

## Adolescent Caretaking of Younger Siblings

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### *Abstract*

*Sibling interactions play important roles in socialization; however, little is known about sibling caretaking in contemporary families. This study examined the prevalence of adolescents providing care for younger siblings and the quality of care as associated with a broad spectrum of contextual, individual, microsystem and macrosystem factors. Relying on nationally representative time diary data from the American Time Use Survey, we found that factors at all levels (contextual, individual, microsystem and macrosystem) were associated with sibling caretaking. The caretaker's sex and the ages and sexes of younger siblings correlated with the incidence and quality of sibling care. Boys more often cared for younger brothers, and girls more often cared for younger sisters. In addition, boys more often played with younger siblings while girls more often provided physical care and talked with younger siblings, mirroring gendered patterns seen in parents.*

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## 1 Introduction

Research on family processes and patterns has primarily focused on the role parents play and has for the most part neglected the role of siblings. In the past several decades there have been roughly 45 published studies on parenting for every study on siblings (McHale et al., 2012). Recent data suggests, however, that most youth today grow up in a home with one or more siblings (King et al., 2010; McHale et al., 2012). Growing up with siblings provides individuals with opportunities for socialization and learning that they do not readily gain elsewhere. The roles that siblings fulfill within a family are vital in the socialization process. In the past, one of the critical roles that siblings filled was that of caretaker. As mothers and fathers worked to provide for and support the family, older siblings cared for their younger siblings, even those just barely younger (Morrow, 2008; Weisner, 1987; Weisner and Gallimore, 1977). Older siblings would feed, clothe, teach, monitor, and play with younger siblings. Termed sibling caretaking, these interactions were critical in the development of both the sibling being taken care of and the sibling providing the care and contributed to overall family welfare. Times have changed, and we know very little about how often sibling caretaking occurs and the quality of the interactions during sibling caretaking in Western society. Indeed, only a handful of studies have examined contemporary sibling caretaking (e.g., Cain and Hofferth, 1989; East and Hamill, 2013; Howe and Rinaldi, 2004; Hsueh and Gennetian, 2011), and the extant research has focused on racially and economically homogenous samples.

Sibling caretaking entails both benefits and costs for adolescents and families. On one hand, adolescent caretakers likely benefit from the experience. They build social skills, confidence, and responsibility, traits that likely impact future achievement and success (Kuperminc, Jurkovic, and Casey, 2009). Among children, caring for siblings with a mother present is correlated with higher perspective taking and social understanding among children (Stewart and Martin, 1984). Families may benefit when adolescents provide care, enabling

parents to work or attend to other activities. However, time spent caring for siblings may hinder adolescents from pursuing other developmentally appropriate experiences such as studying, working, volunteering and extracurricular activities (Dodson and Dickert, 2004). The concern about the trade-off to adolescents caring for siblings intensifies when coupled with family circumstance. Some worry that sibling care disproportionately falls to girls from disadvantaged backgrounds, including low-income and single-parent homes (Gager et al., 1999; Zick and Allen, 1996). Different ethnic groups view family obligations as having differing levels of costs and benefits (East, Weisner, and Reyes, 2006). Those of Caucasian descent may be less likely to provide care for younger siblings because they tend to feel a lower sense of obligation to the family and may see it as a burden (Fuligni, Tseng, and Lam, 1999). Given the benefits and costs of sibling care and the need for more information about sibling care patterns and practices, the overall goal of this study was to examine the prevalence and quality of sibling caretaking in a larger heterogeneous sample.

### **1.1 Prevalence and Quality of Sibling Caretaking**

The experience of sibling caretaking in the past was nearly ubiquitous (Weisner, 1987; Weisner and Gallimore, 1977), but current societal attitudes and contexts have changed. Whereas adolescents in the past may have been viewed much more as adults (Morrow, 2008; Weisner and Gallimore, 1977), youth today are more likely to be seen as dependent on parents and not ready for caretaking tasks. Additionally, changes in economic environments and societal norms may have altered the need for sibling care within families. For example, improved economic conditions of the 1940s were associated with compulsory education, and these societal developments diminished the role of sibling caretaking as children spent more time in educational settings (Morrow, 2008). Recent work on sibling caretaking has focused on its prevalence in smaller regionally based, homogenous samples. Recent data from low income,

welfare recipient families suggests that sibling care is less common today than it likely was 100 years ago (exact rates are unknown, but were high; Morrow, 2008; Weisner, 1987; Weisner and Gallimore, 1977); between 16% and 27% of parents have asked an adolescent child to provide care for a younger sibling in the past month (Hsueh and Gennetian, 2011). To date, however, no study has looked at the current prevalence of sibling caretaking in a large nationally based sample. The first aim of this study was to provide a better perspective on how common or rare sibling caretaking was among adolescents. We focused on adolescents. Several states have laws regarding the minimum age a child can be left home alone or left to tend younger siblings; Illinois currently has the oldest set age at 14 (Illinois Legislative Reference Bureau, 2016), and thus, in this paper we focused on care provided by 15–18 year olds.

Beyond measuring the prevalence of sibling caretaking, it is also important to consider the quality of care being provided, and the extant research has yet to explore variations in the quality of care. Caretakers may provide direct care with a high level of interaction involving play, feeding, and other developmentally healthy activities. Other times, they may provide low-intensity care, where caretakers supervise younger siblings or simply keep an eye on them. Direct care, as opposed to supervisory care, may be more or less likely to occur for different types of adolescents or in different contexts. While we know that mothers and fathers devote equal proportions of care time to developmental care over a child's life (Zick and Bryant, 1996), we are not aware of any research addressing the quality of care provided to children by siblings. Thus, the second aim of this study was to examine factors associated with providing direct or low-intensity care. Given the novelty of this approach, this analysis was exploratory.

## **1.2 Correlates of Sibling Caretaking**

In examining the prevalence and quality of sibling caretaking it is critical to understand the correlates and factors associated with providing care for younger siblings. Bronfenbrenner's

ecological model suggests that family patterns and processes are influenced by factors at several different levels (Bronfenbrenner and Ceci, 1994; Bronfenbrenner and Morris, 2006). Most commonly, scholars focus on Bronfenbrenner's explanation of different levels of systems, from the microsystem up to the macrosystem. At the center of Bronfenbrenner's framework are characteristics of an individual and specific contexts that interactions occur in. Thus, contextual factors and individual characteristics may influence youth development. To date, the sibling caretaking literature has largely focused on the macrosystem and adolescent's individual characteristics (East and Hamill, 2013; Hsueh and Gennetian, 2011; Morrow, 2008). To broaden the research on this topic, our analysis included factors from the contextual level, the adolescent's characteristics, the family microsystem, and the larger societal macrosystem. We do not consider mesosystem interactions or exosystem factors due to data limitations.

**1.2.1 Contextual factors.** Bronfenbrenner suggested that characteristics of a specific context are essential to understanding family processes and patterns (Bronfenbrenner and Ceci, 1994). Contextual factors vary from day to day for individuals and within a microsystem. For example, to understand how family processes may be linked to adolescent sleep patterns, it is critical to take into account the context of the day of the week. Adolescents get more sleep on weekends (Gradisar et al., 2003). This level of Bronfenbrenner's model is examined less frequently, but may play a critical role in sibling caretaking. In our study we focused on three specific characteristics of the context that were available in the data. The first context we examined was the presence of a parent. A large fraction of sibling care likely occurs when parents are out of the home and need someone to watch younger children. Indeed, much of the work on sibling caretaking has focused on this type of care. In the past, however, siblings engaged in caretaking both at times when parents were and were not present (Weisner, 1987; Weisner and Gallimore, 1977). Despite changes in society, similar patterns may still exist. Older siblings may provide

care for younger siblings while parents are making dinner, doing chores, or taking care of other children. Thus we examined whether the parent was home was linked to the likelihood of care. Because exploration of this context was new, we made no hypothesis about parental presence.

