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Household Structure and Children's Educational Attainment: A Perspective on Coresidence with Grandparents

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Abstract

Children from alternative households complete fewer years of schooling. Yet little is known about the implications of coresidence with grandparents for educational attainment. Using data from the National Longitudinal Study of Adolescent Health (N = 10,083), this study found that extended households with two biological parents were not detrimental to high school completion or college enrollment. Although coresidence with grandparents did not compensate for not living with two biological parents, it seemed to be beneficial for the educational attainment of youth from single-mother households. In contrast, skipped-generation households were associated with a persistent disadvantage for educational attainment. Limited socioeconomic resources partially accounted for the adverse effects of alternative households, whereas parenting quality did not explain these effects. Interactions of gender by household structure suggested that stepfather households could have negative consequences for high school completion and college enrollment only for girls.

Keywords

coresident grandparents; educational attainment; gender; household structure; parenting; socioeconomic status

Educational attainment matters in adulthood for life outcomes and is contingent on household structures in childhood. Lower attainment is related to off-time adult role transitions, low occupational and economic achievement, poor physical and psychological health, and unstable marital relationships (Baum & Ma, 2007). Compared to youth with two biological married parents, those in alternative households tend to complete fewer years of schooling (e.g., Brown, 2004; Sun, 2003). Little is known, however, about the implications of coresidence with grandparents for the educational attainment of children. Yet, in 2001, 6.2 million U.S. children (9%) lived in a household with at least one grandparent present (Kreider & Fields, 2005). Approximately 2 million children (3%) coresided with at least one grandparent in two-parent families (i.e., with either biological, adoptive, or stepparents), 2.4 million children (3.4%) were in single-mother households with one or more grandparents, and 1.4 million children (1.9%) lived in skipped-generation households (grandparents rearing grandchildren without coresident parents).

Unlike most prior research, the present study investigates differences in the educational attainment of adolescents not only from two biological parent families, stepfather families, and single-mother families, but also from extended households (i.e., households where at least one grandparent coresides with a parent or parent(s) and children) of two biological parents, extended households with single mothers, and skipped-generation households. Also,

in contrast to the majority of previous studies, we distinguish between divorced and never-married mothers. Compared to children of divorced mothers, those of never-married mothers are more disadvantaged in terms of family socioeconomic resources and the nonresident father's involvement, but they are less likely to be exposed to certain types of problematic family processes such as interparental conflict, disruptions in mother-child relationships, and multiple parental marital transitions (Kendig & Bianchi, 2008). For the sake of brevity, we refer to adolescents' living arrangements other than nuclear households with two biological parents (i.e., without coresident grandparents) as "alternative households."

Using data on 10,083 youths from Wave 1 (1994–1995) and Wave 4 (2007–2008) of the National Longitudinal Study of Adolescent Health (Add Health), this study examines high school completion, college enrollment, and college graduation. To date, research on extended and skipped-generation households and educational attainment (e.g., Aquilino, 1996; DeLeire & Kalil, 2002; Sun, 2003) has not assessed young people's college graduation. Any college experience is beneficial when compared to no postsecondary education. But college graduates enjoy better options and wider opportunities in the job market, greater earnings, and a higher standard of living than their counterparts who attended some college but did not earn a degree (Baum & Ma, 2007). Building on theory and prior research, we attempt to disentangle household structure effects on young people's educational attainment from the effects of family socioeconomic resources and of parenting quality. In addition, we examine whether the association between household structures and educational attainment varies by young people's gender because mixed findings of available research in this area warrant further investigation.

Background

Research has consistently shown a greater risk of low educational achievement and attainment for children from stepfather and single-mother households than for those from two biological parent families (e.g., Brown, 2004; Demo & Acock, 1996). Studies on the well-being of children who have ever coresided with grandparents are not as numerous as research on other alternative households. In particular, the potential impact of extended households with two biological parents in the United States is largely unknown, whereas research on Taiwan indicated that these households could be beneficial for children's academic performance (Pong & Chen, 2010).

Available studies on extended single-mother households had inconsistent findings. Some research supported the idea that coresiding with grandparents can be advantageous for the educational attainment of children of divorced- as well as never-married mothers (Aquilino, 1996; DeLeire & Kalil, 2002). For example, in Aquilino's study, children born to never-married mothers were more likely to complete high school and to enroll in postsecondary education if they coresided with grandparents at some point before age 15. Similarly, research by DeLeire and Kalil showed that compared to their counterparts from two biological parent families, eighth graders from extended households with never-married mothers were more likely to finish high school and to enroll in college. Also, controlling for income, eighth graders from extended households with divorced mothers were no less likely to finish high school and to enroll in college than were youth residing with two biological parents (DeLeire & Kalil). In contrast, a study by M. S. Hill, Yeung, and Duncan (2001) suggested that children coresiding with grandparents in single-mother households in late childhood, i.e., between ages 11–15, might complete fewer years of schooling. The discrepancies in findings can be explained in part by variations across studies in the children's ages, duration of a particular household structure, timing of coresidence with grandparents, and levels of education assessed.

The few available studies on child outcomes in skipped-generation households demonstrated that youth in these living arrangements tend to have low academic achievement and educational attainment (Edwards & Mumford, 2005; Sun, 2003). For example, Aquilino's (1996) research on children born to unmarried mothers showed that youth reared in grandparents' households without a mother present were less likely to complete high school and to enroll in postsecondary education than were those who continuously resided in single-mother households. In addition, DeLeire and Kalil's (2002) study discussed above revealed that compared to their counterparts from households with two biological parents, adolescents from skipped-generation households were less likely to graduate from high school.

The effects of household structure on children's educational outcomes can be shaped by numerous family factors. Research and theoretical perspectives suggest that socioeconomic resources and parenting are particularly important among these factors (Demo & Acock, 1996; Hill, N.E. et al., 2004). Gender, unstable living arrangements, and other variables have also been linked to child outcomes and are included as control variables in the current study.

Socioeconomic Resources

The economic vulnerability framework argues that variations in family socioeconomic resources such as income, parental education—especially maternal education—and welfare receipt, as an indicator of inadequate financial resources, can account for differences in lower educational attainment of children from alternative households (McLanahan & Sandefur, 1994). Families with higher socioeconomic status (SES) have more monetary as well as nonmonetary resources to facilitate children's educational success (Davis-Kean, 2005). In particular, SES can be directly related to educational outcomes through the availability of material resources in the family that have an impact on the quality of the child's home environment, school programs, and extracurricular activities (Morris & Gennetian, 2003).

In addition, a family process perspective implies that family socioeconomic background matters for children's educational outcomes in part through family socialization, namely parenting behavior and practices (Crosnoe & Cavanagh, 2010). For example, family SES is associated with parents' ability and skills to promote children's academic success by fostering educational and occupational aspirations, by providing opportunities for learning outside of school, and by discussing with children academic strategies and plans for the future (Bianchi, Robinson, & Milkie, 2006). At the same time, low SES has adverse consequences for educational attainment because parental stress associated with socioeconomic disadvantage leads to less engaged and less supportive parenting and because the lack of positive role models in households on welfare may affect children's preferences for educational success, occupational achievement, and economic independence (Ku & Plotnick, 2003).

Families with two biological parents have higher levels of socioeconomic resources than do households with only one or no biological parents present. Yet, fewer socioeconomic resources may be available to children in extended households with two biological parents (Hill, M.S. et al., 2001; Pong & Chen, 2010), because the presence of grandparents in these households is generally linked to issues in the grandparent generation such as financial difficulties and poor health (Szinovacz, 1996). Stepfather households tend to have similar levels of socioeconomic resources as two biological parent families (Lichter, Roempke Graefe, & Brown, 2003). In contrast, single-mother households are very likely to be disadvantaged in terms of financial resources and parental education, especially if the mother has never been married (Demo & Acock, 1996; Hill, M. S. et al., 2001). Nevertheless, if grandparents are present in single-mother households, children are

substantially less likely to live below or near the poverty level (Mutchler & Baker, 2009). Yet, children residing in grandparents' households with no parents are at particular risk of living in poverty (Kreider & Fields, 2005).

