

ABSTRACT

Title of Document: VARIATIONS IN TEEN MOTHERS AND TEEN FATHERS' SOCIOECONOMIC ATTAINMENT IN ADULTHOOD: EXPLORING THE ROLE OF FAMILY SUPPORT AND ADULT IDENTITY

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Although teen pregnancy rates in the U.S. have decreased over the past several decades, teenage parenthood remains a major public health concern. Research indicates that teenage parents have worse socioeconomic outcomes than their peers who postponed childbearing. Much remains to be learned about the factors that buffer the negative impact of teen pregnancy. Few studies have examined characteristics of young mothers and fathers who fare well in adulthood despite early childbearing, including whether or not subgroup variation in outcomes exist by race. Based on the Life Course Theory, this study investigated two potential longitudinal predictors of teen parents' socioeconomic attainment in adulthood: family support and adult identity.

A secondary data analysis with males and females who reported a live birth before age 20 (N=1,317; 74.5% females) was conducted using longitudinal data from the National Longitudinal Study of Adolescent to Adult Health. Regression models accounting for survey design and weights were developed to fulfill the study aims. In Study 1, racial differences in teen fathers' demographic characteristics over the life

course were explored. Findings showed that Black teen fathers, while they perceived greater parental support in their transition to adulthood, experienced a greater accumulation of socioeconomic disadvantages in their adulthood compared to White teen fathers. In Study 2, the longitudinal impact of family support and adult identity on socioeconomic attainment was investigated among teen mothers. Results from adjusted linear regression analyses suggested that adult identity profiles may impact teenage mothers' socioeconomic outcomes, but showed no statistically significant associations between perceived parental support and socioeconomic outcomes. In Study 3, longitudinal predictors of educational attainment and income in adulthood were examined for teen fathers. Results from adjusted regression models showed that (a) teenage fathers' risk behavior in adolescence is associated with lower educational attainment and income in adulthood and (b) work participation in their early 20s may reduce teen fathers' investment in education.

Findings from this study can help inform interventions to promote successful socioeconomic adulthood trajectories among teen mothers and teen fathers by identifying factors that may buffer negative effects associated with early childbearing.

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AND ADULT IDENTITY

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Dissertation submitted to the Faculty of the Graduate School of the
University of Maryland, College Park in partial fulfillment
of the requirements for the degree of
Doctor of Philosophy
2017

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To my mother,
with all my love.

Acknowledgements

I am grateful to my mentors, family, and friends who have contributed to the completion of this dissertation.

To my advisors, Dr. Kerry M. Green and Dr. Mary A. Garza, who have unwaveringly supported me in the completion of this dissertation work and in every step of the doctoral program, I am grateful for their continued generosity of time, encouragement, and knowledge.

To the other members of my dissertation committee, Dr. Amelia M. Arria, Dr. Amy B. Lewin, and Dr. Mia A. Smith-Bynum, I am grateful for their guidance and thoughtful feedback provided at different stages of this dissertation project. Dr. Lewin's invitation to participate on her research team on teen pregnancy provided invaluable and formative experience for my work.

To Dr. Katherine Sharp, who has advocated for me, including helping with my first assistantship, I wish to express my gratitude. I would also like to thank Dr. Elbert Glover, who provided me an assistantship, which made it financially possible for me to complete this doctoral program.

I also wish to thank those who made the work of writing assignments in a second language less painful by providing endless edits, feedback, and grammatical advice: Erica, Erin, Haimish, Mary, Natalie, Nora, Rabab, and Roman. A notable thank you to the UMD Graduate School Writing Center and to the writing fellow Jessica Lu with her help on this dissertation.

To my international student and immigrant friends Barbara, Go Matsuo, and Rabab whose solidarity helped ease my adaptation to a new country.

To my cohort: Bina, Blair, Daisy, Erica, Erin, Krishna, and Tim, for all their support and friendship.

To my family in the U.S., who have warmly welcomed me and always made me feel at home. For that, I thank loving aunts and uncles, grandparents, brother and sister-in-law, Marik and Alla, my niece, Sonia and nephew, Max. A special thanks to my parents-in-law, Misha and Fira, for their support and all the delicious home cooked food.

To my father, Emilio, my brother, Fabricio, sister-in-law, Cristina, my dearest niece Mariah, and my nephews Pedro and João, who I have missed so much during these years. I am grateful for all the Skype calls and the vacations together. Especially to my father, who along with my mother, made countless sacrifices to give my brother and I the best education possible.

To my dearest godmother, Grace, for the long phone calls, for being there to ease some of my sadness in the hard times, and to share some of my happiness in the good times.

To my husband, Roman, whose unconditional support made getting a PhD in the U.S. possible and whose companionship transformed obstacles into pathways. Life is good by your side.

To my mother, Nida, who started this journey with me and unexpectedly had to leave. You had to depart and I had to continue. I am here because of you. Because of your strong will in changing your destiny, you showed me I also could change mine. I wish so much I could see the happiness of this achievement reflected in your eyes. I miss you and I love you.

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Chapter 1: Introduction

1.1. Background of the Problem

Despite statistics that may imply otherwise, teen pregnancy constitutes a major public health concern. In 2010, teen pregnancy rates in the United States reached their lowest point since the 1970s, with 57.4 pregnancies per 1,000 women aged 15-19 (Kost & Henshaw, 2014). Reflecting the decline observed in teen pregnancies, the teen birth rate reached a historic low in 2015 with 22.3 births per 1,000 women aged 15-19 (Hamilton, Martin, & Osterman, 2016). Nonetheless, while teen pregnancy has dropped approximately 50% over the past four decades (Kost & Henshaw, 2014), the U.S. still has one of the highest rates of adolescent birth among developed countries (Sedgh, Finer, Bankole, Eilers, & Singh, 2015). Explanations for the high rates of teen pregnancy and births in the U.S. compared to other developed countries includes the large number of abstinence education programs in the U.S. (Rosenfield, Charo, & Chavkin, 2008; Stanger-Hall & Hall, 2011), which have been shown to be ineffective in preventing teenage births, and greater levels of economic disparity in the U.S. (Kearney & Levine, 2012).

Differences in teen pregnancy and birth rates among racial and ethnic group persist within the U.S. Comparing racial groups, African American girls have the highest rates of teen pregnancy, at 99.5 per 1,000, compared to 37.8 for non-Hispanic White girls (Kost & Henshaw, 2014). The birthrate for African American girls (51.4 per 1,000) is more than twice the rate for non-Hispanic White teenagers (23.6 per 1,000) (Kost & Henshaw, 2014). Hispanic adolescents also have disproportionately high rates of teen pregnancy (83.5 per 1,000) and births (55.6 per 1,000) compared to non-Hispanic Whites

(Kost & Henshaw, 2014). According to Hamilton et al. (2012), African American and Latina adolescents accounted for 57% of teenage births in 2011.

While data on teenage births by adolescent mothers is available, data on the prevalence of births fathered by adolescent males is limited. In the most recent report from National Vital Statistics, which reflected data from 2013, the age of the father was not reported for 32% of births by women age 20 and younger, and for 29% of all non-marital births (Martin et al., 2015). Nonetheless, it is estimated that 12.3 per 1,000 births were fathered by males between the ages of 15-19, compared to 26.5 births per 1,000 for females aged 15-19 (Martin et al., 2015).

Racial disparities in teen births are also observed among these adolescent fathers. The birth rate for Black adolescent males (21.5 per 1,000) is two times the rate for White adolescents (10.9 per 1,000)¹ (Martin et al., 2015). However, similar to the rate of births to teen mothers, the rate of births to children fathered by adolescent males is declining. The highest peak in the past three decades occurred in 1991, with rates of 27.4 per 1,000 for all males between the ages of 15-19 years, 19 per 1,000 among Whites, and 57.8 per 1,000 among Blacks (Martin et al., 2015).

Beyond racial differences, teen parenting is still not randomly distributed among the population. Studies have shown that females from lower socioeconomic status groups are at higher risk for early childbearing (Gest, Mahoney, & Cairns, 1999; Jaffee, 2002; Kirby, Coyle, & Gould, 2001; Manlove, 1998; Scaramella, Neppl, Ontai, & Conger, 2008). Compared to those who postponed childbearing, teen mothers are more likely to come from families with low income, and to have parents with lower educational

¹ In this analysis, African American and Whites include men of Hispanic origin.

attainment (Booth, Rustenbach, & McHale, 2008; Lee, 2010). Regarding family structure, teen mothers are more likely to live in a household with none, or only one, of their biological parents (Booth et al., 2008), and to be raised by a single mom (Lee, 2010) who was herself a teenage mother (Woodward, Fergusson, & Horwood, 2001). In addition, during their childhoods adolescent mothers are more likely to be exposed to inter-parental conflict and physical punishment (Woodward et al., 2001). School dropout rates have also been correlated with teen pregnancy (Pacheco & Plutzer, 2007), with studies showing that most teen mothers dropped out of school before becoming pregnant (Fergusson & Woodward, 2000; Manlove, 1998). Other academic characteristics associated with teenage pregnancy are prior grade failures (Gest et al., 1999), poor academic skills (Fergusson & Woodward, 2000; Gest et al., 1999; Jaffee, 2002), and a low sense of connectedness with their schools (Booth et al., 2008).

Teen fathers share some of the same risk factors for teenage birth as teen mothers, particularly those pertaining to family and socioeconomic background. Males from low socioeconomic status groups are at an increased risk for becoming teen fathers (Gest et al., 1999) (Gest et al., 1999; Xie, Cairns, & Cairns, 2001). Compared to those who postponed childbearing, teenage fathers are more likely to come from low-income families and to have parents with lower educational attainment (Booth et al., 2008; Lee, 2010). Like their female counterparts, teen fathers are more likely to live in a household with zero or one biological parent (Booth et al., 2008). Regarding school factors, low academic competence is associated with teen parenting among males (Xie et al., 2001). Research also suggests an association between fathering a child during the teenage years and childhood aggressive behavior, adolescent substance use, deviant peer association

(Miller-Johnson, Winn, Coie, Malone, & Lochman, 2004), and delinquency (Booth et al., 2008).

Teenage birth and socioeconomic attainment of teen mothers and teen fathers later in life.

The negative impact of early childbirth on the lives of teen mothers is well documented in the literature. Adolescent mothers face an increased risk for lower educational attainment by young adulthood compared to non-teenage mothers with similar backgrounds (Barr & Simons, 2012; Hofferth, Reid, & Mott, 2001; Lee, 2010; Levine & Painter, 2003). The repercussions of adolescent childbearing on educational attainment persist into mid-adulthood. One study involving a cohort of African Americans from disadvantaged backgrounds demonstrated that adolescent mothers in the 1970s ended up achieving lower educational attainment at ages 32 and 42 compared to non-teenage mothers (Assini-Meytin & Green, 2015). Similarly, a 35-year follow-up study found that by their mid-50s adolescent mothers still had completed fewer years of schooling than the non-teenage mothers (Taylor, 2009).

In addition, adolescent mothers are more likely to depend on welfare and have poorer economic outcomes, as compared to those who postpone childbearing (Grogger & Bronars, 1993). For example, in a nationally representative sample of youth, Fletcher and Wolfe (2009) found that teen parenting had a negative impact on mothers' incomes by the time they had reached their early 20s. Similarly, findings from Assini-Meytin and Green (2015) showed that poor African American adolescent mothers in the 1970s continued to have lower incomes at ages 32 and 42 compared to non-teen mothers.

While studies have examined the impact of teenage birth on the socioeconomic outcomes of females, much less is known about its impact on adolescent fathers. Research suggests that adolescent fathers enter the labor market earlier than their peers; however, by their mid-20s, they are more likely to be unemployed and have a lower income (Brien & Willis, 2008, Pirog-Good 1996). In adulthood, teen fathers are more likely than non-teen fathers to earn a lower income, complete fewer years of education (Brien & Willis, 2008; Covington, Peters, Sabia, & Price, 2011; Dariotis, Pleck, Astone, & Sonenstein, 2011; Nock, 1998) and live in poverty (Nock, 1998). There is also evidence of a cohort effect: adolescent fathers in the late 1990s achieved less education than teen fathers in the late 1970s (Covington et al., 2011).

Given the broad socioeconomic consequences of teen parenthood among teen mothers and fathers, and the persistence of these disadvantages into adulthood, it is critical to identify factors that can buffer possible negative outcomes. The evidence demonstrating the negative impact of early childbearing on teen fathers' socioeconomic attainment in adulthood highlights the importance of continuing to study teen fathers. Additionally, evidence that the relative disadvantages for teen fathers tends to increase over their lives (in contrast to teen mothers, whose disadvantaged trajectories lessen over time) (Furstenberg, 2007; Smithbattle, 2007; Weed, Nicholson, & Farris, 2015), makes addressing the problem particularly urgent (Dariotis et al., 2011; Furstenberg, 2003).

1.2. Justification for the Current Study

Although teen parents, on average, experience worse socioeconomic outcomes in adulthood compared to non-teen parents, longitudinal studies of teen mothers indicate heterogeneity of outcomes (Furstenberg, 2007; Furstenberg, Brooks-Gunn, & Morgan,

1987b; SmithBattle & Leonard, 2012; Weed et al., 2015). Some teen mothers, despite early childbearing, finish high school and enroll in college, earn an adequate income, and do not become dependent on welfare (Furstenberg, 2007). In addition, qualitative studies show that for some teen parents, having a child at an early age creates an incentive for them to return to school and avoid becoming involved with drugs and delinquency, since they now have a young life for which to care (Weed et al., 2015). Given that previous studies have shown that teen parenting does not necessarily derail socioeconomic trajectories, it is important to identify which teen parent characteristics are associated with success in adulthood.

The paucity of literature on teen fathers, and the evidence suggesting the existence of gendered differences in teen parenting and later outcomes, highlight the need to examine the buffers of negative socioeconomic attainment in adulthood through separate studies of teen mothers and teen fathers. The few studies that have explored gender differences found important distinctions in predictors of positive outcomes in adulthood between teen mothers and teen fathers. For example, Mollborn (2007) showed that childcare provided in adolescence is essential for teen mothers' educational attainment at age 26, whereas housing and financial support is most critical for teen fathers' educational attainment in adulthood. In addition, the inclusion of separate models for males addresses the call for more and better information on teen fathers specifically (Castillo, Welch, & Sarver, 2011; Devault, Deslauriers, Groulx, & Sévigny, 2010), as much less is known about the parenting practices, family formation, and pathways into adulthood for teen fathers, as well as the possible buffers of negative socioeconomic outcomes.

1.3. The Influence of Family Support

At any age, having a baby is a major life transition that requires adaptation and a strong support system. However, adolescents who bear children must simultaneously deal with a variety of other important life transitions, such as completing school, moving out of their parents' home, finding a job or career, and building long-term romantic relationships (Mollborn & Jacobs, 2011). Without strong, supportive relationships, a teenager who has a child may be unable to finish their schooling, which will potentially have negative impacts on subsequent education, income, and employment (Elder, 1998). Therefore, supportive relationships are likely crucial in facilitating teen parents' responses to the challenges of adolescence and parenting. Such relationships, however, have not yet been studied in depth, particularly in the context of teen parents' socioeconomic attainment.

The characteristics of supportive relationships for teen mothers and fathers may vary across racial groups. According to Henly (1997), "given the variation in incidence, outcomes and response to adolescent motherhood by race, the social support systems that have developed to cope with teen parenthood might also have distinct qualities" (p. 631). For example, research suggests that responses to early childbearing in African American families might be less severe compared to responses in White families (Henly, 1993). In addition, African American teen parents are less likely to marry and interrupt schooling as a result of early childbearing (Marsiglio, 1987; Rudd, McKenry, & Nah, 1990). Racial differences in the meaning and functioning of social support might help to explain variations in the role of support provided by the family in teen parents' lives (Caldwell & Antonucci, 1997; Davis, 2002; Henly, 1997). These differences in the structure of social

support between African American and White teenage parents may moderate the relationships between parental support and long-term socioeconomic attainment.

1.4. The Role of Adult Identity

Becoming a parent is one of the events in life that marks an individual's transition to adulthood. However, 'becoming an adult' involves roles and responsibilities beyond childbearing. When asked "what it means to be a women," low-income teen mothers from New York clearly defined adulthood as a concept broader than motherhood (Leadbeater & Way, 2001). For those young mothers, financial independence and having their own place to live were also included as important markers of adulthood. From a theoretical perspective, Benson, Johnson, and Elder (2012) propose that becoming an adult relates to the individuals' perception of how old they are in relation to others (subjective age) and their level of autonomy and social responsibility (psychosocial maturity). According to Weed et al. (2015), "conceptualizing the transition to adulthood based on identity profiles in contrast to chronological age may provide a more meaningful understanding of the impact of teen parenthood on important outcomes" (p. 89).

Given that individuals tend to act based on their perceived sense of self, it is expected that those who identify themselves as adults will be more likely to assume adult roles in pursuing financial independence and completing their education, which in turn will influence their educational and economic trajectories (Benson & Elder, 2011). Having an older subjective age could be beneficial for teen parents as it may facilitate better approaches to solving problems and accepting new responsibilities (Johnson & Mollborn, 2009), thus potentially predicting successful adulthood trajectories. To explore

this concept further, this study examined the role of adult identity in predicting successful socioeconomic attainment in adulthood among teen mothers and fathers.

1.5. Implications

Findings from this study can promote successful adulthood trajectories among teen mothers and fathers by identifying potential modifiable factors that may be targets of interventions. In addition, due to the variability in the life course of teen parents, identifying characteristics of those at greatest risk for difficult transitions to adulthood may inform the development of screening tools to be used to indicate individuals in need of support (Oxford, Gilchrist, Gillmore, & Lohr, 2006).

Promoting teen parents' educational attainment, adequate income, and secure employment will likely have a positive impact on their health and psychological wellbeing (Hobcraft & Kiernan, 2001). Extensive literature has documented evidence that health and health behaviors are shaped by socioeconomic factors (Braveman & Gottlieb, 2014). For example, Braveman, Cubbin, Egerter, Williams, and Pamuk (2010), in a study using five different nationally representative data sources, found a clear socioeconomic gradient pattern in the association of income and education with several health indicators (e.g. life expectancy, heart disease, diabetes, and infant mortality). These gradient patterns were found particularly among non-Hispanic Blacks and Whites, where those from lower income levels and education were least healthy across most indicators (Braveman et al., 2010). The growing evidence of the correlation between socioeconomic factors and health outcomes suggests that identifying predictors of positive socioeconomic attainment among teen parents is highly relevant for public health.

In addition, the benefits of helping teen parents achieve positive socioeconomic

outcomes will likely extend to their children. Studies have shown that teen mothers' low income and educational attainment is associated with several health and developmental disparities for their children (Mollborn, Lawrence, James-Hawkins, & Fomby, 2014). Among fathers, higher educational attainment is associated with better co-parenting behaviors, as well as increased caregiving and nurturing behaviors; while being employed is associated with greater frequency of child visits (Futris, Nielsen, & Olmstead, 2010). Therefore, helping teen parents improve their socioeconomic status might also positively affect their children's development and well-being.

By examining the characteristics of the individuals who make successful transitions to adulthood, findings from this study can help to reframe the cultural myth that teen parents are doomed to a life of poor outcomes. This aim aligns with the efforts of other researchers to reframe the negative assumptions associated with teen childbearing (SmithBattle & Leonard, 2012; Weed et al., 2015). According to Weed et al. (2015), the "negative social construction of teen parenting as problematic perpetuates stereotypes and focuses blame on the young people themselves. This negative social construction, in turn, may become a self-fulfilling prophecy if it contributes to additional challenges and consequences for teen parents and their children" (p. 3).

1.6. Theoretical Framework and Conceptual Model

As a guide, this study made use of the Life Course Theory, which proposes that social and biographical contexts influence an individual's life trajectory (Elder, 1998). This study's conceptual model, which is based on the Life Course Theory's principles of linked lives and aging, predicts that teenage mothers' and fathers' socioeconomic attainment is influenced by the support received from their parents, as well as the

characteristics of their adult identity (see Figure 1). The concept of linked lives refers to the idea that how well a family is able to adapt to challenging circumstances can shape an individuals' life course. The immediate family of teen parents constitutes a network of people who react to a birth of the child in a more or less supportive way. The support received from family influences the teen parents' ability to maintain important developmental tasks (e.g., stay in school) while raising a child (SmithBattle & Leonard, 2012), thus influencing subsequent socioeconomic attainment. Because of the different configurations of family support and historical meaning of non-marital early childbirth among Black and White communities (Henly, 1997), the ways parents of Black and White teenagers react to an early childbirth likely differs; therefore, the relationship between parental support and socioeconomic attainment in adulthood is expected to differ by race, demonstrating the importance of context in framing this issue.

Based on the Life Course Theory's principle of aging, this model also predicts that teen parents' subjective age influences their socioeconomic attainment in adulthood and that this relationship differs by the level of the individuals' psychosocial maturity. According to the Life Course Theory's principle of aging, individuals' perceptions of age are influenced by their social context (Elder, Johnson, & Crosnoe, 2004); and individuals' age identities likely influence their actions and the decisions they make in life, thus, affecting their life-course trajectories.

Since the Life Course Theory emphasizes the importance of context and cumulative disadvantage (Dannefer, 2003), it is critical to take into account the early lives of teen parents. Early disadvantages are compounded over time, leading to accumulation of inequalities over the course of someone's life (Ferraro & Shippee, 2009).