The second contextual factor we examined was the length of care provided, and this context only applied to those who provided care for a younger sibling. Providing care for a longer duration may be linked with a greater likelihood of providing either high or low quality care. One possibility is that responsible adolescents who are more interactive caretakers may be expected to provide more care. For example, a parent may trust a caring and capable adolescent to provide sibling care for a long period of time but trust a less mature adolescent to provide sibling care for a short period of time. Thus, the context of providing care for a longer duration may be linked with higher quality care. Conversely, adolescents may be able to provide high quality care for short periods of time but may not be able to maintain high quality care as duration increases and they tire, consistent with theories of diminishing marginal returns (Mas-Colell, Whinston, and Green, 2002). In addition, parental expectations of quality may differ for short interactions compared to long interaction where an older sibling supervises and keeps track of a younger sibling. Thus, it is possible that a longer amount of time spent caring for the younger sibling would be linked to lower quality care. Because of diametrically opposed theoretical explanations of connections between duration and quality of sibling care and a recognitions that exploration of this context was new, we made no hypothesis about duration of care.

Finally, we examined whether care occurred on a weekend or weekday. On one hand, adolescents may be involved in extra-curricular activities and homework, spend less time at home during the week and therefore be less likely to engage in sibling care on weekdays. On the other hand, direct care related to helping with homework may be more likely on a weekday when siblings need tutoring help. When broadly examining adolescent time spent caring for all

household members, young and old, Wight et al. (2009) find no weekend effect. Given that there were no measures of connections between sibling care specifically and day of the week, we made no hypothesis about this measure.

**1.2.2 Individual characteristics.** Central to Bronfenbrenner's ecological model (Bronfenbrenner and Ceci, 1994) is the individual. Individual characteristics in part determine how an adolescent interacts with the larger environments of the ecological framework, and the consideration of individual characteristics is critical to understanding family processes and patterns. These factors are specific to the individual person rather than those in the family microsystem.

An adolescent's sex plays a role in their experiences within the family. Gender roles at home can develop when expectations of involvement depend on being male or female. Explanations of gender differences in adult home duties, such as time-availability or relative resource theories within couples, do not fit well for adolescents, because these theories are based in long-term couple relationship dynamics. The emergence and persistence of gender differences during adolescence is most consistent with theories of differences emerging from traditional socialization and accompanying attitudes and beliefs at home (Mooney, Knox, and Schacht, 2016). Parents tend to view caretaking as a task for a mature, responsible and nurturing child and in many cases parents tend to see daughters as having those characteristics more than sons (Weisner and Gallimore, 1977). Additionally, socio-cultural bias of many American families suggests that girls and women are more fit for caretaking tasks (East, Weisner, and Slonim, 2009; Zukow-Goldring, 2002). Empirical work suggests that sex is a critical individual characteristic in adolescent time spent in home duties; girls spend more time in home duties than adolescent boys (Gager et al., 1999), and girls are more likely to provide care for younger siblings than are boys (East and Hamill, 2013; Howe and Rinaldi, 2004; Hsueh and Gennetian, 2011). Thus, we expected that across many contexts, adolescent girls would provide care more

often than adolescent boys. In our study we examined whether sibling caretaking was more likely for girls.

We know little about adolescent gender differences in the quality of care provided to children. If in fact girls are more mature, responsible and nurturing, we might expect the relative level of direct care to be higher among girls compared to boys. While we know that mothers and fathers devote equal proportions of care time to developmental care over a child's life (Zick and Bryant, 1996), we know little about gender differences in direct and low-intensity care among adolescents caring for siblings. Thus, we examined whether direct or low-intensity care varied by the adolescent's sex, and given the absence of research on this particular facet of sibling care, the analysis was exploratory.

We also examined whether age associated with sibling care. On the one hand, older adolescents likely make better caretakers, given the maturity required (Weisner and Gallimore, 1977). On the other hand, adolescents increase in autonomy with age and tend to spend less time with family members (Larson et al., 1996). Given conflicting theoretical arguments for age related to sibling care, we made no specific hypothesis about these connections.

**1.2.3 Microsystem.** Beyond contextual and individual level factors, family level microsystem variables also play a role in family processes. Microsystem factors are shared within the family or among multiple individuals, they are not specific to a focal individual. In the current study, several microsystem variables were chosen because of the consistent role they play in other sibling processes. Specifically, we examined the number of siblings in the home (e.g., Kuo and Hauser, 1997), the age difference between siblings (e.g., Conger and Little, 2010; Whiteman et al., 2014), and sibling's gender constellations (same gender or opposite gender; e.g., Kim et al., 2006; Lindell et al., 2015). In regards to family size, adolescents from larger families may be expected to provide more sibling care due to increased demand for their help (Kalenkoski et al.,



2011). Prior research documents that sibling care is more prevalent in larger families (Call et al., 1995).

Age and sex differences between caretakers and care recipients may impact sibling caretaking. Variation in attention is needed to care for younger siblings at different stages of development. Given that patterns in other sibling processes vary by the age and sex of both siblings in relation to one another (e.g., Kim et al., 2006), it is possible that sibling caretaking does too. For example, although girls likely provide more care overall (East and Hamill, 2013; Howe and Rinaldi, 2004; Hsueh and Gennetian, 2011), parents may be more inclined to expect an adolescent boy to provide care for a younger brother than they may a younger sister. However, these intersections have not been examined in the research on sibling caretaking, so these analyses were exploratory.

Additionally, we controlled for other family composition factors, such as the presence of others household member who could potentially substitute as care providers for young children. We considered older sibling and non-parent adult, such as a grandparent, living in the household (Ho, 2015). We knew of no research that considered responsible household individuals as factors impacting sibling care, but based on the economic theory of labor substitutes, we expected that their presence would decrease the need for adolescent sibling care and thus decrease overall prevalence of sibling care by survey respondents.

Family-level variables may interact with factors at other levels. For example, adolescent boys may be more likely to provide care if there are younger brothers close in age, and adolescent girls may be more likely to provide care if there are a larger number of siblings, younger sisters, or much younger siblings. These patterns may also change based on a parent's presence. Thus, we explored the interaction of family-level factors with the adolescent's sex and whether the parent was home, but given the dearth of sibling caretaking research, we offered no specific hypotheses.

Beyond family composition, family socioeconomic status may matter. Wealthier families may be less inclined to use siblings as caretakers if they can afford other types of care whereas low-income families may be more likely to use sibling care (Dodson and Dickert, 2004). Some have suggested that employed mothers in particular may be more likely to have adolescents provide care for younger siblings because they are less frequently available to provide that care themselves (Burton, 1997; Cain and Hofferth, 1989; Hsueh and Gennetian, 2011). However, other research found little evidence of maternal employment impacting the time adolescents spend caring for household members (Goldscheider and Waite, 1991; Wight et al., 2009). Given the lack of consensus on connections between sibling caretaking and parents' employment, we made no specific hypothesis about parents' employment.

