. New York: Harcourt Brace Jovanovich.
- Ishii-Kuntz, M., & Secombe, K. (1989). The impact of children upon social support networks throughout the life course. *Journal of Marriage and Family*, 51(3), 777 - 790.
- Kalmijn, M. (1998). Intermarriage and homogamy: Causes, patterns, trends. *Annual review of sociology*, 24(1), 395-421.
- Kaufman, G., & Uhlenberg, P. (1998). Effects of life course transitions on the quality of relationships between adult children and their parents. *Journal of Marriage and Family*, 60(4), 924-938.
- Kennedy, S., & Bumpass, L. (2008). Cohabitation and children's living arrangements: New estimates from the United States. *Demographic Research*, 19, 1663-1692.
- Kim, J.Y., McHale, S.M., Wayne Osgood, D., & Crouter, A.C. (2006). Longitudinal course and family correlates of sibling relationships from childhood through adolescence. *Childhood Development*, 77(6), 1746-1761.

- Lee, T. R., Mancini, J. A., & Maxwell, J. W. (1990). Sibling relationships in adulthood: Contact patterns and motivations. *Journal of Marriage and Family, 52*(2), 431-440.
- Marks, S. R. (1977). Multiple roles and role strain: Some notes on human energy, time and commitment. *American Sociological Review, 42*(6), 921-936.
- Marks, S.R., & MacDermid, S.M. (1996). Multiple roles and the self: A theory of role balance. *Journal of Marriage and the Family, 58*(2), 417-432.
- McHale, S. M., Updegraff, K. A., & Whiteman, S. D. (2012). Sibling relationships and influences in childhood and adolescence. *Journal of Marriage and Family, 74*(5), 913-930.
- McHale, S.M., Bissell, J., & Kim, J.Y. (2009). Sibling relationship, family, and genetic factors in sibling similarity in sexual risk. *Journal of Family Psychology, 23*(4), 562- 572.
- Merton, R. K. (1968). *Social theory and social structure*. New York: Free Press.
- Mikkelson, A. C., Myers, S. A., & Hannawa, A. F. (2011). The differential use of relationship maintenance behaviors in adult sibling relationships. *Communication Studies, 62*(3), 258-271.
- Milevsky, A. (2004). Perceived parental marital satisfaction and divorce: Effects of sibling relations in emerging adults. *Journal of Divorce & Remarriage, 41*(1-2), 115-128.
- Milevsky, A. (2005). Compensatory patterns of sibling support in emerging adulthood: Variations in loneliness, self-esteem, depression, and life satisfaction. *Journal of Social and Personal Relationships, 22*(6), 743-755.
- Milevsky, A., & Heerwagen, M. (2013). A phenomenological examination of sibling relationships in emerging adulthood. *Marriage & Family Review, 49*(3), 251- 263.

- Milevsky, A., Smooth, K., Leh, M., & Ruppe, A. (2005). Familial and contextual variables and the nature of sibling relationships in emerging adulthood. *Marriage & Family Review*, 37(4), 123-141.
- Moen, P., Kim, J. E., & Hofmeister, H. (2001). Couples' work/retirement transitions, gender, and marital quality. *Social Psychology Quarterly*, 64(1), 55-71.
- Munch, A., McPherson, J.M., & Smith-Lovin, L. (1997). Gender, children, and social contact: the effects of childrearing for men and women. *American Sociological Review*, 62(4), 509-520.
- Nomaguchi, K. M., & Milkie, M.A. (2003). Costs and rewards of children: The effects of becoming a parent on adults' lives. *Journal of Marriage and Family*, 65(2), 356-374.
- Nomaguchi, K.M., Milkie, M.A., & Bianchi, S.M. (2005). Time strains and psychological well-being do dual-earner mothers and fathers differ? *Journal of Family Issues*, 26(6), 756-792.
- Riggio, H. R. (2001). Relations between parental divorce and the quality of adult sibling relationships. *Journal of Divorce & Remarriage*, 36(1-2), 67-82.
- Ryan, C. L., & Bauman, K. (2016). Educational attainment in the United States: 2015.
- Ryan, S., Franzetta, K., Schelar, E., & Manlove, J. (2009). Family structure history: Links to relationship formation behaviors in young adulthood. *Journal of Marriage and Family*, 71(4), 935-953.
- Sarkisian, N., & Gerstel, N. (2008). Till marriage do us part: Adult children's relationships with their parents. *Journal of Marriage and Family*, 70(2), 360-376.