Thus, family background, school related characteristics, and individual characteristics are all expected to influence the study's outcomes, and have therefore been accounted for in our conceptual model.

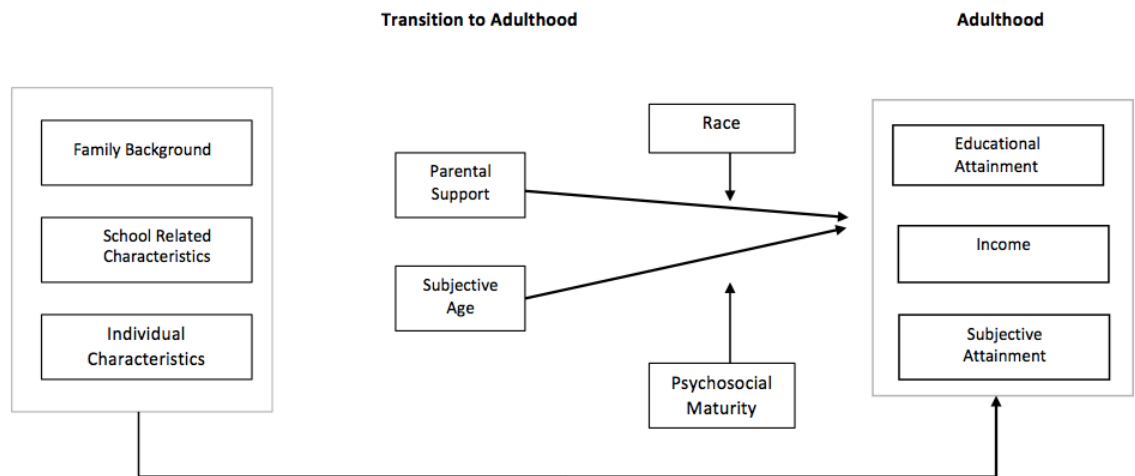


Figure 1. Conceptual Model of Perceived Parental Support and Subjective Age as Buffers of Negative Socioeconomic Attainment in Adulthood and Moderation Effects.

1.7. The Current Study

To test the study's conceptual model, a secondary analysis of data from the National Longitudinal Study of Adolescent to Adult Health (Add Health) was conducted. Add Health is a longitudinal study of a nationally representative sample of teenagers from grades 7 to 12 (in 1994 and 1995) who were followed until the ages of 24-32 (in 2008 and 2009). Access to the Add Health restricted-use contractual dataset was facilitated by the Maryland Population Research Center at the University of Maryland, College Park. The Add Health restricted-use dataset was chosen because it provides access to the full national survey sample (~20,000), whereas the publicly available data restricts access to only a sample subset (~5,000).

The analytical sample includes males and females who had a child before the age

of 20. The study primarily included measures from three waves of Add Health (Waves I, III, and IV). Relevant covariates were selected from Wave I, 1994-1995 (e.g., parental educational attainment, household income, and school connectedness), Wave III, 2001-2002 (e.g., marital status), and Wave IV, 2008-2009 (e.g., number of children). From Wave III, the independent variables (perceived parental emotional support, perceived parental financial support, subjective age, and psychosocial maturity) were selected. Finally, the outcome variables (educational attainment, income, and subjective attainment) were selected from Wave IV. See list of selected variables in Appendix J.

1.8. Research Questions and Hypotheses

The research questions and hypotheses for the current study are as follows:

RQ1. Does perceived family support provided in the transition to adulthood predict later socioeconomic attainment among teen mothers and teen fathers, and does this association vary by race?

H1.1: Compared to teen parents with low perceived parental emotional support, teen parents with high perceived parental emotional support in the transition to adulthood achieve more years of schooling, greater income, and higher subjective attainment in young adulthood.

H1.2: Compared to teen parents with low perceived parental financial support, teen parents with high perceived parental financial support in the transition to adulthood achieve more years of schooling, greater income, and higher subjective attainment in young adulthood.

H1.3: Among teen parents, the associations between perceived parental emotional and financial support in the transition to adulthood and socioeconomic attainment in

young adulthood differ by race.

RQ2. Does subjective age affect socioeconomic attainment in adulthood among teen mothers and among teen fathers and does this relationship vary by psychosocial maturity levels?

H2.1: Teenage parents with older subjective age and higher levels of psychosocial maturity achieve more years of schooling, greater income, and higher subjective attainment in young adulthood compared to teen parents with (a) older subjective age and low psychosocial maturity, (b) young subjective age and high psychosocial maturity, and (c) young subjective age and low psychosocial maturity.

1.9. Dissertation Format

In the following chapters, the dissertation work conducted to investigate the research questions and hypothesis is presented. Chapter 2 includes a review of the literature on five main topics (1) predictors of teen parents' socioeconomic attainment in adulthood; (2) the influence of parental support on teen parents' socioeconomic outcomes and racial differences in parental support; (3) the characteristics of teen fathers' involvement with their children; (4) adult identity profiles and its influence on socioeconomic trajectories; and (5) the Life Course Theory as it relates to the understanding of teen parents' socioeconomic trajectories. Following, three manuscripts resulting from this dissertation work are presented. Chapter 3 presents a descriptive study exploring differences in Black and White teen fathers' psychosocial characteristics over the life course, including racial differences in parental support and socioeconomic attainment in adulthood. Chapter 4 presents findings from the second study, which investigated the role of parental support and adult identity on teen mothers' socioeconomic attainment in adulthood. The third paper is presented in Chapter 5 and examines longitudinal predictors of teen fathers' socioeconomic attainment in adulthood. In chapter 6 all study findings are discussed, along with implications for the field and limitations. Results from analyses not included in the three main manuscripts are presented in the Appendices. These include non-statistically significant findings that were not included in the three main studies – in particular, the association of perceived parental support and age identity with socioeconomic attainment outcomes among teen fathers.

1.10. Definitions of Terms

Adolescence. It is characterized by the developmental stage that markers the transition from childhood to transition to adulthood. While the age range that characterizes “adolescence” differs in the literature, in this study, it refers to the period reflecting data collected in Wave I of Add Health (ages 11 – 19).

Adult Identity. Refers to individuals’ perceived developmental status based on two main components: perception of age in comparison to others of the same chronological age (subjective age) and individuals’ perception of their levels of independence, confidence, and responsibility (psychosocial maturity) (Benson & Elder, 2011).

Family support. This term is used interchangeably with ‘parental support’ to refer to the two main independent variables: perceived parental emotional support and perceived parental financial support.

Life course. This term refers to a “pattern of socially defined, age-graded events and roles which is subject to historical change in culture and social structure” (Elder, 1999, p. 302).

Linked lives. One of the main concepts of the Life Course Theory. This term is used to describe the notion that “lives are lived interdependently and socio-historical influences are expressed through this network of shared relationships” (Elder et al., 2004, p. 13).

Pathways. Refers to socially shaped trajectories that are followed by individuals (Elder et al., 2004). According to Pallas (2004) “A trajectory is an attribute of an

individual, whereas a pathway is an attribute of a social system. Pathways are of particular interest in their ability to illuminate structures” (p. 168).

Perceived parental emotional support. This term is used to refer to individuals’ perception of emotional closeness with biological parents or other parent-like figure.

Perceived parental financial support. This term refers to participants’ report on any financial help received from biological parents or other parent-like figure.

Psychosocial maturity. This term refers to individuals’ perception on their autonomy, independence, and social responsibility.

Socioeconomic Attainment. This term is used to refer to educational attainment, personal income, and subjective socioeconomic status in young adulthood.

Subjective age. Term is used to describe how old an individual perceive to be in relationship to others their same chronological age.

Teen parenting. In this study, teen parenting is defined as women who gave birth to a child and men who have fathered a child before the age of 20 (19 and younger). Alternative names used interchangeably: early childbearing, adolescent parenting, teenage parenting.

Teen pregnancy. Most commonly defined in the literature and national agencies as pregnancy in girls age 19 and younger (Martin, Hamilton, Osterman, Curtin, & Mathews, 2015; Office of Adolescent Health, 2015). Alternative names used interchangeably: teenage pregnancy, adolescent pregnancy.

Trajectory. Defined as “change over a substantial period of life that links behavior in two or more life stages” (Bengtson & Allen, 1993, p. 471). Trajectories are

made up of a sequence of transitions (see definition below), which can indicate the beginning and end of a particular trajectory (Macmillan & Eliason, 2004).

Transition. Refers to a short life change (Bengtson & Allen, 1993). Transitions commonly involve changes in social status and identity (Elder et al., 2004). Examples of transitions are entry into first grade, birth of a child.

Transition to adulthood. Refers to the developmental period between adolescence and adulthood, chronologically between the ages of 18 to 25 (Arnett, 2000). It is characterized by changes in social roles where individuals move towards more permanent adult roles (Benson & Furstenberg, 2006). In this study reflects the period corresponding to Wave III, when participants have a mean of 22 years of age. This term is used interchangeably with “emerging adulthood”.

Young Adulthood. It is a term used to refer to the beginning of adulthood, where individuals have generally achieved more defined roles through marriage, parenting, or have a more settled occupational path (Arnett, 2000). In this study, it reflects the period corresponding to Add Health’s Wave IV, with individuals have a mean of 28 years of age.

Chapter 2: Literature Review

This chapter describes the current literature on predictors of poor socioeconomic outcomes among teen parents, and explains the theoretical framework used to guide this study. First, I examine the risk factors for poor socioeconomic outcomes for teen parents. Second, I review the literature on the current state of knowledge regarding the main independent variables (parental support and adult identity), and consider their importance in predicting socioeconomic trajectories of success among teen mothers and fathers. Next, I describe the characteristics of family support received by teen mothers and fathers, highlighting racial differences between Blacks and Whites. Lastly, I present the theoretical framework used in this study together with its application to understanding the socioeconomic trajectories of teen parents in adulthood.

2.1. Factors Associated with Teen Parents' Socioeconomic Attainment in Adulthood

2.1.1. Family background

Teen parents from disadvantaged backgrounds have greater odds of experiencing lower socioeconomic attainment in adulthood. Studies show a negative association between parental educational attainment and teen mothers' work participation and years of education in adulthood (Oxford, Lee, & Lohr, 2010; Schoon & Polek, 2011). In the 1988–2000 National Education Longitudinal Study (NELS), teen mothers and fathers from families with higher socioeconomic status (measured by parents' occupation, educational level, and family income) had a greater likelihood of completing high school by young adulthood (Mollborn, 2010). For teen fathers, lower parental education has been correlated with decreased odds of earning a high school diploma or GED by their early to mid 20s (Marsiglio, 1987).

2.1.2. School related factors

Academic engagement has been shown to promote positive outcomes in adulthood. In a British sample of teen mothers in the 1980s, Schoon and Polek (2011) showed that school motivation in adolescence was positively associated with academic qualifications by age 30, and with employment between the ages of 16 and 29, which in turn decreased the odds of welfare dependency by age 30. Being at grade level is also a strong predictor of resiliency among teen mothers (Weed, Keogh, & Borkowski, 2000). Teen mothers who had repeated a grade achieved fewer years of education at six years postpartum (Way & Leadbeater, 1999), while teen mothers and fathers with higher math and reading scores at age 18 were more likely to have graduated from high school by age 26 (Mollborn, 2010).

2.1.3. Individual characteristics

Research has shown that specific characteristics related to teen parents' age at first pregnancy, whether or not they are involved in the child's caregiving, and decisions to marry and cohabit are likely influences on later socioeconomic attainment. Studies suggest that older teen parents suffer a smaller educational penalty in the long term compared to younger teen parents (Hoffman, Foster, & Furstenberg Jr, 1993; Mollborn, 2007), since older parents typically complete more years of schooling before childbirth. In a cross-sectional study, Henly (1997) found that age was negatively associated with being off-time in education for White teen mothers, but not for African American teen mothers. Among teenage fathers in the 1970s, the age at which the teen fathered a child had no correlation with educational attainment in adulthood (Marsiglio, 1987). Studies show that being the primary caregiver had a negative effect on adulthood educational

attainment for teen mothers but not teen fathers (Mollborn, 2007, 2010). Finally, marriage or cohabitation may hinder teenage parents' educational attainment in adulthood. Compared to those who remain living with their families, those who marry or cohabit had decreased odds of graduating high school (Mollborn, 2010) and finding employment (Weed et al., 2000), as well as lower work aspirations and greater financial insecurity (Henly, 1997). Among teen fathers, marriage/cohabitation was associated with higher high school drop out rates (Marsiglio, 1987).

2.1.4. Risk behavior

Substance use and delinquency are important correlates of teenage fatherhood (Tremblay, Sutherland, & Day, 2016). When compounded with an early transition to fatherhood, these factors may negatively impact teen fathers' socioeconomic trajectories (Landers, Mitchell, & Coates, 2015). In general samples, studies have shown that adolescent risk behaviors, such as drug use (Green & Ensminger, 2006; King, Meehan, Trim, & Chassin, 2006), heavy drinking (Staff, Patrick, Loken, & Maggs, 2008), and delinquency (Makarios, Cullen, & Piquero, 2015) can negatively impact educational attainment in adulthood.

2.2. Parental Support and Teen Parents' Socioeconomic Attainment

Family support is a relevant factor for positive socioeconomic attainment among teen parents, as it is thought to buffer the strains of caregiving for teen mothers, especially those with limited psychosocial resources (Letourneau, Stewart, & Barnfather, 2004). The nature and quality of family support provided to adolescent parents begins long before the pregnancy and childbirth. For example, families with adequate early parenting practices in which education is valued tend to provide more support for their

daughters, enabling them to continue their education after birth (Leadbeater, 2014).

Another study has shown that family strengths (e.g., closeness, support, protection) in childhood are protective against adolescent pregnancy and long-term psychosocial consequences (job and financial problems) in adulthood (Hillis et al., 2010). These studies provide evidence that family support may be a potential proxy for parental practices in the years prior to pregnancy, which presents additional opportunities for early intervention.

Despite the overall theoretical consensus on the potential protective effect of family support on teen mothers' adverse outcomes (Devereux, Weigel, Ballard-Reisch, Leigh, & Cahoon, 2009; Smithbattle, 2007; Toomey, Umaña-Taylor, Jahromi, & Updegraff, 2013), there is still no clear understanding of the effects of different types of family support on the life of teenage parents (Beers & Hollo, 2009; Henly, 1997). While some studies document a clear association between family support and outcomes for teen mothers in such areas as depression (Edwards et al., 2012) and wellbeing (Kissman & Shapiro, 1990), others show more ambiguous results on measures of educational attainment (Leadbeater & Way, 2001) and financial security (Furstenberg et al., 1987b).

2.2.1. Material support

Material support provided by one's family can help teen parents meet their basic needs, particularly when other safety nets are not present. The literature on teen parenting has used several different measures as indicators of material support, including residence with parents and childcare arrangements (Caldwell & Antonucci, 1997; Henly, 1997). As specific literature on financial support is limited, this section presents the current state of knowledge on diverse indicators of material support from family as it

pertains to adulthood socioeconomic achievement among teen mothers and fathers.

One of the few studies analyzing the role of financial support on socioeconomic attainment included females who were teen mothers in the 1980s, and who, at the time of data collection, were receiving Temporary Assistance for Needy Families (TANF) (Henly, 1997). In this cross-sectional study, it was found that having no additional sources of financial support other than welfare was associated with greater financial insecurity for White teen mothers, but not for African American teen mothers (Henly, 1997). In addition, lack of financial support other than welfare was marginally associated with being off-grade in their education for both White and African American teen mothers (Henly, 1997). This study highlights the positive association between financial support and indicators of socioeconomic attainment. Further studies, however, will be needed to analyze longitudinal relationships.

Research suggests that teen mothers who continue residing with their parents may benefit more from family assistance than those who move away from home (Furstenberg & Crawford, 1978). According to Mollborn and Jacobs (2011), even when the father of the baby resides in the same household, teen mothers cite their parents as their main source of support. Among a sample of low-income African American females who were teenage mothers in the 1960s, those who stayed in their parents' home after childbirth had greater odds of remaining in school and graduating, and of being employed and off welfare by the 6-year follow-up compared to those who moved out of the family home (Furstenberg & Crawford, 1978). Moreover, a greater proportion of teen mothers residing with their families (alone or with their spouse) received money from their parents or other family members compared to those living with their spouses in a separate household

(Furstenberg & Crawford, 1978). The beneficial effect of maintaining residence with parents is supported in a more recent study of male and female teen parents in the late 1980s and early 1990s (Mollborn, 2010). Findings from this study showed that marriage/cohabitation combined with co-residence with two parents had no effect on educational attainment compared to remaining single and living with two parents; however, marriage/cohabitation and co-residence with none or one parent had a negative effect on educational attainment in adulthood compared to remaining single and living with two parents.

While support from family plays a relevant role in the lives of teen mothers, its positive effects seem to diminish over time (Beers & Hollo, 2009; Bunting & McAuley, 2004a; Caldwell & Antonucci, 1997). Furstenberg et al. (1987b) found that African American teenage mothers who resided with their parents after birth were more likely to remain enrolled in school; however, at the 17-year follow-up these mothers were more likely to experience economic problems. As the authors explain, “possibly, co-residence offers temporary relief, but if extended, may foster long-term dependency” (Furstenberg et al., 1987b, p. 57). Similarly, in a sample of African American and Puerto Rican teen mothers in the 1980s, residence of the teenage mother with her own mother in the first year post-partum reduced educational attainment at six-year follow-up (Way & Leadbeater, 1999).

Another explanation for the negative effect of family support on teen parents’ life relates to the strains associated with parent-teen interactions. Some researchers explain that the tension between the need for support and desire for independence may result in strains in mother-daughter relationships, potentially decreasing the benefits of support

(Bunting & McAuley, 2004a; Caldwell & Antonucci, 1997). Teen mothers, on average, maintain residence with their own mothers for five years after giving birth, depending on them as the primary source of housing, financial support, and child-care (Caldwell & Antonucci, 1997). Support and strain are not exclusive, as teenage mothers tend to identify their own mothers as the most frequent source of support *and* psychological conflict (Buckingham-Howes, Oberlander, Hurley, Fitzmaurice, & Black, 2011; Nitz, Ketterlinus, & Brandt, 1995).

The provision of childcare is another crucial factor in whether teen mothers remain in school. Findings from a qualitative study with a sample of African American and White teenage mothers found that childcare support provided by family varied greatly among participants (Smithbattle, 2007). For some teen mothers, family care provided by their families enabled them to finish school, by leaving them more time to dedicate to school-related activities (Smithbattle, 2007). In another study, childcare support by maternal grandmothers increased the likelihood of returning to school and graduating (Leadbeater, 1996). In the absence of childcare provided by their families, and lacking financial resources to pay for this service, teen parents from low-socioeconomic groups are faced with greater obstacles to continuing schooling. From qualitative interviews with low-income teen mothers, Mollborn (2011) found that despite their academic aspirations, teen mothers' lack of money for transportation and childcare hindered their ability to remain in school.

Even though availability of financial resources is a known crucial factor in helping teen mothers with the tasks of raising a child while trying to continue their education and professional training, few studies have analyzed the long-term impact of

family financial support on teen mothers' socioeconomic attainment in adulthood. In addition, most of the studies examining the role of material support on socioeconomic attainment looked at cohorts of teen mothers from the 1960's (Furstenberg, 2007; Furstenberg et al., 1987b) and 1980's (Henly, 1997; Leadbeater, 2014; SmithBattle & Leonard, 2012). According to Mollborn and Jacobs (2011) there is evidence that since passage of the welfare reform bill in 1996, the governmental safety net for teen mothers has been shrinking, and that teen mothers are likely relying more on their families for material support. As a result, further analysis is necessary to explore, in a more recent cohort of teen mothers, the relationship between financial support provided by parents and socioeconomic attainment.

Few studies have investigated the influence of financial support or other material support on teenage fathers' socioeconomic attainment. Using data from the 1988–2000 National Education Longitudinal Study (NELS), Mollborn (2007) showed that material resources are a key factor in reducing the educational penalty for teen fathers. Taking into account the availability of material resources, this study found no statistically significant differences in educational attainment between teen fathers and non-teen fathers (Mollborn, 2007). Other research, based on a subsample of teen fathers from NELLS (N=50), showed that teen fathers who worked 20 hours or more at age 18 were less likely to obtain a GED or to graduate from high school by age 26 (Mollborn, 2010). These findings suggest that financial support from parents might help teen fathers remain in school and achieve a higher socioeconomic attainment in adulthood. Given the potential positive effects of parental financial support on teen fathers' socioeconomic attainment in adulthood, and given the paucity of studies on this topic, further studies are needed to

determine the long-term impact of parental financial support on teen fathers' educational, income, and subjective attainment in adulthood.

2.2.2. Parental emotional support

Emotional support may help teen parents cope with stress and difficult situations when negotiating the responsibilities of raising a child while remaining in school (Way & Leadbeater, 1999). In a cross-sectional study of low-income urban females who were teen mothers in the 1980s, Henly (1997) found that African American teen mothers who reported more emotional support from any source were less likely to report poor grades and financial insecurity; on the other hand, no statistically significant effects were reported for Whites. In the same study, provision of emotional support from any source was non-statistically associated with educational attainment (Henly, 1997). Another longitudinal study of African American and Puerto Rican teen mothers found that those who received more emotional support from family were more likely to have returned to school at 36 months postpartum (Leadbeater, 1996).