Previous studies showed that limited socioeconomic resources could completely or partially account for lower educational achievement and attainment among youth from single-mother households with and without coresident grandparents and from skipped-generation households (e.g., DeLeire & Kalil, 2002; Sun, 2003). In contrast, SES did not explain the negative effects of stepfather households on children's educational outcomes. The presence of a stepfather in the household tends to be associated with increased socioeconomic resources. Nevertheless, these resources may not be available for stepchildren's educational expenses, such as extracurricular activities and a college education, because the stepfather may be unwilling to invest in biologically unrelated children.

On the basis of the economic vulnerability framework and prior research, we expect that when family income, maternal education, and welfare receipt are taken into account, the negative effects of alternative households for youth's educational attainment will be attenuated. In particular, these effects will diminish for young people from never-married mother households with and without coresident grandparents and from skipped-generation households, because in comparison with other alternative households, these living arrangements tend to have the lowest levels of socioeconomic resources. We also anticipate that compared to decreases in the effects of other alternative households, decreases in the effects of stepfather families will be less substantial, because the financial circumstances of single mothers are likely to improve after remarriage.

Parenting

The socialization perspective maintains that consistent and supportive parenting is associated with better outcomes for children and that the presence of two adults in the household is important for adequate parenting (McLanahan & Sandefur, 1994). Furthermore, the family process framework suggests that variations in family processes such as parenting behaviors and practices can account for differences in children's educational attainment across household structures (Crosnoe, Mistry, & Elder, 2002). Generally, in addition to greater socioeconomic resources, greater investments of parental time, attention, and support are available to children in two biological parent households (Amato, 2005).

Despite the possibility for multigenerational conflict, extended households with two biological parents as well as with single mothers can be beneficial for children because coresident grandparents can help take care of children, provide assistance to parents with errands and household chores, and contribute to family income, all of which can have positive implications for overall parenting quality in the household (Bryson & Casper, 1999). Yet, coresidence with grandparents in two biological parent families may lead to lower parental involvement with children because, as discussed above, the formation of these households may be related to issues in the grandparent generation such as deteriorating health (Hill, M.S. et al., 2001; Pong & Chen, 2010). In contrast, three-generation households with single mothers tend to be formed in response to needs and problems in the parent generation (Szinovacz, 1996).

Due to the presence of an additional adult, extended single-mother households as well as stepfather households can potentially have positive implications for parenting quality and, as a result, for children's outcomes. Single mothers without an additional adult in the household may have less access to emotional as well as tangible support, experience role overload, and have insufficient time and energy to devote to their children, which can lead to less involved parenting (Carlson & McLanahan, 2006). Compared to never-married mother

families, households with divorced mothers may have even lower parenting quality (Demo & Acock, 1996) because parental marital transitions are stressful for individuals and may lead to deteriorations in parent–child relationships. Nevertheless, some divorced mothers reported several positive attributes of postdivorce households for their parenting, including less tension and greater cohesion in the household, more time to spend with children, and the absence of conflict with the other parent over parenting practices (Morrison, 1995).

Extended households with single mothers and stepfather households may also have some disadvantages for parenting quality, however. For example, because their parenting roles are relatively tenuous, coresident grandparents, as well as stepfathers, may have more conflict with mothers over parenting practices and less authority over children than biological parents. At the same time, extended households with single mothers can be associated with more involved and supportive parenting than stepfather households. Because they are biologically related, grandparents may have more interest in the children's well-being and may develop a more secure attachment and a more stable emotional bond with them than stepfathers (Kivett, 1991). Children, in turn, can find it easier to adjust to coresidence with grandparents than with stepfathers, partly because they are less likely to perceive grandparents as competitors for the mother's time and attention (Astone & McLanahan, 1991).

In contrast, stepfathers may be less involved with their stepchildren for several reasons, including little institutional support for the stepparent role, stepfathers' responsibilities to children from previous marriages, a tendency for parents to invest less in nonbiological children, and children's rejections of stepfathers (e.g., O'Connor, Dunn, Jenkins, & Rasbash, 2006). Stepfather households may also be related to children's weaker relationships with the mother because she has to devote some of her time and attention to the stepfather. But stepfather households may become gradually more beneficial for children as the family adapts to new roles and routines (Wagmiller, Gershoff, Veliz, & Clements, 2010). Over time, increased family socioeconomic resources, involvement of stepfathers with their stepchildren, and an enhanced family environment, including more parental support and supervision, may lead to better outcomes of children.

Grandparents' parenting skills and practices in skipped-generation households have not been investigated extensively. However, available research indicated that grandparents' parenting behaviors might be contingent on several interrelated factors in addition to those that can have implications for parents' childrearing (Goodman, 2007). These factors can include grandparents' health, their relationships with the child's biological parents, and the circumstances under which grandparents assumed responsibility for their grandchildren.

Following prior research, the present study considers several aspects of parenting that were found to make a difference in children's educational outcomes, including the quality of the parent–child relationship (Astone & McLanahan, 1991), parental control (Brown & Iyengar, 2008), the frequency of family meals (Eisenberg, Olson, Neumark-Sztainer, Story, & Bearinger, 2004), parental knowledge of children's school activities (Harris & Goodall, 2008), parental educational expectations (Davis-Kean, 2005), and parents' personally knowing the child's friends and the friends' parents (Stephenson, Quick, Atkinson, & Tschida, 2005). Prior research found that the association between household structure and children's educational attainment were partly accounted for by parenting (Astone & McLanahan; Ermisch & Francesconi, 2001; Sun, 2003). Some studies, however, demonstrated that parenting, despite its importance, did not mediate these associations (DeLeire & Kalil, 2002; Dunifon & Kowaleski-Jones, 2002).

In keeping with the socialization theory and prior research, we expect that when parenting quality is taken into account, differences in educational attainment between children from nuclear households with two biological parents and alternative households will diminish. We anticipate that compared to other alternative households, parenting quality is more likely to reduce these differences for youth from skipped-generation households, single-mother families without coresident grandparents, and stepfather families.

Gender

According to the social learning theory, the implications of certain household structures on child outcomes may vary by children's gender (Ram & Hou, 2005). Children are more likely to identify with and to internalize the attitudes, beliefs, and values of the same-gender parent. Moreover, gender socialization and greater perceived similarity can lead to more reciprocal and mutually responsive ties within same-gender parent-child dyads.

There is a paucity of studies that specifically examined gender differences in children's educational attainment across various household structures. However, research on other outcomes suggests that boys residing with divorced or never-married mothers can be disadvantaged because they typically lack a male role model in the household. At the same time, the gender-specific parenting practices and a strong bond with the mother can protect daughters from potential adverse effects of residing without a father figure (Aquilino, 1991). In contrast, in stepfamilies, boys seem to benefit from the presence of a man in the household, whereas girls often find it difficult to establish a nonconflictual relationship with a stepfather (Blaauboer & Mulder, 2010). Some studies, however, did not observe any gender differences in child outcomes in single-mother and stepfather households (e.g., Fischer, 2007) or found stronger negative effects for daughters in divorced-mother families (e.g., Cooney & Kurz, 1996). Similarly, some studies found inconsistent gender differences in extended and skipped-generation households (Aquilino, 1991; Dubowitz & Sawyer, 1994), whereas others did not find any differences (e.g., Sun, 2003).

On the basis of social learning theory and prior research, we expect that the effects of stepfather families will be stronger for daughters, whereas the effects of single-mother households will be stronger for sons. Given the paucity of research on extended and skipped-generation households, we do not test any specific hypotheses regarding gender differences in these living arrangements.

