Family Structure & Outcomes in Emerging Adulthood:
How Children Born to Unwed Mothers Fare*

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Abstract

A vast body of research indicates that being raised in a family that does not include both biological parents is associated with a range of poor outcomes in childhood, adolescence, and young adulthood**.** This literature has focused primarily on children in divorced families. Less is known about the well-being of children born to single mothers, especially when they reach adolescence and young adulthood. This paper explores how those born to single mothers fare as emerging adults, focusing on two important outcomes: obtaining a high school diploma, and early childbearing. Particular attention is paid to how transitions of single mothers into marriage or cohabitation during their children's youth shape these outcomes. Data are from the linked Children and Young Adult sample of the 1979 National Longitudinal Survey of Youth (NLSY79). We find significant differences in the likelihood of graduating from high school and experiencing a teen birth for those born to a never-married versus a married mother. Such differences are moderated after accounting for the background characteristics of mothers as well as the behaviors of the youth themselves during adolescence. Compared to youth born to married parents who remained in intact marriage, emerging adults born to single mothers who formed coresidential unions during their adolescence were significantly less likely to graduate from high school. Among youth born to single mothers, we find few distinctions between those who remain in stable, single mother families and those whose mothers marry or cohabit, regardless of the paternal status of the mother's partner and whether it endures. Additional research is necessary to determine whether selection (into either marital unions or stable single parenting) accounts for these results. Nonetheless, our findings raise doubts regarding marriage promotion policies, at least in terms of the benefits they provide to the children born to single mothers.

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A vast body of research indicates that being raised in a family that does not include both biological parents is associated with a range of poor outcomes in childhood, adolescence, and young adulthood (Amato, 2005; Brown, 2006; Coleman, Ganong, and Fine, 2000; McLanahan & Sandefur, 1994). Children who did not grow up with both biological parents score lower on measures of psychological adjustment, academic success, and marital stability (Amato, 2005; Brown, 2006; McLanahan & Sandefur, 1994) and are more likely to be involved in precocious adolescent sexual activity and to experience nonmarital childbearing (Cavanagh, Crissey, & Raley, 2008; Cooksey, Mott, & Neubauer, 2002; Cherlin, Kiernan, and Chase-Landsdale, 1995; Raley, Crissey, & Muller, 2007; Ryan, Franzetta, Schelar, & Manlove, 2009; Wu & Martinson, 1993). This literature has focused primarily on children in divorced families. Less is known about the well-being of children born to single mothers, especially when they reach adolescence and young adulthood. This is a substantial omission, given the increase in nonmarital childbearing over the past twenty years. Nearly 40 percent of all births now occur outside of marriage (Hamilton, Martin, & Ventura, 2009) and these rates are even higher for African American births (Ellwood & Jencks, 2004; Martin, 2004).

Evidence of better outcomes among children in two-parent compared to single-parent homes is often used to buttress claims that promoting marriage among single mothers will produce positive outcomes for their children (Nock, 2005; Ooms, Bouchet and Parke, 2004). Conclusions about likely consequences of their mother's marriage for children of never-married

mothers cannot be drawn solely from research on children of divorce. Compared to children of never-married mothers, children of divorce are less likely to live in poverty**,** experience fewer residential moves, and have more extensive family networks, important for social support (Brown, 2006; Raley, Frisco, & Wildsmith, 2005). Mothers who bear children out of marriage also have lower levels of education and are more likely to be African American (Bianchi, 1999; Fields, 2003). Furthermore, while marriage improves economic living standards for the average adult (Waite and Gallagher, 2000), and socioeconomic status is positively associated with health and well-being, the marriages formed by single mothers are often unstable and of lower quality (Williams, Sassler, & Nicholson, 2008). Parental marriage may therefore be detrimental to the well-being of children of single mothers.

This project explores how those born to single mothers fare as emerging adults, focusing on two important and potentially linked events: obtaining a high school diploma, and early childbearing. Particular attention is paid to how the union transitions of single mothers into marriage or cohabitation during their children's youth shape their offspring's likelihood of graduating from high school and engaging in early parenting. Data are from the linked Children and Young Adult sample of the 1979 National Longitudinal Survey of Youth (NLSY79). Our study extends the growing body of research on the intergenerational reproduction of family structure and well-being (Amato & Cheadle, 2005; Aquilino, 1996; Cherlin, Kiernan, and Chase-Landsdale, 1995; Furstenberg, Levine, & Brooks-Gunn, 1990; Teachman, 2002; Wu and Thomson, 2001), by focusing on the children of single mothers who came of age during the 1990s, when such living arrangements were becoming more prevalent, and when sizable numbers of children born to married parents also experienced time in mother-headed families (Graefe and Lichter, 2007; Kennedy and Bumpass, 2008).

The Impact of Family Structure

Children's living arrangements during their formative years have long been perceived as primary contributors to numerous dimensions of well-being. The research on this topic has evolved over the past few decades, from a focus on the detrimental consequences of marital dissolution (Cherlin, 1982; McLanahan and Sandefur, 1994), to a broader emphasis on the number and kinds of transitions experienced by children not residing with both biological married parents (Cavanagh, Crissey, and Raley, 2008; Hill, Yeung, and Duncan, 2001; Hofferth and Goldscheider, 2010; Ryan, Franzetta, Schelar, and Manlove, 2009; Sassler, Cunningham, and Lichter 2009), as well as the role played by selection into single parent families (Fomby and Cherlin 2004; Williams et al., 2010). Increased attention has also been paid to racial differences in the consequences of union disruption and formation (Fomby, Mollborn, and Sennott, 2010; Heard, 2007; Osborne, Manning, and Smock, 200).

A small but growing body of research has focused on how children born to unwed mothers fare, both as a consequence of initial family status and following maternal relationship formation, which thereby introduces union instability. Several studies have examined how children born to single mothers in the late 1950s and 1960s fared as young adults. Among the best known of these studies is that conducted by Frank Furstenberg and colleagues on unmarried Black teenagers living in Baltimore (Furstenberg, Brooks-Gunn, and Morgan, 1987; Furstenberg, 2007). This study followed the children, who were born between 1966 and 1968, into young adulthood. Among this population, children born to young mothers were more likely to experience early childbearing themselves than were their counterparts who were born to older mothers (Furstenberg et al., 1987; Furstenberg, Levine, and Brooks-Gunn, 1990). Although the majority completed high school, sizable proportions did not, and the majority of those born to

unmarried teen mothers repeated a grade in school (Furstenberg et al., 1987). Relying on data from the 1987 National Survey of Families and Households (NSFH), Aquilino (1996) studied those not living with both biological parents at birth, and who were born between 1953 and 1968. Aquilino also found that large proportions of children born into single parent families did not complete high school, though that was not the case for children adopted into a two-parent family and those whose biological parents married after the birth.

While such studies generally concur regarding the detrimental impact of being born to single mothers, there is little consensus regarding the impact of maternal marriage on young adult well-being. The longitudinal follow-up of the Baltimore teen mothers reported that marriage improved the school performance of their children (Furstenberg et al., 1987). Aquilino (1996), in contrast, found no statistically significant difference in the likelihood of high school graduation for those who remained in a single-parent family and those who transitioned into a step-family. At the other end of the spectrum Wu and Martinson (1993) found that union transitions experienced by children born to single mothers was significantly associated with the likelihood of premarital births, though time spent in a single-parent family was not. Taken together, these three studies suggest that the impact of maternal marriage for children born to unwed mothers may be beneficial, neutral, or negative.