The positive impact of parental emotional support on teen mothers' educational attainment might not last for the long term. In the 6-year postpartum follow-up on the same cohort of African American and Puerto Rican teen mothers, emotional support from family was associated with lower educational attainment (Way & Leadbeater, 1999). In a post hoc analysis using qualitative data, the authors found that adolescent mothers who were high achievers were more likely to come from a family that either challenged them to do well or neglected them; in contrast, low achievers were more likely to come from families that encouraged dependency over self-reliance (Way & Leadbeater, 1999).

As most studies on the role of emotional support on teen mothers' socioeconomic attainment relates to school outcomes (Leadbeater, 1996; Way & Leadbeater, 1999), much less is known about the impacts on income and subjective attainment in adulthood. Furthermore, little is known about the long-term impact of parental emotional support on teen mothers' socioeconomic attainment extending into adulthood. Further analysis is necessary to explore the long-term effect of parental emotional support on diverse indicators of teen mothers' socioeconomic attainment in adulthood.

Compared to the literature on teen mothers, there are relatively few studies on the role of emotional support from parents on teen fathers' socioeconomic attainment. The influence of parental emotional support on the life of young fathers has been explored primarily in the context of paternal involvement with children and the overall quality of parental relationships. For example, in a sample of African American teenage fathers, emotional support from various sources was positively associated with healthy parenting behavior (Miller, 1994). Another study found that in a sample of African American paternal mothers, support of their son's fathering practices increased teen fathers' involvement with their child (Reddock, Caldwell, & Antonucci, 2015). Research shows that teen fathers who are more involved in their children's lives are less likely to use drugs and to commit crimes (Wiemann, Agurcia, Rickert, Berenson, & Volk, 2006).

2.2.3. Racial differences in support received from family

Research suggests that, overall, compared to White families, African American families have a broader notion of kinship (Henly, 1997; Smith-Bynum, 2013), extending beyond the nuclear family to include other relatives such as grandparents and uncles (Lu et al., 2010). The emphasis on extended kinship in some African American families

might translate into support for African American teen mothers from a broader range of family members. For example, Baer (1999) shows that the involvement of parents, grandparents, siblings, and friends with the baby tend to be more common among African Americans teen mothers compared to Whites. This finding is supported by studies showing that African American teen mothers are more likely to live in a multi-generational household than White teen mothers (Caldwell & Antonucci, 1997; Henly, 1997; Mollborn, 2011; Trent & Harlan, 1994). Conversely, compared to African American teen mothers, White teen mothers have greater odds of forming their own family unit through marriage or cohabitation (Caldwell & Antonucci, 1997; Henly, 1997; Mollborn, 2011).

While African American teen mothers might enjoy a stronger family network of support, they tend to receive less support from the father of the baby. A study that analyzed the social support provided by fathers of babies born to adolescent mothers found that African Americans received the least amount of support, with 41.9% of African American teenage mothers reporting low support, followed by 26.2% of Mexican-American and 19.4% of Caucasian (Wiemann et al., 2006) teenage mothers.² African American teen mothers' low rates of co-residence with the father of the baby might partially explain these numbers, as residential fathers are more likely to invest and spend time with their children (Berger & Langton, 2011; Jones & Mosher, 2013).

There is a paucity of research examining racial differences in the relationship between emotional and financial support and teen mothers' educational attainment. In one of the few studies that examined this relationship (Henly, 1997), findings suggested

² In this study, Wiemann et al. (2006) combined support regarding money, transportation, advice, and availability to talk about problems into one measure.

that African American teen mothers had comparable levels of emotional support and lower financial support (not including welfare) than did Whites. In this study, low emotional support was associated with greater financial insecurity and poorer grades for African Americans, but not for Whites (Henly, 1997).

As for financial support, Henly (1997) reports that White teenage mothers with financial support beyond welfare experienced less financial insecurity; no statistically significant effects were found for African American teen mothers. These differential effects on financial support might be partially explained by the fact that Whites may receive higher amounts of financial support outside welfare, thereby impacting differentially the relationship between financial support and economic security between African American and White teen mothers. This explanation is supported by studies showing that African American teenage mothers tend to come from more disadvantaged backgrounds than White teen mothers (Casares, Lahiff, Eskenazi, & Halpern-Felsher, 2010; SmithBattle & Leonard, 2012).

Much less is known about racial discrepancies in how much support is provided to teen fathers by their families. No research to date has explored racial differences in the relationship between family support and teen fathers' socioeconomic attainment in adulthood. Disparities observed in the structure of support networks between African American and White teenage parents might explain the differences in findings when examining the role of social support on wellbeing (Davis, 2002; Henly, 1997). Therefore, it is necessary to further understand whether the relationship between support and teen parents' socioeconomic attainment in adulthood differ according to race.

2.3. Teen fathers' involvement with their children

An important aspect to consider when investigating teen fathers' socioeconomic trajectories in adulthood is their involvement and participation in their child's life. Studies have shown that teen fathers attribute different meanings to their fatherhood role. One of the most commonly cited roles is serving as a financial provider for the mother and the baby (Devault et al., 2010; Lemay, Cashman, Elfenbein, & Felice, 2010; Paschal, Lewis-Moss, & Hsiao, 2011). For a young male, being a 'provider', particularly without the financial support from his parents, might translate into an accumulative loss of social capital. Young fathers might feel pressure to drop out from school in order to provide for their children, which in the long run hinders their ability to find meaningful employment with higher wages (Devault et al., 2010).

Studies on father involvement show that younger fathers are less involved with their children compared to older fathers (Berger & Langton, 2011; Castillo et al., 2011; Saleh & Hilton, 2010). The literature on father involvement also shows that residential (Berger & Langton, 2011; Castillo et al., 2011; Johnson, 2001; Saleh & Hilton, 2010), employed (Gavin et al., 2002), and financially stable (Saleh & Hilton, 2010) fathers were more likely to be involved with their children. These characteristics help to explain the lower parental involvement of younger fathers compared to their older counterparts, since young fathers are less likely to be married and are more economically disadvantaged (Berger & Langton, 2011).

Parental involvement is strongly associated with being in a romantic relationship with the mother of the baby (Edin & Nelson, 2013; Gavin et al., 2002; Johnson, 2001; Lewin, Mitchell, Burrell, Beers, & Duggan, 2011; Paschal et al., 2011; Tach, Mincy, &

Edin, 2010). In the case of young fathers, the baby is often conceived after a relatively brief romantic involvement (Devault et al., 2010; Edin & Nelson, 2013), which further contributes to the instability of the relationship, especially after birth. In a study involving urban, low-income African American teen mothers, Lewin et al. (2011) observed a significant decrease in father involvement before children reached two years of age (between baseline and 12-month follow-up); however, statistically significant differences in father involvement were not observed between 12-month and 24-month follow-up. These findings are consistent with studies showing that one year after a baby is born, most young disadvantaged couples are no longer romantically involved, leading to a dramatic decline in father involvement (Edin & Kefalas, 2011; Edin & Nelson, 2013).

Socioeconomic hardship plays an important role in young males' ability to marry and remain involved with their children (Edin & Nelson, 2013). Among Black males, contextual factors associated with discrimination and social exclusion exacerbate socioeconomic disadvantages (Hacker, 2003), thereby increasing barriers to marriage. For example, recent data on marital birth show that over two thirds (70.4%) of non-marital births are to non-Hispanic Black women (Hamilton et al., 2016). Edin and Kefalas (2011) explain that not only did the pool of 'marriageable men' decrease beginning in the 1950s due to economic recession, but the criteria for low-income Black women to marry have changed. In the authors' words, "though the poor and the middle class now have similarly high standards for marriage, the poor are far less likely to achieve their 'White picket fence dream'" (Edin & Kefalas, 2011, p. 202), and therefore are choosing to have babies out of the wedlock.

2.4. Subjective Age and Socioeconomic Attainment in Adulthood

Subjective age, individuals' self-perception of how old they are in comparison to others (Benson & Elder, 2011), is an important construct to consider when studying teen parents' socioeconomic attainment. Most of the research on this construct, however, focuses on predictors of older subjective age rather than its consequences. Studies have shown that those who assume adult roles—such as marriage, parenthood, and full-time work—earlier are more likely to report an older subjective age (Benson & Furstenberg, 2006; Foster, Hagan, & Brooks-Gunn, 2008; Johnson, Berg, & Sirotzki, 2007). In a study conducted with young adults between the ages of 19 and 21 in Philadelphia, Benson and Furstenberg (2006) found that women with children were six times more likely to perceive themselves as adults compared to childless women; however, in the same sample, becoming a father had almost no effect on men's perceived adult identity.

2.4.1. Psychosocial maturity

Subjective age is closely tied to the concept of psychosocial maturity, since whether or not older subjective age is beneficial or detrimental to a youth's development may depend on their level of psychosocial maturity. Older subjective age might lead to “pseudo-maturation,” as subjective age identity does not necessarily develop in consonance with psychosocial maturity (Galambos & Tilton-Weaver, 2000; Johnson & Mollborn, 2009). Adolescents who feel older than others their age are more likely to use drugs, and report higher levels of problem behaviors such as drinking and staying out late (Arbeau, Galambos, & Jansson, 2007; Galambos, Kolaric, Sears, & Maggs, 1999).

2.4.2. Adult identity profiles

In an analysis using Add Health data, Benson and Elder (2011) identified four

adult identity profiles based on combinations of high and low levels of subjective age and psychosocial maturity: early adult, pseudo-adult, anticipatory, and late adult (see Figure 2.1). Early adults are defined as those with high scores on subjective age and psychosocial maturation, whereas pseudo-adults have high scores on subjective age but low psychosocial maturation. Early adults are more likely to come from disadvantaged backgrounds, be African American, and have high self-esteem. The pseudo-adult profile is also associated with disadvantaged family contexts, however, it is combined with a distant parent-child relationship. Those with an anticipatory profile have low subjective age and high psychosocial maturity. They are more likely to be African American, live in a household with two biological parents, have a close parent-child relationship, and have high self-esteem. Finally, those with late adult profiles have low scores in both domains: subjective age and psychosocial maturity. Those in the late adult profile are more likely to be Asian, come from families with high income and two biological parents, have a close relationship with their parents, and have low self-esteem.

		Subjective Age	
		High	Low
Psychosocial Maturity	High	Early Adults	Anticipatory Adults
	Low	Pseudo-Adults	Late Adults

Figure 2.1. Adult Identity Profiles. From “Reevaluating the ‘subjective weathering’ hypothesis: Subjective aging, coping resources, and the stress process” by J.B. Benson (2014).

The role of subjective age, and its interaction with psychosocial maturity, in the development of socioeconomic attainment in adulthood is understudied in the literature, especially as it relates to teen parents. One of the few studies that examined the relationship between subjective age and socioeconomic attainment among young adults

found that late adults obtain higher levels of education by young adulthood (ages 25-29) (Benson et al., 2012). Results from the same study show that early adults earn more in young adulthood, compared to the other adult profiles. The authors argue that maintaining a late adult identity and having a “slower path” to adulthood might be beneficial in the long term, as it may provide youths more opportunities to accumulate experiences and result in higher levels of economic attainment later in life.

How does subjective age impact teen parents’ life course and socioeconomic attainment in adulthood? Teen parents have already achieved one of the strongest markers of adulthood: having a child. As the process of developing an adult subjective identity is complex and influenced by individual experiences and contexts over the life course (Elder, 1998), further studies are necessary to understand subgroup variations in the construction of adult identity (Benson & Furstenberg, 2006) and its impact on socioeconomic outcomes in adulthood. To date, no studies have explored the role of subjective age and its interaction with psychosocial maturity on teenage parents’ socioeconomic attainment.

2.5. Theoretical Underpinnings of the Current Study

The Life Course Theory emphasizes the notion that life trajectories are socially organized (Elder, 1998), which highlights the importance of understanding long-term socio-demographic change throughout the life course (Bengtson & Allen, 1993). In other words, to understand individuals’ trajectories over the life course it is important to consider their childhood, adolescence, and adulthood experiences (Laub & Sampson, 2009). In contrast to life-span developmental theories that focus on general principles of human development, Life Course Theory emphasizes the influence of context on an

individual's life (Bengtson & Allen, 1993). Variations in a person's life course are determined by their interactions within the social context, and development is not uniform.

This idea of variation in the life course trajectory is exemplified by Furstenberg's work following low-income teen mothers from Baltimore over four decades (Furstenberg, 2007; Furstenberg et al., 1987b). Even though nearly all study participants came from low socioeconomic groups, their outcomes in adulthood varied greatly. Some finished high school, completed college, and were able to overcome poverty (Furstenberg, 2007). Based on these findings, the author criticizes the notion that teenage mothers, by not having the normative experiences of schooling and work during adolescence, would be destined to a life of poor outcomes (Furstenberg, 2007). According to Oxford et al. (2006) "From a life course perspective, one important goal of research is to identify factors during adolescence that can differentiate the most from the least problem-beset progressions onto adulthood" (p. 21). Variations in the adulthood trajectories of teen mothers leads to an additional question: what factors predict these distinct outcomes?

The Life Course Theory proposes that the contextual and social differences between cohorts should be acknowledged and taken into account when examining teenage parents' life course trajectories. For example, in the U.S. until the 1960s, adolescent childbirth was not perceived as a social problem (Furstenberg, 2003). Furstenberg (2007) explains that economic recession in the early 1960s led to declining birth rates for all women; however, the decline in birth rates for adolescent mothers happened at a lower rate compared to older mothers. In concert with that change, it

became more socially acceptable to view pregnancy and marriage as two separate entities, no longer strictly tied or forced together through “shotgun weddings.” This was especially true for African American women and women from other disadvantaged minority groups. Teen pregnancy began to constitute a major social problem after the 1960s, when marriage no longer served as a safety net for teen mothers (Furstenberg, 2007).

Time differences in cohorts also influence the type of resources available to support teenage parents. Public policy changes, such as the creation of Title X in 1970, might have provided support to economically disadvantaged young mothers by offering reproductive health services and expanding the Aid to Families with Dependent Children (AFDC). However, the major shift in public welfare in 1996 might have affected teen mothers differently than younger cohorts. The former AFDC was replaced by the Temporary Assistance for Needy Families (TANF) (SmithBattle & Leonard, 2012). Compared to AFDC, TANF created more rules and limited welfare receipts to a maximum of five years over a lifetime. In addition, in order to receive TANF, adolescent mothers younger than 18 years were required to live either with adults or in supervised settings (SmithBattle & Leonard, 2012). The teenage parents in this study all became parents post-1996.

2.5.1. Linked lives

Linked lives refers to the notion that individuals’ life course trajectories are understood in the context of their interpersonal relationships. Therefore, family ties constitute a strong influence on life-course trajectories. According to Elder (1999), “historical events and individual experience are connected through the family and the

‘linked’ fates of its members. The misfortune of one member is shared through relationships” (p. 306-307). In his seminal work “Children of Great Depression,” Elder (1999) observed that children from families who adapted more successfully during the stressful period of the Great Depression were at lower risk for drastic income loss during their 30s. In the context of teen parents, how well the family is able to adapt to an early childbirth and support the young parents in adjusting to this life transition should impact their life course trajectories. For example, as expected from a life course perspective, low-income African American young mothers who received the support of their families after giving birth were able to come back to school and gain work experience after their kids reached school age, or even earlier (Furstenberg (2007).

2.5.2. Aging

In the Life Course Theory, aging and development are conceptualized as a life long process. Context and life experiences influence individuals’ patterns of aging. Therefore, despite their chronological age, individuals’ aging process differs depending on their varied life experiences and social contexts (Elder, 2002). *Age* can assume three different meanings: historical age, social age, and subjective age (Elder, 2002). This study focused on subjective age and its potential impact on the socioeconomic trajectories of teen parents.

Life transitions, such as the birth of a child, influence individuals’ perception of age. According to Elder (2002), despite their chronological age, individuals’ aging process differs depending on their varied exposure to life experiences and social context. Age is tied to the idea of a “normal” or “expectable” pattern in the life course, which is marked by sequenced and interdependent life transitions (Settersten Jr, 2004). For

example, school completion normally happens up to age 19 and precedes marriage, which precedes childbearing. Teen parents are thought to deviate from the norm by being “off time” in their transition to parenthood.

Individuals’ perceptions of what constitutes the “normal” or “expected” aging pattern in their own social context influence their perception of age. The individual’s perception of aging in comparison to others with the same chronological age is defined as “subjective age” (Benson & Elder, 2011). In Elder’s words, “In moving through the age structure, individuals are made cognizant of being early, on time or later in role performance and accomplishments by an informal system of rewards and negative sanctions” (Elder, 1975, p. 175). In the context of teenage parents, an older subjective age could facilitate better approaches to solving problems and adapting to the responsibilities of raising a child (Johnson & Mollborn, 2009). Effective adaptations under difficult circumstances may lead to positive socioeconomic attainment in adulthood.

In sum, the Life Course Theory provides a framework for longitudinal studies seeking to investigate how early events impact individuals’ life trajectories. Specifically, Life Course Theory is useful for understanding how family support and adult age identity in the transition to adulthood influence young parents’ educational attainment, income, and subjective attainment in adulthood. In addition, this theory is helpful for understanding potential differences in family support between Black and White teen parents, and how this support affects socioeconomic attainment in adulthood.

Chapter 3: Study 1: Racial Differences in Teenage Fathers'

Characteristics over the Life Course

Abstract

Understanding of racial differences as they relate to teenage fathers' early risk factors and later outcomes is limited. The goal of this study is to provide a national portrait of teen fathers' characteristics over time, including family background, schooling, crime/delinquency, substance use, living arrangements, and socioeconomic attainment, with particular attention to Black and White differences. To achieve this aim, we conducted a secondary data analysis of the National Longitudinal Study of Adolescent to Adult Health. The analytic sample consisted of self-identified Black and White males who fathered a child before the age of 20 (N=278, 32.7% Black). We used data from participants' adolescence, transition to adulthood, and young adulthood. Analyses accounted for survey sampling weights. Findings showed that, in their adolescence, no statistically significant differences were found between Black and White teen fathers in parental involvement, grade repetition, school connectedness, and delinquency; however Black teen fathers came from families with lower income. By their early 20s, a greater proportion of White teen fathers than Black teen fathers reported substance use. Black fathers were more likely to cohabit with a partner and perceived greater emotional and financial support from their parents. By young adulthood, Black teen fathers were more likely to be arrested, had less work participation, and earned a mean income 2.6 times lower than Whites. Findings from this study suggest that Black teen fathers, while similar to Whites in adolescence, experience greater accumulation of disadvantages over the life

course. Future research should consider the specific factors, including social context, that contribute to the disproportionate disadvantage among Black teen fathers in their young adulthood.

Introduction

Traditionally, the literature on teenage parents has focused more on teen mothers than fathers. However, teen fathers make up a sizable group of young males. In 2014, adolescent birth was reported by 11.3 in 1,000 males between the ages of 15 to 19 residing in the US (Hamilton, Martin, Osterman, Curtin, & Mathews, 2015). which translates into approximately 121,898 babies fathered in this age group. This number is likely higher, as the age of the father is not reported for one-third of births by women age 20 and younger (Martin et al., 2015). In addition, teenage fatherhood is marked by racial disparities. Black adolescent males have twice the rate of teen birth compared to Whites (19.1 in 1,000 compared to 10.1 per 1,000) (Hamilton et al., 2015).

The early risk factors for teenage fatherhood are well documented in the literature. Studies have shown that teen fathers tend to be from low socioeconomic status groups (Gest et al., 1999; Xie et al., 2001), have parents with lower educational attainment (Booth et al., 2008), and live in a household with none or one biological parent (Booth et al., 2008). Low academic competence is also associated with teen parenting among males (Xie et al., 2001) as well as childhood aggressive behavior, adolescent substance use, deviant peer association (Miller-Johnson et al., 2004), and delinquency (Booth et al., 2008). While studies have identified the characteristics of males at increased risk for becoming teen fathers, few studies are based on national

samples (Booth et al., 2008). In addition, studies have mostly compared teen fathers to non-teen fathers; differences in Black and White teen fathers circumstances in their adolescence remain largely unknown.

Delinquent behavior and substance use are important correlates of teen fatherhood that may persist over time. The literature suggests that the birth of a child is a life event that potentially decreases trajectories of crime and substance abuse; however, there is evidence that this positive change is greater among older fathers compared to younger fathers (Kerr, Capaldi, Owen, Wiesner, & Pears, 2011). In a population-based sample, between the ages of 12 to 29, teen fathers had more assaults, drug sales, drug use, and arrests than non-teen fathers; no differences between the groups were found for marijuana use (Landers et al., 2015). In another study, among youth participating in a program serving young fathers, about 40% reported substance abuse and 30% had committed a felony (Weinman, Smith, & Buzi, 2002). Despite data showing that teen fathers are at increased risk for substance use and involvement with crime, no studies have investigated racial differences in the prevalence of substance use and crime over time within a sample of teen fathers.

Family formation and support from family are other important characteristics in the life course of teenage fathers. By their early 20s, over half of teen fathers are married or cohabiting (Scott, Steward-Streng, Manlove, & Moore, 2012). Studies on fathers have shown that White males are more likely to be married than Black males at the time of birth (Percheski & Wildeman, 2008). While studies have not extensively examined racial differences in marital status specifically among teen fathers, being married may be a protective factor in the life course trajectory of teen fathers, as it is associated with

reduced risk for substance use and crime (Landers et al., 2015; Nevarez, Weinman, Buzi, & Smith, 2009). In addition, married teen fathers are more likely to reside with their children, which is shown to be independently associated with reduced likelihood of marijuana and other drug use (Landers et al., 2015). As for parental support, research suggests that having supportive parents has a positive impact on teen fathers' involvement with their child (Fagan, Bernd, & Whiteman, 2007; Paschal et al., 2011), parenting behavior (Miller, 1994), and mental health (Hunt, Caldwell, & Assari, 2015). Despite evidence of the protective effect of marriage, residential status, and parental support on teen fathers life course trajectories, it is unknown whether these characteristics are similar for Black and White teen fathers.

