Parent-Child Relationships in Stepfather Families and Adolescent Adjustment: A Latent Class Analysis

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Abstract

The current study draws on Waves I and III from Add Health to examine the closeness of parent-adolescent relationships in married mother-stepfather families (N = 1,934). We use latent class analysis (LCA) to identify family constellations defined by adolescents' relationships with all of their parents: mothers, stepfathers, and biological nonresident fathers. In particular, we (1) identify the most common underlying patterns of adolescent-parent relationships in stepfamilies, (2) determine the background characteristics that predict membership in these groups, and (3) examine how adolescents in these groups fare in terms of depressive symptoms, delinquency, and substance use. Results indicate that stepfamily relationships form four latent classes. Adolescents in these classes differ on measures of adjustment, and many of these differences persist into the early adult years.

Due to high rates of divorce, nonmarital childbearing, cohabitation, and remarriage, an increasing number of children are growing up apart from their biological fathers and living with stepfathers. The transition to stepfamily living presents a number of risks for children, and children in stepfamilies exhibit more internalizing and externalizing problems than do children in two-biological parent households, on average (Bray, 1999). Moreover, despite improvements in children's standard of living when custodial mothers remarry, children in stepfather families are no better off on most emotional and behavioral indicators than are children in single-mother households (Amato, 2010; Sweeney, 2010). A focus on average differences in children's adjustment, however, obscures the heterogeneity in outcomes among children living in stepfamilies (Coleman, Ganong, & Russell, 2013).

Why do some children in stepfamilies thrive while others flounder? Although a variety of factors appear to contribute to children's adjustment in stepfamilies, almost all observers agree that the role of parents is central (Bornstein, 2002). Close and supportive relationships with parents foster children's healthy development in all types of families, including stepfamilies. Yet establishing and maintaining strong parent-child ties in stepfamilies is challenging, especially for adolescents (Bray & Easling, 2005; Hetherington & Clingempeel, 1992; Hetherington & Stanley-Hagan, 2000).

We draw on Waves I and III from the National Longitudinal Study of Adolescent to Adult Health (Add Health) to examine the closeness of parent-adolescent relationships in married mother-stepfather families and the implications of these relationships for adolescent adjustment. We focus on stepfather families because the number of children in stepmother households is comparatively small (Stewart, 2007), and their representation in Add Health is too limited to conduct a detailed analysis. The current study also is limited to *married* stepfathers

because adolescents in the Add Health study who lived with their mothers and cohabiting partners were not asked questions about their relationships with stepfather figures. Stepfamilies that began as cohabiting partnerships and transitioned into marriage prior to the Wave I interview, however, are included in the sample. Despite some limitations, the Add Health data set is appropriate for the current topic because it is large, is nationally representative, and provides detailed information on parent-child relationships in stepfamilies. Moreover, Add Health makes it possible study the associations between stepfamily relationships and multiple aspects of adolescent adjustment.

Previous stepfamily research has focused on children's relationships with each parent separately (e.g., King, 2006). In contrast, we identify family constellations defined by adolescents' relationships with mothers, stepfathers, and biological nonresident fathers—an approach broadly consistent with family systems theory. In particular, we (1) identify the most common underlying patterns of adolescent-parent relationships in stepfamilies, (2) determine the background characteristics that predict these patterns, and (3) examine how different patterns of relationships are associated with symptoms of depression, delinquency, and substance use in adolescence (using cross sectional data) and young adulthood (using longitudinal data).

BACKGROUND

Many stepfamily researchers have studied stepfamily dyads, with a particular focus on stepfather-stepchild relationships. This research has revealed a striking degree of variability, with some stepfathers developing close emotional ties with their stepchildren and others remaining disengaged and emotionally distant (King, 2006). Despite the usefulness of this research, few studies of stepfamilies have studied systems larger than dyads. In one exceptional study, Baxter, Braithwaite, and Bryant (2006) examined triadic relationships among college students living

with a biological parent and a stepparent. The most common pattern to emerge from their qualitative analysis was one in which young adults related to the stepparent (to whom they were moderately close) primarily through the resident biological parent (to whom they were very close). Other patterns involved youth who were close to the resident biological parent but not the stepparent, youth who were not close to either parent, and youth were very close to both parents, with the latter group being the least common.

Family systems theory provides a general framework for our research. This perspective focuses on patterns of closeness and communication between family members, how these patterns are maintained over time, and the implications of these patterns for individual and family development (Broderick, 1993; Kerr & Bowen, 1988; Minuchin, 1974). The assumption that all parts of a family system are interrelated shifts the focus away from particular dyadic relationships and toward more general patterns that characterize multiple relationships. The present study considers adolescents' relationships with three parental figures: stepfathers, mothers, and nonresident biological fathers. Although most studies of stepfamilies have not incorporated information on nonresident fathers, bringing nonresident fathers into the picture makes it possible to study systems larger than those defined by the household. Moreover, children's contact with nonresident fathers has increased in recent decades (Amato, Meyers, & Emery, 2009), and the quality of these relationships is related to multiple aspects of children's adjustment (Adamsons & Johnson, 2013; Amato & Gilbreth, 1999). For these reasons, including nonresident fathers provides a more comprehensive picture of parent-child relationships in stepfamilies and how these relationships are related to adolescent adjustment. (Adolescents in Add Health were not asked about nonresidential stepmothers, so we are unable to incorporate this information.)

Family systems theory, like virtually all family theories, assumes that parent-child relationships are central to children's development and adjustment. As children grow into adolescence, parent-child conflict tends to increase and engagement in shared activities tends to decline (Smetana, Campione-Barr, & Metzger, 2006). As long as these relationships remain emotionally close, however, parents continue to be valuable resources for their adolescent children. Indeed, a large research literature shows positive associations between the quality of parent-child relationships and multiple aspects of adolescent adjustment across a variety of family structures (Gray & Steinberg, 1999; Buchanan, Maccoby, & Dornbusch, 2000; Steinberg, 2001).

