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Romantic Relationships from Adolescence to Young Adulthood: Evidence from the National Longitudinal Study of Adolescent Health

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ABSTRACT

Theories on romantic relationship development posit a progression of involvement and intensity with age, relationship duration, and experience in romantic relationships. Using the National Longitudinal Study of Adolescent Health, this study tests these propositions by considering relationship type and patterns of relationships over the course of adolescence and their influence on relationship formation in young adulthood. Findings confirm that relationships become more exclusive, dyadic, of longer duration, and more emotionally and sexually intimate over the course of adolescence. Relationship experience in adolescence is associated with an increased likelihood of cohabitation and marriage in young adulthood. Finally, individuals' ascribed characteristics of gender, race/ethnicity, family structure, and income status have influences on adolescent romantic relationships that persist into young adulthood.

Much of the literature on social development during the transition to adulthood has focused on the role of key earlier relationships with parents and peers in constructing the social landscape on which young adult relationships will develop. Prior to the mid-1990s virtually no research considered the developmental currency provided by adolescent romantic relationships. The paucity of research in this area is attributed to several factors including skepticism regarding the importance of perceived short-lived relationships, research and funding focus on sexual (not romantic) relationships, and difficulty of both measuring adolescent romance and accounting for romantic relationships using existing theories of social or interpersonal development (Brown, Feiring, and Furman 1999; Collins 2003).

The past decade has seen a marked increase in studies on adolescent romantic relationships. This increase is driven by a number of factors. First, romantic relationships have been implicated both in negative behaviors (Neeman, Hubbard and Masten 1995) and psychosocial well-being (Joyner and Udry 2000; Davies and Windle 2000) and cited as imperative for development (Giordano 2003; Giordano, Longmore, and Manning 2001; Erikson 1968). Thus, researchers have aimed to identify the age, stage, and social conditions under which such relationships are pro-social or maladaptive.

Second, the transition to adulthood has become elongated and less orderly such that young people take longer to “become” adults and they do so by passing various markers of adulthood out of the standard sequence common to prior generations (Settersten, Furstenberg, and Rumbaut 2005). Especially relevant for the study of social development, young people are delaying marriage so that the average age at first marriage is 25 for women and 27 for men (U.S. Census Bureau 2001). At the same time, half of all adolescents report romantic involvement by the age of 15 (Carver, Joyner, and Udry 2003). This means that on average, adolescents have ten

to twelve years of romantic experience prior to marriage. Not only is this a significant span of time, it is also dense with regard to individual and interpersonal development (Dornbusch 1989).

Finally, theories have developed and adapted to more fully account for romantic experience in adolescence (Furman and Wehner 1994; Brown 1999; Connolly and Goldberg 1999; Allen and Land 1999; Collins 1997; Collins and Sroufe 1999; Giordano 2003; Giordano et al. 2001 & 2005). Empirical research to test new theoretical propositions has begun to appear in the literature, yet gaps remain in the evidentiary base. Thus, understanding adolescent romantic relationships becomes a timely and compelling research objective.

In this paper we review and integrate existing theories on the development of romantic experience through adolescence and into adulthood. We then review findings from empirical forays into the romantic lives of adolescents. Next, guided by theory we conduct prospective empirical analyses that describe patterns of relationship involvement, assess their demographic correlates, and estimate the associations between relationship progression and both qualitative aspects of adolescent relationships and the formation of young adult relationships. Our analyses use the National Longitudinal Study of Adolescent Health (Add Health), data that has proven useful in other studies of adolescent romance (Joyner and Udry 2000; Giordano et al. 2005; Carver et al. 2003; Raley, Crissy and Muller 2006). Our contribution with these data is unique because we test developmental theories and empirically follow adolescents into young adulthood by utilizing all three waves of the data. Finally, we integrate our findings with those of other studies and assess future research needs.

Adolescent Romantic Relationship Theories

Several important theoretical schemas have emerged to help make sense of how adolescent romantic relationships fit into the existing social relationship order and how they develop over time. While these schemas are relatively new, they have roots in earlier theories of development. Furman and Wehner (1994) offer a behavioral systems approach to understanding the various developmental tasks accomplished by adolescent romance. The four systems invoked in adolescent romantic relationships are *affiliative*, *sexual/reproductive*, *attachment*, and *care giving*. Furman and Wehner arrive at this conceptualization of adolescent romantic relationships by merging ideas from attachment theory (e.g. Hazen and Shaver 1987) and Sullivan's (1953) theory of social needs in key relationships from infancy through adolescence.

According to the behavioral systems approach, the affiliative function of adolescent romantic relationships offers companionship, reciprocity and cooperation. The sexual/reproductive system includes physical intimacy and the potential for procreation. The attachment system is characterized by love, closeness, bonding, and feelings of security, and the care giving system is represented by support and assistance between partners. Furman and Wehner (1994) suggest that the affiliative and sexual/reproductive systems are active in adolescent romance before the attachment and care giving systems develop. In fact, these latter two systems may not manifest until early adulthood. The behavioral systems model suggests that systems are engaged in a cumulative fashion, rather than a progression where one system gives way to another. For example, when the attachment system is active in a relationship, the sexual/reproductive and affiliative systems are also likely to be active in that relationship.

While Furman and Wehner describe behavioral systems in adolescent romantic relationships, Brown (1999) and Connolly and Goldberg (1999) introduce phase- or stage-based models of the progression of romantic experience during adolescence. Similarities between the

progression models of Brown and Connolly and Goldberg allow for the identification of four distinct phases: *initiation*, *affiliation*, *intimate*, and *committed* (1). Both of these models are rooted in early work by Dunphy (1963) on the progression of adolescent romantic relationships from crowds to heterosexual dyads. In the initiation phase, attraction and desire are key feelings, but actual contact between potential partners is limited. In the affiliation phase, opposite-sex individuals interact in group settings. This provides opportunities to learn how to interact with the opposite sex and to meet potential partners. In the intimate phase, couples form and begin to distance themselves from the peer group to focus emotional energies on the dyadic relationship. In the committed phase, couples share emotional and physical intimacy, exhibit care giving behavior, and serve as attachment figures.