Teenage fathers' early risk factors and circumstances later in life lead to differences in trajectories of disadvantages over the life course. The Life Course Perspective emphasizes the influence of social context on an individuals' life (Elder et al., 2004) and cumulative disadvantage (Dannefer, 2003), meaning that disadvantages experienced in early life are compounded over time, leading to an accumulation of inequalities (Ferraro & Shippee, 2009). For some young males, fathering a child at an early age, compounded with socioeconomic disadvantages (e.g. low-income family, public assistance) and risk behaviors (e.g. delinquency, substance use), can make a successful transition to adulthood increasingly difficult, perpetuating trajectories of disadvantages and negative outcomes later in life (e.g. low educational attainment, unemployment, crime). The well-documented literature in racial discrimination and social exclusion (Hacker, 2003) provides substantial evidence that the circumstances and outcomes of Black and White teen fathers likely differ. Therefore, this process may be

particularly problematic for Black teen fathers, as it is often compounded with racism and systematic discrimination, which are thought to exclude Black males from achieving their full potential in the main areas of society (Gee, Walsemann, & Brondolo, 2012; Hacker, 2003; Lu et al., 2010).

Given gaps in the study of racial differences in teen fathers' life circumstances in their adolescence and later in life (Scott et al., 2012), this study explores differences in Black and White teenage fathers' psychosocial characteristics over the life course. Guided by the Life Course Perspective, we examined racial differences in teen fathers' psychosocial characteristics, which could lead to accumulation of inequalities—particularly as they compound over time. We also examined protective factors such as family support, marriage/cohabitation, and residence status as they may redirect teen fathers' negative trajectories. Specifically, the research questions guiding this study were: Are there differences between Black and White teen fathers' (1) family background (2) school characteristics (3) substance use, delinquency, and crime (4) marital arrangements (5) perceived parental support, and (6) socioeconomic attainment?

Methods

Sample

We used a sample of teen fathers from the National Longitudinal Study of Adolescent to Adult Health (Add Health). Add Health is a nationally representative study of youth followed over fifteen years, from adolescence to young adulthood. Our study uses data from participants' adolescence (Wave I, 1994-1995), transition to adulthood (Wave III, 2001-2002), and young adulthood (Wave IV, 2008-2009). The analytical sample includes Black and White males who fathered a child before the age of 20

(N=278; 187 Whites and 91 Blacks). This analytical sample includes males of Hispanic origin. Among “Black/African American” participants, only one also self-identified as “Hispanic/Latino.” Among “Whites,” 30 participants also self-identified as “Hispanic/Latino.”

Measures

Individual characteristics. Age at Wave I was a continuous measure. Participants’ place of residence was measured with a composite variable indicating ‘partly rural’ or ‘completely urbanized’ areas.

Family background. All measures were selected from Wave I and mostly based on parent reports. In this analytical sample, 93.7% of the respondent parents were mothers or the female head of the household. Parental educational attainment was measured as the highest degree achieved (1 = No high school diploma, 2 = High school/GED, and 3 = College graduate and beyond). Receiving public assistance was based on whether they were currently receiving assistance, such as welfare, at the time of survey (0 = No, 1 = Yes). For household income, parents reported total family income in the previous year (1994), including public assistance or any other source. The parental involvement scale was based on adolescent reports on five items (e.g., “gone shopping,” “played a sport,” “worked on a project for school”) and five items related to communication (e.g., talked about “someone you are dating,” “a personal problem,” “school work or grades”) with mother and father, separately. Response options were 1 = Yes, 0 = No, and scale was calculated based on the sum of all items.. Parental involvement was calculated based on the arithmetic mean of the maternal and paternal scales (range 0-15). A higher score indicates greater parental involvement.

School-related characteristics and delinquency. Ever repeated a grade was measured with participants' report on ever being held back a grade (0 = No, 1 = Yes). School connectedness was based on the arithmetic mean of five items: "I feel close to people at this school," "I am happy to be at this school," "I feel like I am a part of this school," "The teachers at this school treat students fairly," and "I feel safe in this school." The items were measured on a Likert scale (1 = Strongly agree to 5 = Strongly disagree), and the scale was reverse coded so greater values indicate higher school connectedness ($\alpha = 0.79$). Delinquency was based on the arithmetic mean of 15 items reflecting engagement in a variety of delinquent behaviors (e.g., get into a physical fight, run away from home, steal, sell marijuana or other drugs). Response options included 0 = Never, 1 = 1 or 2 times, 2 = 3-4 times, and 3 = 5 or more times.

Substance use and crime. In Wave I, marijuana use was assessed as 'ever' vs. 'never' use. In Wave III, marijuana use was based on participants' report on marijuana use in the last 12 months. Other drug use was also assessed as 'ever' vs. 'never' use in Wave I and past year use in Wave III. In both waves, other drug use was a composite variable (yes/no) based on participants' reports of use of any of the following drugs: cocaine, crystal meth, LSD, PCP, ecstasy, mushrooms, inhalants, ice, heroin, prescription medicines not prescribed for the participant, or intravenous use of illegal drugs. Alcohol use in both groups, Waves I and III, was assessed with participants' answer to the question: "In the past 12 months, on how many days did you drink five or more drinks?" Response options were: 0 = None, 1 = 1-2 days in the past 12 months, 2 = Once a month or less, 3 = 2-3 days a month, 4 = 1-2 days a week, 5 = 3-5 days a week, 6 = Every day or

almost every day. Arrests were self-reported and coded as 0 = No, 1 = Yes (ever arrested).

Marital and residential status. Marital status was assessed at Wave III with participants' report on previous marriage and cohabitation. Based on these two items, a composite variable was created (0 = Never married/cohabit, 1 = Ever married, 2 = Ever cohabit). Married individuals who previously cohabited were only coded as having married. Participants also reported on whether the child lived with them (0 = No, 1 = Yes) at Waves III and IV. Due to the high percentage of missing data at Wave III, we also included the same measure from Wave IV.

Family Support. All family support constructs were drawn from Wave III. Perceived parental emotional support was based on two separate scales: maternal emotional support and paternal emotional support. Participants were asked about their relationships with their current and previous residential mother and father. Questions refer to biological mother, biological father, and other parent-like figures. Three items comprise perceived parental emotional support: a) "You enjoy doing things with him/her", b) "Most of the time he/she is warm and loving towards you", and c) "How close do you feel to him/her?" and were measured on a Likert-type scale (1 = strongly agree to 5 = strongly disagree). Items were reverse coded so that higher values indicated greater support. First, maternal and paternal emotional support scales were created separately by calculating the mean of these three items. Following, parental emotional support was based on the mean of the maternal and paternal scales. To reduce the amount of missing data, if the participant had information for only one of the parents, this mean was used (Needham, 2008). Internal reliability for maternal scale was $\alpha = 0.86$ and for

paternal scale $\alpha=0.91$. Perceived parental financial support was also assessed for residential and non-residential mother and father. Participants were asked whether their parent(s) gave or paid them anything significant in the past 12 months. Response options for mother and father financial support were combined into a single measure of parental financial support. Response options were recoded as 1 = Yes, if participants reported financial support from one or both parents, and 0 = No, if participants reported no financial support from both parents. In both measures of perceived parental support, 109 participants had completed data for both parents, 70 had completed data on mothers only, and five had completed data on fathers only.

Socioeconomic Attainment. All items were from Wave IV. Educational attainment was based on self-report of highest education achieved (1 = Less than high school, 2 = High school graduate/Professional training, 3 = Some college, 4 = Complete college and beyond). For income, participants reported on personal earnings before taxes in the previous year. Sixteen teen fathers reported no income (eight Black and eight White participants). Work participation assesses whether participants were currently working for pay at least 10 hours a week (0 = No, 1 = Yes).

Data analysis

All descriptive statistics were conducted in Stata/MP 14.0, taking into account survey weights (StataCorp LP, College Station, TX). Bivariate regression models were used to obtain p-values to assess differences in proportions and means between Black and White teen fathers across measures. We maintained in the analytical model all cases with Wave IV cross-sectional sample weight and used the subpopulation option to obtain correct standard errors. We defined the subpopulation using two criteria: a) ‘teen fathers’

(1 = Teen fathers, 0 = Others), and b) 'White' or 'Black' (1 = White, 2 = Black, 3 = Other). Missing data varied across measures (range 0% - 24.4%).

Results

In this analytical sample, 74.7% of teen fathers were between the ages of 18-19 at birth of the first child (67.2% Black fathers, 73.6% White fathers). By the mean age of 28, participants reported a mean of 2.14 children (2.38 for Black fathers and 2.17 for White fathers), with a range of one to seven. There were no statistically significant differences between Black and White teen fathers in their age at birth or number of children (results not shown).

Table 3.1 shows differences in Black and White teen fathers' characteristics in adolescence (mean age 15.7). Black teen fathers lived in households with lower mean income ($p = .022$) than Whites, despite no differences in parental education. Compared to Black teen fathers, White teen fathers reported greater proportions of other drug use (16.5% vs. 3.2%, $p = .007$) and a higher mean of alcohol use (1.22 vs. 0.62, $p = .014$). Also, White teen fathers were more likely to reside in rural locations (47.7% vs. 32.6%, $p = .082$). No statistically significant differences between Black and White teen fathers were found in parental involvement, ever repeating a grade, school connectedness, and delinquency.

As shown in Table 3.2, by their transition to adulthood (mean age 22.2), White teen parents were almost five times as likely to report past year use of other drugs than Blacks (14.5% vs. 3.0%, respectively, $p = .045$) and had a higher mean of alcohol use (1.32 vs. 0.45, $p < .001$). Regarding marital status, White teen parents were more likely to have ever been married and less likely to have ever cohabited than Blacks ($p = .004$).

White teen fathers were also more likely to report residence with their child than Black teen fathers ($p = .001$). Compared to Whites, Black teen parents had a greater mean of perceived parental emotional support ($p < .001$) and a greater proportion reported financial support ($p < .024$).

Also shown in Table 3.2, by their young adulthood (mean age 28.6), two-thirds of Black teen fathers reported ever being arrested compared to half of White teen fathers ($p < .010$). Also, a greater proportion of White teen fathers reported residence with child compared to Black teen fathers ($p = .087$). Compared to Whites, Black teen fathers had lower education attainment; however, this association was not statistically significant ($p = .229$). Black teen fathers had statistically significant lower income than Whites and a lower proportion of work participation.

Discussion

This descriptive study sought to investigate differences in circumstances and outcomes of Black and White teen fathers in a nationally representative sample of youth. Findings showed that, in adolescence, there are few differences between Black and White teen fathers. School involvement and delinquency in adolescence do not distinguish Black teen fathers as a group at higher risk for negative outcomes than Whites. There are no statistically significant differences between Black and White teen fathers on report of grade retention. Black teen fathers are no more disengaged in school, nor did they report greater mean of delinquent behaviors in their adolescence than Whites. As an exception, compared to Black teen fathers, White teen fathers come from families with higher incomes and report greater incidence of substance use.

Come adulthood, a different picture appears. Notable differences emerge between

Black and White teen fathers regarding relationship and residential status. In the early years after birth, union formation through marriage or cohabitation is commonly observed among teen parents. In studies using nationally representative samples of youth, findings showed that about 60% of teen mothers cohabited before their child turned age three (Manning & Cohen, 2015) and over half of the teen fathers were married or in a cohabiting relationship between the ages of 22 and 24 (Scott et al., 2012). Consistent with these findings, almost half of teen fathers in our analytical sample reported marriage or cohabitation by their early 20s. However, this varies significantly by race. Black teen fathers are less likely to be married and more likely to cohabitate than Whites. They are also less likely than Whites to live with their child. These differences might be explained by the greater socioeconomic disadvantages experienced by Black teen fathers, which may reduce the chances of marriage among young adults (Furstenberg, 2010).

Our analyses show Black teen fathers have significantly lower income in adulthood than White teen fathers, somewhat lower work participation, and higher rates of arrests. Racial differences in teen fathers' unemployment reflected national estimates (U.S. Department of Labor, 2009), with Black teen fathers having two times the unemployment rate of Whites; overall, teen fathers experienced greater unemployment rates than the national estimate for males in 2009 (U.S. Department of Labor, 2009). Teen fathers also had a greater proportion of previous arrests when compared to other national samples of males (Schwartz & Beaver, 2011), with our study showing higher rates among Blacks. Arrests may have negatively impacted teen fathers' work participation, as a record of previous arrest reduces future employability (Solomon, 2012). These findings suggest that teen fathers in general, and Black teen fathers in

particular, are in need of employment help. Among Black teen fathers, an early transition into fatherhood, compounded with other social factors disproportionately affecting Black males (e.g., number of arrests), may make it increasingly difficult to obtain meaningful employment and higher income in adulthood. Future studies are necessary to examine racial differences in pathways leading to socioeconomic disadvantage in adulthood among teen fathers.

Considering that, according to many outcomes, Black teen fathers are doing worse than Whites, , it was surprising to find greater family support among Black teen fathers compared to White teen fathers. Our study showed that, in their early 20s, 80% of Black teen fathers receive parental financial support, while less than two thirds of White teen fathers receive financial support from their parents. A few factors may explain this difference. First, White teen fathers have a greater proportion of marriage, which is associated with reduced family support (Henly, 1997; Mollborn, 2010). Second, compared to White teen fathers, we found Black teen fathers are more likely to experience economic strains and consequently may depend more on their families for financial help. We also found that Black teen parents reported a higher mean of perceived parental emotional support than Whites. This finding might be explained by the stronger sense of family ties within the African American community resulting from the need to survive and succeed in a historically hostile social environment. (Johnson & Staples, 2005)

Our findings show that substance use is one area where White teen fathers fare worse than Black teen fathers. Specifically, White teen fathers, in their adolescence, have a greater proportion of individuals who use other drugs and a greater mean of alcohol use

than Black teen fathers. This pattern persists, as White teen fathers continue to have a greater proportion of individuals who use other drugs and alcohol compared to Black teen fathers in their early 20s. This finding may be partially explained by participants' place of residence, as youth from rural areas are more likely to report substance abuse than those living in urban areas (Havens, Young, & Havens, 2011). Even though studies have documented some young males' desire to change risk behaviors when they become fathers (Parra-Cardona, Sharp, & Wampler, 2008), the trajectories of substance abuse and crime seem to persist in later stages of life. As substance use can negatively affect teen fathers' ability to maintain contact with and care for their children, efforts are necessary to address substance use prevention and treatment, particularly among White teen fathers.

Limitations

The current analysis uses a relatively small sample of teen fathers, particularly Black teen fathers. Findings may therefore not be generalizable to contemporary teen fathers not captured in this population-based survey. The small sample of teen fathers may also reflect attrition, as 'teen father' was based on retrospective report at Waves III and IV (adolescent males were not asked about birth on previous waves). Therefore, this study may have excluded those at a greater disadvantage, as they are more likely to have dropped out in previous waves of data collection (Johnson et al., 2007). Finally, while we compared Black and White teenage fathers, future studies are necessary to include males from other races and ethnicities.

Conclusion

The greater number of arrests that Black teen fathers experience by adulthood, as well as other social factors (e.g., neighborhood and school segregation, perceived racism)

might help explain the socioeconomic gap between Black and White teen fathers in adulthood. Future studies are necessary to examine racial differences in pathways into socioeconomic disadvantages in adulthood among teen fathers. Differences in teen fathers' patterns of substance use, socioeconomic outcomes, and crime suggest important implications for interventions and resource allocation to support Black and White teen fathers' successful transition into adulthood. Public policies and investment in education, and professional/employment training among Black teen fathers in particular, may help them secure stable employment with higher wages in adulthood. White teen fathers, on the other hand, are at greater need for substance use prevention and treatment. The characterization of the circumstances and outcomes of Black and White teen fathers over the life course may inform interventions to help teen fathers' successful transition into adulthood while supporting them to fulfill their role as involved and supportive parents.

Table 3.1. Racial Differences in Teen Fathers' Characteristics in Adolescence (W1).

	N	Total	White	Black	p-value
<i>Individual Characteristics</i>					
Age, mean (SE) (range 12.74-19.62)	278	15.67 (0.14)	15.74 (0.16)	15.42 (0.26)	.228
Location					
Partly rural	276	43.5%	47.7%	32.6%	.082
Completely urbanized		56.5%	52.3%	67.4%	
Hispanic/Latino, %	278	7.5%	9.8%	1.4%	<.001
<i>Family Background^a</i>					
Parent educational attainment, %					
Less than HS	236	27.3%	28.7%	23.2%	.574
HS graduate/Incomplete college		65.1%	64.6%	66.5%	
College graduate and beyond		7.6%	6.6%	10.2%	
Receiving public assistance, %	234	16.7%	14.3%	23.5%	.197
Household income, mean (SE)	211	\$29,476 (2,010)	\$31,828 (2,387)	\$22,824 (3,122)	.022
Parental involvement, Mean (SE) (range 0-15)	263	5.22 (0.22)	5.04 (0.26)	5.65 (0.40)	.198
<i>School-Related Characteristics</i>					
Ever repeated a grade, %	278	36.5%	36.2%	37.0%	.925
School connectedness scale, mean (SE) (range 1-5)	266	3.64 (0.06)	3.62 (0.08)	3.69 (0.09)	.585
<i>Substance Use and Delinquency</i>					
Marijuana use, ever (W1)	274	39.8%	41.8%	34.1%	.335
Other drug use, ever (W1)	274	13.0%	16.5%	3.2%	.007
Alcohol use, mean (SE) (range 0 – 6) (W1)	278	1.05 (0.12)	1.22 (0.16)	0.62 (0.17)	.014
Delinquency scale, mean (SE) (range 0-2)	272	0.43 (0.03)	0.45 (0.04)	0.39 (0.07)	.451

Results are weighted. ^aAll parent report, except for parental practice scale which the teen father reported.

Table 3.2. Racial Differences in Teen Fathers' Characteristics in their Transition to Adulthood (W3) and Young Adulthood (W4).

	N	Total	White	Black	p-value
<i>Individual Characteristics</i>					
Age (W3), <i>mean (SE)</i> (range 18.79-25.91)	232	22.17 (0.16)	22.24 (0.18)	21.95 (21.33)	.429
Age (W4), <i>mean (SE)</i> (range 25.49-32.65)	278	28.64 (0.14)	28.73 (0.17)	28.39 (0.26)	.284
<i>Substance Use (W3) and Crime (W4)</i>					
Past year marijuana use (W3)	232	35.7%	32.9%	44.9%	.203
Past year other drug use (W3)	232	11.9%	14.5%	3.0%	.045
Alcohol use, <i>mean (SE)</i> (range 0 – 6) (W3)	232	1.12 (0.13)	1.32 (0.15)	0.45 (0.14)	<.001
Ever arrested (W4), %	277	61.8%	55.5%	77.8%	.010
<i>Relationship and Residential Status</i>					
Marital status (W3), %					
Never married/cohabit	232	17.2%	14.3%	27.0%	.004
Ever married		41.8%	49.3%	16.5%	
Ever cohabit		41.0%	36.4%	56.5%	
Resides with child (W3), %	181	63.2%	72.4%	29.8%	.001
Resides with child (W4), %	266	55.5%	59.8%	43.9%	.087
<i>Family Support (W3)</i>					
Perceived parental emotional support, <i>mean (SE)</i> (range 2.33-5.00)	210	4.39 (0.05)	4.32 (0.06)	4.61 (0.07)	<.001
Reports parental financial support, %	210	66.7%	62.1%	80.2%	.024

	N	Total	White	Black	p-value
<i>Socio-Economic Attainment (W4)</i>					
Educational attainment, %					
Less than HS	278	26.6%	22.0%	38.4%	.229
HS graduate/Professional training		39.6%	41.5%	34.9%	
Some college		28.7%	31.5%	21.4%	
Completed college and beyond		5.0%	4.9%	5.1%	
Income, <i>mean (SE)</i> (range \$0-165,000)	257	\$33,757 (2,322)	\$40,224 (2,870)	\$15,613 (\$1,628)	<.001
Work participation, %	227	83.3%	87.3%	73.1%	.057
Results are weighted.					

Chapter 4: Study 2: Teen Mothers' Socioeconomic Attainment Later in Life: A Longitudinal Investigation of the Role of Familial Support and Adult Identity

Abstract

The transition to adulthood is a critical part of life. For teen mothers, who assume additional adult roles while often still relying on their families for support, this transition can be difficult. Our understanding of this developmental stage for teen mothers, however, is still lacking. Few studies have focused on how adult identity and family support during the transition to adulthood may affect teen mothers' socioeconomic trajectories. Using an analytical sample of 981 teen mothers from the National Longitudinal Study of Adolescent to Adult Health, we examined the prospective role of parental support (emotional and financial) and adult identity profiles in the transition to adulthood on three socioeconomic outcomes in young adulthood: educational attainment, income, and subjective attainment. Findings from adjusted linear regression analyses showed no statistically significant associations between teen mothers' perceived parental support and socioeconomic outcomes. The two adult identity profiles with younger subjective age (i.e., late and anticipatory) were predictive of lower socioeconomic attainment on some indicators, when compared to the early adult profile. This study offers evidence that teen mothers' adult identity profiles may impact their socioeconomic outcomes later in life.