Family transitions pose challenges for children's relationships with parents. Parental divorce (or union disruption) tends to weaken children's ties to nonresident fathers (Amato, 2010), and maternal re-partnering often creates tension between children and mothers (Cavanagh, Schiller, & Riegle-Crumb, 2006; Day & Acock, 2004). Moreover, many children reject their stepfathers, especially when remarriage occurs during early adolescence (Hetherington & Jodl, 1994; Hetherington & Stanley-Hagan, 2000). Nevertheless, a great deal of variability exists in adolescents' ties with parents in stepfamilies (King, 2006), and these relationships continue to be important contexts for understanding adolescent adjustment (Hetherington, Henderson, & Reiss, 1999; Pryor & Rodgers, 2001).

THE PRESENT STUDY

The current study extends prior research by using latent class analysis (LCA) to study patterns of relationships in stepfamilies. LCA is a statistical method for identifying *unobserved* subgroups within populations based on observed indicators (Collins & Lanza, 2010; McCutcheon, 1987). LCA is a person-centered rather than a variable-centered approach. In a variable-centered

approach like factor analysis, variables are grouped into broad factors based on their inter-correlations. In a person-centered approach like LCA, people are placed into groups based on the similarity of their responses (in the present case, adolescents' reports of closeness to parents). Variable-centered research can show how scores on particular variables (e.g., adolescents' ratings of closeness to parents) correlate with scores on particular outcomes (e.g., adolescents' reports of depressive symptoms). A person-centered approach, in contrast, can show how groups of adolescents (as defined by their distinctive pattern of relationships with parents in the present study) differ on particular forms of adjustment. The person-centered approach shifts our attention away from the differences between variables and toward the differences between relatively homogeneous subgroups of adolescents.

LCA has several advantages over earlier person-center methods like cluster analysis. Unlike cluster analysis, LCA does not require researchers to specify the number of classes in advance, and empirical indicators are available to determine the optimal number. Moreover, whereas cluster analysis assigns individuals to clusters absolutely, LCA calculates each individual's probability of membership in each class. (Probabilities of less than 1 are assumed to be due to measurement error.) Studies based on LCA (or Latent Transition Analysis, its close cousin) have appeared in the research literature on family relationships in recent years, with promising results. For example, LCA has been used to study patterns of interaction between adult children and their parents in the Netherlands (Van Gaalen & Dykstra, 2006), the structure of intergenerational relations in rural China (Guo, Chi, & Silverstein, 2012), and patterns of father-infant interaction in two-parent families (Goodman, Crouter, Lanzo, Cox, & Vernon-Feagans, 2011). We know of no studies that have used LCA to study stepfamily relationships.

Following systems theory, we assume that family relationships tend to "crystallize" in particular configurations, based on an underlying logic. Because LCA is an exploratory rather than a confirmatory method, it is difficult to predict what these groups will be. One possible group involves adolescents who are close to all of their parents—a likely outcome to the extent that positivity in one relationship spills over and influences other relationships. Correspondingly, some troubled adolescents may withdraw emotionally from their families and not be close to any parent. Another possibility includes adolescents who are close to mothers and distant from stepfathers as well as biological fathers, particularly in cases where mothers act as gatekeepers or form coalitions with their children. Other adolescents may be close to both resident parents but distant from nonresident fathers—a pattern that may occur when nonresident fathers withdraw from their children's lives or when resident parents establish strong boundaries around themselves and their children. Yet other adolescents may be close to both biological parents and distant from stepfathers, or close to nonresident fathers but distant from mothers and stepfathers. Given the exploratory nature of the current study, we do not frame specific hypotheses about the number, nature, and frequency of these patterns.

The first step in the current analysis identifies latent classes and provides population-level estimates of the proportion of adolescents in each class. After determining the number and size of the latent classes, we examine family and individual characteristics that predict membership in these classes. We draw on prior theory and research on parent-child relationships in stepfamilies for this purpose. These variables include adolescent gender, adolescent age, adolescent race, whether the adolescent was U.S. born, adolescent religiosity, mother and stepfather education, household income, years in a stepfamily, and the number of siblings in the household (Hetherington & Clingempeel, 1992; Pryor, 2014; Stewart, 2007; Sweeney, 2010). To capture

aspects of family history, we also include whether the adolescent was born in marriage and the total number of father figures to which the adolescent was exposed since birth. Finally, because recent work on family complexity suggests the importance of looking at different types of siblings (e.g., Brown, Manning, & Stykes, 2015), we include variables that reflect the presence of half- and step-siblings in the household.

We then examine adolescent adjustment at Wave 1—as indicated by symptoms of depression, delinquency, and substance use—by latent class membership, before and after controlling for the above mentioned background characteristics. Given the existence of feedback loops in family systems, we assume that the links between youth adjustment and patterns of stepfamily closeness are bidirectional. That is, troubled parent-child relationships increase the risk of problems like delinquency and substance use, and these problems, in turn, create further tension in parent-child relationships. Although our analytic methods require distinguishing between independent and dependent variables, our main goal is to determine how relationship patterns in stepfamilies are associated with adolescent adjustment, rather than to make one-directional causal inferences.