Some of this variation is no doubt due to the differences between the three samples utilized, which differed dramatically in their sample location, racial composition, and age distribution. They also contrasted children born to single mothers with a variety of comparison groups – those youth whose parents were older at birth, or other urban Blacks (Furstenberg et al., 1990), and young adults born to single mothers versus those in other family structures (Aquilino, 1996; Wu and Martinson 1993). The racial composition of those in these samples may also have

contributed to the differing findings. The Baltimore study focused on a community sample of poor black adolescent mothers, whereas the NSFH and NLSY were more racially, economically, and geographically diverse (though children born to single mothers remained disproportionately Black). Furthermore, the children of single mothers in all three of these samples were born at a time period when non-marital childbearing was not very prevalent and highly stigmatized (Hamilton, Martin, & Ventura, 2009). But the prevalence of non-marital births was higher among the Black population, which may have diminished the detrimental effects (Fomby et al., 2010; Heard, 2007), in part because of relative levels of disadvantage and exposure to other mother-headed households.

Studies examining how more recent cohorts of children born to single mothers fare in adolescence have expanded, as the proportion of non-marital births as a share of all births has increased (Hamilton, Martin, & Ventura, 2009) and new data collections include adequate numbers of various family structures. Much of the research emanating from such data sets, however, remains focused on very young children. Results from the Fragile Families data collection find considerable variation in family instability across types of family structures, with cohabiting unions being far less stable than marital ones, with subsequent ramifications for child adjustment (Osborne et al., 2007). Other scholars explore the association between family instability and chidlren's behavior during the transition to elementary school using the NICHD Study of Early Child Care and Youth Development (SECCYD) (Cavanagh and Huston, 2006). Recent research using data from the Early Childhood Longitudinal Study (ECLS-K) has examined how children born to single mothers fare, examining changes in reading and math ability through the 5th grade (Wagmiller, Gershoff, Veliz, and Clements, 2010). Notwithstanding the increase in studies of the role family change exerts in shaping outcomes for adolescents and

emerging adults that utilizes data from the National Longitudinal Study of Adolescent Health (Add Health) (Brown, 2006; Cavanagh, Schiller, and Riegle-Crumb, 2006; Fomby et al., 2010; Heard, 2007; Ryan, Franzetta, Schelar, and Manlove, 2009) or the National Longitudinal Study of Youth (NLSY) (Fomby and Cherlin, 2007; Hofferth and Goldscheider, 2010), few of these studies distinguish children born to single mothers from those who ever spend time in a female-headed family. It is therefore not possible to disentangle whether children born to single mothers differ from those born to married mothers who subsequently divorced.

Despite the proliferation in data enabling comparisons between children born into single mother families, those whose parents are cohabiting at their birth, and married parent families, the focus on the impact of family instability clouds what we know about how children born to single mothers fare when mothers marry. The family instability framework suggests that changes in a parent's marital or romantic histories (such as divorce, remarriage, cohabitation) serve as major stressors in a child's life, and that repeated transitions result in the accumulation of stress. With each family structure change, children are presented with either the loss or gain of a parental figure, which often creates disruption due to the uninstitutionalized nature of both the role of step-parents and cohabiting partner (Cherlin, 1978, 2004).

The shortcoming of the family instability approach, however, is that it assigns precedence to change rather than to initial status. Experiencing the disruption of a parent's marriage via divorce may exert dramatically different effects from undergoing the marriage of one's single mother. Furthermore, the effect of stability may exert dramatically different effects for children whose parents remain in intact unions and those born to single mothers who do not enter into (and potentially exit) coresidential unions. The existing research on family instability supports this perspective, in that studies find that accounting for family structure at birth reduces the

impact of the number of transitions experienced (Fomby et al., 2010). Other studies have found that the type of union entered, such as a cohabitation versus a marriage, rather than the number of transitions, matters for children's outcomes (Sassler, Cunningham, and Lichter, 2009; Williams, Sassler, Frieh, and Cooksey, 2010).

The Associations between Childhood Experiences and Young Adult Outcomes

Studies of young adult transitions are often guided by one or more of the following conceptual frameworks: socialization, the socioeconomic status of the family, and the life course perspective. An understanding of each can shed light on the factors shaping the behaviors of young and emerging adults.

The *socialization perspective* posits that the childrearing environment experienced by children has an impact on their subsequent behaviors; even as parents impart desired values and goals to their offspring, children observe their parents' behaviors. The type of family in which children live, accordingly, provides a template for young adults. Those born to young mothers, for example, may view early childbearing as normative (Edin and Kafalas, 2005). Young adults born to older mothers, or with highly educated parents, in contrast, may expect (and be expected) to attend and complete college prior to becoming parents (Lareau, 2003; Sassler and Cunningham, 2008). Children from single-parent or stepparent families may also receive less encouragement to achieve academically than those in intact married-parent families (Astone and McLanahan, 1991; McLanahan and Sandefur, 1994). Family structure experienced by children while growing up has, in particular, been considered a primary venue of socialization with regards to sexual behavior and union formation. Children who grow up with unmarried parents, or who experience the disruption of parents' marriages, are frequently exposed to the new romantic partnerships parents form (Goldscheider and Sassler, 2006; Graefe and Lichter, 2007;

Sassler et al., 2009a), and express more liberal attitudes about sexuality, cohabitation, and divorce than those whose parents remained married throughout their childhood (Clarkberg et al., 1995; Kapinus, 2004). Drawing from the socialization perspective leads to the expectation that young adults born to single mothers, as well as younger mothers and less educated parents, would have a weaker orientation towards schooling and would be more likely to engage in early childbearing than young adults whose parents were married at their birth and who grew up in stable married-parent households. How those born to single mothers fare relative to young adults who experienced parental divorce has been less theorized, but we also expect young adults who experienced family disruption to be less likely to drop out of high school, and more likely to turn to romantic attachments in adolescents and thereby put themselves at risk of early childbearing, than emerging adults whose parents remained married throughout their adolescents.

The *social class perspective* suggests that those growing up in less advantaged families will experience more expedited entrance into sexual involvement and parenting, and would be demonstrate a weaker attachment to educational achievements, as a result of economic exigency, or a shortage of resources that might enable alternative pursuits (such as schooling). Those raised in more advantaged backgrounds are often encouraged to focus on the acquisition of skills necessary for middle class life, which generally means focusing on school attainment in youth and discouraging romantic unions at young ages (Lareau, 2003). Women who were unmarried upon becoming parents for the first time, and those who gave birth at young adults, in contrast, are more likely to have come from less economically advantaged families and to have dropped out of school (Cooksey et al., 2002; Furstenberg et al., 1987; Pearson et al., 2006). Such mothers, if they marry, are also more likely to experience marital disruption (Graefe and Lichter, 2007; Martin, 2006). Divorce also has negative effects on women and children's social class status. A

great deal of evidence indicates that experiencing parental divorce or union disruption while growing up adversely affects the socioeconomic status of children (Amato, 2000; Avellar and Smock, 2005), frequently resulting in residential moves and school changes. Young adults who experience parental divorce leave home at younger ages (Aquilino, 1991; Cherlin et al., 1995; Goldscheider and Goldscheider, 1998; Teachman, 2003), are more likely to turn to romantic partners (rather than parents) for emotional and economic support (Cavanagh et al., 2008; Cooksey et al., 2002; Pearson et al., 2006), and form cohabiting unions earlier than do the more economically privileged (Clarkberg, 1999; Sassler and Goldscheider, 2004).