Introduction

Despite evidence that, on average, teen mothers have worse socioeconomic outcomes at adulthood compared to non-teen mothers (Assini-Meytin & Green, 2015; Lee & Gramotnev, 2006; Lee, 2010), studies examining variations among teen mothers show that they are in fact a heterogeneous group (Furstenberg, 2007; Mistry et al., 2016; SmithBattle & Leonard, 2012; Weed et al., 2015). Some teen mothers complete college, earn an adequate income, and never depend on government assistance (Furstenberg, 2007). For some teenage mothers, having another life to care for creates an extra incentive to return to school and to avoid drugs and delinquency (Weed et al., 2015). If early childbearing does not necessarily derail socioeconomic trajectories, then, what factors help teen mothers to succeed?

Some of the differences in socioeconomic outcomes among teen mothers are based on early circumstances and their marital status later in life. Compared to low-income teen mothers, studies have shown that teen mothers from more advantaged families have increased educational attainment (Mollborn, 2010; Oxford et al., 2010) and work participation (Oxford et al., 2010) 10 to 16 years postpartum. Also, there is evidence that teen mothers' academic engagement in adolescence promotes positive outcomes such as educational attainment, employment, lower welfare dependability (Schoon & Polek, 2011), and resiliency (Weed et al., 2015). Regarding marital status, compared to those who remain residing with their family, being married or cohabiting is associated with reduced employment (Weed et al., 2000), lower work aspirations, and more financial insecurity (Henly, 1997). Marriage or cohabitation also seems to negatively impact teen mothers' educational path (Mollborn, 2007), particularly when

teen mothers do not maintain co-residence with their parents (Mollborn, 2010). These studies show that teen mothers' early life circumstances (e.g., family background, grades, and school involvement) and later marital path alter their socioeconomic trajectories in adulthood.

Despite growing interest from researchers in identifying teen mothers' characteristics that lead to successful life trajectories (SmithBattle & Leonard, 2012; Weed et al., 2015), few studies have focused on psychosocial factors in their transition to adulthood. The transition to adulthood reflects the age period between 18 to 25 years, and is characterized by the changes in social responsibilities leading gradually to more permanent adult roles (Benson & Furstenberg, 2006). The transition to adulthood is also a time where individuals 'age out' of the formal structure of school and other governmental programs that might have played a significant role in providing tangible support for vulnerable families (Osgood, Foster, Flanagan, & Ruth, 2005). In this transition between adolescence and adulthood, individuals are still dependent on their parents for different types of assistance (Furstenberg, 2010; Osgood et al., 2005). Parents may serve as 'safety nets' for their children, providing necessary guidance and assistance in moments of crises, such as divorce and unemployment (Swartz, Kim, Uno, Mortimer, & O'Brien, 2011). In the context of teen parenting, this is a period when teen mothers have to balance the challenges of reaching increased independence towards adulthood while raising young children; therefore, many teen mothers are still at need for parental support.

Guided by the Life Course Theory (Elder, 1998), this study focuses on two predictors of teen mothers' socioeconomic attainment in young adulthood: parental support and adult identity. The Life Course Theory emphasizes that individuals' lives are

a series of trajectories influenced and changed by discrete life events and ever-changing historical context (Elder, 1998). Based on the concept of *linked lives*, the Life Course Theory proposes that individuals' life course trajectories evolve in the context of their interpersonal relationships (Elder, 1999). Among teen mothers, their families' ability to adapt to an early childbearing and to support them throughout the first years of motherhood likely has a direct impact on their capacity to continue their education and professional development (SmithBattle & Leonard, 2012). Thus, we expect that the support provided by families during the transition to adulthood influences the long-term socioeconomic success of teenage mothers.

According to the Life Course Theory's principle of '*aging*,' social context influences individuals' perceptions of age (Elder et al., 2004). There is evidence that youth who perceive themselves older than their peers in chronological age are more prone to assuming adult roles in the areas of financial independence and education completion (Benson & Elder, 2011). Having an older subjective age could be beneficial for teen mothers as it may facilitate better approaches to solving problems and accepting new responsibilities (Johnson & Mollborn, 2009), which, in turn, could positively influence their socioeconomic trajectories. However, no studies have yet investigated the relationship between subjective age and its interaction with psychosocial maturity (adult identity) in predicting successful socioeconomic attainment in young adulthood among teen mothers.

Parental support

Parental support may be a critical factor for positive socioeconomic attainment among teen parents, although studies have rarely compared the importance of emotional

and financial support for teenage mothers in their transition to adulthood. Most studies on the topic have focused on investigating parental support while teen mothers are pregnant, or on being an adolescent parent (Leadbeater, 1996). Support in this life stage is typically accompanied by conflict in the mother-daughter relationship (Bunting & McAuley, 2004a). The parenting teenager is often dependent on their mother to meet several necessities (e.g., food, housing, child care) while working towards individuation (Logsdon, Birkimer, Ratterman, Cahill, & Cahill, 2002). By their early 20s, however, teen mothers have likely achieved a greater level of independence from their parents. As an example, a nationally representative sample of female adolescents in the mid-1990s to 2010 revealed that over 60% were married or cohabiting before their first child turned age three (Manning & Cohen, 2015). These marital unions, particularly among low-income mothers, are often unstable (Edin & Kefalas, 2011) and may not provide a steady source of support over time. Young mothers tend to rely on their family for financial assistance, as the father of their children often lacks the qualifications to find employment with higher wages (Furstenberg, 2007). As in the transition to adulthood, teen mothers likely still rely on their families for economic and emotional support, however, further studies are needed to analyze the effects of support received during this life stage.

Financial support from family can help teen mothers meet their basic needs, particularly in the absence of other social safety nets. According to Mollborn and Jacobs (2011) “structural and demographic forces have left many teenage mothers with fewer public sources of financial support, child care, and housing, making them more economically reliant on their families and communities” (p.18). There is evidence of a negative association between lack of financial support and poor socioeconomic

outcomes. For example, in a cross-sectional study with teen mothers receiving Temporary Assistance for Needy Families (TANF), lack of financial support was associated with greater financial insecurity, and was marginally associated with repeating a grade (Henly, 1997). Given the increasing need for parental financial support for extended periods of time (Furstenberg, 2010), it is important to understand whether financial support from parents in teen mothers' early 20s helps them to achieve better socioeconomic outcomes in adulthood.

The effect of emotional support on teen mothers' socioeconomic outcomes is still not clear. Some research has shown a positive cross-sectional association with emotional support and teen mothers' report of financial security and school grades (Henly, 1997). A longitudinal study, on the other hand, documented a negative association between emotional support and teen mothers' educational attainment at six-year postpartum (Way & Leadbeater, 1999). In a post-hoc analysis, the authors found that teen mothers with lower educational attainment at follow-up were more likely to be residing with their family during the first year postpartum and to be dependent on their families for a longer period; by contrast, high achieving teen mothers had parents who either challenged or neglected them (Way & Leadbeater, 1999). Thus, the effect of parental emotional support on teen mothers' socioeconomic trajectories is highly complex and its benefits are dependent on the duration and circumstances in which it is provided. Further investigations may help to better understand critical points in time and the type of support necessary to foster teen mothers' socioeconomic success.

Adult identity

Subjective age is one dimension of adult identity, and it refers to how old an individual perceives himself or herself to be in relationship to others (Benson & Elder, 2011). Studies have shown that those who make early transitions to adult roles such as parenthood, marriage, cohabitation, and full-time employment are more likely to report an older subjective age (Benson & Furstenberg, 2006; Foster et al., 2008; Johnson et al., 2007; Johnson & Mollborn, 2009). Other predictors of older subjective age include low parental educational attainment, single mother households, and childhood hardship (Johnson & Mollborn, 2009). Given most predictors of older subjective age overlap with teen mothers' life circumstances, subjective age is an important construct to consider when studying teen mothers, in order to understand variability in outcomes. However, no studies have yet investigated the role of subjective age on teen mothers' socioeconomic attainment later in life.

The extent to which having an older subjective age facilitates more adaptive responses to severe life circumstances might also depend on its interaction with psychosocial maturity. An older subjective age alone can lead to 'pseudo-maturation,' as the perception of being older than other people the same age does not necessarily develop in consonance with autonomy and social responsibility (Galambos & Tilton-Weaver, 2000; Johnson & Mollborn, 2009). For example, Benson (2014) found that psychosocial maturity had a protective effect on the relationship between old subjective age as a result of previous childhood stressors ('subjective weathering') and depression. Besides, researchers found that high psychosocial maturity was a critical factor in educational and work attainment in young adulthood (Benson et al., 2012).

We build on Benson and Elder's work (2011), which identified four adult identity profiles based on a combination of high and low levels of subjective age and psychosocial maturity (see Table 2.1 on page 35). 'Early adults' are defined as those with older subjective age and high psychosocial maturation, while 'pseudo-adults' are defined as those with older subjective age and low psychosocial maturation. 'Early adults' are more likely to be African American, come from disadvantaged backgrounds, and report high self-esteem; the pseudo-adult profile is also associated with disadvantaged family contexts and is correlated with distant parent-child relationships. Those with an 'anticipatory' profile have young subjective age and high psychosocial maturity. Finally, those with a 'late adult' profile have young subjective age and low psychosocial maturity. Individuals with 'anticipatory' profiles are more likely to be African American, live in a household with two biological parents, have a close parent-child relationship, and have high self-esteem. 'Late adults' are likely to be Asian, come from families with high income and two biological parents, have a close relationship with their parents, and have low self-esteem (Benson & Elder, 2011). To our knowledge, this is the first study to apply this developmental model to the examination of teen mothers' socioeconomic attainment later in life.

The present study

Using a sample of teen mothers drawn from the National Longitudinal Study of Adolescent to Adult Health (Add Health) and grounded on the Life Course Theory, this study addresses two aims. First, we identify the longitudinal impact of perceived parental support (i.e. emotional and financial support) in the transition to adulthood on three indicators of socioeconomic attainment in young adulthood: educational attainment,

income, and subjective attainment. We hypothesize that teen mothers with higher perceived parental support, regardless of type, achieve higher socioeconomic outcomes in adulthood, compared to those with lower parental support. The parental support in the transition to adulthood may provide a ‘safety net’ which teen mothers can rely upon to invest in their educational and professional development. Second, we investigate the role of adult identity on teen mothers’ later socioeconomic attainment. We hypothesize that teen mothers with older subjective age and higher maturation levels (‘early adults’) have greater socioeconomic attainment in their adulthood, compared to the other identity profiles. We believe that teen mothers with an ‘early adult’ profile adapt better to the stresses associated with raising a child while assuming other adult roles such as seeking financial independence and continuing formal education.

Methods

Sample

This study was a secondary data analysis based on Add Health, a nationally representative sample of youth followed for over a decade in four waves, from adolescence to adulthood. Data collection for Wave I, in-home sample, occurred from 1994-1995 and included approximately 20,000 adolescents ranging from ages 11–19 (mean=16). Wave II was collected in the subsequent year (1996) and was not used in this study. All demographic information was taken from Wave I, as we did not expect major changes in these characteristics after only one year. In Wave III (2008-2009), a total of 15,197 participants were interviewed (75.9%) and in Wave IV (2008-2009), 80.3% of participants were interviewed (N= 15,701). The current analysis involves 981 teen

mothers. We defined ‘teen mothers’ as females who reported a live birth before the age of 19 years and 11 months.

Measures

Individual characteristics. Teen mothers’ age at Wave I was included as a continuous variable (range 12.74 -19.71). Participants’ age at Wave III (range 18.31 – 26.81) and Wave IV (range 24.59 – 33.12) were included in the univariate analysis for descriptive purposes. Race and ethnicity (‘Hispanic/Latino’) were assessed separately. Participants were allowed to self-identify with more than one race category. In this analytical sample we recoded ‘race’ as 1 = White (includes 75 participants who also self-identified as ‘Hispanic/Latino’, four as ‘Asian’, 17 as ‘American Indian’, and two as ‘Other’), 2 = African American/Black (includes nine participants who also self-identified as ‘Hispanic/Latino’) and 3 = Other (includes 83 participants who self-identified as ‘Hispanic/Latino,’ 26 as ‘Asian,’ six as ‘American Indian,’ and seven as ‘Other’).

Family Background. Measures of family background come from parents’ survey administered at Wave I. The only exception was the parent-adolescent involvement scale, which was drawn from the adolescent interview at Wave I. Parent respondents were 96.5% female (mother or other female head of the household). Most of them (N = 692, 85.1%) were the biological mother. To assess parental educational attainment, parent respondents indicated their highest level of schooling. Answers were recoded as 1 = Less than high school, 2 = High school graduate/Incomplete college, and 3 = College graduate and beyond. Household income was assessed with parents’ report on total family income in the previous year (1994), range \$0 - \$426,000. We standardized household income given high skewness. Parental involvement was based on adolescents’ report on shared

activities (5 items) and communication (5 items) in the previous month with their mother and father, separately. Examples of shared activities included “went shopping,” “played a sport,” “went to a religious service.” Communication items included: “talked about someone you are dating, or a party you went to,” “had a talk about a personal problem,” “talked about other things you are doing in school.” Response options were 1=Yes, 0=No. First, maternal and paternal scales were created separately by adding the ten items. Next, the parental involvement scale was calculated based on the arithmetic mean of the maternal and paternal scales. If only one parent had a scale, we used this value as the arithmetic mean. The scale range was 0 – 15.

School-related characteristics. All items included were measured at Wave I. Ever repeated a grade was assessed with participants’ report on ever being held back a grade. School connectedness scale was based on the arithmetic mean of the five items: “I feel close to people at this school,” “I am happy to be at this school,” “I feel like I am a part of this school,” “The teachers at this school treat students fairly,” and “I feel safe in this school.” Items were measured on a 5-item Likert scale (1 = Strongly agree to 5 = Strongly disagree). The scale was reverse coded so greater values indicate higher school connectedness. Scale range was 1 – 5, and $\alpha = 0.75$.

Relationship and parenting characteristics. We assessed marital status in Wave III with participants’ report on (1) ever being married and (2) ever cohabited. We combined these two variables into a composite measure with the following categories: 0 = Never married/cohabit, 1 = Ever married, 2 = Ever cohabited. Thus, some married individuals may have cohabited but were only coded as having married. Age at birth was calculated based on participants’ date of birth and report on the year their child was born.

Consistent with previous literature (Mollborn, 2007), this variable was dichotomized as ‘younger’ (<18) and ‘older’ (18-19) teenage parents. Number of children consisted of participants’ report on live children by Wave IV (range 0 – 7).

Perceived parental support. Measures were assessed at Wave III. Consistent with previous research, a composite measure was created to assess perceived parental emotional support (Needham, 2008; Needham & Austin, 2010). This measure is based on two separate scales: maternal emotional support and paternal emotional support. Participants were asked about their relationships with their current and previous residential mother and father. Questions refer to the biological mother, the biological father, and other parent-like figures. Three items make up perceived parental emotional support: a) “You enjoy doing things with him/her,” b) “Most of the time he/she is warm and loving towards you,” and c) “I feel close to him/her?” All items were measured on a Likert-type scale (1 = Strongly agree to 5 = Strongly disagree). Items were reversed coded so higher values indicated greater perceived parental emotional support. First, maternal and paternal emotional support scales were created by the arithmetic mean of these three items. Following, parental emotional support was calculated based on the arithmetic mean of the maternal and paternal emotional support scales. To reduce the amount of missing data, if the participant had information for only one of the parents, this mean was used as a measure of parental support (Needham, 2008). Internal consistency for mothers’ scale was $\alpha = 0.92$, and for fathers’ scale $\alpha = 0.93$. The scale’s range was 2.3 – 5.0. Perceived parental financial support was assessed for residential and non-residential mother and father. Participants were asked whether they were given or paid anything significant in the past 12 months (1 = Yes, 0 = No). Response options for

mother and father financial support were combined into one measure of parental financial support. Response option was recoded as 1 = Yes, if participants reported financial support from one or both parents, and 0 = No, if participants reported no financial support from both parents. For emotional and financial support scales, N = 442 (45.1%) of the sample had completed data for both parents, N = 270 (27.5%) had information on maternal support only, N = 34 (3.5%) had information on paternal support only, and N = 235 (23.9%) had missing data on both parents.

Adult Identity. Informed by Benson and Elder (2011), we reproduced four adult identity profiles using measures from Wave III (see Table 2.1, p. 36 mentioned earlier). The indicators of subjective age included: subjective age (“How old do you feel compared to others your age”, 0 = Younger all of the time, 4 = Older all of the time), acquisition pace of social maturity (“In terms of social maturity, would you say you grew up faster, slower, or at about the same rate as other people your age?”, 1 = Slower, 3 = Faster), acquisition pace of adult responsibilities (“In terms of taking on adult responsibilities, would you say you grew up faster, slower, or at about the same rate?”, 1 = Slower, 3 = Faster), and perceived adult status (“How often do you think of yourself as an adult”, 0 = Never, 4 = All the time). Indicators of psychosocial maturity included participants’ rating of how independent, confident, and considerate they are (1 = Not at all to 4 = Very). To reproduce the four identity profiles, first we standardized all the seven indicators using z-scores. Second, we used K-means clustering, a statistical method that assigned the scores on the seven standardized items into four clusters, which make up the adult identity profiles.

Socioeconomic outcomes. All measures were continuous and selected from Wave IV. Educational attainment was based on self-report of highest education achieved. Response options ranged from 1 = 8th grade or less, to 9 = completed a master's degree. Income was measured by participants' reports on personal earnings before taxes in the previous year of data collection (range \$0 - \$450,000). It was standardized due to high skewness. To assess subjective socioeconomic status (SES), participants were asked to indicate where do they think they currently stand in a ladder representing all people in the United States (range 0–10) (Adler & Stewart, 2007). At the top of the ladder were those with the most money, highest education, and most respected jobs; at the bottom of the ladder were those with least money and education, and those unemployed or with least respected jobs. Subjective attainment more broadly captures socioeconomic attainment in young adulthood. It is shown to reflect current socioeconomic attainment (e.g., education and work status) rather than more distal indicators such as family social status at adolescence (Nielsen, Roos, & Combs, 2015).

Data analysis

Statistical analyses were conducted in two main steps. First, we used Multiple Imputation by Chained Equations (MICE) (White, Royston, & Wood, 2011) with theoretically sound independent variables for estimating the missing values. Guided by the literature, we included in the imputation models covariates and outcome variables (Graham, 2009; White et al., 2011). We generated 40 imputed datasets to maximize statistical power, and then combined datasets using standard combining procedures (Graham, Olchowski, & Gilreath, 2007).

Secondly, analyses were conducted using a design-based approach, taking into account survey design (cluster and strata) and weights. To obtain correct standard errors, we kept in the analysis all participants with sample weight at Wave IV (N = 14,800) (Chen & Chantala, 2014), and defined ‘teen mothers’ (0 = Others, 1 = Yes) as the analytical subpopulation. To contextualize participants’ characteristics, we compared teen mothers’ to non-teen mothers across all measures in bivariate analysis using design-based F-tests. Afterwards, bivariate and multivariate linear regression models were built to investigate the associations between independent variables and each dependent variable. Bivariate models were used to assess the independent association of each variable on the three selected outcomes. A second model included all variables statistically significant at the $p < .20$ level and assessed the effect of the independent variables on the three selected outcomes. As the outcome variables (i.e. educational attainment, income, and subjective attainment) were highly correlated, we included the same control variables across the three adjusted models. All analyses were conducted in Stata/MP 14.0.

Results

Teen mothers’ demographic characteristics, perceived parental support, adult identity profiles, socioeconomic outcomes, and comparisons with non-teen mothers are presented in Table 4.1. Teen mothers were mostly White (63.0%) from relatively disadvantaged families, with 28.7% of parents reporting less than high school education and a mean household of \$30,627 in 1993. In their adolescence, participants’ parental involvement scale had a mean of 5.63 (SE = 0.12). Approximately one-fourth (26.7%) of teen mothers repeated a grade by mean age of 15.69 years and had a school connectedness scale mean of 3.54 (SE = 0.04). By their transition to adulthood (mean age

22.05), most of them had been either married (42.9%) or resided in a cohabitation relationship (43.0%). Over half (68.0%) reported receiving financial support from their parents. Regarding adult identity, almost half (47.5%) of teen mothers in this analytical sample were classified as ‘early adults.’ By their young adulthood (mean age 28.75), 18.6% of participants did not complete high school, only 8.7% had completed college (data not shown), and they had a mean income of \$18,312. Teen mothers’ had a mean subjective attainment of 4.42.

As shown in Table 4.2, most demographic characteristics were statistically significantly associated with educational attainment. Teen mothers who had ever repeated a grade, who had ever married or cohabited (as opposed to remaining single), and those with greater number of children had lower educational attainment by young adulthood, whereas parental education, household income, parental involvement, school connectedness, and age were positively associated with educational attainment. As for income, teen mothers with more educated parents reported higher wages in their young adulthood; grade retention and number of children was negatively associated with income. Only participants’ age was statistically significantly associated with subjective attainment.

As shown in Table 4.3, perceived parental emotional support was associated with higher subjective attainment in the transition to adulthood; however, this relationship became marginally statistically significant after controlling for demographic characteristics ($B = 0.21$, $p = .089$). Perceived parental emotional support and financial support were surprisingly not related to any other outcomes.