Finally, to determine whether the differences in adjustment between latent classes are stable over time, we examine class differences in adjustment in Wave III, approximately 6-7 years later when respondents were in emerging adulthood (Arnett, 2000). During the transition to adulthood, youth have many developmental tasks to accomplish. The process is not always smooth, however, and the prevalence of several types of risky behavior, including substance use, peaks during emerging adulthood, not adolescence (Arnett, 2000). But despite the fact that establishing independence from parents is a defining feature of adulthood, parents continue to serve as crucial sources of support for youth as they make this transition (Stewart, 2007). Our

goal in this final analysis is to see if relationships with parents in adolescence have implications that persist beyond the teen years. The goal of this analysis is not to identify the developmental processes that lead to similarities and differences in adjustment between adolescence and early adulthood. Our more modest goal is to see if differences between latent classes in adjustment persist from adolescence into early adulthood.

METHOD

Sample

We used data from Waves I and III of the Add Health study. When weighted, these data are nationally representative of adolescents in grades 7 through 12 in the United States during the 1994-1995 school year (Harris et al., 2009). We drew on the subset of adolescents in Add Health who participated in the in-home interviews at Wave I (N = 20,745). The analytic sample for the cross-sectional analysis was restricted to adolescents with valid sample weights who were living with a biological mother and a stepfather at Wave I, excluding those whose non-resident biological father was known to be deceased (n = 1,934). Daughters made up about half (51%) of the sample, and the mean age was 15.4 years. The sample was mostly non-Hispanic white (70%), with 13% non-Hispanic Black, 11% Hispanic, and 6% other. The typical adolescent had been in a stepfamily for 7.6 years. Additional details on the sample are available in the first column of Table 2.

For the longitudinal analysis, we drew on Wave III data collected in 2001-2002 when youth were in their early adult years (ages 18 to 26). The Wave III sample size was 1,408, or 73% of the original Wave I sample. Attrition between waves was more common among men than women, among youth without stepsiblings than with stepsiblings, and among youth who did

not know their nonresident fathers. Attrition was not related to any of the other variables used in the analysis.

Analysis

Data analysis was conducted using *Mplus* version 6 (Muthen & Muthen, 2010) with full-information maximum likelihood (FIML) estimation to handle missing data. This approach uses all available data when estimating parameters, thereby reducing missing data biases (Enders & Banadalos, 2001). Results are based on weighted data, with standard errors adjusted for clustering and stratification in the Add Health sampling design.

Measures

Parent-child relationship measures. Closeness to mother was measured with a single item asking adolescents how close they felt to their resident biological mothers (1= *not at all close*, 5 = *very close*). Identical questions were used to measure *closeness to stepfather* and *closeness to nonresident father*. Adolescents who stated that they never saw or did not know their biological fathers (21%) were not asked the question about closeness. Because our goal was to examine relationship patterns among *all* adolescents, it was necessary to include these cases in the analysis. Consequently, we included a binary indicator in the analysis (0 = *does not know nonresident biological father*, 1 = *knows nonresident biological father*) and assigned a value of 1 (the lowest possible value) on the closeness variable to adolescents who did not know their nonresident biological father.

Predictors of adolescent-parent relationship classes. We examined several individual- and family-level characteristics that may predict membership in the latent classes. These variables also served as controls when we examined associations between latent class membership in adolescent and young adult adjustment. Adolescent variables included whether

the adolescent was a daughter (0 = *son*, 1 = *daughter*), the adolescent's age at Wave I (in years), and if the adolescent was not a citizen (0 = *a US citizen*, 1 = *not a US citizen*). Adolescent race/ethnicity was captured with four dummy variables: non-Hispanic White (reference group), non-Hispanic Black, Hispanic, and other. Ordered measures of mother's education and stepfather's education were used to measure social class (1 = *less than high school education*, 4 = *college education or more*), along with family income in logged-dollars. The number of years in a stepfamily involved the length of time the adolescent had lived in the same household with the stepfather, regardless of whether the union began with cohabitation or marriage.

Information about siblings was drawn from the household roster and included a count variable for the number of full siblings and two binary indicators indicating whether the respondent lived with any step-siblings (0 = *no stepsiblings*, 1 = *stepsiblings*) or any half-siblings (0 = *no half-siblings*, 1 = *half-siblings*). The number of father figures drew on questions about the mother's relationship history and the number of coresidential relationships (cohabitations and marriages) the adolescent had been exposed to since birth. A binary variable indicated whether the adolescent was born in marriage (0 = *not born in marriage*, 1 = *born in marriage*). Finally, *religiosity* was based on the mean of three standardized items dealing with how often the adolescent attended religious services, the importance of religion, and participation in religious activities ($\alpha = .82$). Information on the mother's education, stepfather's education, family income, the number of father figures, and whether the adolescent had been born in marriage was obtained from the mother interview; all other variables were derived from the adolescent interview.

Measures of Adjustment. The current study examined three aspects of adjustment during adolescence and young adulthood: depressive symptoms, delinquency, and substance use. Scales

were constructed from items drawn from the Wave I in-home interview for the cross-sectional analysis and from the Wave III in-home interview for the longitudinal analysis. Fewer items were available for some constructs in Wave III than in Wave I.

We measured depressive symptoms with items from the Center for Epidemiological Studies Depression Scale (CES-D; Radloff, 1977). The Wave I scale asked how often during the previous week adolescents had the following feelings or experiences: felt sad, were depressed, felt lonely, felt fearful, felt disliked by others, could not shake off the blues, were too tired to do things, felt that their lives were not worth living, were bothered by things more than usual, had trouble focusing, had a poor appetite, talked less than usual, did not enjoy life, felt happy, felt hopeful, and felt that they were as good as other people (alpha = .88). Responses ranged from 0 (*rarely or never*) to 3 (*most or all of the time*). The corresponding Wave III young adult score was based on a subset of 9 items from the adolescent interview (alpha = .81). The Wave I and Wave III symptoms scales were standardized to have means of zero and standard deviations of 1 within each wave.