Control Variables

We consider duration of Wave 1 household structure and the number of mother's marital transitions by Wave 1 as control variables, because instability in living arrangements were found to be related to lower SES, less effective parenting, and poorer outcomes for children (Osborne & McLanahan, 2007). Following previous studies in this area, we also included adolescents' characteristics at Wave 1 such as age, race/ethnicity, the number of siblings, and depressive symptoms as control variables, because of their importance for educational outcomes (e.g., Heard, 2007; Needham, 2009). Additionally, this study controls for such aspects of adolescent's school functioning at Wave 1 as cognitive ability, school problems, suspension and expulsion, school absences, college aspirations, and perceived intelligence because they were found to be linked to educational attainment (Chen & Kaplan, 2003).

Method

Data

This study draws on data from Wave 1 (1994–1995) and Wave 4 (2007–2008) of the Add Health, a nationally representative study of adolescents in grades 7 through 12 ($N = 90,118$).

from a sample of 80 high schools and 52 middle schools in the United States. Respondents were selected using a multistage, stratified, school-based, cluster sampling design with several oversamples. Wave 1 of the Add Health also contained in-home interviews with a random sample of adolescents ($N = 20,745$) and with one resident parental figure, 85% of whom were mothers ($n = 17,670$). Parents were interviewed only at Wave 1 of the Add Health. Wave 4 included in-home interviews with the original respondents ($n = 15,701$; 76% of Wave 1 adolescents, aged 24–32 at Wave 4).

Measures of household structure, SES, parenting, and adolescents' characteristics, and school functioning were taken from Wave 1, whereas variables of educational attainment came from Wave 4. Because information from parental respondents was necessary to distinguish between divorced and never-married mothers and to create measures of family income and welfare in adolescence, we eliminated from our analytic sample adolescents who did not have interviews with their biological mothers or, in case of skipped-generation households, with grandmothers available at Wave 1 ($n = 5,257$; 25.3%). In addition, we excluded adolescents who did not reside in one of the household structures of interest at Wave 1 ($n = 1,273$, 8.2% of the remaining Wave 1 respondents). Also, we did not include Wave 1 adolescents who were not reinterviewed at Wave 4 ($n = 2,758$, 19.4%) and did not have valid sampling weights at Waves 1 and 4 ($n = 901$, 7.9%). Those who attrited by Wave 4 were more likely to be in the following categories: resided with never-married mothers at Wave 1, had less educated parents, were less likely to be female, were older, were less likely to be White, had lower cognitive ability, and reported fewer school absences. Finally, we limited our sample to those adolescents who were White, Black, or Hispanic, because of very small cell sizes for other ethnic/racial groups for certain household structures ($n = 473$, 4.5%). Our final sample consists of 10,083 young people.

Dependent Variables

High school completion (0 = no, 1 = yes) indicated whether respondents had graduated from high school or received general equivalency diplomas (GEDs; $n = 729$, 7.23%). Excluding the GED recipients from the analysis did not change the results. *College enrollment* (0 = no, 1 = yes) measured whether respondents had ever attended a 2-year ($n = 742$, 7.36%) or 4-year college. *College graduation* (0 = no, 1 = yes) captured whether the respondents had received a bachelor's degree by Wave 4.

Independent Variables

Household structure—Eight mutually exclusive types of Wave 1 household structure were constructed on the basis of detailed household rosters in which adolescents at Wave 1 reported on the relationship of every household member to them. To distinguish between divorced and never-married mothers, we used in-home interviews with adolescents' mothers at Wave 1. The analyses examined households with : (a) two biological parents (reference category), (b) two biological parents with a grandparent, (c) never-married mother with a grandparent, (d) divorced mother with a grandparent, (e) grandparents with no parents present, (f) never-married mother; (g) divorced mother, and (h) stepfather (0 = no, 1 = yes).

Socioeconomic resources—We included three measures of socioeconomic resources of the adolescent's family at Wave 1: *income*, *welfare receipt*, and *maternal education*. *Income*, taken from interviews with the mother or the grandmother in skipped-generation households at Wave 1, indexed total family income in 1994. It was logged in the analyses to correct for skewness. *Welfare receipt* measured whether the mother or the grandmother reported receiving public assistance (0 = no, 1 = yes). *Mother's education* (grandmother's education in case of skipped-generation families) was reported by the adolescent at Wave 1 (1 = less than high school, 4 = college or more).

Parenting—Excepting parental social closure, all other measures of parenting were taken from in-home interviews with adolescents at Wave 1. In skipped-generation household, these measures indexed parenting of grandmothers. *Relationship quality with mother* was a summed indicator of adolescents' responses to four questions regarding how close they felt to their mother, how warm and loving their mother was toward them, how satisfied they were with communication with their mother, and how satisfied they were with the relationship with their mother ($\alpha = .86$). The responses for the last three questions were reverse-coded so that values for all four questions would range from 1 = *not at all* to 5 = *very much*.

Parental control was a summed indicator constructed from responses to seven no/yes questions asking whether available parental figures in the household let adolescents make their own decisions about weekend curfew, friends, clothes, the amount of television to watch, television programs, bedtime, and food (range 0 to 7; $\alpha = .62$). *Shared dinner* measured the number of days in the past week on which at least one of the resident parental figures was present during the evening meal. *Mother's school involvement* was a summed indicator of adolescents' responses to two no/yes questions regarding whether, in the past four weeks, the adolescent had done the following activities with the mother: talked about school work or grades and talked about other things the adolescent was doing at school ($\alpha = .65$). *Mother's aspirations for college* captured adolescents' perceptions on how disappointed on a scale from 1 = *lowest* to 5 = *highest* the mother would be if they did not graduate from college. *Mother's social closure* represented the mother's responses to three no/yes questions asking whether she knew what school the adolescent's best friend went to, whether she had met the best friend, and whether she had met the best friend's parents ($\alpha = .68$). This measure was dichotomized to reflect parental affirmative responses to at least one of the three questions (0 = *no*, 1 = *yes*).

Control Variables

Household characteristics at Wave 1—Adolescents' household rosters and mother's or grandmother's reports on her relationship history at Wave 1 were used to construct *duration* in Wave 1 living arrangements and the *number of marital transitions* by Wave 1. *Duration* was equal to the number of years since the relevant change in the household structure (e.g., coresidence with grandparents, a remarriage, and a marital disruption). It was equivalent to the adolescent's age at Wave 1 for nuclear households with two biological parents and households with never-married mothers. The *number of marital transitions* reflected the number of changes in the mother's or grandmother's marital status by Wave 1 during the adolescent's life or since the adolescent started living in a skipped-generation household, respectively.

Adolescent's characteristics at Wave 1—*Girl* captured adolescent's gender and was coded 0 = *no* and 1 = *yes*. *Age* was dichotomized (0 = *15 or younger*, 1 = *16 or older*) because duration of Wave 1 household structure was measured in years. *Race/ethnicity* was measured by three dummy variables: *White* (reference category), *Black*, and *Hispanic* (0 = *no*, 1 = *yes*). In the Add Health, adolescents were asked a separate question on Hispanic ethnicity. We assigned all adolescents who identified themselves as Hispanic to a single ethnic category, regardless of their race. Adolescents had an option to provide multiple responses to the question on race. Those who chose more than one race were asked to select a single race category, which was used in this study. The *number of siblings* was obtained from the adolescents' household roster.

Adolescent's depressive symptoms were measured by a mean value of adolescents' responses to a 19-question Center for Epidemiological Studies Depression scale (CES-D;

Radloff, 1977) regarding their emotional state during the past week ($\alpha = .86$). The items on the scale cover a wide variety of potential depressive symptoms (e.g., not feeling like eating, feeling depressed, and not enjoying life). Responses for each item ranged from 0 = *never or rarely* to 3 = *most of the time or all of the time*. Responses to 4 items were reverse-coded so that higher values for all items would indicate more frequent depressive symptoms.

School functioning at Wave 1—*Cognitive ability* was measured with the Add Health Picture Vocabulary Test, an abridged version of the Peabody Picture Vocabulary Test, Revised (Dunn, 1981). We used scores standardized by age with a mean of 100 and a standard deviation of 15. An indicator of *school problems* was constructed as a mean scale from 4 questions capturing whether adolescents had problems getting along with teachers, paying attention in school, doing homework, and getting along with other students since the start of the recent school year ($\alpha = .69$). Responses to each question ranged from 0 = *never* to 4 = *every day*.