**1.2.4 Macrosystem.** Lastly, sibling caretaking may be linked to societal macrosystem factors. Cultural norms and socioeconomic conditions contribute to the common experience and values of adolescents and thus are important to consider when learning about adolescent interactions with siblings. The extant literature suggests possible racial, ethnic and cultural differences in sibling caretaking. Anthropological work suggests that cultures from Asia, to East Africa, to American ethnic minorities differ in their rates of sibling caretaking (Weisner and Gallimore, 1977; Whiting and Whiting, 1975). Possible differences within sub-American cultures may also exist. For example, past work highlights that in America, different ethnic groups view family obligations as having differing levels of costs and benefits (East, Weisner, and Reyes, 2006). Those of Caucasian descent may be less likely to provide care for younger siblings because they tend to feel a lower sense of obligation to the family and may see it as a burden (Fuligni, Tseng, and Lam, 1999). Accordingly, in the current paper we examined caretaking rates by ethnicity, and hypothesized that youth of Caucasian descent would provide lower rates of care than youth of ethnic minority descent (Hispanic, African, Asian).

Prior research on sibling caretaking has focused on low-income and welfare recipient families, recognizing the critical role that economic conditions played in sibling caretaking (Garner et al., 1994; Hsueh and Gennetian, 2011). Our data were collected between 2003 and 2015. Although not longitudinal, some participants responded during favorable economic conditions while others responded during recessionary conditions in the United States and during different phases of macroeconomic recovery that followed. Prior work on low-income families (Hsueh and Gennetian, 2011) suggested that improving economic conditions necessitated an increase in sibling caretaking. When parents were out of work there was less need for sibling care, but as parents returned to work they needed adolescent children to care for younger brothers and sisters (Burton, 1997; Cain and Hofferth, 1989; Hsueh and Gennetian, 2011). In contrast, adolescents may have provided more sibling care as families adjusted out of precaution to a higher risk of job loss. If parents were worried about parental job loss during the economic downturn, they may have relied less on out-of-home care and more on adolescents even when employed (Carroll and Samwick, 1998). Due to conflicting predictions of connections between economic conditions and sibling caretaking and the lack of empirical research, the analysis of economic conditions was exploratory.

### **1.3 Current Study**

In the current study we examine the prevalence, quality, and correlates of contemporary adolescent caretaking of younger siblings, and we make three distinct contributions to the literature. First, we measure the prevalence of sibling caretaking and the amount of time adolescents spend in sibling caretaking to determine the regularity of this type of interaction in contemporary families. Basing the research on a large nationally representative sample, we study the practice broadly and do not limit the sample to a particular socioeconomic/ethnic group. Our second contribution to the sibling caretaking literature is that we provide information about the

types of activities done during sibling care. We determine the extent that sibling caretakers interact with younger siblings in developmentally healthy activities compared to care that is supervisory only. Our third contribution is our thorough attention to aspects of sibling care that are sometimes not considered—contextual, individual, microlevel, and macrolevel correlates. By analyzing an expanded set of mechanisms, we test whether factors at all the levels described in Bronfenbrenner’s ecological model impacted sibling care.

We offer a few hypotheses. Specifically, we expected that across many contexts, adolescent girls would provide more care than adolescent boys. We anticipated that in larger families youth would be more likely to provide care for a sibling. We expected that the presence of older siblings and non-parent adults, like grandparents, in a household would decrease overall prevalence of sibling care by survey respondents. We hypothesized that low-income families would have a higher prevalence of sibling care. Lastly, we further expected that Caucasian youth would be less likely to provide care than youth of ethnic minorities. Because the research on this topic is thin, our other analyses are largely exploratory and descriptive. Based on the limited work on sibling caretaking (e.g., East and Hamill, 2013; Howe and Rinaldi, 2004; Hsueh and Gennetian, 2011), we included exploratory analyses on whether the prevalence and quality of sibling caretaking varied by contextual factors (parents’ presence and day of the week), an individual factor (age), microsystem variables (age of younger sibling, sex constellation of the siblings, parental employment) and macrosystem variables (economic conditions). Exploratory analyses also included whether length of care was linked with the quality of care provided. We further explored the interaction of variables from multiple levels.

## **2 Method**

### **2.1 Participants**

We conducted empirical analysis of adolescent caretaking of younger siblings by analyzing individual-level time-use diaries from the American Time Use Survey (ATUS) between 2003 and 2015 (Hofferth et al., 2015). The ATUS sample included 9,397 adolescents between the ages of 15 and 18. We dropped 121 adolescents who were parents followed by 152 adolescents who were married. We dropped 362 adolescents who had no information about the respondent's mother, either because they lived only with a father (340 adolescents), had two mothers with highly differentiated profiles (3 adolescents), or had missing information on mother's background (19 adolescents). We dropped 3,592 adolescents who did not have a younger sibling living at home. The final analysis sample included 5,170 adolescents between the ages of 15 and 18 ( $M\ age = 16.51, SD = 1.05$ ) who were not married or already parents, had mother's information in the dataset, and had at least one younger household member. Within the final sample, 1,456 reported providing care for a younger household member. Participants came from every state within the United States and Washington D.C. Additional demographic information is presented in Table 1.

## **2.2 Procedure**

The survey was administered by the U.S. Census Bureau (King et al., 2010) in connection with the Current Population Survey (CPS). We used sampling weights provided by the ATUS to ensure that the sample was representative of the United States national population. A phone interview lasting about thirty minutes documented an individual's time-use over a 24-hour period, from 4 a.m. of the previous day until 4 a.m. of the interview day, and respondents accounted for all time through the day (Hamermesh et al., 2005). Interviewers used the Day Reconstruction Method and computer assistance to elicit high quality recall and accuracy (Kahneman et al., 2004), and for each primary activity throughout a day, respondents reported

the timing of the activity, the location of the activity, who else was present, and if a child was simultaneously being cared for.

## **2.3 Measures**

**2.3.1 Prevalence of sibling caretaking.** We focused on activities related to caring for a younger household member and did not differentiate between full, half, or stepsiblings in this analysis.

We measured as a dichotomous variable whether the adolescent survey respondent provided any amount of sibling care during the sample day. Parents may or may not have been present as siblings interacted, and our conceptualization of sibling caretaking was not limited to babysitting. Sibling care included many direct activities done with and for children, such as feeding, reading to, and playing sports with children. A broad view of sibling care also included indirect caretaking, the supervision or assumption of responsibility for children, even if a caretaker was not explicitly engaging with the children. Care prevalence included whether a respondent reported having a child in his or her care while doing other activities. It also included whether the respondent reported having no one older present and a younger sibling present. Due to limitations in the data, indirect care did not include the time a child was sleeping. In addition, the survey prevented respondents from reporting having a child older than age 12 in his or her care while doing other activities. Thus our measure of care likely underestimated the actual incidence of care. Because this research focused on caring for siblings, we excluded shared time beyond these care activities. As reported in Table 1, 30% of the adolescents in the sample engaged in sibling care, and for those engaged, the average time spent was 141 minutes per day.

**2.3.2 Quality of sibling caretaking.** Beyond understanding whether adolescents devote time to younger siblings, we explored the types of activities siblings did together. We grouped sibling care experiences into two categories: direct care and low-intensity care (Folbre and Yoon, 2007; Sayers, 2016). Direct care activities contributed to meeting a child's physical, educational,

emotional, and cognitive needs and included activities such as feeding, providing medical care to a child, reading with a child, playing with toys or games, doing art, playing sports, talking, teaching, and attending a child's events. The most common activities that adolescents did with younger siblings were providing physical care, playing with younger children, talking with children, and helping with homework. Direct care required the caretaker to directly focus on the child and accounted for 43% of total sibling care time. Low-intensity care measured time when an adolescent reported having a child in his or her care but engaged in an activity unrelated to child care. Low-intensity care accounted for 57% of total sibling care time. An adolescent was most often watching television or movies and eating or drinking when providing low-intensity care. About 6% of sibling care time was done while studying. A detailed description of the caretaker's activities is presented in Table 2.