Delinquency was based on 15 different delinquent activities during adolescence and 8 different delinquent (or criminal) activities during young adulthood. The adolescent delinquency variable was drawn from a series of Wave I questions that asked if respondents had engaged in the following activities during the past year: painted graffiti on someone else's property, deliberately damaged someone else's property, lied to their parents about where they were or who they were with, shoplifted, took someone's car without permission, stole something with a value under $50, stole something with a value over $50, entered onto someone else's property with the intention of stealing, sold drugs, got rowdy in a public place, got into a serious physical fight, used or threatened to use a weapon, took part in a fight with a group of their friends against

another group of people, shot or stabbed someone, and got into a fight in which the other person was seriously injured. These items were dichotomized (0 = *never*, 1 = *at least once*) and summed to create an index of adolescent delinquency (range = 0 – 15, mean = 2.26, SD = 2.53).

The corresponding variable for young adults was derived from Wave III questions asking respondents if (in the past year) they deliberately damaged someone else's property, stole something with a value under $50, stole something with a value over $50, entered onto someone else's property with the intention of stealing, sold drugs, used or threatened to use a weapon, took part in a fight with a group of their friends against another group of people, or got into a fight in which the other person was seriously injured. These items were dichotomized (0 = *never*, 1 = *at least once*) and summed to create a scale of young adult antisocial activity (range = 0 – 8, mean = 0.49, SD = 1.20).

We also assessed adolescents' and young adults' use of three substances: cigarettes (tobacco), alcohol, and marijuana. Questions were identical at Wave I and Wave III. To measure *smoking*, respondents were asked about the number of days in the past month on which they had smoked any cigarettes. We created a dichotomous item (0 = *no smoking*, 1 = *smoking on 1 or more days*) to indicate whether respondents had used cigarettes (or had been cigarette free) during the past month. Nearly one third of adolescents (31%) and nearly one half of young adults (49%) reported smoking in the previous month. Frequent binge drinking was captured with a question asking how often during the past year respondents had been "drunk" or "very high" on alcohol (0 = *drunk once per month or less*, 1 = *drunk more than once a month*). Scores of 1 on this item were assigned to 18% of adolescents and 24% of young adults. Finally, a question asked if respondents had smoked marijuana in the past month (0 = *no*, 1 = *yes*). Positive responses to this question were provided by 15% of adolescents and 24% of young adults.

RESULTS

The Latent Classes

We estimated solutions with 2, 3, 4, 5, and 6 latent classes and relied on three measures to determine the best solution. Entropy is a measure of how well individual cases can be classified unambiguously and ranges from 0 to 1, with larger values indicating a clearer delineation of classes. The Bayesian Information Criterion (BIC) is a measure of model fit, with lower values indicating that a given model is more likely to be the true model. Finally, the Lo-Mendell-Rubin test indicates whether a solution with K classes provides a significantly better fit to the data than a solution with K-1 classes.

In the current study, the three measures provided inconsistent results. Entropy increased from 2 to 4 classes and then declined, which suggested that the 4-class solution was optimal. BIC values were lowest for the 5-class solution, which suggested that this was the optimal solution. And the Lo-Mendell-Rubin test was not significant for solutions with more than 3 classes, which suggested that the 3-class solution was optimal. When fit indices yield contrary conclusions, it is necessary to examine the best-fitting solutions to see which has the most heuristic value (Collins & Lanza, 2010). Our examination of the 3, 4, and 5-class solutions revealed that the 4-class solution had the clearest interpretation. The 3-class solution largely combined classes 3 and 4, which masked the important distinction between children with either close or nonexistent relationships with nonresident fathers (see below), whereas the 5-class solution essentially divided class 2 into two subclasses that differed in what appeared to be substantively unimportant ways. The 4-class solution not only had a clear interpretation, but also had an excellent entropy value (.99), which indicated that the cases could be classified into four groups with a high degree of certainty.

Table 1 shows the means of the four variables used to generate the latent classes. The first column shows the overall means for the full sample, and subsequent columns show the means for the four latent classes. For the three closeness ratings, we report means based on raw scores (to provide a sense of absolute closeness) as well as Z scores (to provide a sense of relative closeness). Adolescents in Class 1 (9% of the sample) did not report being particularly close to any of their parents. The mean ratings (raw scores) for stepfathers, mothers, and nonresident biological fathers were 2.58, 2.77, and 2.61, respectively. All three means were below 3, the midpoint of the response options. Correspondingly, the mean Z scores for stepfathers and mothers were negative and substantial (-.99 and -2.35, respectively), although the mean Z score for nonresident biological fathers (-.05) was only slightly negative and close to the grand mean of 0. Sixteen percent of adolescents in this group had no contact with their biological fathers. We refer to this class as *not close to resident parents*.

----- *Table 1 about here* -----

Adolescents in Class 2 (20% of the sample) reported being moderately close to all of their parents, although the mean rating for nonresident fathers (2.49) was below the midpoint of the response options. All three of the mean Z scores were negative. Nineteen percent of adolescents in this group did not know their biological fathers. We refer to this class as *moderately close to resident parents*.

Adolescents in Class 3 (16% of the sample) reported being close to their stepfathers (4.2) and very close to their mothers (5.0). Both of the corresponding Z scores were positive. No adolescents in this group knew their biological fathers. (The proportion not knowing their fathers was 1.0). By default, these adolescents had been assigned the lowest possible score of 1 on the

father closeness rating, as noted earlier. We label this group *close to resident parents-don't know nonresident father*.