Suspension/expulsion was created as a dichotomous measure reflecting whether adolescents were ever suspended or expelled from school (0 = *no*, 1 = *yes*). The measure of *school absences* was created from adolescents' reports to two questions on their absences during the recent school year and indicated the maximum of either excused or unexcused absences (0 = *none*, 1 = *1 or 2 times*, 2 = *3 to 10 times*, and 3 = *more than 10 times*). *Educational aspirations for college* were based on adolescents' perceptions of how likely they were to go to college (1 = *low*, 5 = *high*). Adolescents' *self-rated intelligence* reflected how intelligent they were compared to their age peers (1 = *moderately below average*, 6 = *extremely above average*).

Missing values on all independent and control variables were handled using the Stata command *ICE* for multiple imputation. Most variables had less than 1% of missing values. Variables requiring the most imputed values were income (13% for the total analytic sample) and cognitive ability (4%). We included flag variables for imputed data (0 = *not imputed*, 1 = *imputed*) to assess whether cases with missing values were markedly different from other cases.

Analytic Strategy

Analyses used logistic regression models that were based on *SVY* commands in STATA to adjust for the stratified, school-based sampling design. This technique ensures unbiased standard errors and reduces the chance of false-positive significance tests (Chantala & Tabor, 1999). Analyses were weighted to adjust for oversamples. Six models were estimated for each dependent variable. Variables were entered in successive blocks, which helped examine how key sets of variables accounted for the effects of household structure. Model 1 included measures of household structures, household characteristics, and adolescent's demographic characteristics. Models 2 and 3 examined how much of the association between household structure and educational attainment was explained through socioeconomic resources and parenting quality, respectively. Model 4 included measures of SES and parenting simultaneously. Model 5 added adolescent's depressive symptoms and school functioning. Finally, statistically significant interaction terms between household structure and young person's gender, if any, were presented in Model 6. Regressions for high school completion were based on the total analytic sample ($N = 10,083$), regressions for college enrollment and college graduation were based on a subsample of adolescents who had finished high school ($n = 9,434$) or had attended college ($n = 6,732$), respectively.

Results

Descriptive Statistics

Table 1 reports means/percentages for all the variables in the analyses for the total sample and by household type. In terms of educational attainment, youth from families with two biological parents were less likely to graduate from college if their grandparents were present in the household at Wave 1. Compared to those from nuclear households with two biological parents, adolescents from alternative households were less likely to finish high school, to enroll in college, and to graduate from college, with two exceptions. Namely, youth from extended households with never-married mothers were not significantly less likely to enroll in college, whereas adolescents from extended households with divorced mothers were not significantly less likely to complete high school than those from nuclear households with two biological parents.

Regression Results

High school completion—Table 2 presents the results of the logistic regression models for high school completion. Model 1 estimated the extent to which indicators of household structure accounted for differences in educational attainment of adolescents, controlling for household characteristics and adolescent's demographic characteristics. The effect of extended households with two biological parents was positive but not statistically significant. Relative to those from nuclear households with two biological parents, children from alternative households were less likely to finish high school, with one exception: The negative effect of extended households with divorced mothers was not statistically significant.

Model 2 added family income, welfare, and mother's education. The addition of socioeconomic resources considerably reduced the risk of not completing high school for young people from alternative households. In particular, the odds ratio for extended households with never-married mothers became nonsignificant. Model 3 included measures of parenting quality, without accounting for SES. In spite of their importance for high school completion, our measures of parenting did not significantly decrease the disadvantages associated with alternative household structures. Furthermore, when family socioeconomic resources and parenting were simultaneously entered into Model 4, the household structure coefficients were similar to those in Model 2, which had only measures of SES. In Model 5, the inclusion of adolescent's depressive symptoms and school functioning reduced the adverse effect of never-married mother families to nonsignificance. Model 6 shows that the risk of not finishing high school in stepfather families was statistically significant only for girls.

College enrollment—Table 3 shows the results for college enrollment, following the same sequence of models as in Table 2. Model 1 indicates that extended households with divorced and never-married mothers and stepfather households were not associated with a statistically significant risk of not enrolling in college. At the same time, compared to their counterparts from nuclear households with two biological parents, children from divorced and never-married mother households without grandparents and from skipped-generation households were less likely to enroll in higher education. The negative implications of these households were reduced to nonsignificance once measures of socioeconomic resources were added in Model 2. In contrast, Model 3 demonstrates that despite their importance, our measures of parenting did not considerably mediate the risk of not enrolling in college associated with divorced and never-married mother households without grandparents and with skipped-generation households. Furthermore, the coefficients for these alternative

households were almost the same in Model 4, which adjusted simultaneously for SES and parenting, and in Model 2, which included only measures of SES.

As shown in Model 5, school functioning explained none of the differences in college enrollment across household structures. The interaction term in Model 6 suggests that residing in stepfather families in adolescence decreased the odds of enrolling in higher education only for girls. Note that after controlling for SES in Model 2, youth in extended households with never-married mothers were more likely to enroll in college than were those from households with two biological parents, though this association did not reach statistical significance at conventional levels.

College graduation—Regression models for college graduation are presented in Table 4 in the same sequence as in previous tables. Model 1 indicates that compared to nuclear households with two biological parents, alternative households, except for extended households with divorced mothers, were associated with a statistically significant risk of not graduating from college. After measures of socioeconomic resources were introduced in Model 2, the risk of not receiving a bachelor's degree was considerably reduced for young people who resided in adolescence in households with divorced and never-married mothers with and without grandparents and in skipped-generation households. In particular, the coefficients of nuclear households with divorced mothers and of extended households with never-married mothers became nonsignificant.

Similar to the results for high school completion and college enrollment, Model 3 shows that parenting, although important, did not account for the decreased odds of college graduation for young people from alternative households. Also, the odds ratios in Model 4 were similar to those in Model 2. Household structure coefficient did not change significantly after the introduction of school functioning in Model 5. There were no statistically significant interactions between measures of household structure and adolescents' gender.

Supplementary analysis for age cohorts—Because of the wide age range (11–18) of adolescents in the study sample at Wave 1, we conducted logistic regression analysis separately for younger (15 or younger) and older (16 or older) adolescents. The results for younger and older adolescents were similar (not shown), with one major exception. Compared to nuclear households with two biological parents, extended households with divorced mothers were associated with a decrease in the odds of college enrollment for younger adolescents, but with an increase in the odds of college enrollment for older adolescents. These findings are consistent with research of M. S. Hill and colleagues (2001) indicating that coresidence with grandparents in single-mother households between ages 11–15 can have negative implications for years of completed schooling. However, M. S. Hill and colleagues (2001) did not examine adolescents older than age 15. Potential multigenerational conflict over parenting practices and the circumstances under which these households were formed may be particularly detrimental for children during early adolescence when the majority of changes associated with puberty are taking place. In contrast, coresident grandparents' guidance, advice, and support can be beneficial for children in late adolescence when they are making educational and occupational plans.

Discussion

With a particular focus on such understudied living arrangements as extended households with two biological parents, extended household with single mothers, and skipped-generation households, this study examined the associations between exposure to alternative household structures in adolescence and young people's educational attainment. More specifically, we assessed whether socioeconomic resources and parenting quality can

explain these associations. In addition, this study considered not only high school completion and college attendance, but also college graduation. Building on a growing body of research on variations across different types of single-mother families, we also distinguished between divorced and never-married mothers. Furthermore, this study paid attention to possible gender differences in the implications of household structure for youth's educational attainment.