Table 4.4 shows the associations between adult identity profiles and socioeconomic outcomes. In adjusted models, ‘anticipatory’ adults had lower education ($B = -0.86$, $p = .001$), lower income ($B = -.15$, $p = .004$), and lower subjective attainment ($B = -0.55$, $p = .022$) compared to ‘early adults.’ Also in adjusted model, ‘late’ adults had lower subjective attainment than ‘early adults’ ($B = -0.75$, $p = .002$).

Discussion

Support from parents in the transition to adulthood did not seem to help teen mothers from our sample to achieve higher socioeconomic attainment later in life. Despite evidence that parental support might be critical in helping teen mothers with parenting responsibilities while they advance in their educational and professional training, we found no statistically significant associations between perceived parental support and socioeconomic outcomes.

The lack of a statistically significant association between perceived parental emotional support and socioeconomic outcomes might be partially explained by the high proportion of teenage mothers from our sample that reported marriage or cohabitation. Researchers have suggested that while marriage and cohabitation indicate a step towards family formation and independency, they may limit the amounts and quality of support received from family (Bunting & McAuley, 2004a; Henly, 1997). In Add Health data with all youth (not among teen parents), Johnson and Benson (2012) found that this same measure of perceived emotional support in the transition to adulthood positively predicted subjective attainment in young adulthood; however, its effect on subjective attainment was weaker for those who reported cohabitation. The authors explain that young adults who have a partner may rely less on their parents for emotional needs, and

therefore, parental emotional support in the transition to adulthood may not explain variability in later socioeconomic attainment (Johnson & Benson, 2012). It may be that for teenage mothers in marriage/cohabitation relationships, support from the male partner has a greater impact on later socioeconomic attainment than does parental support. Studies have shown that teenage mothers residing with their male partners tend to have lower socioeconomic attainment in adulthood compared to those who remained living with their parents (Leadbeater, 2014; Mollborn, 2007); and teenage mothers in marriage/cohabitation relationships whose partners provided emotional support were more likely to successfully transition to adulthood compared to those in non-supportive relationships (Leadbeater, 2014). Finally, the little variability on perceived emotional support (mean = 4.30, SE = 0.03) might also partially explain these null findings.

As for parental financial support, while over half of our sample reported financial aid from their parents, the help received was not predictive of any markers of socioeconomic attainment in adulthood. Similarly to emotional support, marriage or cohabitation is reported to significantly reduce the level of financial support from parents (Swartz et al., 2011). In addition, teenage mothers from our sample were from relatively disadvantaged families. While low-income families tend to provide financial support in similar proportions compared to more advantaged families (Swartz et al., 2011), the amounts of financial help are significantly lower (Schoeni & Ross, 2005). These findings might indicate that in their transition to adulthood, teen mothers may be lacking the necessary financial support from parents to effectively help them advance in their educational and professional path.

For adult identity, the second set of predictors under analysis, findings suggest that teen mothers with older subjective ages, despite their levels of psychosocial maturity, achieve higher levels of socioeconomic attainment than those with younger subjective ages. To our knowledge, Benson et al. (2012) is the only study to investigate the role of adult identity on socioeconomic trajectories. Interestingly, in Benson's sample, 'pseudo-adults' (those with older subjective age and low psychosocial maturity) had the lowest levels of attainment compared to the other adult profiles. According to the authors, "lacking the same psychosocial resources, young people with pseudo-adult identities are not as able as early adults to make plans and choices associated with a successful school-to-work transition" (Benson et al., 2012, p. 1756). Among teen mothers, however, lower levels of psychosocial maturity coupled with an older adult identity does not seem to negatively impact the socioeconomic trajectories. It appears that, among teen mothers, perceiving themselves to be older than others their age is a major component in assuming adult roles towards their education and financial independence, which ultimately may impact their socioeconomic attainment.

Findings from bivariate analysis between control variables and socioeconomic outcomes echoed findings from other studies. For example, consistent with previous research (Mollborn, 2010; Schoon & Polek, 2011), teen mothers' family background and school involvement in their adolescence positively related to teen mothers' educational attainment and income in adulthood. Our findings also corroborate the negative association documented between marriage/cohabitation and teen mothers' educational attainment (Mollborn, 2007). Despite evidence that those in cohabitation relationships are more likely to be disadvantaged compared to those who are married (Goodwin, Mosher,

& Chandra, 2010), in our sample, marriage and cohabitation were both negatively associated with teen mothers' educational attainment compared to those who remained single. Finally, as in other samples (Oxford et al., 2010), we observe a negative association between number of children and teen mothers' educational attainment and income, reinforcing one potential benefit of delaying subsequent births among young mothers.

This study has several limitations. While findings from this study advance the literature by including measures of perceived parental support in the transition to adulthood, these measures still reflect a specific point in time. As perceived support may vary over time, future research is necessary to investigate the effects of the persistence of support on teen mothers' markers of socioeconomic attainment in adulthood. The long-term benefits of support on teen mothers' socioeconomic trajectories may be dependent on the quality and duration of the support received. It may also depend on other types of support not examined in this study (e.g., instrumental support with babysitting). Also, our measure of financial support is limited to the presence or absence of financial help from parents. The amount of financial support provided may be crucial in determining whether teen mothers can advance their education and achieve a better overall social status. Another limitation worth mentioning relates to the lack of inclusion of teen mothers' work participation as a measure of socioeconomic attainment in adulthood. While Add Health assessed work participation in Wave IV, we were unable to build an adequate imputation model to estimate its missing values. As work participation in adulthood might indicate teen mothers' economic self-reliance and independence, future studies are necessary to assess employment outcomes.

The strengths of this study relate to the focus on investigating theory-driven factors in teen mothers' transition to adulthood that may positively alter their socioeconomic trajectories. Literature on the 'transition to adulthood' or 'emerging adulthood' suggests that (1) youth are relying for a longer periods of time on their parents in order to invest in education and professional training, as the requirements to obtain higher paying jobs have increased (Furstenberg, Rumbaut, & Settersten, 2004); and (2) the criteria for reaching 'adulthood' has evolved from more traditional markers based on role attainment (e.g., 'marriage', 'having children') towards individual character qualities (e.g., 'accepting responsibilities,' 'financial independence') (Arnett, 1998). As the pathways into adulthood have broadened and become more complex (Furstenberg et al., 2004), it is important to understand how family support and adult identity impact teen mothers' socioeconomic outcomes in adulthood. In this context, findings from this study provided evidence that (1) the emotional and financial support teen mothers receive from parents in their transition to adulthood might not be enough to help them to achieve greater socioeconomic attainment in adulthood, and (2) teen mothers' perception of their own adult identities may impact their socioeconomic trajectories. Future studies are necessary to investigate what specific types of support and the amount and quality of support in the transition to adulthood effectively help teen mothers to succeed, and the pathways through which older identity profiles lead to better socioeconomic outcomes among teenage mothers.

Table 4.1. Descriptive Statistics of Measures by Teen Motherhood Status.

	Non-teen mothers N=6,885	Teen mothers N=981
	% or M (SE)	% or M (SE)
<i>Individual Characteristics</i>		
Age (W1)	15.89 (0.12) [†]	15.69 (0.15)
Age (W3)	22.18 (0.12)	22.05 (0.17)
Age (W4)	28.75 (0.12) [†]	28.57 (0.15)
Race/Ethnicity		
White	74.8***	63.0
African American/Black	15.3	26.2
Other	9.7	10.8
<i>Family Background (W1)</i>		
Parent educational attainment		
Less than high school	16.1***	28.7
High school graduate	60.7	63.5
Incomplete/graduate college	23.1	7.7
Household income	\$47,891*** (\$1,906)	\$30,627 (\$1,269)
Parental involvement scale	5.89 (0.06)*	5.63 (0.12)
<i>School Related Characteristics (W1)</i>		
Ever repeated a grade	16.3***	26.7
School connectedness scale	3.70 (0.02)***	3.54 (0.04)
<i>Relationship and Parenting Characteristics</i>		
Marital status (W3)		
Never married/cohabited	49.4***	14.1
Ever married	19.9	42.9
Ever cohabited	30.7	43.0
Age at first birth (W3/W4)		
<18	-	35.9
18 – 19		64.1
Number of children (W4)	0.90 (0.03)***	2.31 (0.04)
<i>Parental Support (W3)</i>		
Perceived parental emotional support	4.44 (0.01)***	4.30 (0.03)
Reports parental financial support	75.9***	68.0
<i>Adult Identity Profile (W3)</i>		
Pseudo-adult	19.5***	25.1
Anticipatory	25.9	13.1
Early adult	36.0	47.5
Late	18.5	14.2
<i>Socioeconomic Attainment (W4)</i>		
Educational attainment	5.91 (0.08)***	4.40 (0.09)
Income	\$29,472 (\$982)***	\$18,312 (\$947)
Subjective attainment	5.05 (0.05)***	4.42 (0.08)

Results are weighted and adjusted for cluster and strata. [†]p<.10; *p<.05; ***p<.001

Table 4.2. Unadjusted Linear Regression Models of Control Variables (Waves 1, 3, and 4) Predicting Socioeconomic Outcomes (Wave 4), Teen Mothers (N=981).

	Educational attainment		Income		Subjective attainment	
	<i>B</i>	<i>SE</i>	<i>B</i>	<i>SE</i>	<i>B</i>	<i>SE</i>
Age (W1)	0.10	0.51*	0.01	0.02	0.11	0.04*
Race/Ethnicity (W1)						
White (Ref.)						
African American/Black	0.14	(0.19)	-0.05	0.04	0.22	0.16
Other	-0.19	(0.29)	0.07	0.06	0.11	0.19
Parent educational attainment (W1)						
Less than high school (Ref.)						
High school graduate	0.92	0.19***	0.08	0.04*	0.01	0.16
College graduate and beyond	1.69	0.33***	0.15	0.08*	0.44	0.34
Household income (W1), log	0.59	0.25**	0.06	0.04	0.09	0.18
Parental involvement (W1)	0.08	0.02***	0.01	0.01	0.01	0.03
Ever repeated a grade (W1)	-1.15	0.17***	-0.13	0.04**	-0.27	0.18
School connectedness scale (W1)	0.21	0.10*	0.01	0.02	0.07	0.09
Marital status (W3)						
Never married/cohabit						
Ever married	-0.73	0.23**	-0.01	0.06	0.16	0.23
Ever cohabited	-0.75	0.25**	-0.06	0.05	-0.20	0.25
Age at first birth (W3/W4)						
<18 (Ref.)						
18 – 19	0.35	0.20†	0.02	0.03	0.07	0.15
Number of children (W4)	-0.25	0.08***	-0.06	0.01***	-0.02	0.07

Results are weighted and adjusted for cluster and strata.

†p<.10; *p<.05; **p<.01; ***p<.001.

Table 4.3. Linear Regression Models of Perceived Parental Support (Wave 3) Predicting Socioeconomic Outcomes (Wave 4), Teen Mothers (N=981).

	Education				Income				Subjective attainment			
	Model 1		Model 2		Model 1		Model 2		Model 1		Model 2	
	<i>B</i>	<i>SE</i>	<i>B</i>	<i>SE</i>	<i>B</i>	<i>SE</i>	<i>B</i>	<i>SE</i>	<i>B</i>	<i>SE</i>	<i>B</i>	<i>SE</i>
<i>Parental Support</i>												
Emotional support	-0.02	0.13	-0.12	0.13	-0.01	0.04	-0.01	0.04	0.25	0.12*	0.21	0.12 [†]
Financial support	0.12	0.19	0.01	0.18	-0.04	0.06	-0.05	0.07	0.07	0.21	0.14	0.20

Results are weighted and adjusted for cluster and strata. Model 1 consists of unadjusted models. Model 2 controls for: age, race, parental educational attainment, household income, parental involvement, ever repeated a grade, school connectedness, marital status, age at first birth, and number of children

[†]p<.10; *p<.05.

Table 4.4. Linear Regression Models of Adult Identity (Wave 3) Predicting Socioeconomic Outcomes (Wave 4), Teen Mothers (N=981).

	Education				Income				Subjective attainment			
	Model 1		Model 2		Model 1		Model 2		Model 1		Model 2	
<i>Adult Identity Profile</i>	<i>B</i>	<i>SE</i>	<i>B</i>	<i>SE</i>	<i>B</i>	<i>SE</i>	<i>B</i>	<i>SE</i>	<i>B</i>	<i>SE</i>	<i>B</i>	<i>SE</i>
Pseudo-adult	-0.12	0.24	-0.15	0.20	0.04	0.08	0.02	0.08	-0.12	0.21	-0.12	0.20
Anticipatory	-0.75	0.25**	-0.86	0.24***	-0.16	0.05**	-0.15	0.05**	-0.47	0.22*	-0.55	0.23*
Late	-0.12	0.30	-0.21	0.25	-0.01	0.06	-0.04	0.06	-0.77	0.24**	-0.75	0.24**
Early adult (Ref.)												

Results are weighted and adjusted for cluster and strata. Model 1 consists of unadjusted models. Model 2 controls for: age, race, parental educational attainment, household income, parental involvement, ever repeated a grade, school connectedness, marital status, age at first birth, and number of children

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

Chapter 5: Study 3: Helping Teen Fathers to Succeed: Longitudinal Predictors of Teen Fathers' Educational Attainment and Income in Adulthood

Abstract

One of the greatest public health concerns associated with teen parenting is the lower socioeconomic achievement of teen parents attributed to early childbirth. While research has documented the relative disadvantages of teen fathers compared to non-teen fathers, few studies have identified the variations in socioeconomic attainment among a sample of teenage fathers. To address this gap in the literature, this study identifies teen fathers' longitudinal predictors of educational attainment and income in adulthood (age range 25.48 – 32.75). We focus on the impact of risk behavior (drug use, binge drinking, and delinquency), as well as adult role transitions (marital status and full-time employment). We conducted data analysis with 224 males who fathered a child before age 20, based on a nationally representative sample of youth drawn from the National Study of Adolescence to Adult Health (Add Health). We used bivariate and multivariate regression models accounting for weights and survey design. Results showed that risk behavior in adolescence predicted teen fathers' lower educational attainment and income in adulthood. As for adult role transitions, work participation in the transition to adulthood was associated with lower odds of teen fathers advancing in their educational path. This study identifies potentially modifiable factors that policymakers may use to design programs to support teenage fathers.

Introduction

An extensive literature has provided evidence that socioeconomic factors, including educational attainment and income, have a positive impact on individuals' health and psychological wellbeing (Braveman et al., 2010; Braveman & Gottlieb, 2014; Hobcraft & Kiernan, 2001). Higher educational attainment among fathers is associated with better co-parenting behaviors, as well as increased caregiving and nurturing behaviors, while being employed is associated with greater frequency of child visits (Futris et al., 2010). Thus, helping teen fathers to raise their socioeconomic status might not only benefit them individually but also positively affect their children's development and well-being.

A growing body of literature has documented various risk factors that increase the likelihood of teenage boys becoming fathers. Research has shown that compared to their peers, teen fathers in the U.S. are more likely to come from low socioeconomic status groups (Gest et al., 1999; Xie et al., 2001), have parents with low educational attainment (Booth et al., 2008; Lee, 2010), and live in a household with zero or only one biological parent (Booth et al., 2008). Other characteristics associated with teen fatherhood are low academic competence (Xie et al., 2001), substance use, deviant peer association (Miller-Johnson et al., 2004), and delinquency (Booth et al., 2008). These background characteristics, compounded with early fatherhood, may make it increasingly difficult for young males to transition successfully into adulthood, leading to an accumulation of inequalities.

The risk factors for teenage fatherhood play an important role in determining the socioeconomic consequences of early parenting (Brien & Willis, 2008; Geronimus &

Korenman, 1992; Hoffman & Maynard, 2008), however, they do not seem to fully explain socioeconomic disadvantages experienced later in life by teen fathers (Dariotis et al., 2011; Nock, 1998; Sigle-Rushton, 2005). The differences in socioeconomic attainment between teen and non-teen parents remain, even when controlling for background characteristics such as family structure, childhood poverty, and aggressive behavior (Assini-Meytin & Green, 2015; Sigle-Rushton, 2005). For example, one study found that adolescent males who fathered a child in the 1990s had fewer years of education by their early 20s and were more likely to have dropped out of high school, compared to their peers whose partners had a miscarriage (Fletcher & Wolfe, 2012). Research suggests that by age 20 adolescent fathers enter the labor market earlier than their peers; however, by their mid-20s they are more likely to be unemployed and to have a lower income (Brien & Willis, 2008; Pirog-Good, 1996). While studies have documented socioeconomic disadvantages of teen fathers relative to non-teen fathers (Covington et al., 2011; Fletcher & Wolfe, 2012), much less is known about the variability of socioeconomic attainment within a sample of teen fathers (Futris, Olmstead, Pasley, & Nielsen, 2012).

Despite studies showing that teenage fathers may have a more difficult transition to adulthood compared to their childless counterparts (Covington et al., 2011; Fletcher & Wolfe, 2012; Pirog-Good, 1996), the mechanisms that lead some teen fathers to lower socioeconomic attainment in adulthood are still not clear. Some authors, for example, explain that the birth of a child might redirect teen fathers' investments from education to work, which might translate into greater disadvantages later in life, as those who continue education have a greater likelihood of higher incomes (Brien & Willis, 2008; Fletcher &

Wolfe, 2012). Other researchers suggest that previous history of delinquency compounded with an early transition into parenting may make it increasingly difficult for teen fathers to successfully transition to adulthood (Landers et al., 2015). Some teen fathers may turn to illegal activities (e.g., selling drugs) to fulfill their role as providers (Paschal et al., 2011). While researchers have hypothesized mechanisms by which teen fathers may experience a truncated path into adulthood, few studies have tested predictors of teen fathers' socioeconomic attainment in adulthood (Marsiglio, 1987; Mollborn, 2010). Simply put, the identification of social and behavioral factors that help teen fathers to succeed is a critical gap in our knowledge.

Few studies have investigated predictors of socioeconomic attainment among teen fathers. In a study with a cohort of males who became teen fathers in the late 1970s and early 1980s, Marsiglio (1987) found that married teen fathers (i.e., maritally conceived births) were more likely to drop out of high school compared to non-married teen fathers. The author also found that Black teen fathers were more likely to complete high school or obtain a General Equivalency Diploma (GED) than non-disadvantaged White teen fathers (Marsiglio, 1987). Another study with a more recent cohort of teen parents (who reported a live birth between 1988-1992, N = 48) found that teen fathers who worked full time were less likely to complete high school compared to those working part-time (Mollborn, 2010). While these two studies provided evidence that adult role transitions such as marriage and employment can negatively affect teen fathers' educational attainment, neither investigated the history of substance use and delinquency as risk factors for teen fathers' lower educational attainment. As both substance use and delinquency are risk factors for becoming a teenage father, it is important to understand whether these

characteristics also differentiate teen fathers' socioeconomic attainment later in life.

The aim of this study is to identify longitudinal predictors of teen fathers' educational attainment and income in a nationally representative sample of youth. Although most studies have focused on high school completion, no studies have yet investigated longitudinal predictors of teen fathers who further their educational path beyond high school. Research shows an increase in personal earnings and a decrease in unemployment rates when individuals complete additional education beyond high school (U.S. Census Bureau, 2016), affirming that education is an important marker of adult success. We extend the literature by including an additional indicator of socioeconomic attainment, personal income in adulthood, as research has demonstrated the positive association between males' earnings and parental involvement (Smith, Krohn, Chu, & Best, 2005).

Our study, which is based on the Life Course Perspective and informed by previous studies, focuses on two main categories of predictors that may alter teen fathers' socioeconomic trajectories: risk behavior in adolescence (substance use and delinquency) and adult role transitions (marital status and full-time employment in the transition to adulthood), while controlling for early demographics and socioeconomic background. The Life Course Perspective emphasizes that life course trajectories are socially organized and influenced by socio-demographic changes (Bengtson & Allen, 1993); therefore, the identification of factors in teen fathers' adolescence and young adulthood that may alter later socioeconomic attainment might help in the differentiation of those prone to a difficult transition to adulthood. We hypothesize that greater socioeconomic disadvantages are concentrated among teen fathers with higher risk behavior in

adolescence. As for the second set of predictors, we expect that teen fathers who work full-time and are married or in a cohabitation relationship by their early 20s achieve lower educational attainment and income in their adulthood, compared to single and teen fathers with no full-time employment. We believe that, compared to those without full-time work, teen fathers who invest in full-time work in their early 20s lose educational years that might translate into lower income in their adulthood.

Methods

Sample

We used data from the National Longitudinal Study of Adolescent to Adult Health (Add Health). The Add Health cohort is a nationally representative sample of adolescents followed over a decade in four waves of data collection. Add Health data are based on a stratified random sample of US high schools. The first wave of the in-home survey occurred between 1994 and 1995 and included a subsample of about 20,000 adolescents ranging from ages 11 – 21 ($M = 16$). Subsequent data collection occurred one year later, in 1996 (Wave II, $N = 14,738$), between 2001 – 2002 (Wave III, $N = 15,197$), and from 2008 – 2009 (Wave IV, $N = 15,701$). Given the time proximity between Waves I and Wave II and the significantly lower response rate in Wave II, we selected data from teen fathers' adolescence from Wave I only (mean age = 15.68, $SE = 0.20$, range = 2.74, 19.7). We also included data from teen fathers' transition to adulthood (Wave III, mean age = 22.12, $SE = 0.21$, range = 18.78, 26.41), and young adulthood (Wave IV, mean age = 28.63, $SE = 0.20$, range = 25.46, 32.75). We defined teen fathers as males who fathered a child before the age of 20.