Finally, adolescents in Class 4 (55% of the sample) reported being close to their stepfathers (with a mean score of nearly 4) and very close to their mothers (with a mean score of exactly 5). Moreover, all of these adolescents (100%) knew their nonresident biological fathers. These adolescents also were relatively close to their fathers, as reflected in a mean raw score above the midpoint of the response scale and a positive mean Z score. We refer to this class as *close to all parents.*

Differences Between Latent Classes on Background Variables

Table 2 shows the means for all of the background variables by class membership. The first column shows the overall mean for the full sample, and subsequent columns show the means for the four latent classes. To supplement the means shown in Table 2, we used multinomial logistic regression to regress class membership on the background variables. We conducted three regression analyses and rotated the excluded group to provide contrasts between all four classes. Significant differences between groups (based on the multivariate results) are reported in the final column of Table 2. (The full multinomial results are available from the authors.)

----- *Table 2 about here* -----

The analysis was clearest in distinguishing adolescents in the *close to resident parents-don't know nonresident father* class (Class 3) from other adolescents. Table 2 shows that adolescents in this class were younger than adolescents in the other three classes, and the multivariate analysis indicated that these differences were significant. Adolescents in this class also had been in stepfamilies for the longest time (over 9 years), and the differences between this class and the other three classes were significant. Adolescents in this class had the lowest mean

scores for mother and stepfather education, although most of these differences were not statistically significant. Although adolescents in this this class were the most likely to be Hispanic, only one difference between classes was significant. In addition, adolescents in this class were less likely than other adolescents to have been born within marital unions (two of the three differences were significant). Taken together, these results indicate that the *close to resident parents-don't know nonresident father* class was made up largely of adolescents born to unwed mothers with comparatively little education who had formed new unions (and married their partners) when their children were relatively young. Given this constellation of traits, it is not surprising that these adolescents knew little about their biological fathers (Cheadle, Amato, & King, 2010). It is noteworthy that despite their somewhat disadvantaged circumstances, these families not only stayed together, but also maintained close relationships between adolescents and stepfathers.

Adolescents in the *not close to resident parents* class (Class 1) were especially likely to be women, with the differences between this class and two other classes being statistically significant in the multivariate analysis. Other researchers have noted that adolescent daughters are more likely than sons to report friction in stepfamilies (Hetherington & Jodl, 1994). Adolescents in this class also tended to be somewhat older than other adolescents. Other than these differences, adolescents in this class were not notably different from other adolescents on the background variables.

Adolescents in the *moderately close to resident parents* group (Class 2) were comparable to those in Class 1 (*not close to resident parents*) in being older than average. They were the least likely of any class to be Black, although the differences between classes were modest. They

also tended to have the highest family income (significantly higher than Class 4). Otherwise, members of this group did not differ appreciably from the other classes.

Adolescents in the *close to all parents* group (Class 4) had been in stepfamilies for the shortest duration (with one significant difference between classes). Adolescents in this class also were the most likely to have been born within marriage, and two of the three differences between this class and the other classes were statistically significant.

Latent Class Differences in Adjustment

The next step in the analysis compared the four groups of adolescents on the measures of adjustment in adolescence and early adulthood. To accomplish this goal, we conducted a series of regression analyses with dummy variables to represent the latent classes. We relied on linear regression for depressive symptoms, poisson regression for the count measure of delinquency (or criminality among young adults), and logistic regression for the binary substance use measures. Table 3 shows the results from two regression models with Class 4 (*close to all parents*) serving as the omitted comparison group. We conducted additional regression analyses with the other classes serving as the omitted comparison group. This made it possible to examine all possible contrasts between groups, and the significant differences are summarized in the table. Model 1 is bivariate, whereas Model 2 controls for all of the background variables listed in Tables 2. Results for adolescents (Wave I) are shown on the left side of the table and results for young adults (Wave III) are shown on the right.

With respect to symptoms of depression, adolescents who were *not close to resident parents* or *moderately close to resident parents* (Classes 1 and 2) reported more symptoms than did adolescents with stronger ties to parents (Classes 3 and 4). The same pattern was apparent in the bivariate and multivariate models. These findings are consistent with the notion that having

close ties with parents protects adolescents from experiencing symptoms of depression. There was no difference, however, between adolescents in the *close to resident parents—don't know nonresident father* group (Class 3) and the *close to all parents* group (Class 4). The results for young adults were similar, although only the difference between the *not close to resident parents* group (Class 1) and the *close to all parents* class (Class 4) was statistically significant.

----- *Table 3 about here* -----

With respect to delinquency, only one difference between groups was significant in Model 1. Controlling for the background variables in Model 2, however, revealed several additional differences, with adolescents in the *not close to resident parents* group (Class 1) reporting more delinquency than adolescents in the *close to resident parents—don't know nonresident father* group (Class 3) and the *close to all parents group* (Class 4). In addition, adolescents in the *moderately close to resident parents* group (Class 2) scored higher than did adolescents in the *close to all parents* group (Class 4). In general, these findings are consistent with the notion that having close ties with parents protects adolescents from drifting into antisocial activities. Once again, however, among adolescents who had close ties with mothers and stepfathers, there was no difference between those who did not know their nonresident biological fathers (Class 3) or were close to their nonresident fathers (Class 4). This pattern was not replicated in early adulthood. Instead, the bivariate model indicated a reversal, with individuals who had been in Class 1 as adolescents (not close to resident parents) showing the lowest level of delinquent behavior. No differences between classes were significant in the multivariate model, however, so we do not discuss the results for young adults further.

With respect to substance use, adolescents in the *close to resident parents—don't know nonresident father* group (Class 3) were less likely to report smoking cigarettes than were

adolescents in the other three groups, and the same trend was apparent in the bivariate and multivariate results. To provide an idea of the magnitude of these differences, 20% of adolescents in Class 3 reported smoking cigarettes in the previous month, compared with 34% in Class 1, 37% in Class 2, and 32% in Class 4. The results for young adults were similar, which indicates that the tendency for adolescents who were close to their resident parents (but not their nonresident fathers) to avoid cigarette smoking continued into the early adult years.