Even as family of origin characteristics play important roles in establishing behaviors in adolescence and into young adulthood, the *life course perspective* suggests the need to pay attention to how processes are sequenced and interrelated (Elder, 1988). Experiencing parental union disruption during middle school, for example, may weigh heavily on subsequent behaviors in adulthood. Family disruption or maternal formation of new romantic relationships may influence young adults' school behaviors (Brown, 2006; Cavanagh, Schiller, and Riegle-Crumb, 2006; Heard, 2007; Wagmiller et al., 2010), both negatively (Brown, 2006; Cavanagh, Schiller, and Rielge-Crumb, 2006; Heard, 2007; Raely, Frisco, and Wildsmith, 2005), and in a very few instances, positively (Wagmiller et al., 2010). But adolescent behaviors may also help establish young adults' future trajectories. Repeating a grade, for example, is a good predictor of not pursuing post-secondary education (Furstenberg et al., 1987), and those who engage in precocious sexual activity are also more focused on peer relationships and less interested in educational pursuits (Raley, Crissey, and Muller, 2007; Spriggs and Halpern, 2008). Educational aspirations in adolescence may also motivate those who desire to pursue post-secondary schooling to focus more on academic subjects than on peer relations.

Because there can be more than one theoretical explanation for observed behaviors, adjudicating between these various perspectives is challenging. It is unclear whether socialization or social class disadvantage that may accelerate transitions to adulthood is responsible, for example, for the findings that children born to unwed mothers or who have experienced parental divorce experience earlier sexual debut (Cooksey et al., 2002; Pearson et al., 2006), are more likely to have difficulties in school (Brown, 2006), and form unions earlier and more frequently than their counterparts who grow up in married-parent families (Clarkberg, 1999; Goldscheider and Goldscheider, 1993; Sassler and Goldscheider, 2004; Teachman, 2002, 2003). Research is emerging which suggests that socialization as well as social class disadvantage are experienced differently by racial minorities and whites (Fomby et al., 2007; Heard, 2007), as well as by boys and girls (Cavanagh et al., 2008; Ryan et al., 2007; Sassler, Addo, and Hartmann, 2010).

The Current Study

In this study we address two basic questions: (1) Are children born to single mothers disadvantaged in terms of young adult outcomes? In other words, is disadvantage transmitted to the next generation via behaviors that adversely affect young adults' economic prospects in the long run? and (2) Among those born to single mothers, is a mother's subsequent marriage or cohabitation associated with a greater likelihood of completing high school or avoiding a teen birth? Our inference of a causal relationship of single parenthood or union transitions with young adult's well-being means we must consider potential bias introduced by differential selection of mothers into marital unions. That is, associations of marital transitions among single mothers with improved educational outcomes and early parenthood may be biased by differential selection of mothers into marital unions based on their own attributes, as well as those of their

children. Our study therefore seeks to account for the likelihood that child attributes affect mother's marital prospects (Goldscheider and Sassler, 2006; Graefe and Lichter, 2007), as well as conditioning young adult outcomes. Our data allow us to control for a range of background characteristics, of both mother and the young adult. We employ multivariate propensity score matching to determine whether significant observed associations of maternal union histories with young adult outcomes persist when single mothers who enter unions are matched with those who have a similar predicted propensity of sharing that union history. For this analysis, we include indicators from the children as well as their mothers.

DATA

Data are from the 1979 The National Longitudinal Survey of Youth (NLSY79). Initial interviews were undertaken with 12,686 young men and women ages 14-22 in 1979 that included a nationally representative sample of youth of these ages plus oversamples of black, Hispanic, military and poor white oversamples. The military and economically disadvantaged white oversamples were subsequently dropped, but remaining respondents, including those in the black and Hispanic oversamples, have been retained and interviewed annually through 1994 and biennially since. Retention rates remain at over 80 percent of cases still eligible to be interviewed, and publicly released data on this cohort currently span almost 30 years with detailed union histories collected throughout the study.

A particular strength of the NLSY79 is the availability of linked data on all children born to the NLSY79 women that have been collected biennially since 1986. A wide range of information has been collected on and from these children. Beginning in 1994 and continuing biennially, children aged 15 and older were interviewed as Young Adults and given a separate survey that included many items that were also asked of their mothers when they were

themselves teenagers and in their early twenties. When weighted, the sample of children born to the women of the NLSY79 can be considered fully representative of children born to a nationally representative sample of women between the ages of 14 and 21 on December 31, 1978.

We construct our analytic sample in the following manner. Although the NLSY includes data on all children born to NLSY79 mothers, we limit all analyses to 1st born children so as not to violate assumptions of independence of observations. As of 2008, 90.8% of first-born young adults have aged into the young adult sample. Of 4,021 NLSY79 women known to have had a child by 2008 while married or never-married, 506 (12.6) of the mothers did not consent to have their child interviewed (or their child did not consent at age 14). These cases are necessarily excluded from the analysis. We must also exclude from the analysis 94 (2.3%) first born offspring who were over the age of 18 in 1994, as they were missing information on young adult outcomes measured in adolescence (at age 14), and 187 (4.7%) who were younger than age 14 in 2008 and had therefore not yet aged into the young adult sample. Also omitted were the 352 (8.8%) of young adults that were never interviewed, and an additional 670 (16.7%) who were not yet old enough to have completed the outcomes of interest for this paper (completing high school by age 19, of becoming a parent by 19). In total, there were 2,215 first born offspring of NSLY79 mothers eligible for our analyses.

Measures

Dependent Variables

We construct a measure of **high school graduation** based on three questions asked of young adults at each survey. Respondents reported the highest grade completed as each interview. They were then asked if they had received a diploma or passed a GED examination, and if so, which one they had obtained. Those who answered affirmatively to receiving a

diploma were designated as graduating from high school. Those who did not report receiving a diploma, or who did not answer the question about degree receipt (n = 207) were coded as not graduating from high school.[1i] We also elected not to include 202 respondents who reported they obtained a GED with the sample of high school graduates, unless they indicated that they had both obtained a diploma and completed their GED (*n* = 1); research indicates significant differences in the returns to GEDs when compared with high school diplomas (Clark and Jaeger, 2006; Ou, 2008; Tyler, 2003).

For the analysis of **early birth**, we determine if young adults indicate becoming a parent before reaching the age of 20. This was ascertained by the NLSY question asked across survey ways that provides the date of birth for the young adult's first born child. We classify "early" as having a child before age 20, as many studies of teen pregnancy report rates for women ages 15 to 19.

Independent Variables

Our primary independent variable of interest is the marital status of mothers at the birth of their child, and any transitions into coresidential romantic unions (both marriage and cohabitation) experienced. We denote *single motherhood status* for those women who had a first birth while never-married and lived with that child in her household. For the *union formation history* experienced by single mothers, we rely on two dummy variables to distinguish the marital and cohabitation histories of single mothers by the time the young adult had reached age 14; we determine if single mothers entered a marital union, and if they entered a cohabiting union that did not transition to marriage. The reference category consists of mothers who remained continually never-married and did not enter into a cohabiting union. We also disaggregate mother's union status by paternity status, to yield four additional groupings: if the

mother married the biological father; if the mother cohabited with the biological father; if the mother married a man who was not the biological father of the child; and if the mother cohabited with a new partner; mothers who remained single and did not enter into either a marital or cohabiting union by the time the child reached age 14 serve as the reference category. Our final measure of maternal union transitions further disaggregates these unions by whether they endured or not, yielding six categories, in addition to the reference (remained single): mother married biological father and it endured (through age 14); mother married biological father and it ended by age 14; mother married new partner and it endured; mother married new partner and it ended; mother cohabited with biological father; and mother cohabited with new partner.