When assessed as partially overlapping and complementary perspectives, the system and phase conceptualizations lead to similar hypotheses regarding adolescent romantic relationships. Together, these theories suggest that the normative adolescent relationship experience would start in early adolescence with a short-lived relationship that is characterized by group dating. Then in middle adolescence one would progress to multiple short-lived relationships that are decreasingly group focused and increasingly characterized by both sexual and, to a lesser extent, emotional intimacy. Finally, in late adolescence or early adulthood, one would progress to a single committed, sexual, and exclusive relationship of longer duration (see too Seiffge-Krenke 2003). Of course this is only a normative experience, and individuals are expected to deviate from this idealized progression model due to individual factors as well as social and cultural conditions (Cohen, Kasen, Chen, Hartmark, and Gordon 2003). As such, it should be considered a “soft-stage” model where the tempo and direction of movement can vary (although mostly

progression rather than *regression*), rather than a “hard-stage” model where sequential progression is compulsory (Connolly, Craig, Goldberg, and Pepler 2004).

The theory-building of the last decade has motivated an encouraging amount of high quality empirical work to test these theories. This research has touched on the number, duration, and quality of romantic relationships. Most often, researchers investigate how the number of partners and average relationship duration vary with age and gender, and how relationship quality varies with the duration of the relationship. Below we highlight some key empirical findings from many studies on discrete dimensions of romantic relationships and three relatively new studies on the theoretical model of relationship progression outlined above.

Number of partners and relationship duration

First, with regard to the accumulation of romantic experience, data from Add Health indicate that while about one-quarter of 12-year-olds report romantic involvement, nearly 75 percent of all 18-year-olds report such involvement (Carver et al. 2003). Shulman and Scharf (2000) also show that older adolescents have a higher likelihood of currently being in a romantic relationship. Boys are more likely to be involved in relationships until age 15, at which time girls surpass boys in the prevalence of romantic involvement (Carver et al 2003). Similarly, Davies and Windle (2000) find that among 15- and 16-year-olds, a higher percentage of females than males report being in a steady relationship, and a higher percentage of males than females report no relationship or only a single, casual partner. This finding suggests that relationship type (steady v. casual) may differ by gender as well.

Regarding duration, older adolescents report longer relationships than younger adolescents (Carver et al. 2003; Connolly and Johnson 1996; Shulman and Scharf 2000). In addition, girls report longer relationships than boys (Carver et al 2003; Shulman and Scharf

2000). Contrary to conventional beliefs about the ephemeral nature of adolescent romance, Carver and colleagues (2003) find the median relationship duration to be 14 months, with wide variation by age. They find the average duration among 12- to 13-year-olds is 5 months, among 14- to 15-year-olds it is 8 months, and among those 16- to 18-years-old it is 20 months (2).

Most studies consider age and gender differences in relationship experience, but few studies consider other aspects of adolescents' social addresses like race/ethnicity and socioeconomic status (3) (for exceptions regarding race see Giordano et al 2005; and Connolly et al 2004). However, we know that adolescents of different racial/ethnic and socioeconomic groups differ with regard to relationship-related behaviors like sexual activity in adolescence (Upchurch, Levy-Storms, Sucoff and Anshensel 1998) and cohabitation, childbearing and marriage in adulthood (Sandefur, Martin, Eggerling-Boeck, Mannon and Meier 2000). While it is likely that adolescent romantic relationship experiences also differ by these factors, the evidence is thin.

Relationship qualities

In general, most research findings are consistent with the idea that relationship qualities vary with age such that early adolescents have more affiliative, companionate relationships while older adolescents have more committed, loving, and supportive relationships (Shulman and Kipnis 2001; Shulman and Scharf 2000). Older adolescents rate support from their romantic partners as more important than support from their best friends and parents compared to younger adolescents who rate parents or peers higher (Seiffge-Krenke 2003) or do not differentiate support from parents, peers, and partners (Connolly and Johnson 1996). Regarding relationship behaviors, Carver and colleagues (2003) find that with age, partners engage in behaviors that suggest higher levels of relationship commitment and intensity (e.g. meeting partner's parents or going out alone with partner). In addition to age, relationship duration impacts on quality such

that longer relationships are characterized by more attachment-like characteristics (Miller and Hoicowitz 2004); this may be the case at any age. However as relationships age, so too do the partners in them. Therefore, relationship duration and age are inextricably tied to one another.

Regarding gender differences in relationship qualities, empirical investigations invariably find that females are more relationship-focused than males (Galliher, Welsh, Rostosky, and Kawaguchi 2004). Girls value relationships more for interpersonal qualities while boys value them for physical attraction (Feiring 1996). However, recent research offers a portrait of gender differences in relationships that is somewhat different than suggested by past research. Using evidence from the Toledo Adolescent Relationship Study, Giordano and colleagues (2006) show that boys have *less* confidence than, and *similar* levels of emotional engagement to girls in relationships. Furthermore, boys report that their partners have greater power and influence in relationships. Perhaps adolescent gender norms are changing (see Risman and Schwartz 2002).

Relationship Patterns over Time

Empirical investigations are beginning to test the idea of a progression model of romantic relationship development. A recent prospective study by Connolly and colleagues (2004) uses a sample of Canadian 5th through 8th graders to test whether early adolescents move through romantic involvement phases as predicted by theory – sequentially and progressively as opposed to out of order or regressively. They also test whether adolescents are more likely to stay in one stage rather than move to another over the course of a year. They find that adolescents *progress* rather than *regress* through stages of romantic relationships, that they do so mostly sequentially rather than by skipping a stage, and that there is a fair amount of stage stability over the course of one year. This study is unique in its investigation of race/ethnic differences in relationship progression (4). When comparing adolescents of European, Caribbean, and Asian descent, the

authors find that European and Caribbean adolescents followed the expected progression while Asian adolescents did not progress in their relationship formation at all over the one-year period.

A second empirical study by Davies and Windle (2000) examines dating pathways over a one year interval among middle adolescents (15- and 16-year-olds) in a local sample. In this study, respondents are classified into four relationship patterns defined at two points in time over one year: 1) no dating relationships; 2) a single, casual dating relationship; 3) multiple, casual relationships; and 4) steady dating relationships. The cross-classification of these four patterns of dating at times 1 and 2 reveals several patterns consistent with the relationship progression idea. Common transitions between the two time points are: 1) from no dating to a single, casual relationship; 2) from a single casual relationship to multiple casual relationships; 3) from a single casual relationship to a steady dating relationship; and 4) from multiple casual relationships to a steady dating relationship. In this study, most respondents experienced transitions between these types of dating experiences, and most transitions followed the orderly patterns predicted by theory – forward progress from fewer short and less intense relationships to more relationships overall, often to a single committed steady relationship.