With respect to alcohol use, the bivariate results show that adolescents in the *close to resident parents—don't know nonresident father* (Class 3) group were less likely than adolescents in the *moderately close to resident parents* group (Class 2) and the *close to all parents* group (Class 4) to engage in frequent binge drinking. The unadjusted percentages were 14% for adolescents in Class 3 compared with 19% in Class 1, 27% in Class 2, and 19% in Class 4. The differences between classes no longer were significant in the multivariate analysis, however, and the same pattern of results was apparent among young adults.

Finally, although not all contrasts were statistically significant, adolescents in the *moderately close to resident parents* group (Class 2) were the most likely to have used marijuana in the past month, and adolescents in *close to resident parents—don't know nonresident father* group (Class 3) were the least likely. The unadjusted percentages were 17% in Class 1, 24% in Class 2, 8% in Class 3, and 16% in Class 4. Similar trends were apparent in the multivariate as well as the bivariate analysis in both waves.

Overall, adolescents who were close to their mothers and stepfathers but not to their biological fathers (Class 3) tended to report the lowest levels of substance use. Moreover, across all five outcomes, adolescents in this class were no worse off than were adolescents who were close to all of their parents, including their nonresident fathers (Class 4). The same trends were

apparent in early adulthood, although attenuated. We return to these unexpected findings in the discussion section.

DISCUSSION

To understand variation within stepfamilies and how this variation is related to children's adjustment, previous researchers have divided stepfamilies into groups based on structural characteristics, such as the stepparent's gender or the presence of step- or half-siblings in the household (e.g., Fine & Kurdek, 1992; Ganong & Coleman, 1986; Hetherington & Stanley-Hagan, 2000). Although structural characteristics of stepfamilies are important, few researchers have attempted to distinguish between stepfamilies on the basis of relationship characteristics. This omission is curious, given systems theory's emphasis on emotions and its view of families as networks of interlocking relationships (Broderick, 1993; Kerr & Bowen, 1988; Minuchin, 1974). To explore this approach, we focused on adolescents' reports of closeness to mothers, stepfathers, and nonresident biological fathers. We relied on LCA—an appropriate method when the number and characteristics of groups are not known *a priori*. To our knowledge, no other study has relied on LCA to understand stepfamily relationships.

Although the number of relationship patterns that characterize stepfamilies is potentially large, parent-adolescent relationships in the present study fell into four general groups. Some adolescents (9%) were distant from their mothers and stepfathers, whereas others (20%) were moderately close to their mothers and stepfathers. Adolescents in both groups generally knew their nonresident fathers but were not particularly close to them. Most adolescent, however, were close to their mothers and stepfathers, and some of these adolescents (55% of the total) also were close to their nonresident biological fathers. So a pattern of close relationships with *all* parents characterized the majority of stepfamilies with adolescents. The remaining adolescents (16% of

the total) were close to both resident parents but had no relationship with their nonresident biological fathers. These groups overlap a good deal with the groups observed by Baxter, Braithwaite, and Bryant (2006)—the only other study to our knowledge that attempted to describe broad configurations of relationships in stepfamilies. Their study, however, did not include nonresident fathers, involved university students as respondents, and used qualitative rather than quantitative methods. For these reasons, it is difficult to compare the results of the two studies.

We did not see evidence of triangulation or coalitions in our data—relationship patterns often discussed by systems theorists (e.g., Kerr & Bower, 1988). For example, no classes emerged in which children were close to resident mothers but excluded their stepfathers. Instead, adolescents' relationships with mothers and stepfathers tended to be similar, that is, adolescents' relationships with both resident parents tended to be either distant (Class 1), moderately close (Class 2), or very close (Classes 3 and 4). This finding is consistent with prior research showing that closeness to mothers is positively correlated with closeness to stepfathers (King et al., 2014). Adolescents who were close to both resident parents, however, were either distant (Class 3) or close (Class 4) to their nonresident fathers, so consistency in adolescent-parent relationships did not extend beyond the household. These results suggest that children develop close ties with stepfathers either when (a) their biological fathers continue to be actively involved in their children's lives, or (b) their stepfathers "take the place" of completely absent fathers. The presence of both dynamics would account for the absence of a linear correlation between closeness to fathers and closeness to stepfathers (Jensen & Shafer, 2013; King et al., 2014).

Adolescents in Class 3 (close to resident mothers and stepfathers but not close to nonresident biological fathers) are of particular interest. Most of these adolescents were born

outside of marriage and entered stepfamilies at early ages (age 5, on average). The young age of these children at the time of stepfamily formation, and the many years of residing together, probably contributed to the closeness of adolescent-stepfather ties in this group (Hetherington & Jodl, 1994). It is noteworthy that these closely-knit, stable stepfamilies (together for over 9 years, on average) persisted despite being relatively disadvantaged socioeconomically.

As we anticipated, the latent classes that emerged from the analysis were related to aspects of adolescent adjustment. Adolescents with weak ties to resident parents (Class 1) reported the most symptoms of depression and the largest number of delinquent activities. Moreover, the longitudinal analysis revealed that these individuals continued to report a high number of depressive symptoms 6-7 years later, although they did not report an elevated number of antisocial behaviors. Nevertheless, these results are consistent with the notion that close parent-child relationships protect children and youth from a broad range of internalizing and externalizing problems (Buchanan, Maccoby, & Dornbusch, 2000; Gray & Steinberg, 1999; Steinberg, 2001)—a principle that applies to stepfamilies as well as biological-parent families (Stewart, 2007). Of course, most parents find it easier to bond with adolescents who are emotionally adjusted and well behaved (Hawkins, Amato, & King, 2007), so closeness to parents and adolescent behavior are almost certainly related in a reciprocal fashion.