We constructed a measure of the quality of care by calculating the proportion of total sibling care time focused on direct care activities. Implicit in this measure was our belief that time spent interacting with a child was higher quality care compared to time not spent interacting with a child. An increase in the proportion of direct care activities reflected an increase in sibling care time that focused on interacting with children or a decrease in low-intensity sibling care time.

**2.3.3 Contextual factors.** We measured whether a parent was present during sibling care to address questions about the role parents play in shaping the prevalence and quality of sibling care. The duration of sibling care was considered only when analyzing quality of care to understand connections between the length of sibling care and quality of care. Timing of the sibling interactions were also considered in order to address questions about when adolescents most often provided sibling care as captured by a dichotomous variable indicating whether the interaction occurred during a weekend.

**2.3.4 Individual characteristics.** Adolescent characteristics included sex of the respondent and age (reported in years).

**2.3.5 Microsystem.** A central component of the study was our ability to measure sibling caretaking across a broad set of family compositions. To standardize measures of sibling composition across family types, we measured the age and sex of all household siblings. Adolescents had an average of 1.69 ( $SD = .98$ ) younger siblings living at home. In order to capture gendered patterns in sibling care, we counted the number of younger siblings who were ages 0–5, ages 6–12 and ages 13+ who were the same sex as the caretaker. We also counted the number of younger siblings in each age group who were a different sex than the caretaker. We categorically treated the presence of older same sex and older opposite sex siblings in the household. Seventeen percent of adolescents in the sample had at least one older sibling living at home. Parental characteristics were included in the analysis. These characteristics were available through linked CPS information, and we drew information from the final collection of CPS data, which occurred two to five months before the time diary interview took place. We focused on adolescents living with mothers. The number of parents in the home was considered. We included a dichotomous variable measuring the presence of a non-parent adult, such as a grandparent. Living in a low-income household was captured categorically in a variable coded as whether real family income was below \$40,000 in 2014 dollars. The low-income variable approximately corresponded to having income below 150% of the poverty threshold, depending on family size (Bishaw and Glassman, 2016). We viewed strict adherence to the poverty threshold as too restrictive and included households slightly above the poverty threshold in our measure of low-income. We included a dichotomous variable measuring whether a mother reported being employed.

**2.3.6 Macrosystem.** We considered sibling care in relation to the cultural and economic macrocondition of an adolescent. We analyzed race and ethnicity (Hispanic, Black non-Hispanic,



White non-Hispanic, other) to better understand cultural components of sibling caretaking. We studied recessionary economic conditions at a macro level to understand the impact of general conditions on sibling care interactions. Because the United States experienced sluggish job market and housing recoveries, even after the recession of 2007 was technically over, we were compelled to control for more than the official recessionary period. In addition, we separately accounted for a post-recessionary period, in case there were persistent changes in sibling care patterns following the economic downturn. As suggested by Hofferth and Goldscheider (2016), we categorized sibling care by whether it occurred before the onset of the recession in late 2007, during the recession which lasted until June 2009, during a jobless recovery phase which lasted to the end of 2010, or during a post-recession phase.

With our focus on caretaking within one microsystem, measurement of factors in the mesosystem was not possible. Moreover, because geographic information was incomplete in the data, we were unable to control for local labor market conditions or other factors potentially impacting the exosystem.

### **3 Results**

#### **3.1 Analytic Strategy**

We tested two separate models, one for the prevalence, and one for the quality of sibling caretaking. The first model used binary logistic regression to test whether adolescents had provided care the previous day. The model addressed the following question: how do contextual factors, individual level factors, microsystem factors and macrosystem factors associate with the prevalence of sibling care? The model was tested hierarchically in two steps. In the first step we entered main effects of our contextual factors (parent present, 0 = *no*, 1 = *yes*; weekend, 0 = *week day*, 1 = *weekend day*), individual characteristics (female, 0 = *male*, 1 = *female*; adolescent age), microsystem factors (number of same sex siblings and number of opposite sex siblings in age groups 0–5, 6–12, and 13+; older sibling of same sex, 0 = *no*, 1 = *yes*; older sibling of opposite

sex, 0 = *no*, 1 = *yes*; non-parent adult in the household, 0 = *no*, 1 = *yes*; low income, 0 = *no*, 1 = *yes*; parent employed full time, 0 = *no*, 1 = *yes*), and macrosystem factors (Black, non-Hispanic, 0 = *no*, 1 = *yes*; Hispanic, 0 = *no*, 1 = *yes*; Other race, 0 = *no*, 1 = *yes*; recession phase, 0 = *pre-recession*, 1 = *recession*; jobless recovery phase, 0 = *pre-recession*, 1 = *jobless recovery*; post-recession phase, 0 = *pre-recession*, 1 = *post-recession*). In the second step we entered 18 two-way interactions: female interacted with each of the younger sibling age groups for same and opposite sex, female interacted with parent present, parent present interacted with each of the younger sibling age groups for same and opposite sex, recession interacted with each race/ethnicity group, recession interacted with low income, and recession interacted with parent employed full-time.

The second model used Ordinary Least Squares regression to test the quality of sibling caretaking. This model was also tested hierarchically in the same manner as the model for the prevalence of sibling care. The second model addressed the following question: how do contextual factors, individual level factors, microsystem factors and macrosystem factors associate with the quality of care provided during sibling care? There was a small estimation differences between the first and second models. Specifically, the first model utilizing logistic regression did not include the number of hours of care as an explanatory variable given the mathematical connection of this variable to the explanatory variable. In the second model analyzing quality of care, the number of hours of care was included the number of hours of care as a contextual factor.

As part of the process of constructing appropriate models, we tested many specifications of two- and three-way interactions to be sure we were not omitting important interactions between variables, including interactions involving the low-income variable, parent employment variable, and all macrosystem variables. These interactions were not significant and were excluded from the analysis.

### 3.2 Prevalence of Sibling Care

We report the probability that an adolescent cared for a younger sibling in Table 3, along with standard errors and odds ratios for explanatory variables. The reference base for categorical variables was a White, non-Hispanic adolescent boy on a weekday without a parent present. Contextual variables—parental presence and weekend day—played a role in whether sibling caretaking occurred. The presence of a parent at home positively associated with the prevalence of sibling care; parent presence increased the odds of providing some amount of sibling care generally by 12 times. When considering gendered interactions with parental presence, we found that parental presence had the strongest impact when the caretaker was an adolescent boy. The presence of a parent increased the odds of providing sibling care by more than 19 times among adolescent boys, while this effect was attenuated for girls (7 times more likely). The context of the timing played a role in sibling care; care was 20% less likely to occur on a Saturday or Sunday.

Individual attributes associated with sibling care. We found that adolescent girls were 42% more likely to engage in sibling caretaking than boys. Adolescent girls were more likely to babysit without a parent present compared to adolescent boys. Age did not associate with sibling care prevalence.

Microsystem characteristics of a household associated with sibling care prevalence. For every additional sibling younger than six who was the same sex as the caretaker, the odds of providing sibling care increased by 87%, whereas adding an opposite sex sibling increased the odds by only 68%. We also found a gendered response in the prevalence of care for elementary school aged siblings. Adding a sibling between the ages of 6 and 12 whose sex was the same as the caretaker's more than doubled the odds of providing care. However, adding an opposite sex sibling between the ages of 6 and 12 increased the odds of sibling care by only 70%. Same sex

siblings did not impact the odds of sibling care when the younger sibling was thirteen or older, and opposite sex siblings decreased the odds of sibling caretaking when the younger sibling was thirteen or older. Older siblings and non-parent adults, potential substitutes for sibling care providers, did not significantly impact the odds of sibling caretaking. Although adolescents from low-income homes were as likely to provide sibling care as other adolescents when considering only main effects, we found that adolescents from low-income families were less likely to perform sibling care during the recession when zeroing in on this interaction. Having a parent employed full time increased the odds of sibling care by 28%.