- Sherman, A.M., Lansford, J.E., & Volling, B.L. (2006). Sibling relationships and best friendships in young adulthood: Warmth, conflict, and well-being. *Personal Relationships, 13*(2), 151-165.
- Shortt, J.W., & Gottman, J.M. (1997). Closeness in young adult sibling relationships: Affective and physiological processes. *Social Development, 6*(2), 142-164.
- Sieber, S. D. (1974). Toward a theory of role accumulation. *American Sociological Review, 39*(4), 567-578.
- Siller, A. B., & Tompkins, L. (2006, March). The big four: analyzing complex sample survey data using SAS, SPSS, STATA, and SUDAAN. *In proceedings of the thirty-first annual SAS® Users Group international conference* (pp. 26-29). SAS Institute Inc.
- Simon, R.W., & Barrett, A. E. (2010). Nonmarital romantic relationships and mental health in early adulthood does the association differ for women and men? *Journal of Health and Social Behavior, 51*(2), 168-182.
- Spitze, G. D., & Trent, K. (2018). Changes in individual sibling relationships in response to life events. *Journal of Family Issues, 39*(2), 503-526.
- Stocker, C.M., Lanthier, R.P., & Furman, W. (1997). Sibling relationships in early adulthood. *Journal of Family Psychology, 11*(2), 210-221.
- Van Volkom, M., Machiz, C., & Reich, A.E. (2011). Sibling relationships in the college years: Do gender, birth order, and age spacing matter? *North American Journal of Psychology, 13*(1), 35-50.
- Volling, R.L. (2003). Sibling relationships. In M.H. Bornstein, L. Davidson, C. L. M. Keyes, K.A. Moore, & the Center for Child Well-Being. (eds.) *Well-being: Positive development across the life course*. (pp 383-406). Mahwah, NJ: Ebaum.

- Voorpostel, M., van der Lippe, T., Dykstra, P. A., & Flap, H. (2007). Similar or different? The importance of similarities and differences for support between siblings. *Journal of Family Issues*, 28(8), 1026-1053.
- West, J. (2000). Higher education and employment: Opportunities and limitations in the formation of skills in a mass higher education system. *Journal of Vocational Education and Training*, 52(4), 572-588.
- White, L. (2001). Sibling relationships over the life course: A panel analysis. *Journal of Marriage and Family*, 63(2), 555-568.
- Whiteman, S. D., McHale, S. M., & Crouter, A. C. (2011). Family relationships from adolescence to early adulthood: Changes in the family system following firstborns' leaving home. *Journal of Research on Adolescence*, 21(2), 461-474.

Table 1. Weighted Means for Variables in the Analyses (N = 1,554).