With respect to substance use, adolescents with weak ties to resident parents (Class 1) or moderately strong ties to resident parents (Class 2) were the mostly likely to report smoking cigarettes, binge drinking, and marijuana use (despite some variation across models and time periods). We originally expected that adolescents who were close to all of their parents, including their nonresident fathers (Class 4) would exhibit the most positive outcome profile. Contrary to this expectation, adolescents who were close to their resident parents but didn’t

know their nonresident fathers (Class 3) consistently reported the lowest levels of substance use, and this tendency persisted into early adulthood. Indeed, adolescents in Class 3 were significantly less likely to report smoking cigarettes than were adolescents in Class 4 in both waves. We suspect that this finding reflects a potential disadvantage of being close to nonresident fathers. Adolescents who spend significant amounts of time with nonresident fathers are likely to travel regularly between two households, and it is possible that splitting time across two households makes it difficult for parents to effectively monitor their adolescents' peer networks and experimentation with substances. Moreover, spending time in two households may increase adolescents' exposure to people (peers and adults) who smoke cigarettes.

More generally, our findings appear to clash with previous research showing that closeness to nonresident fathers is negatively associated with children's emotional and behavioral problems (Adamsons & Johnson, 2013; Amato & Gilbreth, 1999). It may be, however, that many adolescents require only one close father figure in their lives. If this is true, then adolescents with close ties to their stepfathers may not "need" their biological fathers, although they may value continuing contact. Moreover, most adolescents in Class 3 (close to resident parents but not to nonresident fathers) had been born outside of marriage and were relatively disadvantaged socioeconomically. It may be that in disadvantaged populations, close relationships with nonresident fathers involve costs as well as benefits (Thomas, Farrell, & Barnes, 1996). This might be the case when fathers are struggling with problems often associated with poverty, such as unemployment, discrimination, substance abuse, and chronic psychological distress. The costs of maintaining close relationships under these circumstances might cancel out any benefits and account for why adolescents in Class 3 showed little evidence of impairments despite having no involvement with their biological fathers. Because Add Health contains

minimal information on nonresident fathers, testing this explanation was not possible in the current study, although it would make a useful starting point for further research.

Like all studies, the current one involves limitations. Because the Add Health interview did not include questions about adolescents' closeness to mothers' cohabiting partners, we were unable to incorporate information on cohabiting stepfamilies. (Stepfamilies that began as cohabiting partnerships and turned into marriages were included in the analysis, however.) Similarly, we were unable to include questions about closeness to nonresident stepmothers. In addition, we did not have a sufficient number of cases to do a comparable analysis for resident stepmother families. Moreover, we focused on a single relationship dimension, closeness to parents, and this was measured with a single item. Although emotional closeness is a central relationship feature, broadening the focus to include other relationship dimensions (such as the frequency of sharing activities or parental monitoring and supervision) might provide more detailed distinctions between a more nuanced set of latent classes. Finally, we did not have information on stepfathers' (or other parents') feelings of closeness to adolescents. Although we assume that adolescents' and stepfathers' feelings are positively correlated, a significant minority of cases might exist in which adolescents and stepfathers (or other parents) hold discrepant feelings toward one another.

In conclusion, family systems theory shifts our attention away from dyads and toward larger patterns of relationships within stepfamilies. The present study indicates that LCA can distinguish between groups of stepfamilies on the basis of relationship closeness in a manner that yields compelling classes. Moreover, the present study demonstrates that these relationship configurations are bound up with multiple forms of adjustment that persist from adolescence into the early adult years. Our analysis also shows that adjustment is not a simple function of the

number of positive relationships in the family network. In particular, when adolescents have close relationships with stepfathers, they appear to receive little additional benefit from having close relationships with nonresident fathers. Future studies can build on the current findings by using LCA to explore naturally occurring variation within stepfamilies (as well as in other family forms) with more detailed relationships characteristics. A clearer understanding of how stepfamilies differ from one another—especially in ways that are related to youth development—would be useful to counselors, therapists, and educators who work with stepfamilies (e.g., Lucier-Greer & Adler-Baeder, 2012).

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Table 1. Means of Relationship Indicators by Latent Class Membership

Variable	Full sample	Class 1	Class 2	Class 3	Class 4
Closeness to stepfather					
Mean raw score	3.70	2.58	3.10	4.20	3.95
(Standard error)		(.15)	(.08)	(.11)	(.05)
Mean Z score	0.00	-0.99	-0.54	0.42	0.21
Closeness to mother					
Mean raw score	4.61	2.77	4.00	5.00	5.00
(Standard error)		(.05)	(.00)	(.00)	(.00)
Mean Z score	0.00	-2.35	-0.74	0.57	0.57
Closeness to nonresident father					
Mean raw score	2.63	2.61	2.49	1.00	3.16
(Standard error)		(.14)	(.09)	(.00)	(.07)
Mean Z score	0.00	-0.05	-0.12	-1.01	0.33
Don’t know nonresident father					
Mean raw score	0.21	0.16	0.19	1.00	0.00
(Standard error)		(.04)	(.03)	(.00)	(.00)
N (unweighted)		197	383	301	1,053
Proportion (weighted)		0.09	0.20	0.16	0.55

Note: Means are based on weighted data. Standard errors are adjusted for weighting, clustering, and stratification.