Finally, a recent study by Seiffge-Krenke (2003) uses a prospective sample of 103 West German subjects to assess the individual and relationship precursors to and developmental sequence of adolescent to young adult relationships. Results confirm that with age adolescents gain more experience, maintain relationships for longer durations, and give higher ratings of partner support. Moreover, adolescent romantic relationships exhibit stronger effects on young adult relationship quality than peer relationships or conceptions of the self. Thus, while other studies have examined the influence of earlier relationships in other domains, it appears that relationships in the same domain (romantic) hold more sway over young adult relationships.

While the prior empirical research is instructive, several limitations remain. First, most studies examine one or a few discrete aspects of relationships like number of partners or duration or qualities of relationships. While most studies examine age and gender differences in one of the aforementioned aspects, few studies examine the influence of other demographic characteristics, and rarely do studies examine relationship and individual characteristics together.

Two of the aforementioned studies are ground-breaking in their use of prospective data to confirm propositions about how adolescents enter and progress in romantic relationships during early (Connolly et al 2004) and middle (Davies and Windle 2000) adolescence. However, these studies do not cover a wide age range or span of time. Seiffge-Krenke (2003) accounts for relationships over a wider age range, but because the analysis ends at age 21, it may miss the bulk of the transition to adulthood which some suggests stretches into the 30s (Arnett 2004).

In addition, because of sample limitations, Davies and Windle (2000) and Seiffge-Krenke (2003) do not examine race/ethnic differences in progression, Davies and Windle do not test for gender differences, and Connolly and colleagues (2004) tested for, but did not find gender differences in their particularly young adolescent sample. Finally, all three of these studies of romantic relationship patterns over time are based on relatively small and/or select samples of subjects from one school, city, or region. A primary disadvantage of such samples is their homogeneity compared to the experience of all adolescents. Local norms probably condition the process of romantic relationship development as much as age or gender does. Therefore, considering homogeneous subjects in a single or several high schools in a geographically limited area substantially restricts generalizability.

While several high quality studies have described adolescent romantic relationships using the Add Health data, they have used only one (Carver et al 2003) or two (Joyner and Udry 2000;

Giordano et al 2005) waves of these data. This means that observations end at about age 18 and miss young adult relationships. One new study by Raley and colleagues (2006) uses Add Health data to examine the influence of time 1 relationships on duration to cohabitation and marriage at time 3 among only the oldest sample members. To date, none of these studies explicitly test developmental theories of relationship progression over time.

The present study describes relationship patterns over the course of approximately seven years by considering both relationship type and quality among a nationally representative sample of adolescents during the transition to adulthood. The sample consists of adolescents ages 11-18 at time 1 (1995), 13-20 at time 2 (1996) and 18-25 at time 3 (2001-2002), allowing us to test the idea of relationship progression across a wider age range than has been possible in past studies. In addition, at each interview, respondents report retrospectively on multiple recent romantic relationships, allowing us to capture more than current relationship experience. Although there are not rich measures on romantic relationship qualities, we include a few available measures to give us some sense of how relationships change qualitatively across adolescence. Finally, the sample is heterogeneous on several key dimensions: gender, race/ethnicity, socioeconomic status, family structure, and age. With these data we investigate four research questions:

1. What are the patterns of relationship involvement across time during adolescence?
2. What are the socio-demographic correlates of relationship patterns?
3. How are relationship qualities different for those with different patterns of involvement?
4. How do adolescent relationship patterns correlate with young adult relationship formation?

METHOD

Participants

The National Longitudinal Study of Adolescent Health (hereafter Add Health) includes respondents in grades 7-12 in 1995 who are followed-up in a second interview approximately one year later in 1996 and a third interview in 2001-2002. The first stage of analysis uses respondents who completed interviews at times 1 and 2, had complete romantic relationship information, age, gender, and race/ethnicity data, and had valid sample weights (N=8949) (5). In these analyses, we describe relationships in adolescence by pattern of involvement and relationship qualities for those with relationships. The second stage of analysis uses respondents who completed all three interviews and who have complete information on romantic relationships at time 1 and 2 and relationship history at time 3 (N=7258). In these analyses, we investigate the influence of adolescent relationships on young adult relationship involvement. All multivariate analyses are weighted to adjust for differences in selection probabilities and response rates (Chantala and Tabor 1999; Tourangeau and Shin 1998). Questions on romantic relationships were administered by Audio Computer Assisted Self-Interview (ACASI). This means that respondents hear questions through head phones and see them on a computer screen. They enter responses into the computer without assistance or interference from an interviewer. This method is used to get the most honest answers possible on potentially sensitive matters.

Measures

Adolescent Romantic Relationship Type. We define an adolescent romantic relationship using two sets of questions. First, at times 1 and 2, respondents are asked to report on up to three special romantic relationships in the past 18 months. Second, if respondents do not identify any special romantic relationships, they are asked whether they have held hands with, hugged, or

kissed anyone (not family members) in the past 18 months. If they respond affirmatively to all three questions, they are asked whether they did these things with the same person. If they respond “yes,” the relationship is considered romantic and the respondent is routed back into the series of questions that asks for details about their romantic relationships. Thus, we include both those who initially respond that they have had one or more special romantic relationship *and* those who do not report a special romantic relationship but have engaged in the three affectionate behaviors listed above. Add Health calls these ‘liked relationships.’ Of respondents who we ultimately determine to have had at least one romantic relationship, 85 percent are observed from their answer to the question about special romantic relationships and the remaining 15 percent are observed from their reporting of a liked relationship. From these definitions, we create four categories of relationship experiences at time 1 and time 2: 1) no relationships; 2) one, casual relationship; 3) multiple relationships; and 4) one, steady relationship (6).

Some have suggested that the Add Health definition of a romantic relationship is too narrow because it excludes relationships that adolescents do not consider special (Furman and Hand 2006). The inclusion of liked relationships should partially mitigate against this limitation. In addition, we are interested in those relationships that are most important for the development of young adult romantic relationships. We acknowledge that less special relationships are likely to provide some developmental currency, yet we believe those defined as special and their liked relationship counterparts together represent the most developmentally significant adolescent romantic relationships. Still, we note that our analyses may over estimate the effects of adolescent romantic relationships in general if this definition captures only the most serious ones. ***Adolescent Relationship Patterns Over Time.*** To measure relationship patterning during adolescence, we use a cross-classification of the four categories of relationship type at time 1 and

time 2 as defined above. This classification results in sixteen cells and we group these into six theoretically informed categories of common patterns in our data: 1) no relationships reported at either time point; 2) forward movement from none to one casual or multiple partners *or* from one casual partner to multiple partners; 3) stability in either the one casual or multiple partners categories; 4) regression or backward movement; 5) forward movement from none, one casual, or multiple partners to steady dating; and 6) stability in the steady dating category (7).