Our study confirms the findings of prior research showing that young people from alternative households might have lower educational attainment relative to those from two biological parent families (e.g., Brown, 2004; Sun, 2003). But there were some exceptions. Coresidence with grandparents in two biological parent households did not have adverse effects on high school completion and college enrollment, although it was negatively associated with college graduation. In addition, whereas coresiding with grandparents in households with never-married and divorced mothers did not make up for not living with both biological parents, it was not detrimental and, under certain circumstances, was even beneficial for young people's educational attainment. The findings of this study are consistent with prior research suggesting that educational attainment of youth residing in extended households with two biological parents and extended households with single mothers can be comparable or even better than that of their counterparts from families with two biological parents but without coresident grandparents (Aquilino, 1996; DeLeire & Kalil, 2002; Pong & Chen, 2010).

Extended single-mother families can have some advantages for children's well-being because as discussed earlier, coresident grandparents can provide single mothers and their children with emotional, financial, and instrumental support. Future research would benefit from examining grandparents' involvement with children and relationship quality between family members in these households, which we did not take into account due to data limitations. In addition, the presence of grandparents in single-mother households may provide children with a sense of stability, because grandparents are among the few people in children's lives on whom they can rely across family transitions and disruptions (Kornhaber & Woodward, 1981).

Socioeconomic resources

Consistent with the economic vulnerability perspective and prior research, family socioeconomic resources were important predictors of young people's educational attainment (e.g., Davis-Kean, 2005). As expected, limited socioeconomic resources partially or completely accounted for lower educational attainment of young people of divorced and never-married mothers with and without coresident grandparents and from skipped-generation households. The findings also suggest that because of lower socioeconomic resources, extended households with never-married mothers were not as beneficial for college enrollment as they could have been if they had higher levels of financial resources and maternal education. In contrast, socioeconomic resources did not attenuate the negative effects of stepfather households. These findings are in line with prior research in this area (DeLeire & Kalil, 2002; Sun, 2003).

Variations in socioeconomic resources did not explain the negative effect on college graduation of extended households with two biological parents. There are several possible explanations for this finding. In spite of adequate levels of income, fewer financial resources may be available to children in these households that tend to be formed because of issues in the grandparent generation (Aquilino, 1996; Hill, M.S. et al., 2001). Moreover, additional analysis showed that parents in these households were less likely to be college graduates when compared to those in two biological parent households without coresident grandparents. Does this educational difference indicate less support and encouragement to

graduate from college? In the present study, the multigenerational households were also more likely to be Hispanic than White. Hispanics tend to marry and start a family at a younger age (Hynes, Joyner, Peters, & DeLeone, 2008), events that can interfere with advanced education.

Parenting

In accord with the socialization perspective and previous studies, the findings indicate that parenting quality matters for children's educational attainment (Demo & Acock, 1996; Hill, N. E. et al., 2004). Yet, unlike socioeconomic resources, our measures of parenting did not considerably account for the effects of household structure on educational attainment, which is consistent with several prior studies (e.g., DeLeire & Kalil, 2002; Dunifon & Kowaleski-Jones, 2002). Some previous research did find that parenting accounted, at least partly, for lower educational outcomes for children in alternative households (e.g., Astone & McLanahan, 1991; Ermisch & Francesconi, 2001; Sun, 2003). The discrepancies between our findings and those of other studies can be explained by differences in measures of parenting and household structures as well as by variations in children's ages and outcomes in question across studies.

In addition, the findings of the present study suggest that family SES and parenting of residential mothers are not the only factors that can be responsible for differences in young people's educational attainment across household structures. The remaining household structure differences may be explained by parenting of coresident grandparents and stepfathers, as well as nonresident biological fathers, which we did not consider in our study due to data limitations. The family process perspective emphasizes the importance for children's outcomes not only of parenting but also of family members' relations and interactions with each other, including marital and partner dynamics (Crosnoe & Cavanagh, 2010). Accordingly, future research would benefit from taking into account mothers' and children's relationships with coresident grandparents and stepfathers, as well as nonresident biological fathers, and also considering interparental and multigenerational conflict in alternative households.

Gender

We found only a couple of significant interactions of gender with household structure. Specifically, the findings demonstrated that girls residing in stepfather families in adolescence were less likely to complete high school and to enroll in college than girls from families of two biological parents. This was not true for boys. These findings are in accord with the social learning perspective and several previous studies indicating that stepfather families can be less advantageous for girls as compared to boys (e.g., Aquilino, 1991; Blaauboer & Mulder, 2010). Because prior research on educational attainment has not extensively examined gender differences across various alternative household structures, additional research is needed in this area.

The present study has several limitations. We were able to examine household structures at only one point in time. Due to data limitations, we did not assess the complete history of parental marital transitions after Wave 1 and of children's coresidence with grandparents before and after Wave 1, although we controlled for duration of Wave 1 household structure and the number of mother's marital transitions by Wave 1. In addition, data did not provide information on the reasons for the formation of extended and skipped-generation households. Also, we were not able to consider such aspects of parenting as parents' specific help to their children with preparing for the transition to higher education and with succeeding in college. Furthermore, we could not take into account parenting by grandparents, stepfathers, and nonresident biological fathers. Finally, because there were

relatively few households with never-married mothers with coresident grandparents ($n = 78$), our results for this household structure should be interpreted with caution.

Despite its limitations, this study has taken important steps toward our understanding of differences in educational attainment across household structures by examining extended and skipped-generation households; by assessing college graduation as one of the outcomes; by distinguishing between divorced and never-married mothers; by attempting to disentangle the effects of household structure, SES, and parenting; and by considering gender differences. In line with a few available studies on coresidence with grandparents, this study lends support to the contention that children can fare well, under certain circumstances, in extended households. Similar to prior research, our findings also indicate that although the mediating processes can vary across households, limited socioeconomic resources can at least partly account for young people's lower educational attainment in alternative households. Public policies that increase the socioeconomic well-being of these households can improve children's educational attainment. Young people from alternative households may also require greater assistance with educational plans, including information on securing financial aid for college education.

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References

- Amato PR. The impact of family formation change on the cognitive, social, and emotional well-being of the next generation. *Future of Children*. 2005; 15:75–96. [PubMed: 16158731]
- Aquilino WS. Family structure and home-leaving: A further specification of the relationship. *Journal of Marriage and the Family*. 1991; 53:999–1010.
- Aquilino WS. The life course of children born to unmarried mothers: Childhood living arrangements and young adult outcomes. *Journal of Marriage and the Family*. 1996; 58:293–310.
- Astone NM, McLanahan SS. Family structure, parental practices, and high school completion. *American Sociological Review*. 1991; 56:309–320.
- Baum, S.; Ma, J. Education pays: The benefits of higher education for individuals and society. College Board; New York: 2007. Retrieved from http://www.collegeboard.com/prod_downloads/about/news_info/trends/ed_pays_2007.pdf
- Bianchi, SM.; Robinson, JP.; Milkie, MA. Changing rhythms of American family life. Russell Sage Foundation; New York: 2006.
- Blaauboer M, Mulder CH. Gender differences in the impact of family background on leaving the parental home. *Journal of Housing and the Built Environment*. 2010; 25:53–71.
- Brown SL. Family structure and child well-being: The significance of parental cohabitation. *Journal of Marriage and Family*. 2004; 66:351–367.
- Brown L, Iyengar S. Parenting styles: The impact on student achievement. *Marriage and Family Review*. 2008; 43:14–38.
- Bryson, K.; Casper, LM. Coresident grandparents and grandchildren. U.S. Census Bureau; Washington, DC: 1999. (Current Population Reports: Special Studies Report No. P23-198) Retrieved from <http://www.census.gov/prod/99pubs/p23-198.pdf>