Macrosystem measures associated with the prevalence of sibling care. Race and ethnicity showed differences in associations with sibling care prevalence. Although race and ethnicity did not associate with sibling care incidence overall when estimating main effects, we found interacted effects. Hispanic adolescents were 88% more likely to provide sibling care during the recession than other adolescents. Turning to economic conditions, we found that adolescents were 86% more likely to provide care during the Great Recession compared to before the recession, and the prevalence of this care remained elevated—although dampened over time—during both the jobless recovery and post-recession phases. The interactions in Table 3, however, show that the elevated prevalence of sibling care during the recession was not evenly distributed across ethnicities and income groups; Hispanic adolescents were 88% more likely than other racial and ethnic groups to provide sibling care during the Great Recession. In addition, being from a low-income family decreased the odds of adolescents providing sibling care during the recession by 46%.

### **3.3 Quality of Sibling Care**

We assessed the quality of care by estimating associations between the proportion of time spent in direct care and covariates, and the results are reported in Table 4. Contextual factors associated with the quality of care. When considering main effects only, we found that the

proportion of direct care time increased by 32 percentage points when parents were present. The presence of a parent did not differentially impact the quality of care based on the caretaker's sex or the age and sex compositions of younger siblings, as can be seen in the insignificance of interactions involving parent presence. Increasing care time by one hour increased the proportion of time devoted to direct care by 12 percentage points. Weekend care decreased the proportion of direct care by 11 percentage points.

Individual characteristics played a role in the quality of care. The nature of adolescent girls' care was different from boys'. While girls and boys provided similar levels of quality when estimating main effects, interacted effects on sibling constellations revealed differences between adolescent girls and boys in the quality of care. Adolescent girls provided higher quality care to young siblings under the age of 6 compared to adolescent boys. Adolescent girls and boys provided care of equal quality to same sex siblings ages 6 to 12. The quality of care of adolescent girls caring for younger sisters between the ages of 6 and 12 was not statistically different from that of adolescent boys caring for younger brothers of the same ages. However, the quality of care provided by adolescent girls caring for younger brothers of this age was 9 percentage points higher than the quality of care provided by adolescent boys to younger sisters. Age of the caretaker was not a significant correlate.

The microsystem was predictive of the quality of sibling care provided by an adolescent, and the ages and sibling constellations were particularly important. Siblings between ages 6 and 12 associated with lower quality care. Adding a sibling between ages 6 and 12—irrespective of sibling sex—decreased the proportion of time spent in direct care by 13 percent. Adolescent girls and boys caring for younger same sex siblings between the ages of 6 and 12 provided care of equal quality. However, the quality of care provided by adolescent girls caring for younger brothers of this age was 9 percentage points higher than the quality of care provided by adolescent boys to younger sisters. For both adolescent boys and girls, adding one sibling who

was at least age 13 increased the proportion of time spent in direct care by 10 to 12 percentage points. Older siblings living in the household correlated with sibling care quality. Having an older sibling who was the same sex as the caretaker decreased the proportion of direct care by 8 percentage points, but having an opposite sex sibling did not impact quality of care. While sibling composition and ages associated with quality of care, having non-parent adults living in the home, such as a grandparent, did not change the quality of care provided by adolescents. Adolescents in low-income households provided care that was similar in quality to adolescents not in low-income households. Likewise, having a parent who was employed full time did not impact the quality of caretaking by adolescents.

Cultural constructs associated minimally with the quality of care provided. We found that during the recession, the fraction of time dedicated to direct care by Black non-Hispanic adolescents was 16 percentage points lower than that of White adolescents, while the proportion of direct care provided by adolescents with other race and ethnic characteristics were not different. Otherwise, race and ethnicity were rendered statistically insignificant. We found little evidence that macroeconomic conditions associated with the quality of care. Quality of care only changed for Black, non-hispanic adolescents during the recession. The quality of care was not affected during the jobless recovery compared to pre-recession conditions, and care quality declined by 5 percentage points during the post-recession period.

#### **4 Discussion**

We set out to gain a better understanding of sibling caretaking given the important role that siblings play in each other's development and socialization. Although sibling caretaking was customary in the past (Weisner, 1987; Weisner and Gallimore, 1977), little is known about the prevalence and quality of contemporary sibling care. Thus, the broad aim of this study was to use nationally representative data to examine patterns and factors of sibling caretaking.

#### **4.1 Prevalence of Sibling Care**

Sibling care occurred regularly among the sampled families in our study. Basing the research on a large nationally representative sample, we demonstrated that sibling care is a widespread practice and not limited to particular socio-economic groups. Our findings suggest that on any given day 30% adolescents who have younger siblings provide some sort of care for them. This average rate is slightly higher than the rate reported by lower-income families with sibling caretaking over the past month (Hsueh and Gennetian, 2011), and the difference in prevalence is primarily explained by our inclusion of time when parents were present. Due to the sampling method used in the ATUS, adolescents were asked about their time use for one day, and future studies will also want to examine rates of sibling caretaking in large heterogeneous samples based on care provided in the past month, or even the past year to develop a more complete picture of the prevalence of sibling caretaking.

Sibling care prevalence associated with correlates at several different levels. At the contextual level, siblings were more likely to provide care when parents were present, but the pattern varied by gender. Consistent with past work, our results showed that adolescent girls were more likely to provide care when parents were not home than were adolescent boys (East and Hamill, 2013; Howe and Rinaldi, 2004; Hsueh and Gennetian, 2011). Boys, however, more often provided care than girls when a parent was present. Perhaps parents were less likely to ask adolescent boys to babysit younger siblings, yet still expected them to help younger siblings in care activities when a parent was home and could supervise to some degree. When analyzing the context of timing, we found that weekends were less conducive to sibling care than weekdays. These findings taken together suggest research continue to consider contextual factors in the future when studying sibling care patterns and processes.

The prevalence of sibling caretaking varied in ways that suggested individual attributes matter. Girls were more likely than boys to take part in sibling care, consistent with prior

research (East and Hamill, 2013; Howe and Rinaldi, 2004; Hsueh and Gennetian, 2011), although associations were mediated by parental presence.

Family composition associated in interesting ways with sibling care prevalence at the microsystem level. Consistent with the research of others, we found that adolescents more often provided sibling care in larger families (Call et al., 1995; Kalenkoski et al., 2011). Perhaps in large families, resources had to spread further and adolescents were needed to care for younger siblings. The effect, however, was nuanced based on the ages and sexes of younger siblings. Adolescents were most likely to care for siblings under age 13. When focusing on elementary school aged siblings, adolescent boys more often cared for younger brothers and adolescent girls more often cared for younger sisters. The gendered response in caretaking led to more care among siblings of the same sex and was seen in both girls and boys. It was not clear to what extent gendered interactions were driven by an adolescent, younger siblings, or parents. Although the presence of parents played a role in facilitating sibling care in general, we found no evidence of parents' presence differentially impacting sibling care rates between same sex siblings. The gendered patterns in sibling care prevalence are remarkable considering the exogenous nature of sibling sex compositions. While adolescents don't choose the sex of younger siblings, they do to some extent choose how to interact with them, and the gendered patterns in sibling care interactions we observe suggest that sibling care processes may play an important role in gender development.