Adolescent Romantic Relationship Qualities. Add Health contains a few measures that describe the qualities of romantic relationships. While these measures are not as comprehensive as those used in many studies (e.g. attachment scales), they may at least hint at the content of these relationships. Consistent with propositions about the character of relationship progression from phase and stage theories, we use three indicators of quality in respondents' most recent relationship (8): dyadic mixing, sexual intercourse, and emotional intimacy. *Dyadic mixing* indicates the degree to which adolescents interact or go out exclusively with their partner. It is coded to 1 if respondents reply affirmatively to the statements: 'I went out alone with my partner' or 'I spent less time with my friends to spend more time with my partner.' *Sexual intercourse* indicates whether the relationship included sex (1/0). Finally, if respondents answer affirmatively to at least three of the following statements, their relationship is considered *emotionally intimate* (1/0): we have exchanged gifts, exchanged sentiments of love, thought of ourselves as a couple, and told others we were a couple. We expect that relationships will become more dyadic and more sexually and emotionally intimate over the course of adolescence.

Young Adult Relationship Experience. We consider three measures of relationship experience in young adulthood—ages 18 to 25 at time 3. We consider the number of relationships respondents have had in the past six years and their cohabitation and marriage histories. To

determine the *number of relationships* in the past six years, we use responses to a query asking respondents to list all romantic and sexual relationships since the summer of 1995. With regard to cohabitation and marriage experience, we consider whether respondents have *ever cohabited* with a partner or *ever married*. Both are coded 1 if they have.

Socio-Demographic Measures. Table 1 displays descriptive statistics for all measures used in the analyses. Participants' ages range from 11 to 18 at time 1. For our purposes, we group adolescents into three age categories at time 1: younger (11-13), middle (14-15) and older (16-18). By time 3, these respondents are approximately 18-20, 21-22, and 23-25 respectively. Five race/ethnic categories are defined: non-Hispanic white, non-Hispanic black, Hispanic, Asian and other race. In addition, we indicate low-income status by designating whether the respondent's family income is in the bottom 25 percent of the income distribution for the full sample. Family income was missing in approximately 20 percent of cases. For these cases we substituted the mean level of family income, and included an indicator for missing income in our models. Family structure is grouped into four categories: biological or adoptive two-parent family, step-family, single-parent family and other family types.

INSERT TABLE 1 HERE

RESULTS

What are the patterns of relationship involvement across time during adolescence?

Table 2 documents the cross tabulation of relationship types at times 1 and 2. The right-most column gives the distribution of relationship types at time 1, and the bottom row gives the distribution of types at time 2. Across rows, the cells represent the percent in each time 1

relationship type who moved to or stayed in each time 2 relationship type. When considering the table as a whole, several general patterns are apparent. First, the diagonal shows a substantial amount of stability in relationship type across the one-year time span. The most stability is in the ‘no relationships’ and the ‘steady relationship’ types (Groups 1 and 6). About 70 percent of those who report no relationship at time 1 maintain single status at time 2. Among those who are in a steady relationship at time 1, nearly 60 percent are in a steady relationship at time 2.

In a second pattern, among those who change relationship types between times 1 and 2, forward movement is more prevalent than backward movement. Almost 60 percent of all respondents with one casual relationship at time 1 progress to multiple relationships or to one steady relationship at time 2. Moreover, if we consider only respondents with one casual relationship at time 1 *who changed types* by time 2, an even larger proportion (71%) *progressed* compared to *regressed* (29%) (9). Likewise, 53 percent of all respondents with multiple relationships at time 1 progress to a steady relationship at time 2. If we consider only those who changed types by the second time point, 77 percent progressed and 23 percent regressed.

While all sixteen cells are displayed, we denote the groupings that comprise the six categories of relationship patterns to be analyzed later: 1) no relationships at either time 1 or 2; 2) progression to one casual or multiple relationships; 3) stability in one casual or multiple relationships; 4) regression in relationship types; 5) progression to a steady relationship; and 6) stable in steady relationships. We group in this way to capture stability, change, and the direction of change. Among those in the stability categories (1, 3, and 6), those in the stable no relationships, stable one or multiple relationships, and the stable steady categories have quite different relationship experiences. Likewise, moving forward to one or multiple relationships

denotes relationship up-take, whereas moving forward to a steady relationship probably represents an individual who is further along in the relationship progression.

The regression category is interesting in that it represents respondents who have moved backwards in the idealized progression, or may simply be experiencing a lull in dating when interviewed. In fact, about half in the regression category are not dating anyone at time 2, and half of these respondents (25% of all who regress) had a steady relationship at time 1. So, while those who regress are not actively moving forward in their relationship progression at the time of the second interview, on average they have a fair amount of prior relationship experience and may be experiencing a temporary abeyance in their relationship progression (Cohen et al 2003).

INSERT TABLE 2 ABOUT HERE

What are the socio-demographic correlates of relationship patterns?

To assess socio-demographic attributes associated with adolescent relationship experience, we use multinomial logistic regression to estimate relative risk ratios. In Table 3, each progression pattern is compared to the pattern with the lowest level of experience: those who have progressed from none to one casual or multiple relationships, or more simply, relationship up-take. The first contrast shows that females, middle and older adolescents, and those from step or other family structures are less likely to have no relationships over the course of adolescence, while black, Asian, and low-income adolescents are more likely to have no relationships. The second contrast shows that relationship regression (or backward movement) is more likely only among the oldest and black adolescents. However, the risk is substantial in the case of the oldest adolescents – they are more than twice as likely to regress as to take-up

relationships (because they already have experience). The third contrast shows no statistically significant socio-demographic differences between relationship uptake and stable low-levels of involvement in one casual or multiple relationships.

The fourth contrast shows that middle and older, black, and low-income adolescents are more likely to progress to a steady relationship by time 2. This contrast is interesting when juxtaposed with the first contrast that shows that black and low-income adolescents are more likely to have no relationships. This indicates that while adolescents in these groups are more likely to have no relationships, if romantically involved, they are more likely to progress to steady relationships. The fifth and final contrast shows that females, middle and older adolescents, and those from single-parent families are more likely and Asian adolescents are less likely to have steady relationships across the course of adolescence (10).