- Carlson MJ, McLanahan S. Strengthening unmarried families: Could enhancing couple relationships also improve parenting? *Social Service Review*. 2006; 80:297–321.
- Chen Z-Y, Kaplan HB. School failure in early adolescence and status attainment in middle adulthood: A longitudinal study. *Sociology of Education*. 2003; 76:110–127.
- Chantala, K.; Tabor, J. Strategies to perform a design-based analysis using the Add Health Data. 2001. Retrieved from <http://www.cpc.unc.edu/projects/addhealth/data/guides/weight1.pdf>
- Cooney TM, Kurz J. Mental health outcomes following recent parental divorce. *Journal of Family Issues*. 1996; 17:495–513.
- Crosnoe R, Cavanagh S. Families with children and adolescents: A review, critique, and future agenda. *Journal of Marriage and Family*. 2010; 72:594–611.
- Crosnoe R, Mistry RS, Elder GH Jr. Economic disadvantage, family dynamics, and adolescent enrollment in higher education. *Journal of Marriage and Family*. 2002; 64:690–702.
- Davis-Kean PE. The influence of parent education and family income on child achievement: The indirect role of parental expectations and the home environment. *Journal of Family Psychology*. 2005; 19:294–304. [PubMed: 15982107]
- Demo DH, Acock AC. Family structure, family process, and adolescent well-being. *Journal of Research on Adolescence*. 1996; 6:457–488.
- DeLeire T, Kalil A. Good things come in threes: Single-parent multigenerational family structure and adolescent adjustment. *Demography*. 2002; 39:393–342. [PubMed: 12048958]
- Dubowitz H, Sawyer R. School behavior of children in kinship care. *Child Abuse and Neglect*. 1994; 18:899–911. [PubMed: 7850599]
- Dunifon R, Kowaleski-Jones L. Who's in the house? Race differences in cohabitation, single-parenthood and child development. *Child Development*. 2002; 73:1249–1264. [PubMed: 12146746]
- Dunn, LM. Peabody Picture Vocabulary Test, Revised. America Guidance Service; Circle Pines: MN: 1981.
- Edwards OW, Mumford VE. Children raised by grandparents: Implications for social policy. *International Journal of Sociology and Social Policy*. 2005; 25:18–30.
- Eisenberg ME, Olson RE, Neumark-Sztainer D, Story M, Bearinger LH. Correlations between family meals and psychosocial well-being among adolescents. *Pediatric Medicine*. 2004; 158:792–796.
- Ermisch JF, Francesconi M. Family structure and children's achievements. *Journal of Population Economics*. 2001; 14:249–270.
- Fischer T. Parental divorce and children's socio-economic success: Conditional effects of parental resources prior to divorce, and gender of the child. *Sociology*. 2007; 41:475–495.
- Goodman CC. Intergenerational triads in grandparent families. *Journal of Gerontology: Social Sciences*. 2007; 54B:S281–S296.
- Harris A, Goodall J. Do parents know they matter? Engaging all parents in learning. *Educational Research*. 2008; 50:277–289.
- Heard HE. The family structure trajectory and adolescent school performance. *Journal of Family Issues*. 2007; 28:319–354.
- Hill MS, Yeung W-JJ, Duncan GJ. Childhood family structure and young adult behaviors. *Journal of Population Economics*. 2001; 14:271–299.
- Hill NE, Castellino DR, Lansford JE, Nowlin P, Dodge KA, Bates JE, Pettit GS. Parent academic involvement as related to school behavior, achievement, and aspirations: Demographic variations across adolescence. *Child Development*. 2004; 75:1491–1509. [PubMed: 15369527]
- Hynes K, Joyner K, Peters HE, DeLeone FY. The transition to early fatherhood: National estimates based on multiple surveys. *Demographic Research*. 2008; 18:337–376.
- Kendig SM, Bianchi SM. Single, cohabitating, and married mothers' time with children. *Journal of Marriage and Family*. 2008; 70:1228–1240.
- Kivett VR. The grandparent–grandchild connection. *Marriage and Family Review*. 1991; 16:267–290.
- Kornhaber, A.; Woodward, KL. Grandparents/Grandchildren: The vital connection. Anchor Press/Doubleday; Garden City, NY: 1981.

- Kreider, RM.; Fields, J. Living arrangements of children: 2001. U.S. Census Bureau; Washington, DC: 2005. (Current Population Reports: Household Economic Studies Report No. P70-104) Retrieved from <http://www.census.gov/prod/2005pubs/p70-104.pdf>
- Ku I, Plotnick R. Do children from welfare families obtain less education? *Demography*. 2003; 40:151–170. [PubMed: 12647518]
- Lichter DT, Roempke Graefe D, Brown JB. Is marriage a panacea? Union formation among economically disadvantaged unwed mothers. *Social Problems*. 2003; 50:60–86.
- McLanahan, SS.; Sandefur, G. Growing up in a single-parent family: What hurts, what helps. Harvard University Press; Cambridge, MA: 1994.
- Morris P, Gennetian L. Identifying the effects of income on children's development using experimental data. *Journal of Marriage and Family*. 2003; 65:716–729.
- Morrison NC. Successful single-parent families. *Journal of Divorce and Remarriage*. 1995; 22:205–219.
- Mutchler JE, Baker LA. The implications of grandparent coresidence for economic hardship among children in mother-only families. *Journal of Family Issues*. 2009; 30:1576–1597.
- Needham BL. Adolescent depressive symptomatology and young adult educational attainment: An examination of gender differences. *Journal of Adolescent Health*. 2009; 45:179–186. [PubMed: 19628145]
- O'Connor TG, Dunn J, Jenkins JM, Rasbash J. Predictors of between-family and within-family variation in parent-child relationships. *Journal of Child Psychology and Psychiatry*. 2006; 47:498–510. [PubMed: 16671933]
- Osborne C, McLanahan SS. Partnership instability and child well-being. *Journal of Marriage and Family*. 2007; 69:1065–1083.
- Pong S-L, Chen VW. Coresident grandparents and grandchildren's academic performance in Taiwan. *Journal of Comparative Family Studies*. 2010; 41:111–130.
- Radloff LS. The CES-D scale: A self-report depression scale for research in the general population. *Applied Psychological Measurement*. 1977; 1:385–401.
- Ram B, Hou F. Sex differences in the effects of family structure on children's aggressive behavior. *Journal of Comparative Family Studies*. 2005; 36:329–341.
- Stephenson MT, Quick BL, Atkinson J, Tschida DA. Authoritative parenting and drug-prevention practices: Implications for antidrug ads for parents. *Health Communication*. 2005; 17:301–321. [PubMed: 15855075]
- Sun Y. The well-being of adolescents in households with no biological parents. *Journal of Marriage and Family*. 2003; 65:894–909.
- Szinovacz ME. Living with grandparents: Variations by cohort, race, and family structure. *International Journal of Sociology and Social Policy*. 1996; 16:89–123.
- Wagmiller RL Jr. Gershoff E, Veliz P, Clements M. Does children's academic achievement improve when single mothers marry? *Sociology of Education*. 2010; 83:201–226. [PubMed: 21611134]

Table 1
 Weighted Means/Percentages for Variables Used in the Analysis (N : 10,083; Add Health data)