We see no evidence that older siblings or non-parent adults serve as substitutes for adolescents providing sibling care, suggesting that family utilization of care likely fluctuates with the number of eligible household care providers. Moreover, we found no evidence that wealthier families used adolescents for sibling care less than low-income families and in fact found that during the recession, adolescents in wealthier families were more likely to provide sibling care than adolescents in low-income households. This finding could be connected to



differential changes in parental time at home due to unemployment during the recession, although we were unable to substantiate this speculation. Full employment of any parent in the household associated with sibling care prevalence. This may be due to working parents relying on adolescents for care while at work, or it may reflect a selection effect if working parents have responsible adolescents who are more able to provide care. This finding does not directly relate to discussions on maternal employment and provision of household care by adolescents as we use both parents in our measure.

Cultural factors mattered very little in sibling care prevalence, suggesting that the practice of sibling care spans across diverse households and is not concentrated among particular racial or ethnic groups. Of note, however, is the finding that Hispanic adolescents provided more care during the recession, prompting the question of whether a sense of family obligation and cooperation among Hispanics increases during times of uncertainty and difficulty.

Our analysis revealed significant associations with macroeconomic conditions. Specifically, we found that adolescents provided more sibling care during times of economic downturn, and the higher levels of care dampened as the economy recovered. The effect was much smaller for low-income families. We cannot offer definitive evidence about why family processes in sibling care changed during an economic downturn. The finding was not confounded with parental employment or family income and is consistent with models of precautionary adjustment in households due to changes in risk (Carroll and Samwick, 1998). Although we were unable to measure out of home care, we suspect an interaction between general economic conditions and use of out of home care. Variability in access to and utilization of out-of-home care due to changing levels of job loss risk could have significant impacts on the extent to which siblings provide caretaking to younger siblings. In addition, the effect may have been driven by changes in adolescent commitments to activities away from home. Past work highlights that when families had fewer economic resources, adolescents participated in fewer

extracurricular activities (Weininger et al., 2015). Although we controlled for family economic resources, perhaps depressed economic conditions had the same effect of decreased extracurricular participation, freeing up time to care for younger siblings. Given that adolescents from low-income families were likely already participating in fewer activities, the change may have been less dramatic for them and was linked to a smaller increase in care during the recession. Future studies will want to explore these factors to develop a more complete understanding of the mechanisms by which macroeconomic conditions filter into family processes.

#### **4.2 Quality of Sibling Care**

In addition to the prevalence of sibling caretaking, we also explored the quality of care provided. This approach helped move the literature beyond looking only at the prevalence of caretaking, improving our understanding of what adolescents did during sibling care. Low-intensity care accounted for just over half of the care time. Although supervising, rather than interacting, may have enabled an adolescent to focus on other activities, the actualization of this time was rarely spent on cognitively demanding activities. Providing supervision for younger siblings appeared to crowd out activities that required mental focus. Although over half of the care provided by adolescents was low-intensity, much was also direct and more involved. When looking at the types of activities that adolescent did with younger siblings, the raw data suggest gendered patterns. Akin to how fathers and mothers interact differently with their children (Hossain and Roopnarine, 1994; Tamis-LeMonda et al., 2004), male caretakers were more likely to play with siblings while female caretakers were more likely to provide physical care, talk with or listen to siblings.

Context contributed to the quality of care. Adolescents were more likely to provide direct care when parents were home. In these cases, parents may have encouraged high quality care. When parents were not home, it may have been easier for adolescents to supervise younger

siblings while simultaneously participating in other activities like watching TV or spending time on social media. Direct care was also more likely to happen when care was longer in duration. Parents possibly selected more mature and responsible adolescents to provide care for longer periods of time, and perhaps these adolescents were better equipped or more willing to directly interact with younger siblings in meaningful ways, rather than just supervise them. Alternately, when adolescents provided care for longer periods of time, there simply may have been more opportunities for providing care that included helping with homework or other activities done on a typical day. Along those lines, we also found that low-intensity care was more likely to happen on the weekends, perhaps because there were fewer day-to-day tasks that younger siblings needed help with.

A recurring theme, whether considering the caretaker or care recipient, was that gender shaped sibling care, and we again saw a gender component emerge when analyzing the quality of care. Adolescent girls provided proportionally more direct care to siblings under age 6 compared to adolescent boys. In addition, adolescent boys gave proportionally less direct care to sisters under age 6. These associations are interesting and deserve further consideration given the interest in development processes in very young children. In most sibling constellations, adolescent girls provided proportionally equal or more direct care, a finding that did not mirror patterns observed in parents whose direct care proportions are equal (Zick and Bryant, 1996). Gendered effects on the quality of care for various sibling compositions were not dependent on whether a parent was present to facilitate sibling interactions, suggesting a complex process behind their emergence. In addition, while parental employment increases the incidence of sibling care, it did not play a role in the proportion of time dedicated to direct care.

Although context, the individual characteristic of gender, and microsystem measures related with the quality of sibling care, we found little evidence of macrosystem variables impacting the quality of care. Adolescents of any race and ethnicity generally provided equal

quality care. In both quality and prevalence of care, race and ethnic background mattered little. The quality of care among most adolescents did not suffer during the recession or jobless recovery, when adolescent caretaking was more prevalent. While the quantity of care provided was linked with macroeconomic factors, quality of care was determined by factors less removed from the adolescent.

### **5 Limitations and Conclusions**

The ATUS data allows us to make substantial progress in understanding sibling caretaking in contemporary families, yet limitations of this research remain. Panel data would provide greater detail on how sibling caretaking changes over time. Specifically, longitudinal data would allow researchers to examine how changes in economic situations within families link to changes in sibling care. It would also allow researchers to examine at what ages adolescents begin to provide care for younger siblings. Additionally, the method used in the ATUS of assessing activities over the previous day is useful and meaningful, but it does not give us a picture of sibling caretaking over a broader time period. Much would be learned by analyzing sibling care over a longer time horizon. The study was lacking information about access to and utilization of out of home care would enrich understanding about the contributions to family welfare that adolescents make by performing sibling care. Lastly, the study was also limited by not examining who initiated the care. In some cases, younger siblings may naturally look to older siblings to care for them. Some adolescents may themselves enjoy and seek out care opportunities. In other cases, caretaking may be directed or instigated by parents. Future work delineating who initiated the caretaking would provide a richer understanding behind the processes involved in sibling care interactions. Despite these limitations, our study contributes to the current literature in meaningful ways. Sibling caretaking is still a part of the lives of many

adolescents in modern families, and the prevalence and quality of that care is linked with a wide range of factors and circumstances.

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Table 1  
*Family Demographics and Makeup: Descriptive Statistics*