Class 1: Not close to resident parents (9%)

Class 2: Moderately close to resident parents (20%)

Class 3: Close to resident parents—don’t know nonresident father (16%)

Class 4: Close to all parents (55%)

Table 2. Means (and Standard Errors) of Background Variables by Latent Classes

Variable	Total	Class 1	Class 2	Class 3	Class 4	Differences $p < .05$
Daughter	.51	.66	.54	.48	.48	1 > 3, 4
	(.02)	(.06)	(.03)	(.03)	(.02)	
Age	15.39	15.78	15.64	15.00	15.35	1, 2, 4 > 3; 1 > 4
	(.13)	(.18)	(.14)	(.15)	(.15)	
Years stepfamily	7.58	7.36	7.42	9.21	7.07	3 > 1, 2, 4
	(.17)	(.53)	(.29)	(.34)	(.22)	
Number full sibs	.70	.71	.65	.69	.72	
	(.04)	(.09)	(.09)	(.07)	(.05)	
Any half sibs	.41	.42	.38	.54	.38	
	(.02)	(.05)	(.03)	(.04)	(.02)	
Any step sibs	.11	.06	.09	.10	.12	
	(.01)	(.02)	(.02)	(.02)	(.02)	
Mother education	2.52	2.49	2.64	2.24	2.57	
	(.04)	(.13)	(.07)	(.09)	(.04)	
Stepfather educ	2.55	2.60	2.53	2.23	2.63	4 > 3
	(.05)	(.12)	(.08)	(.09)	(.06)	
Log income	3.50	3.54	3.71	3.36	3.45	2 > 4
	(.05)	(.12)	(.05)	(.07)	(.08)	
Hispanic	.11	.13	.08	.19	.10	3 > 2
	(.02)	(.03)	(.02)	(.04)	(.02)	
Black	.13	.14	.09	.16	.13	4 > 2
	(.02)	(.03)	(.02)	(.03)	(.02)	
Other race	.06	.04	.09	.06	.06	
	(.01)	(.02)	(.02)	(.02)	(.01)	
Child not citizen	.04	.07	.03	.06	.02	
	(.01)	(.02)	(.01)	(.02)	(.01)	
# father figures	1.94	1.86	2.01	1.84	1.97	
	(.03)	(.07)	(.04)	(.07)	(.03)	
Marital birth	.76	.71	.76	.56	.82	4 > 2, 3; 2 > 3
	(.02)	(.07)	(.03)	(.05)	(.02)	
Religiosity Z	-.03	-0.01	-0.08	0.01	0.00	
	(.04)	(.07)	(.07)	(.07)	(.04)	

Note: Total n = 1,934. Means are based on weighted data. Standard errors are adjusted for weighting, survey clustering, and stratification. Significance tests for group differences are based on multinomial logistic regression.

Class 1: Not close to resident parents (9%)
Class 2: Moderately close to resident parents (20%)
Class 3: Close to resident parents—don't know nonresident father (16%)
Class 4: Close to all parents (55%)

Table 3. Regression Analysis of Adjustment Measures on Latent Classes, Waves I and III

	Adolescence (Wave I)		Adulthood (Wave III)	
	Model 1	Model 2	Model 1	Model 2
Depressive symptoms				
C1: Not close	.31	.27	.24	.24
	(.07)	(.07)	(.09)	(.08)
C2: Moderately close	.18	.16	.10	.09
	(.05)	(.05)	(.06)	(.06)
C3: Close to resident	-.02	-.04	.08	.04
	(.05)	(.05)	(.08)	(.08)
C4: Close to all	.00	.00	.00	.00
Differences $p < .05$	1, 2 > 3, 4	1, 2 > 3, 4	1 > 4	1 > 4
Delinquency				
C1: Not close	.22	.30	-.25	-.04
	(.09)	(.10)	(.09)	(.09)
C2: Moderately close	.14	.15	.03	.11
	(.08)	(.08)	(.12)	(.11)
C3: Close to resident	.08	.03	-.07	-.11
	(.09)	(.09)	(.12)	(.13)
C4: Close to all	.00	.00	.00	.00
Differences $p < .05$	1 > 4	1 > 3, 4 2 > 4	1 < 2, 4	none
Smoking				
C1: Not close	.14	.02	.07	.24
	(.25)	(.24)	(.25)	(.25)
C2: Moderately close	.24	.10	.05	.03
	(.18)	(.20)	(.17)	(.19)
C3: Close to resident	-.60	-.58	-.49	-.48
	(.21)	(.21)	(.25)	(.24)
C4: Close to all	.00	.00	.00	.00
Differences $p < .05$	1, 2, 4 > 3	1, 2, 4 > 3	2, 4 > 3	1, 2, 4 > 3

Binge drinking				
C1: Not close	.07	-.04	-.17	.03
	(.30)	(.33)	(.20)	(.22)
C2: Moderately close	.44	.35	.15	.21
	(.17)	(.19)	(.20)	(.20)
C3: Close to resident	-.38	-.17	-.54	-.32
	(.26)	(.29)	(.22)	(.25)
C4: Close to all	.00	.00	.00	.00
Differences $p < .05$	2, 4 > 3	none	2, 4 > 3	none
Marijuana				
C1: Not close	.10	.12	-.03	.16
	(.29)	(.34)	(.28)	(.28)
C2: Moderately close	.56	.56	.29	.40
	(.20)	(.20)	(.18)	(.19)
C3: Close to resident	-.74	-.58	-.31	-.18
	(.38)	(.40)	(.24)	(.25)
C4: Close to all	.00	.00	.00	.00
Differences $p < .05$	2 > 3, 4 4 > 3	2 > 3, 4	2 > 3	2 > 3, 4

Note: Total n = 1,934. Table values are linear regression coefficients for depression, poisson regression coefficients for delinquency, and logistic regression coefficients for smoking, binge drinking, and marijuana. Coefficients in Model 1 are from bivariate analyses. Model 2 includes controls for all background variables. Class 4 serves as the omitted comparison group, although the comparison group was rotated to provide group comparisons for significance testing. Results are weighted, and standard errors (in parentheses) are adjusted for weighting, survey clustering, and stratification.

Class 1: Not close to resident parents (9%)

Class 2: Moderately close to resident parents (20%)

Class 3: Close to resident parents—don't know nonresident father (16%)

Class 4: Close to all parents (55%)