Household structure	Total	Two Parents	Two Parents with a Grandparent	Never-Married Mother with a Grandparent	Divorced Mother with a Grandparent	Only Grandparents	Never-Married Mother	Divorced Mother	Stepfather
Educational attainment									
High school completion (%; 1 = yes)	93.56	95.43	96.41	89.74 ^a	91.95	85.12 ^{ae}	85.67 ^{ade}	90.76 ^a	91.81 ^a
College enrollment (%; 1 = yes)	67.08	71.30	70.77	66.67 ^b	60.92 ^a	51.16 ^{ae}	51.22 ^{ade}	61.81 ^a	61.28 ^a
College graduation (%; 1 = yes)	33.26	39.99	31.28 ^a	23.08 ^a	21.84 ^a	15.35 ^{ae}	15.85 ^{ade}	24.95 ^a	22.56 ^a
Household characteristics									
Duration	13.59	15.49	7.32 ^a	11.15 ^{abe}	8.23 ^{ac}	10.00 ^{ae}	15.48 ^{ea}	12.98 ^{ae}	7.66 ^a
Number of marital transitions	.55	0	0	0 ^b	1.49 ^{ae}	17 ^{ae}	0 ^{ec}	1.50 ^{ae}	2.04 ^a
Adolescent's characteristics									
Girl (%; 1 = yes)	53.99	52.69	52.31	58.97	60.34 ^a	55.81	60.98 ^{ae}	56.13 ^a	54.43
Age (%; 1 = 16)	50.61	50.80	51.79	35.90 ^{abe}	53.45	54.88	49.70	49.97	50.34
Race									
White (%; 1 = yes) (reference category)	61.66	69.15	50.77 ^a	10.26 ^{ae}	31.61 ^{ace}	42.79 ^{ae}	12.50 ^{ade}	50.69 ^{ae}	64.71
Black (%; 1 = yes)	22.40	14.64	14.36	80.77 ^{ae}	42.53 ^{ae}	46.98 ^{ae}	78.66 ^{ade}	33.53 ^{ae}	21.30 ^a
Hispanic (%; 1 = yes)	15.31	15.64	34.36 ^a	8.97	25.29	9.30 ^a	7.93 ^{ade}	15.05	13.25
Number of siblings	1.45	1.52	1.33 ^a	90 ^{abe}	1.21 ^{ae}	.56 ^{ae}	1.43	1.28 ^{ae}	1.56
Socioeconomic resources									
Income (logged)	3.46	3.68	3.65	2.74 ^{ae}	2.79 ^{ae}	2.88 ^{ae}	2.53 ^{ade}	2.97 ^{ae}	3.51 ^a
Missing on income (%; 1 = yes)	13.03	13.11	16.41	12.82	14.37	26.98 ^{ae}	19.21 ^{ade}	10.69 ^a	11.17
Mother's education	1.59	1.65	1.51	1.33 ^a	1.55	.98 ^{ae}	1.20 ^{ade}	1.60	1.54 ^a
Welfare receipt (%; 1 = yes)	8.58	3.29	3.08	29.49 ^{ae}	24.71 ^{ae}	15.81 ^{ae}	39.02 ^{ade}	19.40 ^{ae}	8.04 ^a
Parenting									
Relationship quality with mother	17.32	17.43	17.51	17.94 ^{be}	17.20	16.52 ^{ae}	17.27	17.12 ^a	17.15 ^a
Parental control	1.87	1.90	1.81	2.47 ^{ae}	1.80	1.61 ^{ae}	1.98 ^d	1.74 ^{ae}	1.89
Shared dinner	4.70	4.97	4.84	4.26 ^a	4.40 ^a	4.41 ^a	3.79 ^{ade}	4.21 ^{ae}	4.42 ^a

Household structure	Total	Two Parents	Two Parents with a Grandparent	Never-Married Mother with a Grandparent	Divorced Mother with a Grandparent	Only Grandparents	Never-Married Mother	Divorced Mother	Stepfather
Mother's school involvement	1.20	1.16	1.16	1.33 ^a	1.29	1.79 ^{ae}	1.24	1.26 ^a	1.24 ^a
Mother's aspirations for college	4.13	4.23	4.29	4.03	4.12	3.84 ^a	3.85 ^a	3.98 ^a	3.96 ^a
Mother's social closure (%; 1 = yes)	80.48	83.57	81.03	66.67 ^{ae}	72.99 ^a	61.86 ^{ae}	67.07 ^{ade}	77.28 ^a	78.33 ^a
Adolescent's depressive symptoms	.57	.54	.60 ^a	.58 ^b	.59 ^a	.67 ^{ae}	.68 ^{ade}	.61 ^a	.61 ^a
School functioning				96.23 ^{abce}			91.88 ^{ade}		
Cognitive ability	101.49	102.93	101.70		97.17 ^{ace}	97.00 ^{ae}		99.97 ^a	100.69 ^a
Missing on cognitive ability (%; 1 = yes)	4.23	4.06	4.62	6.41	5.75	4.65	2.44 ^d	5.02	4.02
School problems	1.06	1.01	1.02	83 ^{abce}	1.03 ^{ce}	1.08	1.16 ^a	1.14 ^a	1.16 ^a
Suspension or expulsion (%; 1 = yes)	25.69	19.58	18.46	46.15 ^{ae}	38.51 ^a	51.16 ^{ae}	49.09 ^{ade}	33.96 ^a	31.42 ^a
School absences	1.54	1.53	1.53	1.50	1.57	1.55	1.54	1.58 ^a	1.56
Educational aspirations for college	4.19	4.27	4.24	4.23	4.05 ^a	3.97 ^a	3.95 ^a	4.06 ^a	4.06 ^a
Self-rated intelligence	3.91	3.94	4.08	3.90	3.76 ^a	3.89	3.85	3.84 ^a	3.85 ^a
Unweighted <i>N</i>	10,083	6,087	195	78	174	215	328	1,655	1,343

Note. Superscripts indicate significant group comparisons on the basis of *t* tests ($p < .05$):

^a significant difference from two biological parents without grandparents;

^b never-married mother with a grandparent significantly different from never-married mother;

^c divorced mother with a grandparent significantly different from divorced mother;

^d never-married mother significantly different from divorced mother;

^e stepfather significantly different from other families without two biological parents.

Table 2

Logistic Regression Models Predicting the Association Between Household Structure and High School Completion (N = 10,083; Add Health data)

Variable	Model 1	SE	Model 2	SE	Model 3	SE	Model 4	SE	Model 5	SE	Model 6	SE
Household structure (two parents)												
Two parents with a grandparent	1.18	.47	1.21	.49	1.16	.46	1.20	.48	1.18	.49	1.16	.48
Never-married mother with a grandparent	.32**	.10	.56	.20	.40**	.13	.62	.22	.63	.21	.62	.21
Divorced mother with a grandparent	.50	.18	.68	.26	.51	.19	.67	.26	.87	.41	.85	.40
Only grandparents	.19***	.04	.39***	.08	.21***	.04	.40***	.08	.43**	.10	.43***	.10
Never-married mother	.25***	.04	.49***	.09	.31***	.06	.54**	.11	.71	.14	.70	.14
Divorced mother	.47***	.09	.58**	.11	.49***	.09	.60**	.11	.66*	.13	.64*	.12
Stepfather	.51**	.11	.59**	.12	.52**	.11	.61*	.12	.63*	.14	.85	.22
Household characteristics												
Duration	.98*	.01	.99	.01	.98**	.01	.99	.01	.99	.01	.99	.01
Number of transitions	.94	.08	.94	.07	.96	.08	.95	.07	1.01	.08	1.02	.08
Adolescent's characteristics												
Girl	1.55***	.12	1.67***	.13	1.51**	.12	1.65***	.14	1.33**	.13	1.49***	.15
Age	1.19	.12	1.27*	.13	1.25*	.13	1.33**	.14	1.51***	.17	1.51***	.17
Race (White)												
Black	1.01	.15	1.06	.14	1.05	.16	1.08	.15	1.47**	.21	1.48**	.21
Hispanic	.57**	.09	.99	.17	.61**	.09	.98	.15	1.21	.19	1.21	.19
Number of siblings	.83***	.03	.91*	.03	.86***	.03	.93*	.03	.96	.04	.96	.04
Socioeconomic resources												
Income			1.14**	.04			1.11**	.04	1.05	.05	1.05	.05
Missing on income			.85	.10			.84	.10	.90	.11	.90	.11
Mother's education			2.02***	.10			1.92***	.10	1.50***	.08	1.51***	.08
Welfare receipt			.62**	.09"			.63**	.09	.70*	.13	.69*	.11
Parenting												
Relationship quality with mother					1.02	.02	1.02	.02	.98	.02	.98	.02
Parental control					.88***	.02	.90***	.03	.93*	.03	.93*	.03

Variable	Model 1	SE	Model 2	SE	Model 3	SE	Model 4	SE	Model 5	SE	Model 6	SE
Shared dinner					1.05**	.02	1.06**	.02	1.02	.02	1.02	.02
Mother's school involvement					1.24**	.08	1.17*	.07	1.08	.07	1.08	.07
Mother's aspirations for college					1.32***	.04	1.26***	.04	1.10*	.04	1.10**	.04
Mother's social closure					1.52***	.15	1.26*	.13	1.08	.12	1.08	.12
Adolescent's depressive symptoms									.80	.11	.81	.11
School functioning												
Cognitive ability									1.04***	.01	1.04***	.01
Missing on cognitive ability									.79	.16	.79	.16
School problems									.69***	.04	.69***	.04
Suspension or expulsion									.38***	.04	.38***	.04
School absences									.79**	.05	.78**	.05
Educational aspirations for college									1.29***	.05	1.29***	.05
Self-rated intelligence									1.27***	.06	1.27***	.06
Stepfather × girl											.51**	.12
F	22.50***		33.62***		22.65***		28.19***		33.91***		32.09***	

Note. Reference category for variables is presented in parentheses. Coefficients are odds ratios.