Of course, children born to single mothers are not the only ones to experience relationship flux of parents. We also, therefore, include measures of union transitions experienced by children born to married parents. Initially we ascertain whether mothers who were married at the birth of their child experienced the disruption of that marriage (divorce) by the time the child reached age 14. We also disaggregate the union transitions experienced by those children who experienced the disruption of their parents' marriage by the time they had reached age 14. Two dummy variables distinguish whether married mothers divorced and subsequently (1) remarried, and (2) entered a cohabiting union that did not transition to marriage by the time the young adult had turned 14. The reference category for this group consisted of those mothers who were married at the birth of their child, who subsequently divorced but remained unmarried and did not enter into a cohabiting union following their divorce.

Control Variables include a range of variables that capture the mother's ascribed characteristics and also measures of her socioeconomic status while growing up. These indicators include the birth mother's race/ethnicity (non-Hispanic black, Hispanic and non-

Hispanic non-black or "white"), nativity (1=foreign born), age at first birth, the mother's family composition at age 14 (1=lived with both biological parents), plus her own years of education. Because early births are associated with more adverse child outcomes, we created a dummy variable indicating of the mother's were young (18 or younger) at the time the young adult was born. We also disaggregate years of schooling into discrete categories, with dummy variables for mothers who had not completed high school, and those who had more than a high school diploma (grouping those with some post-secondary schooling and a college degree); the omitted category are those mothers who obtained a high school diploma. Note that the NLSY clearly identifies only three race/ethnic categories: Non-Hispanic Black, Hispanic, and a third group of non-Hispanic non-Black respondents. For brevity we refer to the latter group as "white" in results and to non-Hispanic Black respondents as "Black."

We also include variables obtained from the young adults themselves on their experiences in early adolescence. These include the sex of the young adult (1=female), whether they had ever repeated a grade in school, and their educational aspirations (the highest grade they would like to complete). We also include a dummy variable designating whether young adults reported experiencing sexual debut before reaching the age of 15 (1=early debut), the number of siblings they had by age 16, and their family's poverty status for the year prior to their being surveyed at age 14 (1= in poverty). Our final independent variable assesses young adult's depressive symptoms, utilizing a 7-item version of the CES-D Depression scale. It represents a count of the number of symptoms respondents reported experiencing "most/all of the time" in the past week. Responses range from 0-7.

A number of other variables are included in the propensity score matching analysis. We predict the likelihood that single mothers will marry, utilizing several of the measures described

above (race/ethnicity, nativity, age at first birth, family structure at age 14, and maternal level of educational attainment. We also include measures of single mother's IQ scores (AFQT), attitudes measures in young adulthood (gender role orientation, whether they expected to be married at age 35, if they desired at age 14 to be childless), as well as indicators of her health limitation. Because the marriage of single mothers may also be influenced by the attributes of their children, we also include such attributes, such as the sex of the child, whether they were low birth weight, had repeated a grade in school, and their BMI. Missing information on the explanatory variables was estimated using multiple imputed data created from the imputation using chained equations (ICE) program for STATA (Royston, 2006) in order to maintain maximum sample sizes for all variables utilized in estimation.

Descriptive Results

We first examine differences in the attributes of single and married mothers, and their offspring (see Table 1). The results highlight that single mothers were often from disadvantaged backgrounds, and that these difficulties were replicated in the next generation (see Table 1). Mothers who were unmarried at their child's birth, for example, were over twice as likely to have been young mothers as their married counterparts (27.0% vs. 13.1%), were far less likely to have been living with married parents at age 14 (46.2% vs. 70.7%), and almost two-thirds were Black (64.6% vs. 16.0%). About one-third of single mothers also had not completed high school, as had about one-fifth of mothers who were married at their child's birth, whereas married mothers were significantly more likely to have gone beyond secondary schooling (39.1% vs. 28.6%). Turning to the attributes of the young adults indicates that children born to single mothers were more than two times as likely to have experienced poverty during childhood (37.2% vs. 15.0%), were significantly more likely to have ever repeated a grade (26.5% vs. 15.8%), and had lower

aspirations for completed years of schooling. Furthermore, young adults born to single mothers were about twice as likely to have experienced early sexual debut as those born to married mothers, had more siblings to further reduce parental resources, and scored significantly higher on self-reported levels of depression than did children born to married mothers.

[Table 1 about Here]

Examining the union transitions of both groups of mothers reveals that young adults born to single mothers were far more likely to experience union transitions than were those born to married parents. Of the 1,076 young adults born to single mothers, only about one-fifth experienced no maternal union transitions by age 14; nearly two-thirds of young adults born to single mothers (65.6%) experienced their mother's marriage (whether to their biological father or another man), while another 14.1% experienced their mother's entrance into a cohabiting union that did not transition to marriage by the time they reached adolescence. A sizable proportion of children born to married mothers – 41.9% -- experienced the disruption of their parent's marital union, with nearly one-quarter (24.3%) also going through their mother's remarriage, and another 6.5% witnessing their mother enter into a cohabiting union. Only 11.1% of children whose parents divorced remained in a single-mother household. These differences strongly suggest that children born to single mothers will experience dramatically different outcomes. We turn now to our multivariate analysis to determine whether differences remain after accounting for differences in maternal attributes and young adult experiences.

[Figure 1 about Here]

As for how young adult outcomes vary by maternal marital status at birth, the descriptive results reveal significant differences in the likelihood of graduating from high school and experiencing a teen birth for young adults who were born to a never-married versus a married

mother. These differences are graphed in Figure 1. Only 69.6% of young adults born to unmarried mothers graduated from high school, compared to 78.8% of those born to women who were married at their birth. Young adults whose mothers were unmarried at their birth were also significantly more likely to have given birth than children born to married parents; nearly one-quarter of children born to single mothers (24.6%) had given birth by age 20, compared with 14.2% of children whose parents were married at their birth ($p \leq .01$).

[Figure 2 about Here]

RESULTS

We turn now to our multivariate analyses to determine how being born to an unmarried mother affects important young adult transitions. Table 2 presents results from our logistic regression analysis of the effects of maternal status on young adults' likelihood of graduating from high school. We present odds ratios in our tables; these can be interpreted as the change in the likelihood of graduating from high school associated with each independent variable. An odds ratio greater than 1.0 indicates an increased likelihood of graduating from high school relative to the reference group, while an odds ratio less than 1.0 denotes a reduced likelihood of experiencing the event of interest. We present two analyses for each outcome of interest. We first emphasize the impact of being born to a single mother, both without and with controls (Analysis 1, Models A and B). We then present results for union transitions experienced by single and married mothers, again with and without controls (Analysis 2).

The results from the reduced model (Model A) of Analysis 1 reveals that young adults born to single mothers are only about 59% as likely to graduate from high school as are young adults born to married mothers and this difference is highly significant. After accounting for maternal and child characteristics, however, children born to single mothers no longer differ

sizably in their propensity to complete secondary schooling (Model B). In fact, if Black youth had background characteristics that were similar to white young adults they would be 1.51 times *more* likely to graduate. As expected, young adults whose mothers did not complete high school were only 68% as likely to graduate high school themselves. A number of the young adult characteristics also predict dropping out of school. Young adults who experience precocious sexual involvement are only about 32% as likely to graduate from high school as those who defer sexual involvement to age 15 or later, while those who ever repeated a grade are only 22% as likely to complete a high school degree. Educational aspirations may serve to mediate those outcomes, however, as greater anticipation of pursuing additional schooling is associated with a higher likelihood of graduating from high school. Young adults who score higher on levels of depression are less likely to graduate from high school.