Measures

Demographic characteristics. Demographics were assessed at Wave I. Age was included as a continuous variable. Race was based on participants' self-reports and recoded as 1 = White, 2 = African American/Black, and 3 = Other. "Other" category includes participants self-identified as non-White Hispanic/Latinos, Asian, and Native American.

Family characteristics. Parental educational attainment was assessed in Wave I as the highest education degree achieved by the parent respondent and recoded as 1 = No high school diploma, 2 = High school/GED, and 3 = Some college and beyond. For perceived parental emotional support (Wave III), participants were asked about their relationships with current and previous residential mother and father. Three items made up perceived parental emotional support: a) "You enjoy doing things with him/her", b) "Most of the time he/she is warm and loving towards you", and c) "How close do you feel to him/her?" All items were measured in a Likert-type scale (1 = Strongly agree to 5 = Strongly disagree). Items were reversed coded so higher values indicated greater perceived parental emotional support. First, maternal and paternal emotional support scales were created by the arithmetic mean of these three items. Following, parental emotional support was calculated based on the arithmetic mean of the maternal and paternal emotional support scales. In order to reduce the amount of missing data, if the participant had information for only one of the parents, this mean was used as a measure of parental support (Needham, 2008). Perceived parental financial support (Wave III) was also assessed for residential and non-residential mother and father. Participants were asked whether they were given or paid anything significant in the past 12 months (1 =

Yes, 0 = No). Response options for mother and father financial support were combined into one measure of parental financial support. Response option were recoded as 1 = Yes, if participants reported financial support from one or both parents, and 0 = No, if participants reported no financial support from both parents.

School-related characteristics. Ever repeated grade (Wave I) was assessed with participants' report on ever repeating or being held back a grade (0 = No, 1 = Yes). School connectedness (Wave I) was constructed from the arithmetic mean of five items: "I feel close to people at this school," "I am happy to be at this school," "I feel like I am a part of this school," "The teachers at this school treat students fairly," and "I feel safe in this school." Items were measured with a 5-item Likert scale (1 = Strongly agree to 5= Strongly disagree). Scale was reverse coded so greater values indicate higher school connectedness.

Risk behavior was a composite measure based on participants' report on drug use, binge drinking, and delinquency in Wave I. Given the high correlation between these items, a risk behavior index was created. The high correlation between drug use, binge drinking, and delinquency made it difficult to tease out their independent effect on education and income in the adjusted models; thus the creation of a composite measure. The risk behavior index was created in two stages. First, we recoded drug use, binge drinking, and delinquency separately. Drug use was a composite variable (yes/no) based on participants' report of lifetime use of any of the following drugs: marijuana, cocaine, crystal meth, LSD, PCP, ecstasy, mushrooms, inhalants, ice, heroin, prescription medicines not prescribed for the participant, or intravenous use of illegal drugs. Binge drinking was assessed with participants' report of number of days they had five or more

drinks in the past 12 months (0 = None, 1 = 1-2 days in the past 12 months, 2 = Once a month or less, 3 = 2-3 days a month, 4 = 1-2 days a week, 5 = 3-5 days a week, 6 = Every day or almost every day). Response options were recoded (0 = No, 1 = Yes) and binge drinking was defined as reporting five or more drinks on the same occasion (categories 1 through 6) (Courtney & Polich, 2009). Delinquency was assessed with the arithmetic mean of 15 items representing engagement in a variety of delinquent behaviors (e.g., physical fighting, running away from home, stealing, selling marijuana or other drugs) (alpha = 0.87). Response options included 0 = Never, 1 = 1 or 2 times, 2 = 3-4 times, and 3 = 5 or more times. Scale was dichotomized as high/low delinquency. Respondents with score '1' or higher were recoded as 'high delinquency' and the remaining were pooled into category and coded as 'low delinquency' (Boutwell & Beaver, 2008). Second, we combined the three measures of risk behavior into one dichotomous measure (yes/no), where 'yes' included participants who reported lifetime drug use or binge drinking, or were classified as 'high' delinquency.

Adult role transitions. Adult role measures that were included derived from Wave III. Marital status was based on participants' report on marriage and cohabitation. A composite variable was created based on these two items (0 = Never married or cohabited, 1 = Ever married, 2 = Ever cohabited). Married individuals with previous history of cohabitation were coded only as married. Work participation was based on participants' report on whether they were currently working for pay for at least 10 hours a week and the number of hours typically worked at their current job. A three-category variable was created: 0 = Not working, 1 = Part-time (less than 35 hours/week), 2 = Full-time (35 hours/week or more). Because our main interest was on full-time employment in

participants' early 20s—which could potentially interfere with educational attainment and reduced income in adulthood—we used full-time employment as the reference group.

Socioeconomic attainment. Outcome measures were assessed in Wave IV.

Participants self-reported on their highest educational level achieved. Educational attainment was recoded as 1 = Less than high school, 2 = High school graduate, 3 = Some college and beyond. While obtaining a college degree is an important educational outcome, the relatively small number of teen fathers who completed college ($N = 16$) did not allow for the creation of a separate category. Income was used as a continuous variable and was based on participants' report of personal earnings before taxes in the year prior to data collection (range = \$0, \$165,000). Due to high skewness, this measure was standardized.

Data analysis

All analyses were conducted taking into account survey design and weights. We kept in the analyses all participants with sample weights at Wave IV ($N = 14,800$) and used the subpopulation option to obtain correct standard errors (Chen & Chantala, 2014). To better contextualize participants' characteristics, we compared teen fathers to non-teen fathers across all measures using design-based F-tests. Regression models assessed the impact of the selected longitudinal predictors on education attainment and personal income at adulthood. First, we used bivariate models to explore the independent relationship between the longitudinal predictors and outcomes. Second, we used multivariate models to assess the combined effect of predictors on education and income. To obtain a parsimonious model, we retained variables that were associated with the outcomes at the significance level of $p < .10$. We kept the two demographic characteristics

(i.e., age and race) and the main independent variables (risk behavior, marital status, and work participation) regardless of their statistical significance in the bivariate analyses. The final multivariate model had variance inflation factors below 1.09, which indicate multicollinearity was not a serious concern. All analyses were conducted in Stata/MP 14.0.

For educational attainment as an outcome, we used multinomial logistic regression to explore pairwise comparisons between the three educational categories. We used “some college and beyond” as a reference group as it expresses the most desirable educational outcome. We also explored “less than HS” compared to “HS graduate,” as we believe that high school graduation, as opposed to dropping out, also reflects a positive educational achievement among teen fathers. We used linear regression to investigate the relationship between the independent variables and income.

To obtain the same sample size across all analyses, we kept in the analytical sample participants with complete data across all variables ($N = 224$). Results from attrition analysis revealed that teenage fathers excluded from the analysis ($N = 112$) were more likely to report risk behavior compared to teenage fathers included in the analytical sample (49.4% vs. 35.7%, $p = .039$). No statistically significant differences were observed across the remaining measures.

Results

Table 5.1 shows teen fathers’ characteristics across measures, compared to non-teen fathers. A little over one-fourth (26.8%) of teen fathers’ parents did not complete high school, compared to 14.7% of non-teen fathers’ parents ($p < .001$). In adolescence, a greater proportion of teenage fathers reported ever repeating a grade in school compared non-teen fathers (38.5% vs. 25.9%, $p = .002$). In their transition to adulthood, most teen

fathers (85.0%) reported either marriage or cohabitation, versus only 42.6% of non-teen fathers ($p < .001$). In their adulthood, teen fathers compared to non-teen fathers represented a greater proportion of high school drop outs (27.4% vs. 9.6%, $p < .001$) and had a lower mean income (\$33,382 vs. \$41,381, $p < .001$).

In Table 5.2 results from bivariate and multivariate regression models predicting high school dropout and high school graduation are presented. In the multivariate model, we found that teen fathers' risk behavior in adolescence (AOR = 4.30, 95% CI = 1.39, 13.34) is associated with a greater risk of attaining less than a high school degree by adulthood, compared to pursuing higher education. Compared to teenage fathers working full-time in their early 20s, participants not working in their early 20s were less likely to stop their educational path in high school, as opposed to going to college (AOR = 0.39, 95%CI = 0.16, 0.94).

Findings from the multivariate model comparing high school dropouts to those who completed high school by adulthood revealed that repeating a grade in school (AOR = 4.87, 95% CI = 1.59, 14.88) was positively associated with high school drop out. Risk behavior in adolescence (AOR = 2.64, 95% CI = 0.95, 7.32) was marginally statistically significant associated with high school drop out ($p = .062$).

As shown Table 5.3, even when controlling for early disadvantages, Black teenage fathers achieve lower income in adulthood compared to White teenage fathers ($B = -0.41$, $p < .001$). Results from the multivariate model also show that teenage fathers whose parents graduated from high school have higher income compared to those whose parents were high school drop outs ($B = 0.27$, $p < .001$), and that risk behavior in adolescence is associated with reduced income in adulthood ($B = -0.18$, $p = .036$).

Discussion

This study identified longitudinal predictors of educational attainment and income among teen fathers from a nationally representative sample of youth. For the first set of predictors under analysis, we hypothesized that teen fathers' risk behavior in adolescence (substance use and delinquency) negatively impact teen fathers' socioeconomic attainment, so teen fathers with greater problem behaviors lag behind in their education and income in adulthood. Findings revealed that risk behavior in adolescence is associated with reduced odds of teen fathers graduating from high school, and with lower income in their adulthood. These findings are consistent with other studies of general samples that have found substance use (Green & Ensminger, 2006) and delinquency (Makarios et al., 2015) to negatively impact educational outcomes.

Consistent with previous research (Fletcher & Wolfe, 2012; Mollborn, 2010), our findings support the evidence that work participation in the transition to adulthood may truncate teen fathers' educational trajectory. Interestingly, work participation in their early 20s did not impact teen fathers' income in their young adulthood. It may be that the lower educational attainment associated with early work participation translates into teen fathers' income loss only later in life. As for the second indicator of adult role transition, our findings did not support previous research (Marsiglio, 1987), as we found no association between marital status and education.

In this sample of teenage fathers, race was not statistically significantly associated with educational attainment. Other studies with teenage fathers also did not find an association between race and high school completion (Mollborn, 2010) or showed that Black teen fathers were more likely than White teen fathers to earn a high school diploma

or GED (Marsiglio, 1987). Despite evidence that education is positively correlated with income (U.S. Census Bureau, 2016), findings from our study show that the beneficial effect of education does not seem to directly translate into earnings. Black teenage fathers had lower income in adulthood compared White teenage fathers, even after controlling for other characteristics. While we observed no statistically significant association between race and education, it may be that subtle differences in education are influencing the income gap between Black and White teenage fathers. For example, 38.4% of Black teen fathers vs. 22.4% of White teen fathers did not complete high school by their adulthood (results not shown). This finding also highlights the need for better understanding of the factors that drive the income gap between Black and White teenage fathers.

Several limitations should be acknowledged. While this study advances the literature by identifying teen fathers' selected characteristics that may alter socioeconomic outcomes in their adulthood, most of these factors co-occur. For example, in this sample, delinquency was highly correlated with drug and alcohol use in adolescence. Therefore, future studies that incorporate latent variable approaches to identify teen fathers' risk profiles to low socioeconomic attainment are warranted. In addition, other limitations on data did not allow us to take into account temporal order of events; therefore, causal conclusions should be taken with caution. For example, some teen fathers may have chosen to work full-time as opposed to going to college before their child was born. Finally, much of the socioeconomic trajectories of teen fathers relate to whether or not they took responsibility for their child. While Add Health includes measures of parental involvement in Wave III (e.g. residence with child), we did not use

these measures due to the high percentage of missing values. Additional research is necessary to account for parental involvement when examining teen fathers' socioeconomic outcomes.

This study contributes to the growing literature on teenage fatherhood by acknowledging that teen fathers are a diverse group (Futris et al., 2012) and by identifying the characteristics of those at greatest risk for low educational attainment and income at adulthood. Findings provide evidence that some of the risk factors for teenage fatherhood, such as low parental education and risk behavior in adolescence, also negatively impact teen fathers' socioeconomic attainment in adulthood. Results on the negative association between full-time work and educational attainment also support the efforts to broaden traditional fathering roles as providers to include participation in caregiving and socialization (Kiselica & Kiselica, 2014; Leadbeater, 2014). Comprehensive programs for low-income fathers focusing on providing employment help and fathering skills while reducing the requirements for financial support resulted in greater employment, parental involvement, and increased frequencies in child support payments in the long term (Kiselica & Kiselica, 2014). Identifying the modifiable risk factors leading to difficult transitions to adulthood may inform policies and programs to improve teen fathers' socioeconomic attainment later in life.

Table 5.1. Descriptive Statistics of Measures by Teen Fatherhood Status.

	Non-teen fathers (N=6,598)	Teen fathers (N=336)
<i>Demographic characteristics (W1)</i>		
Age, mean (SE)	16.05 (0.12)*	15.68 (0.20)
Race, %		
White	73.3*	60.9
African American/Black	15.6	23.8
Other	11.1	15.3
<i>Family characteristics (W1/W3)</i>		
Parent educational attainment (W1), %		
Less than HS	14.7***	26.8
HS graduate/GED	43.1	53.3
Some college and beyond	42.1	20.8
Perceived parental emotional support (W3), mean (SE)	4.43	4.37
Reports parental financial support (W3), %	74.5*	65.4
<i>School-related characteristics (W1)</i>		
Ever repeated a grade, %	25.9**	38.5
School connectedness scale, mean (SE)	3.73*	3.61
<i>Substance use and delinquency (W1)</i>		
Risk behavior, yes %	31.1 **	40.8
Ever drug use, %	29.2***	42.7
Binge drinking, %	28.8*	36.4
Reports delinquent behavior, %	6.1***	13.4
<i>Adult role transitions (W3)</i>		
Marital status, %		
Never married/cohabit	53.4***	14.9
Ever married	12.9	41.3
Ever cohabit	29.7	43.7
Work participation, %		
Not working	27.3***	20.9
Part-time work	17.8	7.2
Full-time work	54.9	71.9
<i>Socioeconomic attainment (W4)</i>		
Educational attainment, %		
Less than HS	9.61***	27.4
HS graduate	30.4	38.6
Some college and beyond	58.8	33.9
Income, mean (SE)	\$41,383 (\$1,148)***	\$33,382 (\$2,187)

Results are weighted and adjusted for cluster and strata.

†p<.10; *p<.05; **p<.01; ***p<.001.

Table 5.2. Bivariate and Multivariate Model of Demographic Characteristics, Risk Behavior, and Adult Role Transitions Predicting Teen Fathers' Educational Attainment in Adulthood.

	<i>Less than HS^a</i>		<i>HS Graduate^a</i>	
	<i>Bivariate Model</i>	<i>Multi-variate Model</i>	<i>Bivariate Model</i>	<i>Multi-variate Model</i>
	<i>OR</i>	<i>AOR</i>	<i>OR</i>	<i>AOR</i>
<i>Demographic Characteristics (W1)</i>				
Age	0.99	0.82	1.02	0.96
Race				
White (Ref.)				
African American/Black	0.94	1.16	1.01	1.64
Other	0.81	0.34	0.58	0.41
<i>Family Characteristics (W1/W3)</i>				
Parent educational attainment (W1)				
Less than HS (Ref.)				
HS graduate/Incomplete college	0.31*	0.38 [†]	1.07	1.07
College graduate and beyond	0.24 [†]	0.30	0.69	0.55
Perceived parental emotional support	0.97	-	1.18	-
Reports parental financial support				
No (Ref.)				
Yes	0.84	-	1.92	-
<i>School-related characteristics (W1)</i>				
Ever repeated a grade				
No (Ref.)				
Yes	6.91***	7.07***	1.51	1.45
School connectedness scale, mean (SE)	0.66	-	1.27	-
<i>Substance use and delinquency (W1)</i>				
Risk behavior				
No (Ref.)				
Yes	3.32*	4.30*	1.48	1.63
<i>Adult role transitions (W3)</i>				
Marital status				
Never married/cohabit (Ref.)				
Ever married	1.37	3.26	0.74	0.77
Ever cohabit	1.56	1.85	0.65	0.66
Work participation				
Not working	0.79	0.78	0.44 [†]	0.39*
Part-time work	0.49	0.73	0.40	0.33
Full-time work (Ref.)				

Results are weighted and adjusted for cluster and strata. ^aThe reference category is 'Some college and beyond'.

[†]p<.10; *p<.05; **p<.01; ***p<.001.

Table 5.3. Bivariate and Multivariate Model of Demographic Characteristics, Risk Behavior, and Adult Role Transitions Predicting Teen Fathers' Income in Adulthood.

	Bivariate Model <i>B (SE)</i>	Multivariate Model <i>B (SE)</i>
<i>Demographic Characteristics</i>		
Age (W1)	0.01 (0.03)	0.01 (0.02)
Race (W1)		
White (Ref.)		
African American/Black	-0.48 (0.07)***	-0.41 (0.07)***
Other	-0.26 (0.15)	0.07 (0.13)
<i>Family Characteristics (W1/W3)</i>		
Parent educational attainment (W1)		
Less than HS (Ref.)		
HS graduate/Incomplete college	0.35 (0.09)***	0.27 (0.08)***
College graduate and beyond	0.19 (0.13)	0.12 (0.14)
Perceived parental emotional support	-0.06 (0.09)	-
Reports parental financial support		
No (Ref.)		
Yes	-0.10 (0.08)	-
<i>School-related characteristics (W1)</i>		
Ever repeated a grade		
No (Ref.)		
Yes	-0.23 (0.10)*	-0.13 (0.11)
School connectedness scale	0.01 (0.07)	-
<i>Substance use and delinquency (W1)</i>		
Risk behavior		
No (Ref.)		
Yes	-0.12 (0.09)	-0.18 (0.09)*
Marital status		
Never married/cohabit (Ref.)		
Ever married	0.25 (0.16)	0.09 (0.19)
Ever cohabit	-0.04 (0.14)	-0.05 (0.12)
Work participation (W3)		
Not working	-0.22 (0.15)	-0.05 (0.16)
Part-time work	-0.14 (0.12)	-0.11 (0.10)
Full-time work (Ref.)		

Results are weighted and adjusted for cluster and strata.

†p<.10; *p<.05; **p<.01; ***p<.001.

Chapter 6: Summary

6.1. Overview of Findings and Implications

While an extensive literature has documented the negative impact of teenage childbearing on socioeconomic outcomes, lingering questions prompt further study. For instance, despite the high-risk circumstances, some teen parents succeed, and by adulthood have completed college, earn a living wage, and do not depend on welfare. Even though researchers have been shifting their focus away from the negative stereotypes of teenage parenting, much remains to be learned about within-group variations and the characteristics of those who succeed. Specifically, there is little understanding of the longitudinal predictors of teen parents' successful socioeconomic attainment in adulthood, particularly among teenage fathers. To address this knowledge gap, this study investigates variations in teen mothers' and teen fathers' socioeconomic attainment in adulthood, focusing on two main categories of potential influences: family support (i.e., perceived parental emotional and financial support) and adult identity (i.e., profiles based on high/low subjective age and psychosocial maturity). Guided by the Life Course Theory, and using the National Longitudinal Study of Adolescent to Adult Health as a data source, this dissertation aims to answer two main research questions. First, *does family support provided in the transition to adulthood predict socioeconomic attainment among teen mothers and teen fathers in their adulthood, and does this association vary by race?* Second, *does subjective age affect socioeconomic attainment in adulthood among teen mothers and teen fathers, and does this relationship vary by psychosocial maturity level?* Findings from this study can guide research, policy, and public health interventions to help teenage mothers and fathers successfully transition into adulthood.

6.1.1. Research question 1

To answer this research question, we conducted two separate analyses for teen mothers and teen fathers. In both analytical models, we investigated the longitudinal impact of perceived parental support in the transition to adulthood (i.e., perceived parental emotional and financial support) on socioeconomic outcomes in adulthood (i.e., educational attainment, personal income, and subjective attainment) while controlling for early background characteristics. We also analyzed whether the association between the main independent and dependent variables varied according to race (Black vs. White participants).

Based on the Life Course Theory's principle of *linked lives* family ties constitute a strong influence on the life-course trajectory (Elder, 1999). Thus, it was hypothesized that teen parents' parental support would be positively associated with their socioeconomic attainment later in life. Specifically, the hypotheses were that (a) compared to teen parents with low perceived parental emotional support, teen parents with high perceived parental emotional support in the transition to adulthood have more years of schooling, greater income, and higher subjective attainment in young adulthood; and that (b) compared to teen parents with low perceived parental financial support, teen parents with high perceived parental financial support in the transition to adulthood achieve more years of schooling, greater income, and higher subjective attainment in young adulthood. In addition, given past research indicating that the characteristics of teen mothers' and fathers' supportive relationships may vary across racial groups (Caldwell & Antonucci, 1997; Henly, 1997; Logsdon et al., 2002), it was also hypothesized that the associations between perceived parental support in the transition to adulthood and

socioeconomic attainment in young adulthood would differ by race.