* $p < .05$.

** $p < .01$.

*** $p < .001$.

Table 3
 Logistic Regression Models Predicting the Association Between Household Structure and College Enrollment (n = 9,434; Add Health data)

Variable	Model 1	SE	Model 2	SE	Model 3	SE	Model 4	SE	Model 5	SE	Model 6	SE
Household structure (two parents)												
Two parents with a grandparent	.92	.17	.97	.18	.90	.16	.95	.17	.95	.19	.95	.19
Never-married mother with a grandparent	.87	.23	1.48	.39	.99	.29	1.54	.43	1.48	.44	1.47	.43
Divorced mother with a grandparent	.71	.14	.91	.18	.72	.15	.90	.18	1.01	.22	1.01	.22
Only grandparents	.43***	.09	.85	.17	.49**	.10	.87	.18	.88	.17	.88	.17
Never-married mother	.49***	.07	.79	.10	.56***	.08	.85	.11	.91	.11	.90	.11
Divorced mother	.79*	.08	.92	.10	.81*	.08	.92	.10	.94	.11	.94	.11
Stepfather	.80	.10	.89	.12	.82	.10	.90	.12	.91	.12	1.07	.17
Household characteristics												
Duration	.99	.01	1.00	.01	.99	.01	1.00	.01	1.00	.01	1.00	.01
Number of transitions	.90*	.04	.91	.05	.92	.04	.92	.05	.96	.06	.96	.05
Adolescent's characteristics												
Girl	1.62***	.07	1.79***	.09	1.59***	.07	1.77***	.09	1.59***	.09	1.66***	.10
Age	.92	.06	.96	.06	.92	.07	.97	.07	1.00	.07	1.00	.07
Race (White)												
Black	.95	.11	.98	.09	.94	.10	.96	.09	1.20*	.11	1.21*	.11
Hispanic	.81	.09	1.40**	.17	.85	.08	1.38**	.14	1.68***	.17	1.67***	.17
Number of siblings	.89***	.02	.95	.03	.91**	.02	.96	.03	.98	.03	.98	.03
Socioeconomic resources												
Income			1.17***	.05			1.14**	.04	1.07	.04	1.07	.04
Missing on income			.95	.07			.94	.07	.95	.07	.95	.07
Mother's education			1.91***	.07			1.85***	.07	1.55***	.06	1.56***	.06
Welfare receipt			.75**	.06			.77***	.07	.84*	.07	.84*	.07
Parenting												
Relationship quality with mother					1.02	.01	1.02*	.01	.99	.01	.99	.01
Parental control					.92***	.01	.93***	.02	.97	.02	.97	.02

Variable	Model 1	SE	Model 2	SE	Model 3	SE	Model 4	SE	Model 5	SE	Model 6	SE			
Shared dinner					1.00	.01	1.00	.01	.99	.01	.99	.01			
Mother's school involvement					1.18***	.04	1.14***	.03	1.09***	.03	1.09**	.03			
Mother's aspirations for college					1.30***	.04	1.23***	.03	1.04	.03	1.04	.03			
Mother's social closure					1.51***	.10	1.27***	.08	1.11	.07	1.11	.07			
Adolescent's depressive symptoms									.88	.07	.88	.07			
School functioning															
Cognitive ability									1.03***	.01	1.03***	.01			
Missing on cognitive ability									1.04	.13	1.04	.13			
School problems									.96	.04	.96	.04			
Suspension or expulsion									.69***	.05	.69***	.05			
School absences									.97	.04	.97	.04			
Educational aspirations for college									1.59***	.05	1.59***	.05			
Self-rated intelligence									1.27***	.04	1.27***	.04			
Stepfather × girl											.73*	.11			
F					17.11***		29.53***		25.62***		36.80***		49.78***		47.16***

Note. Reference category for variables is presented in parentheses. Coefficients are odds ratios.

* $p < .05$.

** $p < .01$.

*** $p < .001$.

Table 4
 Logistic Regression Models Predicting the Association Between Household Structure and College Graduation (n = 6,732; Add Health data)

Variable	Model 1	SE	Model 2	SE	Model 3	SE	Model 4	SE	Model 5	SE
Household structure (two parents)										
Two parents with a grandparent	.58**	.11	.60**	.12	.56**	.11	.59**	.11	.51**	.10
Never-married mother with a grandparent	.37**	.11	.63	.19	.43*	.14	.67	.22	.66	.23
Divorced mother with a grandparent	.56	.21	.71	.26	.56	.21	.69	.26	.70	.28
Only grandparents	.30***	.08	.56*	.14	.32***	.09	.55*	.14	.58*	.15
Never-married mother	.35***	.07	.53**	.11	.39***	.08	.58**	.12	.64*	.13
Divorced mother	.73*	.10	.87	.12	.76*	.10	.91	.13	.87	.13
Stepfather	.65*	.11	.69*	.13	.69*	.12	.71	.14	.70	.14
Household characteristics										
Duration	.98**	.01	.99	.01	.98**	.01	.99	.01	.99	.01
Number of transitions	.77***	.06	.79**	.06	.78**	.06	.79**	.06	.84*	.07
Adolescent's characteristics										
Girl	1.39***	.07	1.52***	.08	1.41***	.08	1.54***	.09	1.42***	.09
Age	1.10	.08	1.15*	.08	1.10	.08	1.15*	.08	1.14	.08
Race (White)										
Black	.91	.14	.92	.13	.97	.14	.98	.13	1.18	.14
Hispanic	.62***	.05	.99	.08	.67***	.06	1.02	.08	1.22*	.11
Number of siblings	.95	.03	1.01	.03	.98	.03	1.02	.03	1.03	.03
Socioeconomic resources										
Income			1.29***	.06			1.27***	.06	1.20***	.05
Missing on income			1.24	.11			1.24	.11	1.18	.10
Mother's education			1.66***	.07			1.62***	.07	1.45***	.05
Welfare receipt			.67**	.10			.69*	.11	.71*	.11
Parenting										
Relationship quality with mother					1.02	.01	1.02	.01	.98	.01
Parental control					.90***	.02	.90***	.02	.95**	.02

Variable	Model 1	SE	Model 2	SE	Model 3	SE	Model 4	SE	Model 5	SE
Shared dinner					1.05**	.02	1.06***	.02	1.04*	.02
Mother's school involvement					1.11**	.04	1.09*	.04	1.04	.03
Mother's aspirations for college					1.30***	.03	1.23***	.03	1.07*	.03
Mother's social closure					1.42***	.12	1.20*	.10	1.08	.09
Adolescent's depressive symptoms									.96	.09
School functioning										
Cognitive ability									1.01***	.01
Missing on cognitive ability									1.20	.17
School problems									.85**	.04
Suspension or expulsion									.47***	.04
School absences									.84***	.03
Educational aspirations for college									1.63***	.07
Self-rated intelligence									1.42***	.05
<i>F</i>	18.08***		21.01***		20.45***		20.61***		27.30***	

Note. Reference category for variables is presented in parentheses. Coefficients are odds ratios.

* $p < .05$.

** $p < .01$.

*** $p < .001$.