[Table 2 about Here]

While being born to a single mother adversely affects the odds of high school graduation, prior to including controls, many of these young adults experienced their mothers' union transitions, into marriages or cohabiting relationships. Analysis 2 in Table 2 disaggregates how young adults' educational attainment is influenced by maternal union transitions. Focusing first on how such transitions shape educational attainment, it is evidence that relative to children born to married mothers who remain married through the youth's adolescence, those born to single mothers are not even half as likely to graduate from high school, and this holds regardless of whether the mothers enter into new unions or not. Those who experienced union stability of their single mothers (that is, their single mother neither married nor entered into a cohabiting union) were only 41.7% as likely to graduate from high school as young adults from stable married parent families. Maternal entrance into marriage is no panacea, as young adults whose

single mothers' married were only 44.8% as likely to complete school as their counterparts who were born into and raised in intact married-parent families. Young adults whose mothers entered into cohabiting unions – an increasingly common occurrence for adults with children (Graefe and Lichter 1999) – are the least likely among those born to single mothers to graduate from high school. Though they are only 32.3% as likely to receive a diploma as young adults from intact married-parent families, however, their likelihood of completing high school does not differ significantly from the two other groups of youth born to single mothers (those whose mother remained alone, and those whose mother married) (results not shown).

What about young adults whose parents divorced during their adolescence? The results from Model A in Analysis 2 also indicate that young adults who experienced a parental divorce and the remarriage of their mother were also disadvantaged, in that they were only 47.6% as likely to graduate from high school as their counterparts whose parents did not divorce. Youth whose parents divorced and whose mother remained outside of a coresidential union do not appear to differ from those whose parents remained married, and there also appears to be no difference in the odds of high school graduate when parents divorce and the mother enters into a cohabiting union, though this is a relatively infrequent event in our sample.

Upon including controls (Model B), the impact of maternal union transitions is slightly modified. Mothers who were unmarried at their child's birth and who remain outside of coresidential intimate unions (whether marital or cohabiting) no longer differ at conventional levels of significance from the reference group in terms of their odds of graduating from high school. Young adults born to single mothers who experience their mothers' new unions prior to adolescence, however, remain disadvantaged with regards to high school completion, though accounting for maternal and youth characteristics moderates the detrimental effects slightly.

Children born to single mothers who entered marital unions are now 62.7% as likely to receive a high school diploma, while nearly half of those whose mothers form cohabiting unions now graduate from high school. The impact of experiencing a parental divorce and remarriage is also moderated. Whether there is something selective about mothers who enter into marital or cohabiting unions or remain unpartnered will be examined subsequently with our propensity score analysis.

The impact of background controls remain largely consistent in this more refined model with those observed in the prior analysis, though Blacks are no more likely to graduate from high school after union transitions experienced following their birth are accounted for. Those whose mothers did not complete high school were significantly less likely to graduate from high school themselves; young adults whose mothers obtained any level of post-secondary schooling, on the other hand, are significantly more likely to receive their high school diploma. The indicator of family poverty status is also now significant, with those who experienced family poverty during adolescence only 65.2% as likely to graduate. Young adult experiences like early sexual debut and repeating a grade are associated with a reduced likelihood of high school graduation, as is more siblings and having been depressed in the year prior to turning 14. Higher educational aspirations, on the other hand, increase the likelihood of high school completion.

The impact of maternal marital status at birth is even more magnified for early birth experiences of young adults (see Table 3). The bivariate results (Analysis 1, Model A) suggest an intergenerational transmission of pre-marital births (especially since relatively few teen pregnancies nowadays result in marriage). Young adults whose mothers were unmarried at their birth are nearly twice as likely to also experience a teen pregnancy as their counterparts who were born to married mothers, and this effect is highly significant. When only child

characteristics are accounted for, the impact of maternal marital status remains significant (results not shown). Including maternal characteristics in addition to youth attributes, however, reduces the effect of maternal marital status to insignificance (Model B).

The effects of the control variables are largely as expected. Those whose mothers bore them as teenagers are over twice as likely to also experience teen births, and both Black and Hispanic youth are over one and a half times more likely to become teen parents as their white counterparts. Young adults whose mothers did not complete high school were 1.4 times more likely to become teen mothers, though this effect is only weakly significant. Consistent with prior literature, young adults who experienced early sexual debut were far more likely to become teen parents (odds = 1.85), as were those who scored higher in depression levels during adolescence. These results provide strong justification for the socialization model, as the inclusion of maternal characteristics such as early birth and low levels of education significantly improves the fit of the model, with the inclusion of youth attributes reducing the log likelihood to a smaller extent.

Accounting for maternal union transitions during adolescence in the absence of background controls further differentiates the union experiences of young adults born to unmarried mothers (Analysis 2, Model A). When maternal union transitions are disaggregated, young adults born to unwed mothers who did not subsequently enter into coresidential unions were 3 times more likely to experience early childbearing than their peers who were born to and remained in married-parent families. Youth born to single mothers who subsequently married were twice as likely to become teen parents, while those whose mothers formed cohabiting unions were 2.6 times more likely to become teen parents. As for young adults whose parents were married at their birth but who divorced while they were adolescents, only those whose

mother subsequently entered into a cohabiting union experienced significantly greater risks of bearing a child by age 20; the experience of marital cohabitation for youth born to married mothers nearly tripled the young adults' odds of early childbearing (odds = 2.8).

Accounting for maternal characteristics largely eliminates differences across these groups, with the exception of married mothers who divorced and entered into cohabiting unions (results not shown), and the odds are reduced somewhat further by incorporating youth attributes into the model (Analysis 2, Model B). After accounting for maternal characteristics, none of the marital status transitions experienced by women who were single at the birth of their child reaches conventional levels of significance. Among those born to married mothers who subsequently divorced, youth who experienced their mother's entrance into a cohabiting union are still more likely to become teen parents than young adults whose parents were married at their birth and who remained married, though the magnitude of the effect is somewhat smaller (odds = 2.5). Furthermore, youth whose married mother divorced and entered a cohabiting union are also twice as likely to experience an early birth as young adults whose mothers were unmarried at their birth and who did not enter into a coresidential union (results not shown). The background controls are largely consistent with what was previously reported.

Single Mothers' Union History and Young Adult Outcomes

In the second part of our analysis, we limit our sample to children born to single mothers, and examine whether mothers' union transitions are associated with better outcomes for their offspring. We focus especially on whether union dissolution or the paternity status of the partner affects these associations. The first panel of Table 4 compares young adult outcomes for those born to single mothers who had a) cohabited or b) married by the time young adults reached age 14 to those who remained continually unpartnered. We find no differences in the likelihood that

young adults will either graduate from high school or delay parenthood beyond age 20 by subsequent aggregate union history. In the first analysis, we look only at whether the single mother entered into a marital or cohabiting union (relative to remaining unpartnered), and find no significant associations for either measure of interest. In the second panel, we disaggregate single mothers who enter a union based on the type of union and the paternity status of her partner. Children whose mothers married their biological father or a new partner do not differ at conventional levels of significance from children whose mothers remained continually unpartnered. Nor are there any differences when single mothers enter into a cohabiting union (either with the biological father or a new man) and those whose mothers remain unpartnered. In the third panel, we further disaggregate the marital histories by whether the union endured. Small sample sizes prohibited disaggregation of cohabitations by both paternity status and union dissolution. We find no effect of maternal union transitions, whether into marriages that endured or ended, or into cohabiting unions, on the odds of high school graduation. Our results do show, however, that young adults whose mothers marry and then divorce from their biological father are only 31.9% as likely to experience a teen birth as emerging adults whose mothers remained unpartnered. We observe no such deterrent effect on the likelihood of experiencing a teen birth for young adults whose mother remained married to their biological father, even though this was a far more frequent category. The largest group of single mothers, 38.5%, had married the biological father of their first born child, and of this group about 22% of mothers subsequently divorced that father. Perhaps there is something unique or selective about fathers who marry their child's mother following the birth in that they desire involvement, even if their unions dissolve. We find no other significant associations between maternal union transitions and

young adults' odds of having an early birth, though the coefficients for some groups (i.e., young adults whose mothers cohabited with the biological father) are quite large.