Sibling relationship quality		Controls	
Visits [0 – 4]	2.64	Sibling type	
Phone calls or emails [0 – 8]	4.24	Biological, non-twins	0.71
Help seeking [0 – 4]	1.80	Half	0.10
Fights [0 – 4]	1.17	Step	0.10
Emotional closeness [0 – 4]	2.99	Twins	0.09
Education		Gender composition (R-S)	
R < high school, S same	0.04	Sister-sister	0.30
R < high school, S higher	0.05	Brother-brother	0.29
R high school, S same	0.16	Brother-sister	0.19
R high school, S lower	0.04	Sister-brother	0.21
R high school, S higher	0.15	Age and age gap ^a	
R some college, S same	0.03	Respondents' age	21.80
R some college, S lower	0.07	Age gap between siblings	2.09
R some college, S higher	0.07	0 years	0.12
R in college, S same	0.15	1 or 2 years	0.53
R in college, S lower	0.11	3 years or more	0.35
R in college, S higher	0.04	Birth order ^a	
R bachelor's +, S same	0.02	Older	0.44
R bachelor's +, S lower	0.07	Younger	0.43
Employment		Same (non-twin)	0.04
R non-employed, S same	0.08	Race/ethnicity (R)	
R non-employed, S part-time	0.05	White	0.66
R non-employed, S full-time	0.14	Black	0.16
R part-time, S same	0.06	Hispanic	0.08
R part-time, S non-employed	0.05	Other race	0.09
R part-time, S full-time	0.11	Geographic distance	
R full-time, S same	0.29	Live together	0.21
R full-time, S non-employed	0.12	Within one hour	0.45
R full-time, S part-time	0.11	More than one hour	0.34
Romantic partnership		Sibling relationships in adolescence	
R partnered, S same	0.15	Missing	0.07
R partnered, S single	0.23	High emotional closeness	0.64
R single, S partnered	0.20	Low emotional closeness	0.29
R single, S same	0.43	Frequent fights	0.25
Parenthood		Infrequent fights	0.68
R w/ children, S same	0.15	High time together	0.36
R w/ children, S w/o children	0.17	Low time together	0.57
R w/o children, S w/ children	0.14		
R w/o children, S same	0.54		

Notes. "R" stands for respondents; "S" stands for siblings. ^aThese dummy variables and twins add up to 100%.

Table 2. Ordinary Least Squares Regression Coefficients for the Association Between Adult Transitions and Sibling Relationship Quality (N = 1554).

	Visits		Phone Calls or Emails		Help Seeking		Fights		Emotional Closeness						
	<i>b</i>	<i>SE</i>	<i>b</i>	<i>SE</i>	<i>b</i>	<i>SE</i>	<i>b</i>	<i>SE</i>	<i>b</i>	<i>SE</i>					
Education ^a															
R < high school, S same	-.271	.067	***	-.234	.112	*	-.430	.090	***	-.171	.116		-.247	.084	**
R < high school, S higher	.073	.070		-.193	.123		.000	.120		-.147	.064	*	-.061	.090	
R high school, S lower	-.100	.112		-.012	.098		-.281	.125	*	.006	.213		.026	.156	
R high school, S higher	-.090	.041	*	.138	.112		-.014	.083		-.086	.082		-.084	.089	
R some college, S same	.109	.044	*	-.025	.102		.093	.073		-.145	.082		.141	.089	
R some college, S lower	.149	.037	***	.319	.110	**	.167	.091		-.057	.094		-.044	.090	
R some college, S higher	.136	.035	***	.388	.092	***	-.061	.082		-.255	.074	***	.247	.078	**
R in college, S same	.049	.050		.670	.153	***	.143	.097		-.111	.058		-.031	.083	
R in college, S lower	-.036	.031		.319	.080	***	-.029	.079		-.126	.059	*	.139	.057	*
R in college, S higher	-.083	.044		.942	.145	***	.282	.073	***	-.195	.049	***	.327	.111	**
R bachelor's+, S same	-.214	.046	***	.916	.084	***	.555	.079	***	.002	.084		.041	.106	
R bachelor's+, S lower	-.062	.045		.729	.128	***	.082	.084		-.098	.075		.146	.076	
Employment ^a															
R non-employed, S part-time	-.191	.070	**	-.369	.157	*	-.463	.094	***	-.075	.090		-.070	.060	
R non-employed, S full-time	.005	.066		.349	.147	*	-.444	.089	***	-.152	.088		-.344	.100	***
R part-time, S same	-.090	.052		-.305	.225		.101	.108		-.317	.117	**	-.072	.083	
R part-time, S non-employed	-.223	.107	*	-.209	.217		-.468	.141	**	-.580	.105	***	.097	.072	
R part-time, S full-time	-.110	.049	*	.100	.082		-.199	.061	**	-.206	.070	**	-.100	.064	
R full-time, S same	-.090	.048		.376	.070	***	-.317	.059	***	-.171	.055	**	-.113	.059	
R full-time, S non-employed	-.188	.048	***	-.068	.102		-.295	.084	***	-.187	.080	*	-.153	.073	*
R full-time, S part-time	-.118	.047	*	.110	.089		-.056	.068		-.337	.063	***	-.068	.074	
Romantic partnership ^a															
R partnered, S same	-.075	.036	*	.097	.084		-.079	.060		-.432	.056	***	-.048	.051	
R partnered, S single	-.102	.031	**	-.076	.079		-.096	.057		-.346	.053	***	-.055	.049	