Variables	Full Sample <sup>1</sup> (N <sub>1</sub> = 5,170)			Sibling Caretakers <sup>2</sup> (N <sub>2</sub> = 1,456)		
	M	SD	Range	M	SD	Range
Participating in Sibling Care <sup>a</sup>	0.30	0.46	0 – 1	1.00	0.00	1
Average Duration of Sibling Care (mins.)	—	—	—	141.34	150.74	1 – 955
Proportion of care time devoted to direct care	—	—	—	0.43	0.45	0 – 1
<i>Respondent Characteristics:</i>						
Female <sup>b</sup>	0.48	0.50	0 – 1	0.55	0.50	0 – 1
Age	16.51	1.05	15 – 18	16.40	1.05	15 – 18
<i>Family Characteristics:</i>						
Number of younger siblings	1.69	0.98	1 – 11	1.97	1.14	1 – 11
Number of siblings aged 0 to 5	0.23	0.53	0 – 5	0.36	0.66	0 – 5
Number of siblings aged 6 to 12	0.73	0.79	0 – 6	1.01	0.80	0 – 6
Number of siblings aged 13 to respondent's age	0.72	0.64	0 – 5	0.60	0.68	0 – 4
Number of older siblings	0.17	0.41	0 – 4	0.16	0.38	0 – 2
Number of younger siblings of same sex as respondent	0.85	0.92	0 – 6	1.01	0.90	0 – 6
Number of same sex siblings aged 0 to 5	0.11	0.36	0 – 4	0.18	0.46	0 – 4
Number of same sex siblings aged 6 to 12	0.35	0.58	0 – 3	0.51	0.64	0 – 3
Number of same sex siblings aged 13 to respondent's age	0.38	0.54	0 – 3	0.32	0.52	0 – 3
Number of same sex older siblings	0.21	0.47	0 – 4	0.18	0.41	0 – 2
Single-parent home <sup>c</sup>	0.09	0.28	0 – 1	0.09	0.29	0 – 1
Non-parent adult in home <sup>d</sup>	0.13	0.34	0 – 1	0.14	0.35	0 – 1
Low income family <sup>e</sup>	0.33	0.47	0 – 1	0.35	0.48	0 – 1
Parent employed full-time <sup>f</sup>	0.84	0.37	0 – 1	0.85	0.35	0 – 1
<i>Macrosystem Characteristics:</i>						
Black, non-Hispanic <sup>g</sup>	0.14	0.35	0 – 1	0.13	0.34	0 – 1
Hispanic <sup>h</sup>	0.26	0.44	0 – 1	0.29	0.45	0 – 1
White, non-Hispanic <sup>i</sup>	0.53	0.50	0 – 1	0.51	0.50	0 – 1
Other Race <sup>j</sup>	0.07	0.25	0 – 1	0.08	0.26	0 – 1

<sup>a</sup>Participating in sibling care: 0 = no, 1 = yes. <sup>b</sup>Female: 0 = male, 1 = female. <sup>c</sup>Single-parent home: 0 = more than 1 parent present, 1 = only 1 parent present. <sup>d</sup>Non-parent adult in home: 0 = respondent does not live with a non-parent adult, 1 = respondent lives with a non-parent adult. <sup>e</sup>Low-income family: 0 = family earns above 1.25 times the poverty threshold, 1 = family earns below 1.25 times the poverty threshold. <sup>f</sup>Parent employed full-time: 0 = no parent employed full-time, 1 = one or more parents employed full-time. <sup>g</sup>Black: 0 = not Black or Black & Hispanic, 1 = Black & non-Hispanic. <sup>h</sup>Hispanic: 0 = not Hispanic, 1 = Hispanic. <sup>i</sup>White, non-Hispanic: 0 = not White or White & Hispanic, 1 = White & non-Hispanic. <sup>j</sup>Other race: 0 = White, Black, or Hispanic, 1 = not White, Black, or Hispanic.

<sup>1</sup> The full sample includes adolescents who reported having a younger sibling living in their household.

<sup>2</sup> All adolescents with younger siblings who also reported engaging in sibling care that day.

Table 2

*Sibling Caretaking: Percentage of Sibling Care Time Devoted to Activities (N = 1,456)<sup>3</sup>*

Variables	Full Sample		Male Caretaker		Female Caretaker		All Caretakers						
	M	SD	M	SD	M	SD	Siblings Ages 0 to 5		Siblings Ages 6 to 12		Siblings Ages 13+		ANOVA
							M	SD	M	SD	M	SD	F
<i>Time Dedicated to Direct Care:</i>													
Physical Care	25.28	43.47	25.78	43.77	24.94	43.28	35.20 <sup>†††</sup>	47.80	23.61	42.48	21.90	41.38	19.20 <sup>†††</sup>
Playing with siblings	23.00	42.09	27.14 <sup>***</sup>	44.49	20.18 <sup>***</sup>	40.15	37.66 <sup>†††</sup>	48.50	24.41	42.97	20.51 <sup>†</sup>	40.39	30.61 <sup>†††</sup>
Talking with or listening to siblings	5.73	23.24	3.92 <sup>**</sup>	19.42	6.96 <sup>**</sup>	25.45	3.23 <sup>††</sup>	17.70	6.44	24.56	7.01	25.54	4.91 <sup>††</sup>
Homework tutoring/home schooling	4.22	14.98	5.34 <sup>*</sup>	22.49	3.46 <sup>*</sup>	18.29	2.10 <sup>†††</sup>	14.36	5.69	23.18	4.21	20.07	6.04 <sup>††</sup>
Playing sports with siblings	2.29	14.97	3.58 <sup>***</sup>	18.59	1.41 <sup>***</sup>	11.81	1.03 <sup>†</sup>	10.12	2.71	16.23	2.78	16.44	2.74
Reading to or with siblings	0.50	7.06	0.73	8.51	0.35	5.88	0.85	9.20	0.40	6.31	0.44	6.65	0.86
Other activities	38.98	48.78	33.51 <sup>***</sup>	47.23	43.71 <sup>***</sup>	49.48	19.93 <sup>†††</sup>	39.98	36.74	48.22	43.15 <sup>†††</sup>	49.55	45.42 <sup>†††</sup>
<i>Time Dedicated to Low-Intensity Care:</i>													
Watching television or movies	27.13	44.47	30.33 <sup>**</sup>	45.99	25.45 <sup>**</sup>	43.58	29.89 <sup>†</sup>	45.79	26.80	44.30	25.39	43.54	3.80 <sup>††</sup>
Housework	9.95	29.93	8.38 <sup>***</sup>	27.72	12.86 <sup>***</sup>	33.49	10.67	30.88	9.50	29.32	11.33 <sup>†</sup>	31.70	2.24
Eating or drinking	8.36	27.69	8.41	27.76	8.86	28.42	9.08	28.74	8.27	27.55	8.35	27.68	0.41
Studying	6.12	23.97	5.38	22.57	6.85	25.26	4.21 <sup>††</sup>	20.09	6.38	24.45	7.15	25.77	5.74 <sup>††</sup>
Communicating with others	5.07	21.94	4.28	20.25	5.30	22.41	5.08	21.97	5.30	22.40	6.81 <sup>†</sup>	25.21	2.84
Other activities	43.48	49.57	43.22	49.56	40.67	49.14	41.08	49.22	43.75	49.61	40.96	49.19	2.46

<sup>3</sup> Asterisks indicate significance of an unpaired two-sample *t*-test with unequal variances across sexes; daggers indicate significance of the same test across ages of siblings (in comparison to the 6–12-year-old sibling category). \*, †, ‡: *p* < .05; \*\*, ††, †††: *p* < .01; \*\*\*, †††, ††††: *p* < .001.