[Table 4 about here]

Propensity Score Analysis

Our initial analysis comparing the outcomes of young adults born to single mothers to that of youth whose mothers were married at their birth found significantly worse outcomes in terms of their likelihood of graduating high school and experiencing a teen birth, although such effects largely disappeared with the inclusion of background variables. We also found that young adults born to single mothers who either married or entered a cohabiting union during their adolescence were significantly less likely to graduate from high school than were youth born to married mothers who remained married. But we find few effects of maternal union transitions on youth outcomes upon accounting for paternal status or whether marital unions lasted when our analysis is limited to children born to single mothers. Selection is one possible explanation for the poorer educational outcomes of youth born to unwed mothers who entered into new unions during their adolescence. If single mothers who remain unpartnered differ in a systematic way that is related to young adult's outcomes from those who wed, then we are potentially introducing selection bias into our assumptions.

To partially address selection bias and to employ a more appropriate counterfactual comparison, we turn to propensity score matching (PSM) techniques. These allow us to derive an estimate of the average effect of marriage and cohabitation among single mothers who enter into new coresidential unions. PSM models isolate the effect of a union transition on the educational attainment of youth born to single mothers by matching young adults whose mothers were single at their birth, and predicting which ones would marry or cohabit. This allows us to

derive an estimate of the average effect of marrying and cohabiting among single mothers who actually marry or live with a partner (i.e., average treatment effects among the treated). We match mothers who form coresidential unions (both marriage and cohabitation), as predicted using observed variables associated with selection into marriage. These variables include both the attribute of the mother, as well as characteristics of the child that might either increase or reduce the odds of the mother remarrying before they reach adolescence.

PSM techniques approximate a quasi-experimental design with secondary data by estimating the propensity to receive a particular treatment as a function of observable characteristics, and then matching individuals with similar propensities. First, we re-estimate Table 2 (Analysis 2) to compare women who experienced a union transition following a non-marital birth with those whose remained unpartnered but had a similar likelihood of experiencing the union history of interest. We run separate analyses for the entrance into marital and cohabiting unions. The propensity that single mothers will either remarry or form a cohabiting union is estimated with logistic regression, based on observed characteristics of the women and young adults in the sample. Propensity scores assume that all factors relating to selection into the treatment (e.g., marriage or cohabitation) are observed, and any unobserved characteristics are randomly assigned. The estimated differences between the treatment and control groups on outcome *Y* therefore represent the average effect of a particular configuration of union transitions for respondents with comparable likelihoods of being single mothers.

We anticipate conducting Propensity Score analysis during late September/early October.

DISCUSSION

Nonmarital childbearing has increased substantially in the years since the NLSY79 originally began, and much policy attention has focused on the negative outcomes associated

with growing up with a single mother. In particular, federal funding has been directed towards promoting marriage, particularly among disadvantaged populations. This paper uses panel data from the 1979-2008 NLSY79 to assess differences in outcomes for young adults born to unmarried mothers and those whose parents were married at their birth. We also assess whether maternal union transitions, into marriage and more common cohabiting unions, is positively associated with youth's odds of graduating high school or not experiencing a teen birth. We tracked the subsequent union histories of mothers, both those who experienced nonmarital births and those whose marriages subsequently dissolved, to estimate the effect of entering into new unions vs. remaining never-married, on young adults' likelihood of graduating from high school and becoming a teen parent.

Our empirical results lead to two central conclusions. First, on average, being born to unwed mothers is negatively associated with the child's likelihood of high school graduation, and positively associated with becoming a teen parent. The differences between children born to single mothers and those who were married at their birth are largely eliminated upon accounting for maternal characteristics, suggesting that negative selection into nonmarital parenting exerts a dominant role that swamps even negative behaviors engaged in by the young adults themselves.

Second, for most young adults born to single mothers, the negative consequences of maternal marital status at birth on high school graduation or early births are unlikely to be mitigated by the mother's subsequent entrance into either marital or cohabiting unions. The children of single mothers who marry or cohabit with a new partner, cohabit with the biological father, or marry and divorce the biological father are no more likely to graduate from high school as young adults whose mother remained unpartnered. Effects are somewhat more varied for early birth, with further study required to assess why marriages to the biological father that did

not endure mitigate the odds of becoming a teen parent. Nonetheless, our results are consistent with research showing few benefits to children of the marriage or remarriage of their parents for either educational attainment or relationship formation (Brown, 2006; Fomby et al., 2010; Raley et al., 2006; Ryan et al., 2009). Additional research is required to determine whether outcomes of marital union transitions differ by sex or race/ethnicity.

To conclude, our results suggest that children born to unmarried mothers are disadvantaged in terms of likelihood of graduating from high school or experiencing an early birth, though social background characteristics of mothers often accounts for differences between children born to married parents and those born to single mothers. We find little evidence that maternal marriage improves the prospects for their offspring; even enduring marriages are unlikely to mitigate negative educational outcomes or early births for young adults. Marriage promotion efforts, then, are unlikely to address the problems facing less advantaged youth. More research is needed on the mechanisms through which maternal marital status at birth, and subsequent union transitions, are translated to intergenerational disadvantage, high school drop-out, and teen births. Economic exigency likely plays an important role for youth born into single mother families. There is evidence that marriage only minimally alleviates the poverty and economic strain that accompany nonmarital childbearing (Sigle-Rushton and McLanahan, 2002), and this may partly explain why maternal marriage appears to offer few advantages to the children of single mothers.

Table 1. Descriptive statistics (means/S.E.) of Mothers and Young Adults, by Marital Status of Mother at Birth of Child*

	FULL SAMPLE (N=2215)		SINGLE, UNMARRIED MOTHER		MARRIED MOTHER		
Variable	**Coef.**	**Std. Err.**	**Coef.**	**Std. Err.**	**Coef.**	**Std. Err.**	**Significant Differences?**
Maternal Characteristics							
Mother's age at birth of young adult	21.790	0.085	20.863	0.130	22.415	0.109	***
Mother less than 18 at child's birth (%)	0.187	0.009	0.270	0.017	0.131	0.010	***
Mother lived with both biological parents at age 14	0.608	0.012	0.462	0.019	0.707	0.014	***
Race of Mother							
Black	0.356	0.011	0.646	0.018	0.160	0.011	***
Hispanic	0.215	0.010	0.180	0.014	0.239	0.013	***
Non-Hispanic White	0.429	0.012	0.174	0.014	0.601	0.015	***
Mother's nativity: foreign born	0.076	0.006	0.047	0.008	0.095	0.009	***
Mother's Educational Attainment							
Years of education	12.252	0.054	11.871	0.079	12.508	0.074	***
Level: Less than high school	0.255	0.010	0.331	0.018	0.204	0.012	***
Level: High school graduate	0.396	0.012	0.383	0.018	0.405	0.015	
Level: More than high school	0.349	0.011	0.286	0.017	0.391	0.015	***
Young Adult Characteristics							
Female	0.499	0.012	0.499	0.019	0.499	0.015	
Lived in poverty during adolescence	0.239	0.011	0.372	0.023	0.150	0.013	***
Age at first sexual intercourse	15.796	0.057	15.249	0.096	16.165	0.068	***
Early sexual debut (Before age 15)	0.242	0.010	0.341	0.018	0.174	0.012	***
Ever repeated a grade	0.201	0.015	0.265	0.038	0.158	0.014	***
Highest grade would like to complete	15.093	0.057	14.867	0.114	15.246	0.095	***
Number of siblings by age 16	1.865	0.033	2.035	0.056	1.751	0.034	***
Depression at age 14 (CES-D)	5.026	0.108	5.346	0.201	4.811	0.149	***
N	2,215		1,076		1,139		

Note: *** $p \leq .01$; ** $p \leq .05$; * $P \leq .10$.