INSERT TABLE 3 ABOUT HERE

How are relationships qualities different for those with different patterns of involvement?

In Table 4 we examine associations between relationship patterns and qualities in a multivariate context. Here we use relationship patterns to predict relationship quality in the most recent adolescent relationship while controlling for gender, age, family structure, race/ethnicity, and income status. Because we are estimating qualities, we use only respondents who report a relationship at time 2, when qualities were measured (N=4843). We estimate logistic regression models and report odds ratios. For all models, we again use the pattern of relationship up-take as the reference. Model 1 displays the odds of dyadic mixing. First, we see that those in the ‘stability in one or multiple’ pattern are statistically indistinguishable from the reference group.

Model 1 also shows that those who regressed or progressed to a steady relationship or were in a steady relationship at both times are between 1.5 and 2.5 times more likely to report dyadic involvement in their most recent relationship. Girls and middle or older teens are more likely to report dyadic involvement, whereas black and low-income teens are less likely to do so.

Model 2 estimates the odds of sexual intercourse. Again, those who are stable in one or multiple relationships are statistically indistinguishable from those who took up relationships. Adolescents who regressed or who progressed toward a steady relationship are more than two times more likely to have had sex in their most recent relationship. Furthermore, those who were in a steady relationship at both times are *six times* as likely to have had sex. Females, middle and older adolescents, and those from non-intact or low-income families are also more likely, and those in the 'other race' category are less likely to have had sex in their most recent relationship.

Model 3 estimates the odds of high emotional intimacy given different relationship patterns. Similar to the results of the first two models, those in stable steady relationships are especially likely to report high intimacy (OR: 6.04). Those who have progressed to a steady relationship are almost 4 times as likely, and those who regressed are twice as likely to report high levels of emotional intimacy in their most recent relationship compared to those taking up relationships. Girls are more likely and black and Hispanic teens and those with missing family income information are less likely to report emotional intimacy. There are no age or family structure differences in intimacy net of relationship patterning. Taken together the models in Table 4 confirm the associations predicted by the phase and system models of relationship development. As adolescents progress towards steady relationships, their relationships become more dyadic, sexual, and emotionally involved.

INSERT TABLE 4 ABOUT HERE

How do adolescent relationship patterns correlate with young adult relationship formation?

Looking now at later relationships in young adulthood, we turn to Table 5 to examine associations between adolescent relationship experiences and young adult relationship history in a multivariate context. We estimate the number of relationships since 1995, and the odds of ever marrying and ever cohabitating (outside of marriage). To retain participants who reported no romantic relationships in adolescence, we changed the sexual intercourse measure slightly to indicate whether or not the respondent ever had sex based on their time 1 and 2 reports rather than whether or not they had sex in their most recent relationship at time 2. This allows us to include the sexual experience of those who did not report a relationship at time 2 but may still have had sex in an earlier relationship or outside of the context of a romantic relationship. For the same reason, we drop the measures of dyadic mixing and emotional intimacy. Unfortunately, we do not have measures of these constructs that are not tied to the most recent relationship at time 2. We tested models that included the three quality measures among the sub-sample of those who reported a relationship at time 2, and only the sexual intercourse variable was significant. We show two models for each time 3 outcome. The first is without socio-demographic controls, and the second adds our control variables.

Theories on relationship development suggest that individuals who are further along the relationship progression should be more likely to have cohabitated or married by time 3 (Furman and Wehner 1994). We also expect that sexual intercourse in adolescence, to the degree that it signals commitment, will predict marriage and perhaps also cohabitation. Those who were less far along in the relationship progression as adolescents may have fewer relationships in the last

six years if they are generally less interested or have fewer opportunities for relationships. On the other hand, they may have more relationships as they may have done more dating “catch-up” in the past six years. Those who did not have sex in adolescence may report fewer relationships if they are more generally restrictive regarding relationships.

Model 1A estimates the influence of adolescent relationship patterns on the number of relationships the respondent had since 1995 without controls. Here we see that those whose adolescent pattern was ‘progress to steady’ or ‘stable steady’ have fewer relationships on average. Those who had no adolescent relationships also have substantially fewer relationships in the past six years (Coeff. = -1.28). Those who were sexually active in adolescence have more relationships by time 3. When controls are entered in Model 1B, there are no statistically significant differences between the relationship progression patterns for those who reported any type of relationship in adolescence. However, those who reported *no* relationships in adolescence still have on average one less relationship by time 3 (Coeff. = -1.19). In addition, the positive association between adolescent sex and number of relationships increases slightly in magnitude and remains significant. Regarding control variables, the very oldest respondents and black, Hispanic, and low-income adolescents accumulate fewer relationships by time 3 than their younger, white and higher-income counterparts. The indicator for missing family income is also significant indicating fewer relationships among these respondents.

Model 2A estimates the odds of ever cohabiting with a romantic partner by time 3 without controls. This shows that only those who had no relationships in adolescence are at reduced odds of cohabitation (OR: 0.58). Those with any relationship experience in adolescence are not statistically different in their odds of cohabitation. Adolescent sex triples the odds of cohabitation, perhaps signifying less restrictive attitudes towards relationships in general. When

controls are added in Model 2B, the findings for adolescent relationship patterns and sex remain. Many of the controls are significant as well. Females, middle and older adolescents, those from non-intact or low-income families are also more likely to have cohabited. Only blacks and Hispanics are less likely to have cohabited by time 3.

Model 3A estimates the odds of having married by time 3 without controls. Here we see that those who have progressed to or sustained steady involvement in adolescence are more likely to have married by time 3. Those who report intercourse in one or both of the first two waves are also more likely to have married. When controls are added in Model 3B only those in the stable steady adolescent relationship pattern remain more likely to have married by time 3 (OR: 1.90). Having sex in adolescence also remains significant (OR: 1.70). Much like the findings for cohabitation in Model 2B, females, middle and older adolescents, those from step families or other family types, and those from low-income families or where income is missing are also more likely to be married by time 3. Only blacks are less likely to be married.

INSERT TABLE 5 ABOUT HERE

Because our sample ranges from 18 to 25 at time 3, many respondents are quite young for having cohabitation, and especially marriage, experience. However, the lack of such experience probably does not indicate a lack of relationship experience altogether. To get some insight on other types of young adult romantic relationships, we tested the associations between adolescent relationship experiences and current relationship status (single, dating exclusively, dating non-exclusively, cohabiting but not engaged, engaged, and married) at the time of the third interview (not shown). We did not find significant associations between adolescent relationships and

current relationship status. We think this because the current status measure captures experience at only one point in time, rather than cumulative experience like the ‘ever married’ or ‘ever cohabit’ measures. Following respondents in the next wave of the Add Health data to be collected in 2008 will allow us to assess more time-normative young adult relationship experiences and their adolescent precursors.