Table 3  
*Logistic Regression Analysis Predicting Prevalence of Sibling Care for Adolescents (N = 5,170)*

Variables	Main Effects			Main Effects and Interactions		
	<i>B</i>	<i>SE B</i>	<i>OR</i>	<i>B</i>	<i>SE B</i>	<i>OR</i>
<i>Contextual factors:</i>						
Parent present	2.51***	0.22	12.25	2.97***	0.58	19.57
Weekend	-0.22**	0.08	0.80	-0.22**	0.08	0.80
<i>Individual characteristics:</i>						
Female	0.35***	0.08	1.42	0.13	0.20	1.14
Respondent age	0.00	0.09	1.00	0.00	0.09	1.00
<i>Microsystem:</i>						
# of same sex siblings aged 0 to 5	0.63***	0.11	1.87	0.71***	0.15	2.03
# of same sex siblings aged 6 to 12	0.70***	0.07	2.02	0.62***	0.09	1.87
# of same sex younger siblings 13+	-0.17	0.09	0.84	-0.21	0.12	0.81
# of different sex siblings aged 0 to 5	0.52***	0.12	1.68	0.43**	0.16	1.53
# of different sex siblings aged 6 to 12	0.53***	0.07	1.70	0.43***	0.10	1.54
# of different sex younger siblings 13+	-0.22*	0.09	0.80	-0.25	0.13	0.78
Older sibling of same sex	-0.20	0.12	0.82	-0.19	0.12	0.82
Older sibling of different sex	-0.01	0.14	0.99	0.01	0.14	1.01
Non-parent adult in home	0.07	0.14	1.08	0.08	0.14	1.08
Low-income household	0.09	0.10	1.09	0.17	0.11	1.19
Parent employed full-time	0.25*	0.12	1.28	0.19	0.13	1.21
<i>Macrosystem:</i>						
Black, non-Hispanic	-0.07	0.14	0.93	-0.11	0.15	0.89
Hispanic	0.03	0.11	1.03	-0.07	0.12	0.93
Other race <sup>4</sup>	0.26	0.15	1.30	0.21	0.16	1.23
Recession phase	0.62***	0.12	1.86	0.15	0.36	1.16
Jobless recovery phase	0.34**	0.13	1.41	0.36**	0.13	1.43
Post-recession phase	0.20*	0.10	1.22	0.22*	0.10	1.24

<sup>4</sup> The reference base for categorical variables was a White, non-Hispanic adolescent boy on a weekday without a parent present, living during the pre-recession years in a home with no non-parent adults and a household income above 1.5 times the poverty threshold.

Table 3 continued

Variables	Main Effects			Main Effects and Interactions		
	<i>B</i>	<i>SE B</i>	<i>OR</i>	<i>B</i>	<i>SE B</i>	<i>OR</i>
<i>Interactions:</i>						
Female * # of same sex siblings 0 to 5				-0.21	0.27	0.81
Female * # of same sex siblings 6 to 12				0.34	0.19	1.41
Female * # of same sex younger siblings 13+				0.02	0.21	1.02
Female * # of different sex siblings 0 to 5				0.30	0.23	1.35
Female * # of different sex siblings 6 to 12				0.27	0.16	1.31
Female * # of diff sex younger siblings 13+				0.07	0.19	1.06
Female * parent present				-0.89*	0.39	0.41
Parent present * # of same sex siblings 0 to 5				0.74	0.79	2.10
Parent * # of same sex siblings 6 to 12				-0.24	0.50	0.79
Parent * # of same sex younger siblings 13+				0.68	0.48	1.98
Parent * # of different sex siblings 0 to 5				-0.78	0.44	0.46
Parent * # of different sex siblings 6 to 12				-0.24	0.48	0.79
Parent * # of diff sex younger siblings 13+				0.31	0.44	1.36
Recession * Black, non-Hispanic				0.26	0.37	1.30
Recession * Hispanic				0.63*	0.29	1.88
Recession * Other race				0.48	0.43	1.62
Recession * Low-income household				-0.61*	0.26	0.54
Recession * Parent employed full-time				0.55	0.34	1.74
Constant	-2.06***	0.18	0.13	-1.94***	0.19	0.14
$\chi^2$		373.51***			486.04***	
<i>Df</i>		21			39	

Note: *B* = Coefficient Estimates; *SE* = Standard Error; *OR* = Odds Ratio. \**p* < .05. \*\**p* < .01. \*\*\**p* < .001.

Table 4: Regression Analysis for Proportion of Sibling Care Dedicated to Direct Care (N = 1,459)

Variables	Main Effects			Main Effects and Interactions		
	B	SE B	$\beta$	B	SE B	$\beta$
<i>Contextual factors:</i>						
Parent present	0.32***	0.03	0.27	0.36***	0.09	0.30
Hours of sibling care	0.12***	0.02	0.33	0.12***	0.02	0.32
Weekend	-0.11***	0.02	-0.11	-0.10***	0.02	-0.10
<i>Individual characteristics:</i>						
Female	0.04	0.02	0.04	0.17**	0.05	0.19
Respondent age	-0.00	0.02	-0.00	-0.00	0.02	-0.00
<i>Microsystem:</i>						
# of same sex siblings aged 0 to 5	0.00	0.03	0.00	0.03	0.04	0.03
# of same sex siblings aged 6 to 12	-0.13***	0.02	-0.18	-0.08**	0.03	-0.11
# of same sex younger siblings 13+	0.10***	0.02	0.12	0.11***	0.03	0.13
# of different sex siblings aged 0 to 5	-0.07*	0.03	-0.06	-0.05	0.04	-0.05
# of different sex siblings aged 6 to 12	-0.13***	0.02	-0.19	-0.12***	0.03	-0.17
# of different sex younger siblings 13+	0.12***	0.03	0.13	0.13**	0.04	0.14
Older sibling of same sex	-0.08*	0.03	-0.06	-0.08*	0.03	-0.07
Older sibling of different sex	0.03	0.03	0.03	0.04	0.03	0.03
Non-parent adult in home	-0.05	0.04	-0.04	-0.05	0.04	-0.04
Low-income household	-0.03	0.03	-0.03	-0.03	0.03	-0.03
Parent employed full-time	-0.03	0.03	-0.01	-0.01	0.04	-0.01
<i>Macrosystem:</i>						
Black, non-Hispanic	-0.04	0.03	-0.03	-0.01	0.04	-0.00
Hispanic	-0.04	0.03	-0.04	-0.02	0.03	-0.02
Other race <sup>5</sup>	0.01	0.04	0.01	-0.00	0.05	-0.00
Recession phase	-0.06*	0.03	-0.05	-0.00	0.08	-0.00
Jobless recovery phase	-0.01	0.04	-0.01	-0.01	0.04	-0.01
Post-recession phase	-0.05*	0.03	-0.06	-0.05*	0.03	-0.06

<sup>5</sup> The reference base for categorical variables was a White, non-Hispanic adolescent boy on a weekday without a parent present, living during the pre-recession years in a home with no non-parent adults and a household income above 1.5 times the poverty threshold.

Table 4 continued

Variables	Main Effects			Main Effects and Interactions		
	<i>B</i>	<i>SE B</i>	$\beta$	<i>B</i>	<i>SE B</i>	$\beta$
<i>Interactions:</i>						
Female * # of same sex siblings 0 to 5				-0.07	0.07	-0.04
Female * # of same sex siblings 6 to 12				-0.19***	0.05	-0.16
Female * # of same sex younger siblings 13+				0.01	0.05	0.01
Female * # of different sex siblings 0 to 5				-0.07	0.06	-0.05
Female * # of different sex siblings 6 to 12				-0.08*	0.04	-0.10
Female * # of diff sex younger siblings 13+				0.00	0.06	0.00
Female * parent present				-0.03	0.07	-0.02
Parent present * # of same sex siblings 0 to 5				-0.03	0.11	-0.01
Parent * # of same sex siblings 6 to 12				0.03	0.08	0.02
Parent * # of same sex younger siblings 13+				-0.13	0.08	-0.06
Parent * # of different sex siblings 0 to 5				0.05	0.07	0.02
Parent * # of different sex siblings 6 to 12				0.08	0.06	0.06
Parent * # of diff sex younger siblings 13+				-0.10	0.08	-0.06
Recession * Black, non-Hispanic				-0.16*	0.08	-0.05
Recession * Hispanic				-0.04	0.07	-0.02
Recession * Other race				0.12	0.10	0.03
Recession * Low-income household				0.02	0.06	0.01
Recession * Parent employed full-time				-0.04	0.08	-0.03
$R^2$					0.38	0.40
$F$ for change in $R^2$					25.89***	17.25***

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