Table 2. Logistic Regression Analysis of the Effects of Maternal Marital Status on Young Adult's Likelihood of Graduating from High School

	Analysis 1			Analysis 2	
VARIABLES	Model A	Model B		Model A	Model B
Union Status at Birth					
Premarital birth (0 = first birth occurred while married)	0.586***	0.921			
	[0.0584]	[0.147]			
Subsequent union history (0 = Mother married at birth, remained in intact marriage through age 14)					
Single Mothers					
Stable single mother (no marriage, no cohabitation)				0.417***	0.693
				[0.0836]	[0.171]
Entered marital union				0.448***	0.627**
				[0.0633]	[0.111]
Entered cohabiting union				0.323***	0.494**
				[0.0796]	[0.142]
Married Mothers					
Divorced, no repartnering				0.737	0.729
				[0.164]	[0.171]
Divorced and remarried				0.476***	0.558***
				[0.0768]	[0.0941]
Divorced and entered cohabiting union				0.682	0.934
				[0.208]	[0.295]
Control Variables: Maternal Characteristics					
Mother was young at birth of young adule (1 = ≤ 18)		1.11			0.941
		[0.177]			[0.128]
Mother lived in intact married-parent family at age 14		1.118			1.13
		[0.145]			[0.130]
Race (0 = Non-Hispanic White)					
Black		1.512**			1.168
		[0.242]			[0.186]
Hispanic		0.833			0.82
		[0.140]			[0.123]
Mother's Nativity (1 = foreign-born)		1.574			1.476
		[0.449]			[0.344]
Maternal Educational Attainment (0 = high school graduate)					
Less than high school		0.684**			0.510***
		[0.106]			[0.0714]
More than high school		1.138			1.347**
		[0.172]			[0.182]
Control Variables: Young Adult Characteristics					
Female		0.964			1.095
		[0.130]			[0.117]
Family poverty status in year prior to entering survey (1 = in poverty)		0.607			0.652**
		[0.173]			[0.107]
Experienced early sexual debut (1 ≤ 14)		0.315***			0.425***
		[0.0484]			[0.0505]
Ever repeated a grade		0.222***			0.537***
		[0.0346]			[0.0905]
Educational aspirations (highest grade would like to complete)		1.186**			1.065*
		[0.0578]			[0.0353]
Number siblings by age 16		0.895			0.889**
		[0.0878]			[0.0474]
Depressed in prior year (cesd)		0.946**			0.970*

		[0.0207]			[0.0167]
Constant	3.698***	0.837		4.939***	3.601**
	[0.245]	[0.687]		[0.478]	[2.106]
Observations	2215	2215		2215	2215
Standard Deviations in brackets					
*** p<0.01, ** p<0.05, * p<0.10					

Table 3. Logistic Regression Analysis of the Effects of Maternal Marital Status on Young Adult's Likelihood of Having an Early Birth

	Analysis 1			**Analysis 2**	
VARIABLES	Model A	Model B		Model A	Model B
Union Status at Birth					
Premarital birth (0 = first birth occurred while married)	1.946***	1.009			
	[0.219]	[0.146]			
Subsequent union history (0 = Mother married at birth, remained in intact marriage through age 14)					
Single Mothers					
Stable single mother (no marriage, no cohabitation)				3.044***	1.253
				[0.650]	[0.336]
Entered marital union				2.030***	1.064
				[0.331]	[0.204]
Entered cohabiting union				2.644***	1.394
				[0.663]	[0.384]
Married Mothers					
Divorced, no repartnering				1.494	1.127
				[0.383]	[0.323]
Divorced and remarried				1.241	1.026
				[0.240]	[0.211]
Divorced and entered cohabiting union				2.812***	2.505**
				[0.890]	[0.848]
Control Variables: Maternal Characteristics					
Mother was young at birth of young adule (1 = ≤ 18)		2.168***			2.354***
		[0.303]			[0.326]
Mother lived in intact married-parent family at age 14		0.971			0.964
		[0.128]			[0.122]
Race (0 = Non-Hispanic White)					
Black		1.770***			1.893***
		[0.286]			[0.316]
Hispanic		1.688**			1.812***
		[0.289]			[0.309]
Mother's Nativity (1 = foreign-born)		0.633			0.609*
		[0.172]			[0.159]
Maternal Educational Attainment (0 = high school graduate)					
Less than high school		1.417*			1.636***
		[0.228]			[0.244]
More than high school		0.774			0.738*
		[0.120]			[0.113]
Control Variables: Young Adult Characteristics					
Female		1.098			1.103
		[0.133]			[0.132]
Family poverty status in year prior to entering survey (1 = in poverty)		1.265			1.191

		[0.233]			[0.173]
Experienced early sexual debut (1 ≤ 14)		1.848***			1.659***
		[0.247]			[0.242]
Ever repeated a grade		1.281			1.199
		[0.343]			[0.232]
Educational aspirations (highest grade would like to complete)		0.927			0.962
		[0.0445]			[0.0330]
Number siblings by age 16		1.027			0.991
		[0.0630]			[0.0618]
Depressed in prior year (cesd)		1.059**			1.036
		[0.0244]			[0.0211]
Constant	0.159***	0.195*		0.135***	0.123***
	[0.0125]	[0.165]		[0.0146]	[0.0747]
Observations	2,215	2,215		2,215	2,215
Standard Deviations in brackets					
*** p<0.01, ** p<0.05, * p<0.10					

Table 4. The Effects of Maternal Union Transitions on Young Adult's Outcomes for Youth Born to Single Mothers