R single, S partnered	.003	.024		.324	.060	***	.003	.050		-.308	.060	***	-.114	.040	**
Parenthood ^a															
R w/ children, S same	.069	.033	*	-.048	.071		-.166	.058	**	-.041	.063		-.048	.046	
R w/ children, S w/o children	.079	.031	*	-.208	.083	*	-.233	.058	***	-.142	.066	*	-.015	.065	
R w/o children, S w/ children	.152	.033	***	.172	.066	*	.017	.056		.093	.048		.264	.037	***
Controls ^a															
Half-sibling	-.132	.029	***	-.155	.067	*	-.087	.062		-.088	.060		.051	.041	
Step-sibling	-.793	.048	***	-1.080	.126	***	-.818	.066	***	-.372	.051	***	-.752	.106	***
Twins	-.078	.061		.053	.095		.453	.051	***	.175	.065	**	.161	.054	**
Brother-brother	-.113	.029	***	-.604	.056	***	-.655	.052	***	-.361	.054	***	-.152	.061	*
Brother-sister	-.167	.030	***	-.609	.077	***	-.698	.049	***	-.456	.038	***	-.284	.058	***
Sister-brother	-.125	.037	**	-.897	.090	***	-.592	.057	***	-.120	.048	*	-.349	.058	***
Within one hour apart	-1.014	.023	***	-4.776	.066	***	.095	.051		-.210	.063	**	.066	.068	
More than one hour apart	-2.463	.022	***	-4.624	.072	***	-.120	.051	*	-.377	.051	***	-.008	.077	
R's Age	-.031	.010	**	-.049	.024	*	-.054	.019	**	-.004	.020		-.009	.019	
Age gap between siblings	-.006	.023		-.134	.062	*	-.121	.040	**	-.052	.041		-.129	.037	***
Black	.079	.031	*	.048	.084		-.229	.046	***	-.116	.054	*	.097	.056	
Hispanic	-.034	.044		-.010	.070		.141	.051	**	.225	.071	**	.148	.050	**
Other race	-.121	.028	***	.001	.074		.189	.053	***	.027	.058		-.030	.059	
Sibling relationship quality in adolescence															
Missing	-.112	.036	**	-.015	.099		.251	.063	***	-.123	.057	*	.059	.061	
Low emotional closeness	-.174	.024	***	-.314	.070	***	-.375	.037	***	-.042	.045		-.419	.042	***
Frequent fights	.047	.026		-.073	.060		.103	.044	*	.408	.035	***	-.045	.038	
Frequent time together	.085	.023	***	.287	.067	***	.469	.042	***	-.105	.039	**	.361	.043	***
Younger	-.214	.038	***	-.300	.072	***	.127	.053	*	-.138	.049	**	.001	.066	
Same age (non-twins)	.053	.095		-.660	.193	***	-.239	.131		-.057	.119		-.206	.127	
Intercept	5.009	.228	***	9.390	.574	***	3.709	.450	***	2.276	.460	***	3.516	.425	***

* $p < .05$; ** $p < .01$; *** $p < .001$. Notes. "R" stands for respondents; "S" stands for siblings. ^aOmitted reference categories are: R high school diploma & S same, R non-employed & S same, R single & S same, R non-parents & S same, biological, 1 or 2 years age gap, sister-sister, living together, White, high emotional closeness in W2, infrequent fights in W2, less frequent time together in W2, older.