While our primary interest in Table 5 is in the influence of earlier relationship experiences on young adult relationship status, we must acknowledge that our set of socio-demographic characteristics, which are largely ascribed characteristics, have persistent effects on young adult relationships. Some general conclusions can be drawn. First, females, older respondents, and those from non-intact or low income families of origin are more likely to have cohabited or married by young adulthood. This is consistent with population statistics that indicate that women marry earlier than men (U.S. Census Bureau 2005), and those from non-intact family structures are also more likely to marry or cohabit at a young age (Aquilino 1994; Goldscheider and Goldscheider 1998). We also find that blacks are only one-half to two-thirds as likely as whites to have cohabited or married by time 3, and blacks, Hispanics, and those from low-income families report fewer relationships from adolescence to young adulthood. That blacks are less likely to have married is completely consistent with the findings of numerous past studies (e.g Wilson 1987; Randell 1999). There has been little research on race/ethnic correlates of the number of relationships from adolescence into adulthood, but our findings that blacks and Hispanics report fewer relationships squares well with the theoretical mechanisms that limit the relationship prospects for minorities (e.g. the marriageable men hypothesis may be extended to ‘date-able’ men).

DISCUSSION

Theories on romantic relationship development in adolescence posit a progression of involvement and a change in relationship quality to more emotional and physical intensity and more dyadic mixing with age, relationship duration, and experience in romantic relationships. In addition, theory suggests that adolescent romantic relationships should be an integral part of the social scaffolding on which young adult romantic relationships rest. Furthermore, as the age at formal union formation increases in the U.S. and elsewhere, adolescent and young adult relationships become ever more important as they fill a longer span of time during which many people are not formally partnered.

In this study, we set out to review and integrate theories and prior empirical studies on the development of romantic experiences during the transition to adulthood. To test these theories, we wanted to empirically assess the types, qualities, and patterns of romantic relationships in adolescence and into adulthood. Our hope was to contribute to the existing literature with theoretically informed analyses of a large, longitudinal, and representative dataset that follows adolescents into early adulthood.

With the Add Health data we were able to confirm the theoretically suggested normative pattern of relationship development in adolescence. Specifically, with regard to relationship patterning over time, we confirm on a national level the prior findings with age-limited and localized data that *progression* is more prevalent than *regression* in relationship experience (Connolly et al 2004). Still, we find somewhat more evidence of backward movement. Our study probably observes more regression because our participants have more relationship experience on average (and are older, on average) when we first observe them. Thus, they have accumulated more relationship experience from which to regress at our first point of observation.

Our findings with regard to stability over time should not be ignored or forgotten. Most adolescents reported the same relationship type at two points in time—especially in the ‘no relationships’ and ‘steady’ categories. This is consistent with the high degree of stability over a relatively short span of time documented by some studies (Connolly et al 2004), but runs counter to the finding of others that more adolescents change relationship type than stay in the same type over a one-year time span (Davies and Windle 2000). Perhaps this is because our study includes the full age-range of adolescents (11-18) whereas the findings of more substantial change are based on a sample of 15- to 16-years-olds. It is precisely those in this middle age group who are likely to be in the thick of relationship change.

We also replicate the results of past empirical studies by finding that females and older adolescents are more likely to have any relationship experience (Carver et al 2003; Connolly and Johnson 1996; Shulman and Scharf 2000), and they are also more likely to have steady relationships (Davies and Windle 2000). Black, Asian-American, and low-income adolescents are more likely than their counterparts to report no relationships across adolescence (Connolly et al 2004; Upchurch et al 1998). Interestingly, however, if black and low-income adolescents *are* romantically involved, they appear to by-pass casual dating and progress to steady relationships.

The aforementioned theoretical perspectives suggest that the importance of adolescent relationship experience is captured not only by the number or duration of adolescent relationships, but also by their qualities. As adolescents’ relationships progress along the hypothesized development trajectory, they should become more emotionally and sexually intimate (Furman and Wehner 1994), and more dyadic in nature (Brown 1999; Connolly and Goldberg 1999). Indeed, our study supports these propositions, albeit with some measurement limitations. Adolescents with more relationship experience, especially those who are moving

toward or have sustained steady relationships have substantially increased odds of spending time alone with their partner, having sexual intercourse, and reporting high levels of emotional intimacy. This indicates that as adolescents age, their relationships become more like the exclusive adult relationships that sometimes lead to marriages.

While several high quality studies have empirically supported the theoretical propositions with data from adolescence, we know of no studies that have tested these theories with a sample that has respondents aging up to 25 years old. The Add Health data offers a window into young adulthood, and allows us to assess the degree to which adolescent relationship experiences are associated with adult relationship formation. Here we find fewer significant associations than expected. We find that those who had no relationships in adolescence also report fewer relationships in young adulthood. We also find that these respondents were only about half as likely to have experienced cohabitation by time 3. Perhaps these respondents are less relationship oriented, more selective regarding their entry into relationships, or have had fewer opportunities to be romantically involved. Conversely, we found that those who were consistently in steady relationships in adolescence were more likely to be married by time 3. It may be that some steady high school romances transitioned into marriages shortly thereafter. Or, perhaps these individuals are simply more relationally oriented to begin with.

We did not find that other categories of our nuanced measure of relationship progression (e.g. relationship up-take or progression to steady) were significantly associated with number of relationships, cohabitation, or marriage by time 3. Perhaps this is because we did not have similarly nuanced measures of relationship progression between times 2 and 3. If we had such measures, we may have detected a more seamless progression pattern reaching into young adulthood. On the other hand, it may be the case that *any* adolescent relationship experience

regardless of duration, number of partners, or place in a normative progression, is what matters for young adult union formation (Madsen 2001).

Regarding the influence of qualitative aspects of adolescent relationships on young adult union formation, we found that sexual intercourse is a large, positive, and significant predictor of number of partners, cohabitation, and marriage. Other measures of adolescent relationship experience—dyadic mixing and emotional intimacy—were not predictors of young adult relationships. Intercourse was less common than dyadic mixing or emotional intimacy in adolescent relationships, so perhaps its relative rarity makes it more influential in shaping later relationships. It is also possible that our somewhat weak measures of relationship qualities hinder our ability to detect their influences on later relationships.