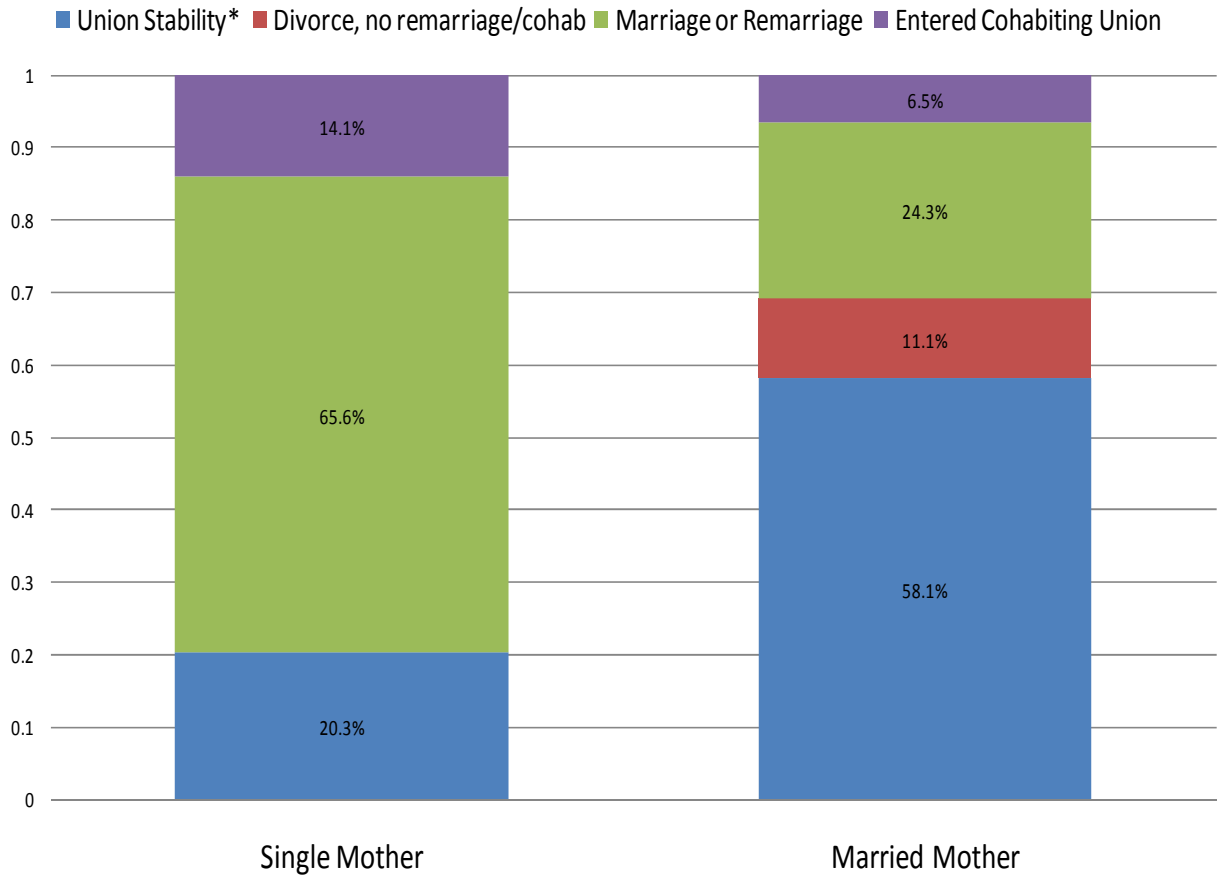
	High School Graduation			Teen Birth		
Maternal Union History	1	2	3	1	2	3
Aggregate Union History[a]						
Mother entered marital union	0.834	--	--	0.903	--	--
	[0.192]			[0.179]		
Mother never married but cohabited	0.714	--	--	1.086	--	--
	[0.232]			[0.328]		
Union history disaggregated by paternity status[a]			--			--
Mother never married, cohabited with biological father		0.776	--		1.206	--
		[0.287]			[0.446]	
Mother never married but cohabited with a new partner		0.536	--		0.673	--
		[0.249]			[0.342]	
Mother married biological father		0.812	--		0.712	--
		[0.239]			[0.190]	
Mother married a new partner		0.829	--		1.042	--
		[0.232]			[0.268]	
Union history disaggregated by paternity status and marital dissolution[a]						
Mother never married but cohabited with biological father			0.663			1.399
			[0.297]			[0.605]
Mother never married but cohabited with new partner			0.553			0.68
			[0.300]			[0.395]
Mother married biological father and it endured			0.709			0.805
			[0.219]			[0.275]
Mother married biological father and it ended			0.507			0.319**
			[0.244]			[0.164]
Mother married new partner and it endured			0.714			1.132
			[0.270]			[0.373]
Mother married new partner and it ended			0.91			0.632
			[0.366]			[0.292]
Constant	2.330***	2.302	0.711	0.258	0.137*	0.464
n	1,076	1,076	1,076	1,076	1,076	1,076

Notes: *** p<0.01, ** p<0.05, * p<0.10. [Standard errors in parentheses].

Model controls for if mother was 18 or younger at young adult's birth, maternal family structure at age 14, race/ethnicity, US nativity, maternal levels of educational atainment, as well as characteristics of the young adult (sex, race/ethnicity poverty status in adolescence, experienced early sexual debut, ever repeated a grade, highest grade would like to complete, number of siblings by age 16, and self-assessed depression (CES-D).

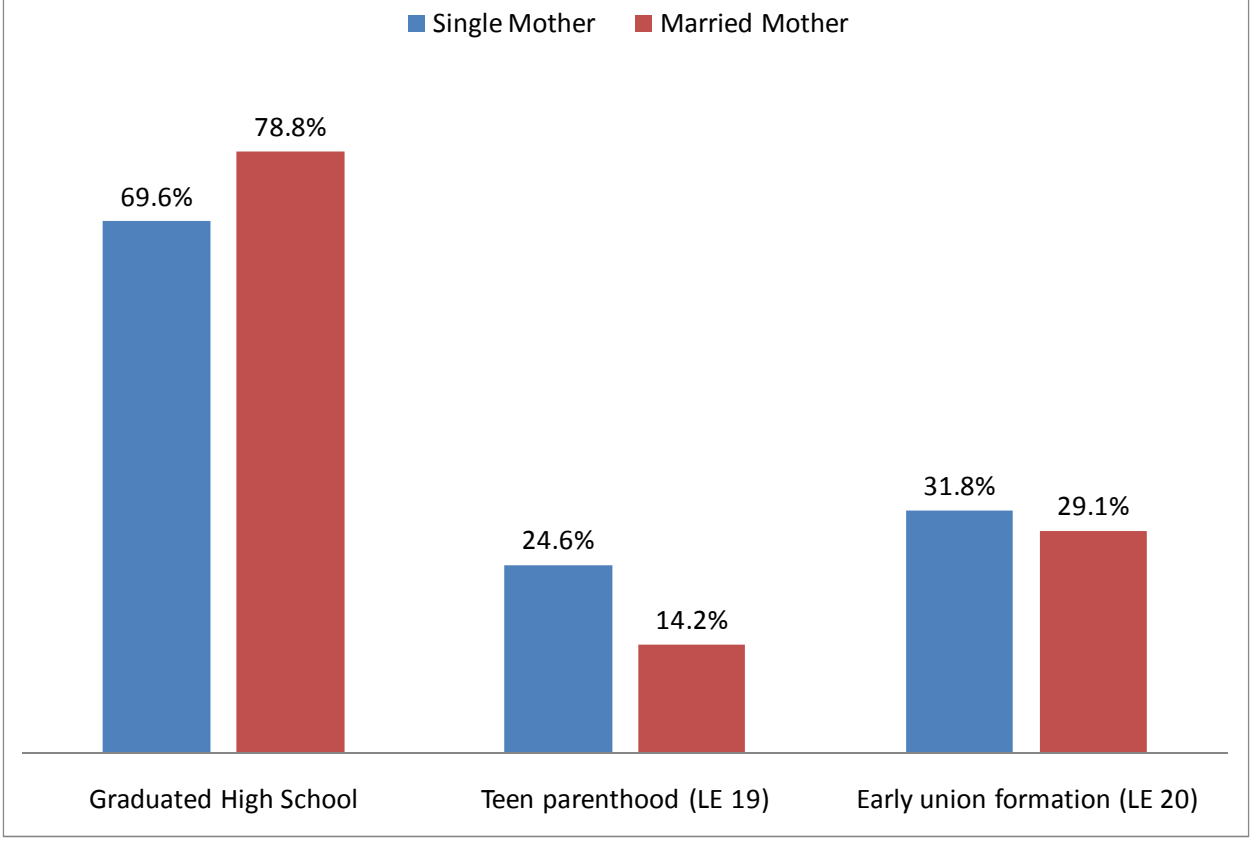
a Compared to continually never-married and unpartnered single mothers.

Figure 1. Young Adults' Experience of Union Change by Age 14, by Marital Status at Birth



* For married mothers, stability is remaining married, whereas for single mothers union stability means no entrance into marriage or cohabitation.

Figure 2. Young Adult Outcomes, by Maternal Marital Status at Birth



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[1i] Of the youth who did not answer the question about degree receipt, only 8 indicated that the highest grade they completed was 12th grade; we retain them with those who did not receive a diploma.