While we confirm the general theoretical propositions regarding relationship progression during adolescence and empirically extend findings into young adulthood, it is important to note that even net of these experiences, socio-demographic differences persist. For example, blacks have a probability of marriage that is less than half that of whites, even after we control for income. These differences are present in adolescent relationship experience, yet considering adolescent dating patterns and qualities does not account for socio-demographic associations with young adult relationship experiences. This suggests that there are deep-rooted structural forces that shape relationship formation in adolescence, and these persist into adulthood. Future research should explore these differences in depth.

CONCLUSIONS

A primary reason for recent scholarly interest in the transition to adulthood is the great shift in the timing and order of major events in the life course. Family formation activities are central to the transition to adulthood, and it is precisely these life events that have changed the

most in recent decades. The average age at first marriage has increased substantially, cohabitation is on the rise, and childbearing is increasingly detached from marriage (Bumpass and Raley 1995). Perhaps more than any time in history, the American family has taken center stage in domestic policy issues in the U.S. (Waite 2000). Non-profit groups, states and the federal government have created a set of initiatives characterized as the marriage movement (e.g. Oklahoma Marriage Initiative), with goals of strengthening young adult relationships.

These initiatives need to recognize that most youth enter adulthood with prior romantic relationship experience. Our work extends what is known about the course of relationship development over adolescence and its influence on relationship formation in adulthood by including measures that capture multiple aspects of relationships (e.g. duration, number, quality), and using data that is representative of all U.S. adolescents in school in 1994. Additionally, we consider the experiences of young people across a wide age range that spans adolescence and extends into adulthood. Importantly, we show that adolescent relationship progression can be empirically characterized as developmental theorists have suggested in a nationally representative sample. Moreover, rather than being trivial or ephemeral, we find that having any relationship experience in adolescents is consequential for young adult partnerships. This suggests that if we are serious in our concern about young adult relationships, scholars and policy-makers must more fully consider adolescent relationship experiences as social and developmental precursors to adult relationships.

Where the breadth of our data is advantageous in many ways, its lack of depth in some areas hinders our ability to establish a complete picture of what is going on in adolescent romantic relationships. For example, we wish our measures of relationship qualities were better. In adolescence, we are limited to behavioral measures that account for things adolescents and

their partners did together or said to each other. In separate models, we also tested the influence of adolescent relationship experiences on young adult relationship quality as measured by a rather crude scale of emotional commitment available for those currently in a relationship. We did not find any significant associations with young adult relationship quality, but we are skeptical of this because of the limitations of our measure of emotional commitment. We wish we had better measures of the qualitative aspects of relationships.

In addition, the social landscape of adolescence is always changing, making it a moving target for investigators. The first interview for Add Health was conducted over 10 years ago and perhaps things are not as they used to be. Future studies should assess relationship patterns in recent cohorts of adolescents.

Despite these limitations, our study is able to test whether theorists have gotten it right with regard to the process of romantic relationship development during adolescence and into young adulthood. Our findings suggest that in general they have. Yet, our investigation of the multiple aspects of relationships and differences based on adolescents' ascribed characteristics hint at interesting nuances in the process of relationship development that should motivate future research on the topic. Our findings help us understand how adolescents negotiate the domain of romantic relationships and why it is so developmentally critical for them to do so.

ENDNOTES

- (1) Brown (1999) and Connolly and Goldberg (1999) use different labels, but the phases are conceptually very similar. We use the Connolly and Goldberg terminology here.
- (2) Furman and Hand (2006) suggest that the Add Health data may capture relatively more serious relationships. If this is true, Add Health may overestimate average relationship duration.
- (3) Giordano (2003) uses the term “social address” to refer group characteristics that structure social behavior and relationships.
- (4) See too Giordano et al (2005) for differences in ideas about dating and behaviors for whites and blacks. Their study does not, however, test models of relationship development over time.
- (5) There are several reasons for missing sample weights. First, if the case was not in the original sampling frame, but was added in the field, it does not have a weight. Second, if the case was selected as part of a pair (twins, half-siblings) and both were not interviewed, it does not have a weight. Finally, if the case did not have a sample flag to indicate whether or not it is part of a special over-sample, it does not have a weight (Joyce Tabor, Add Health Data Manager, personal communication, January 17, 2003). Adolescents who were high school seniors at time 1 and graduated before time 2 were not followed-up.
- (6) We define “casual” as relationships lasting less than three months. Connolly and Johnson use 4 months as a cut-off for short relationships, while Zimmer-Gembeck et al. use two months.
- (7) We chose to group the sixteen cells of the cross-tabulation into six categories for several reasons. First, we feel that ours is an intuitive grouping that captures both stability and change and the direction of change over time. Second, we reduced the groups to just six because we found the 16 groups analytically unwieldy. Finally, we have tried different combinations of the 16 groups that also seem logical. These other groupings did not change our substantive results.
- (8) At time 1, approximately one-third of participants had difficulty using the audio-CASI program to answer questions regarding the activities in their relationships (Carver et al 2003). Therefore, we restrict our analysis of adolescent relationship quality to time 2 reports. While we cannot prospectively assess relationship quality measures from time 1 to time 2, we can get some empirical leverage on relationship qualities in the most recent relationship at time 2 for adolescents at various phases of relationship progression.
- (9) This percentage is derived by adding the number of cases in the time 2 two ‘no relationships’, ‘multiple’, and ‘one, steady’ cells of the time 1 ‘one casual’ row. This summation serves as the denominator. The sum of those in the same row, but only ‘multiple’ and ‘one steady’ columns serves as the numerator for forward movement. The number of cases for each cell are not shown, but can be derived by multiplying the row n by the percentage in each row*column cell.
- (10) Tests for significant differences in progression patterns *between* categories of socio-demographic variables are available upon request.

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Table 1: Weighted Descriptive Statistics

Adolescent Relationship Progression	<u>Percent</u>
stable no relationships	37.54
progression to one or multiple	10.14
stability in one or multiple	2.99
Regression	17.54
progression to steady	13.69
stable in steady	18.10
Adolescent Relationship Quality	
Dyadic Mixing	77.75
High Emotional Intimacy	73.50
Sexual Intercourse	43.00
Young Adult Relationship History	
Ave # of Relationships last 6 years	2.74
Ever Cohabited	39.02
Ever Married	16.00
Socio-Demographic Measures	
Female	53.38
Male	46.62
t1 age 11-13	21.01
t1 age 14-15	37.86
t1 age 16-18	41.13
two bio/adoptive parent family	58.01
step-family	12.12
single-parent family	25.02
other family structure	4.84
White	67.99
Black	14.03
Hispanic	12.36
Asian-American	4.17
Other Race	1.45
not low-income	80.48
low-income	19.52

Table 2: Stability and Change in Relationship Types: % in Time 1 Types who Move to/Stay in Time 2 Types

Time 1 Relationship Type	Time 2 Relationship Type				Total n (%) ^a
	no rels	one, casual	multiple	one, steady	
no rels	71.38	9.96	4.36	14.31	4559 (51.43)
one, casual	23.61	18.85	18.49	39.06	1181 (13.44)
multiple	13.03	6.65	27.16	53.17	109 (1.23)
one, steady	16.06	8.90	18.60	56.45	3015 (34.01)
n (%) ^b	4050 (46.18)	907 (10.83)	978 (11.20)	3014 (31.79)	8949 (100)

^apercent of all time 1 relationship types.

^bpercent of all time 2 relationship types.

¹no relationships at either time (38% of total)

²progression to one casual or multiple (10%)

³stability in one casual or multiple (3%)

⁴regression (18%)

⁵progression to a steady relationship (14%)

⁶stable in steady (18%)

Table 3: Multinomial Logistic Model of Adolescent Relationship Progression (Relative Risk Ratios)

	No RRs v. Progress to one or mult.	Regress v. Progress to one or mult.	Stable 1/mult v. Progress one or mult.	Progress St. v. Progress to one or mult.	Stable St. v. Progress to one or mult.
Demographic Variables					
Male (ref)					
Female	0.74 **	0.81	0.89	1.10	1.74 ***
Age 11-13 (ref)					
Age 14-16	0.74 *	1.33	1.65	1.42 *	3.03 ***
Age 17-18	0.59 ***	2.20 ***	1.53	2.06 ***	8.92 ***
two parent fam (ref)					
step-family	0.56 ***	0.95	0.89	0.98	1.06
single-parent family	0.78	1.31	1.49	1.19	1.51 **
other family type	0.55 *	1.00	0.49	0.69	1.36
White (ref)					
Black	1.90 ***	1.58 *	0.57	1.40 *	1.35
Hispanic	1.25	1.29	0.57	1.22	0.94
Asian	2.25 ***	0.61	0.59	0.65	0.47 *
Other Race	2.49	1.99	0.25	1.66	1.55
Not Low-Income (ref)					
Low Income	1.83 ***	1.19	1.38	1.58 **	1.11
Flag for missing inc	1.07	0.94	1.26	1.00	1.03

*p<0.10; **p<0.05; ***p<0.01

all models account for complex sampling design using stata's svy commands.

Table 4: Probability of Relationship Qualities (Odds Ratios)

	Dependent Variables:						
	MODEL 1 ^a		MODEL 2 ^b		MODEL 3 ^c		
	Dyadic Mixing		Sexual Intercourse		High Emot Intimacy		
progression to one, multiple (ref)							
stability in one, multiple regression	1.48	*	1.42	2.37	***	2.17	***
progression to steady	1.48	**	2.30	***	3.66	***	
stable steady	2.57	***	5.91	***	6.04	***	
male (ref)							
female	1.29	*	1.31	***	1.26	***	
age 11-13 (ref)							
age 14-15 ^d	2.37	***	2.05	***	0.93		
age 16-18 ^d	4.23	***	5.41	***	0.93		
two bio/adoptive parent fam (ref)							
step-family	1.15		1.46	**	1.30		
single-parent family	1.10		1.66	***	1.03		
other family type	0.85		2.16	***	1.03		
white (reference)							
black	0.53	***	1.12		0.66	***	
Hispanic	0.73		0.86		0.69	*	
Asian	0.77		0.76		1.00		
other race	1.88		0.61	*	1.03		
not low-income (ref)							
low-income	0.74	*	1.41	*	0.84		
flag for missing income	0.87		1.03		0.78	*	

***p<.001; **p<.01; *p<.05

all models account for complex sampling design using stata's svy commands.

^aregress and progress to steady categories statistically different from stable steady (p<0.05), but not statistically different from each other

^bregress and progress to steady categories statistically different from stable steady (p<0.05), but not statistically different from each other

^call patterns statistically different from each other (p<0.05)

Table 5: Adolescent Relationships and Young Adult Relationship Experience

	OLS		Logistic		Logistic	
	Number of Rels		Ever Cohab.		Ever Marry	
	UnStd Coeffs.		Odds Ratios		Odds Ratios	
	Model 1		Model 2		Model 3	
Adolescent Relationships	A	B	A	B	A	B
Pattern						
progression to one/mult (ref)						
stability in one, mult	-0.17	-0.13	1.06	1.05	1.46	1.48
regress	0.19	0.14	0.90	0.84	1.50	1.48
progression to steady	-0.41 *	-0.35	0.93	0.88	1.56 *	1.50
stability in steady	-0.43 *	-0.38	1.13	1.01	2.29 ***	1.90 *
no adol. relationships	-1.28 ***	-1.19 ***	0.58 ***	0.61 ***	0.78	0.89
Qualities						
adolescent intercourse	0.49 ***	0.68 ***	3.24 ***	2.93 ***	2.02 ***	1.70 ***
Demographic Variables						
male (ref)						
female		-0.01		1.43 ***		1.92 ***
age 18-20 (ref)						
age 21-22 ^a		-0.08		1.52 ***		1.82 ***
age 23-25 ^a		-0.30 *		1.57 ***		3.08 ***
two bio/adopt parent fam (ref)						
step-family		0.11		1.99 ***		1.40 *
single-parent family		0.19		1.84 ***		0.84
other family type		-0.28		2.22 ***		1.76 ***
white (ref)						
black		-0.46 **		0.55 ***		0.45 ***
Hispanic		-0.63 ***		0.76 *		1.26
Asian		-0.35		0.67		0.76
other race		-0.24		0.98		0.63
not low-income (ref)						
low-income		-0.47 ***		1.50 ***		1.90 ***
flag for missing income		-0.26 *		1.15		1.39 **
Constant	3.18 ***	3.46 ***				
Total N	7258		7232		7218	

***p<.001; **p<.01; *p<.05

all models account for complex sampling design using stata's svy commands