These hypotheses were not supported. Among teen mothers, findings from design-based multivariate regression analyses in adjusted models showed the following: (a) only a marginally statistically significant positive association between perceived parental emotional support and subjective attainment; (b) no statistically significant association could be found between perceived parental financial support and socioeconomic outcomes; and (c) the association between family support variables and each of the socioeconomic attainment outcomes did not vary by race (see Appendix E, Table E1). Among teen fathers, perceived parental emotional and financial support in the transition to adulthood were not statistically significant associated with any of the socioeconomic attainment outcomes in adulthood (see Appendix E, Table E2). As with teen mothers, no racial differences between perceived parental support and socioeconomic attainment outcomes were identified (see Appendix E, Table E2).

Findings from this study offer limited evidence to justify targeting parental emotional and financial support in the transition to adulthood as a means of intervention, at least in terms of long-term socioeconomic outcomes. There may, however, be other benefits of emotional and financial support not examined by these studies that may merit attention.

There were a number of limitations that should be considered before we dismiss the importance of parental emotional and financial support. The first possible explanation relates to the timing parental emotional supports were assessed. Parental emotional support is theoretically believed to buffer the stress associated with an early transition to parenthood while the teen parent is still managing to complete adolescent developmental

tasks (Way & Leadbeater, 1999). It may be that the transition to adulthood captures a period of lower stress in comparison to the teenage years, at least once the teenage parent has adjusted to the parenting role. Also, it is possible that the importance of emotional support from parents decreases between adolescence and the transition to adulthood, as the teenage parents begin to achieve greater individuation (Logsdon et al., 2002) and form marital unions (Manning & Cohen, 2015). In our analytical sample, most teenage parents reported marriage or cohabitation by the transition to adulthood (85.9% teen mothers and 85.5% teen fathers). Studies in general samples of youth (Johnson & Benson, 2012), and a sample of teenage mothers (Leadbeater, 2014), provide evidence that those in marriage/cohabitation relationships may rely more on the emotional support from their romantic partner than from their parents.

A second possible explanation for the null findings in the associations between parental support and socioeconomic attainment pertains to the scope of the parental support variables. The measure of perceived parental emotional support captures the individuals' perception of emotional closeness with biological parents or other parent-like figures. The items are: "You enjoy doing things with him/her," "Most of the time he/she is warm and loving towards you," and "I feel close to him/her." While these items may seem to have adequate face validity as indicators of emotional support, it is possible that participants' report were susceptible to the influence of temporary relationship strain. As for perceived parental financial support, this measure is limited to the presence or absence of financial help and does not capture the amount of financial support received. Future studies should include measures that capture the different types, levels, and quality of support. In addition, more nuanced dimensions of parental support in teenage parents'

transition to adulthood, such as amounts of support and quality/strain of parent-child relationships should be explored in future qualitative studies.

A third reason for these null findings is the relatively small sample size, particularly for race comparisons, which may have limited the ability to detect small effects. For example, while non-statistically significant, perceived parental emotional and financial support seem to be more relevant for educational attainment among White teen fathers (positive association) than Black teen fathers (negative association) (see Appendix E, Table E4). These data trends indicate that there may be subtle differences in the impact of perceived parental support on socioeconomic outcomes between Black and White teen fathers. Future studies with larger sample sizes are necessary to investigate these racial differences.

Given that most studies on parental support have focused on teen mothers' adolescence (Bunting & McAuley, 2004a; Leadbeater, 1996), additional studies are necessary. The changing landscape in the pathways into adulthood, with young adults relying on their parents for longer periods of time (Furstenberg, 2010), reinforces the need for further research on the role of parental support in the transition to adulthood, and its effect on teenage parents' socioeconomic attainment later in life. There are several possible avenues of investigation. How does parental support change as teenage parents age and assume other adult role transitions (e.g., marriage or cohabitation)? In what aspects of their life do teen parents in their early 20s need support from their parents? What specific types of parental support provided in the transition to adulthood are most likely to effectively help teen parents continue their educational path and professional training? How do early family processes (e.g., parental educational aspirations, parental

monitoring, parenting style) influence parental support in the transition to adulthood? How does parental support correlate with strain in the parent-child relationship? How can parents support their children towards achieving economic independence while promoting teen parents' individuation and independence? Future studies should tackle these questions.

6.1.2. Research question 2

To examine the impact of adult identity on teen parents' socioeconomic outcomes, we built four adult identity profiles based on the combinations of high and low levels of "subjective age" and "psychosocial maturity" (see Figure 2.1, page 34). In separate models for teenage mothers and fathers, we examined whether those classified as "early adults" (old subjective age and high psychosocial maturity) achieved more years of education, higher personal income, and greater subjective attainment relative to the other adult identity profiles.

According to the Life Course Theory's principle of aging, individuals' perceptions of age likely influence their actions and the decisions they make in life, affecting their life-course trajectories (Elder et al., 2004). Based on the theoretical understanding that individuals tend to act accordingly with their sense of self, researchers have suggested that teen parents with older subjective ages are more prone to assuming other adult roles, such as becoming financially independent and completing their education (Johnson & Mollborn, 2009). In addition, researchers have suggested that psychosocial maturity may have a protective effect on those with older subjective ages, as subjective age alone may lead to "pseudo-maturation" (Galambos & Tilton-Weaver, 2000; Johnson & Mollborn, 2009) and greater involvement in risk behavior (Arbeau et

al., 2007; Galambos et al., 1999). Thus, it was hypothesized that age identity and later socioeconomic attainment are associated. Specifically, we hypothesized that teen parents with older subjective age and higher psychosocial maturity levels (early adults) achieve greater socioeconomic attainment in adulthood, compared to the other identity profiles ('pseudo adult,' 'anticipatory,' and 'late adult').

Among teenage mothers, results from design-based multivariate regression models partially confirmed the following hypotheses: (a) compared to 'early adults', teen mothers with 'anticipatory' profiles (young subjective age and high psychosocial maturity) achieve less education, lower income, and lower subjective attainment in adulthood; (b) compared to 'early adults', teen mothers with 'late adult' profiles (young subjective age and low psychosocial maturity) achieve less subjective attainment in adulthood; however, (c) no statistically significant differences in socioeconomic outcomes were found between 'early adults' and 'pseudo-adults' (old subjective age and low psychosocial maturity). Similar findings were observed among teen fathers, however, the following associations were only marginally statistically significant: (d) compared with 'early adults', teen fathers with 'anticipatory' adult profile achieved less income in adulthood; (e) compared to 'early adults', teen fathers with 'late' adult profiles achieved less income and subjective attainment in adulthood; and (f) no statistically significant differences in socioeconomic outcomes were found between 'early adults' and 'pseudo-adults'.

Findings from our study suggest that those with identity profiles with older subjective ages, regardless of psychosocial maturity level, tend to do better with respect to their socioeconomic attainment compared to those categorized in profiles with younger

subjective ages. This finding has several explanations. First, while psychosocial maturity is thought to be protective among adolescents with older subjective age, it is possible that among teen mothers in their early 20s, ‘feeling older than others their age’ does not result in the same negative consequences generally observed in adolescent samples (e.g., association with older peers, early sexual initiation, drug use). Second, it may be that the non-statistically significant difference between ‘early adults’ and ‘pseudo-adults’ (both groups have older subjective age, the only difference is in the psychosocial maturity levels) may be related to the grouping resulting from the cluster analysis (see Appendix G, Figure G1). For the pseudo-adult profile, one of the indicators of psychosocial maturity (‘How independent are you’) had a z-score slightly higher than expected.

The greater proportion of teen parents from our analytical sample classified as ‘early adults’ is consistent with their early transition into parenting and early life circumstances. Researchers have suggested that having a baby in the teenage years represents an *early* transition into parenthood, which may contribute to a perception of an older subjective age (Settersten Jr, 2004). Also, the risk factors for teenage parenting overlap with the risk factors that contribute to older subjective age (e.g., poverty, low parental educational attainment, childhood hardship). Indeed, in our sample, 47.8% of teenage mothers and 41.3% of teenage fathers were classified as ‘early adults,’ compared to 31.0% in a general sample of youth (Benson et al., 2012).

Despite teen parents having ‘early adult’ profiles in greater proportion than their non-teen parents’ peers, we still observe variability in adult identity profiles among them. For example, 27.3% of teen mothers and 26.2% of teen fathers were classified in the profiles with young subjective age (‘anticipatory’ and ‘late adults’ combined). Because

age identity is highly influenced by socioeconomic background and the timing of adult role transitions, future studies are still needed to understand the factors that predict differentiation in adult age identity *within* a sample of teenage parents.

6.1.3. Additional major findings among teen fathers

Given the null findings for teen fathers with regards to the main research questions, and the need for better understanding of their life circumstances and socioeconomic trajectories, two additional studies on teen fathers were included in this dissertation. Study 1 (Chapter 3) investigated racial differences in teen fathers' characteristics over the life course and Study 3 (Chapter 5) presented an investigation of teen fathers' longitudinal predictors of socioeconomic attainment.

Confirming findings from previous research (Khurana & Gavazzi, 2011), Study 1's demographic characterization of teen fathers showed that Black teen fathers report lower substance use compared to White teen fathers. Despite the greater substance use among White teen fathers and the evidence that risk behavior (substance use/delinquency)³ negatively impacts education and income (Study 3), White teen fathers had an income 2.6 times higher than Black teen fathers in adulthood (Study 1). Future studies should explore whether risk behaviors in adolescence result in greater accumulation of disadvantages for Black teen fathers compared to White teen fathers.

Given the association between teen fathers' risk behavior and later socioeconomic attainment, school or community-based prevention programs—particularly those focused on the early identification of and intervention with youth at-risk for substance use and delinquent behavior—may have long-term impacts on socioeconomic outcomes for teen

³ In results not shown, substance use was also negatively associated with income and education.

fathers. Since the literature suggests that risk factors for teen fatherhood also place young males at greater risk for criminal offending (Tremblay et al., 2016) and substance use (Landers et al., 2015), it is likely that those interventions seeking to prevent risk behavior will also reduce the rates of teen fatherhood in general.

Results also suggest that full-time work in the transition to adulthood reduces teen fathers' educational attainment in adulthood. Specifically, we found that teenage parents who were not working in their early 20s were less likely to end their educational paths in high school compared to those who were working full-time (AOR = 0.38, 95%CI = 0.16, 0.91). In other words, compared to those working full-time, teen fathers who were not working in their early 20s were more likely to report at least some college experience by their late 20s (mean age 28).

No statistically significant differences were found in educational attainment when comparing those who worked full-time versus part-time. This null finding may be partially explained by the small number of teen parents who reported part-time work (only 7.2%). While the association between full-time work and reduced educational attainment confirms findings from previous studies (Fletcher & Wolfe, 2012; Mollborn, 2010), future investigation is necessary to better understand the paths through which teenage fathers invest in full-time work as opposed to education. Is this a consequence of fathering a child and having to provide financial support? Or, are those who work full-time more economically disadvantaged and lacking the financial capabilities to pursue a college education? Finding answers to these questions might help show how to better support teenage fathers on their educational path. The answer to the first question might lead to policies directed to help teen fathers in providing for their children, such as

subsidy programs; the latter might lead to broader educational programs and policies to support low-income teen fathers to advance their education beyond high school.

6.1.4. Main gender-based differences

While the use of separate analytical models does not allow for a direct comparison between males and females, this section presents major differences in the findings for teen mothers and teen fathers.

Findings from bivariate analysis support previous research (Leadbeater, 2014; Mollborn, 2010) and suggest that teenage mothers in marriage/cohabitation relationships have lower educational attainment compared to those who remain single. Among teen fathers, no statistically significant association was found between marital status and education. Given that women traditionally have a greater role in child-rearing (Bunting & McAuley, 2004b), forming an independent household may have more negative consequences for women as they may lose support from which they could have benefited had they remained residing with their families. This finding suggests the need for further efforts to support married or cohabitating teenage mothers who want to advance their education. These teenage mothers are less likely to receive financial support from their families (see Appendix D, Table D1). They might have a more strained relationship with their parents, or their parents might believe they need less support since they now live independently. Public health interventions are necessary to address the barriers that married and cohabitating teenage mothers face when advancing along their educational path.

Another gender comparison worth mentioning is the racial differences in teen mothers' and fathers' socioeconomic attainment in adulthood. While Black and White

teen mothers have comparable educational attainment and income by mean age 28 (see Appendix C, Table C1), Black teen fathers have higher school drop out rates (38.4% vs. 22.4%, results not shown) and income 2.6 times lower than White teen fathers (see Appendix C, Table C2). These differences in socioeconomic status in adulthood might be driven by social factors disproportionately affecting Black males, such as incarceration and number of arrests. In our analytical sample, 78% of Black teen fathers compared to 55% of White teen fathers reported a history of previous arrest by mean age 28 ($p = .010$). In comparison, only 24.6% of Black teen mothers and 30.8% of White teen mothers reported a previous history of arrest ($p > .05$).

6.2. Strengths and Limitations

This study has several strengths. The use of a nationally representative longitudinal dataset spanning over ten years allows for the examination of temporal ordering between predictors and outcomes. In addition, nationally representative data may have better captured teen mothers and fathers from diverse backgrounds, as opposed to a sample of teenage parents only, which may over-represent adolescents from lower socioeconomic groups or specific sites (e.g., health clinics, welfare recipients). By analyzing data from the Add Health restricted-use dataset, which contains the full in-home sample, the study had a sufficient number of participants in which to analyze teen mothers and fathers separately and to include interactions by race. Having the ability to build an analytical model specific to teen fathers is particularly relevant, as few studies have explored buffers against negative socioeconomic attainment for teenage fathers (Mollborn, 2007, 2010). Race is also an important construct to consider when assessing parental support, as studies have shown differences in support by race among teen parents

(Logsdon et al., 2002). Finally, another strength of this study is the inclusion of two types of perceived parental support (i.e., emotional and financial), which allowed us to consider whether different types of parental support affect socioeconomic outcomes in different ways.

This study is not without limitations. First, while the use of a longitudinal dataset allows for the establishment of temporal order, it brings with it a concern about differential attrition. Differential attrition limits the representativeness of the study sample since the most disadvantaged individuals were the ones most likely to be lost to follow-up (Johnson et al., 2007). While attrition analysis in the analytical sample of teenage fathers was not possible because teen fatherhood was established in later waves (Waves III and IV), attrition analysis in the female sample revealed that about 12% of teenage mothers were lost to follow-up, and that they were more likely to be disadvantaged compared to those included in the analytical sample (see full description of attrition analysis on Appendix A, p.129).

Another limitation refers to the statistical analyses of race as a moderator between parental support measures and socioeconomic attainment outcomes. While the incorporation of a design-based approach led to the estimation of more correct point estimates and estimates of variance, standard errors, and confidence intervals, it required keeping all participants with completed sample weights (N=14,800) in the analysis and, therefore, not allowing the exclusion of other races and the creation of a variable with 'Blacks' and 'Whites' only. This requirement made it challenging to effectively include interaction terms for race (as 'Blacks'/'Whites') and parental support variables in the imputation model, as the variable 'race' had three categories: 'Blacks,' 'Whites,' and

‘Others.’ The lack of regression terms reflecting the interaction between race and parental support variables in the imputation model may have reduced the power to detect an interaction effect, as inconsistencies between the imputation model and the actual analytical model may result in underestimation of the association between variables and consequent loss of statistical power (Von Hippel, 2009).

Measures of selected independent variables reflected a snapshot in time, as perception of parental emotional and financial support might change over the life course. Future research is necessary to analyze persistence and change of independent variables, such as parental support, on adulthood socioeconomic attainment over time.

Finally, this study focused on certain constructs that were expected to predict pathways to teen parents’ successful socioeconomic attainment in adulthood. Other potential factors not included in this investigation might be more predictive when explaining socioeconomic trajectories among teen parents (e.g., educational aspiration, co-residence with parents, parental involvement with the child, school quality, neighborhood social cohesion).

6.3. Future Research Directions

This dissertation advances the current literature by investigating the longitudinal characteristics of teen mothers and fathers who make successful transitions to adulthood. By building separate models for teenage mothers and teenage fathers, findings from this study provided unique insight into gender-based longitudinal predictors of socioeconomic outcomes that can inform future research on pathways and risk profiles. For example, future studies could explore mechanisms that lead to negative socioeconomic attainment in adulthood by identifying how teenage parents’ early risk factors compound over the

life course, leading to accumulation of socioeconomic inequalities. Also, research using a person-centered approach (e.g., latent class analysis) would be useful in identifying teen parents' risk profiles. These risk profiles would offer a more nuanced characterization of groups at higher risk for low socioeconomic attainment in adulthood.

One challenge in investigating the longitudinal buffers of negative socioeconomic outcomes among teen fathers from this national dataset involved the measures of parental involvement. Measures of teen parents' involvement with their children (Wave III) were marred by a large amount of missing data. The parental involvement measures were also unclear regarding whether they referred to children fathered as teenagers or subsequent children. The extension, duration, and ways in which teen fathers take responsibility for their children after birth likely impact their decisions about schooling, professional training, and work participation. Thus, parental involvement will be an important construct to consider when investigating predictors of socioeconomic attainment.

In addition, it is critical that national surveys make an extra effort to retain teen parents, especially teen fathers, in order to obtain an accurate national portrait of teenage parents. Traditionally, studies have followed cohorts of teen mothers over time (Furstenberg, Brooks-Gunn, & Morgan, 1987a; Leadbeater & Way, 2001; SmithBattle & Leonard, 2014). Other studies have studied low-income fathers (Edin & Nelson, 2013; Roy, 2006); however, while teenage fathers might be depicted in these studies, they were not the main focus of the investigation. There is a need for more longitudinal studies to follow teen fathers, so that researchers can collect data tailored specifically to better understand their parenting practices, family formation, and pathways into adulthood.

A central idea in the Life Course Theory is the notion that changing historical times and context have an impact on an individual's life (Elder, 1999). The understanding of historical time and place relates to the idea of 'cohort' and the comparison of outcomes among those who have experienced teen parenting in different decades. Many longitudinal studies on teen parents are from older cohorts who experienced teen parenting in the 1960s (Furstenberg, 2007; Furstenberg et al., 1987b) and 1980s (Henly, 1997; Leadbeater, 2014; SmithBattle & Leonard, 2012), and 1990s, in addition to the the present study and Mollborn (2010). Due to changes in social context and policies, findings may not be generalizable to current cohorts (e.g., teenage parents in the 2010s). Therefore, future studies with more recent cohorts of teen parents are warranted.

Finally, in consonance with the National Institutes of Health's call for '*moving research into practice*' (Zerhouni, 2007), investment in translational research is needed. Future public health efforts should continue to focus on the application of what is already known on the buffers of negative consequences of teenage parenting to the implementation and evaluation of programs to support teen parents' successful transitions to adulthood. For example, intervention programs should target barriers for married or cohabitating teen mothers to advance their education training in their early 20s; among teen fathers, programs should focus on early prevention or reduction of substance use and delinquent behavior in adolescence in order to potentially improve socioeconomic outcomes. Addressing risk factors over the life span among those less likely to succeed is a critical piece in breaking the intergenerational cycle of socioeconomic disadvantage that often accompanies teen childbearing.

Appendices

Appendix A: Methods

This study consisted of a secondary data analysis using the National Longitudinal Study of Adolescent to Adult Health (Add Health). The Add Health cohort is a nationally representative sample of adolescents followed from ages 11 through 32. Add Health includes information on participants' social, economic, psychological, and physical well-being, as well as contextual information on family, neighborhood, school, friendships, and romantic relationships. Add Health data are based on a stratified random sample of U.S. high schools. In order to guarantee that schools selected were representative, they were stratified into 80 clusters by country region (Northwest, Midwest, South, and West), urbanicity (urban, suburban, and rural), type (public, private, and parochial), and ethnicity. Schools' eligibility criteria included having an 11th grade and at least 30 students. Over 70% of schools originally sampled agreed to participate. One hundred forty five schools participated in the study.

Wave I data collection (1994-1995) consisted of two phases: the in-school and the in-home survey. The in-school survey was a self-administered instrument completed by over 90,000 students in grades 7 through 12. The in-home survey included a subsample of about 20,000 adolescents ranging from ages 11–21 ($M = 16$). Interviews were conducted at participants' homes and lasted between one and two hours. Based on the information collected in the in-school surveys, supplementary samples were drawn on specific groups such as physically disabled youth, ethnic minorities, and twins. The response rate for Wave I was 79%. The in-home samples also included parents ($N = 17,670$) and school administrators ($N = 144$). Each participating parent (preferably

resident mother or female head of the household) was asked to complete a self-administered survey covering topics such as education, employment, household income, government assistance, and parent-adolescent interactions. School administrators answered questions about school policies and practices, and teacher and student body characteristics.

Wave II data collection occurred one year after Wave I (1996). It included adolescents ($N = 14,738$) and school administrators ($N = 128$) who participated in the Wave I in-home survey. Participants were between the ages of 11 and 23 years of age ($M = 16$). The response rate was 88.6%⁴. Wave III data collection (2001–2002) consisted of in-home interviews with participants from the Wave I in-home original sample. A total of 15,197 participants were located and interviewed. At Wave III, participants were between the ages of 18 and 26 years ($M = 22$). Participants completed in-home surveys on relevant topics to young adults: romantic relationships, education, and labor outcomes, among others. Participants' partners were also interviewed ($N = 1,507$). The response rate for wave III was 77.4%.

In Wave IV (2008-2009), over 90% of the participants from the Wave I in-home survey were located and 80.3% were interviewed ($N = 15,701$). The response rate in wave IV was 80.3%. Participants completed a 90-minute in-home survey. Data collection instrument covered topics on educational attainment, economic status and strains, romantic relationships, childhood maltreatment, and parenting. Participants were between the ages of 24 and 32 years ($M = 28$). Wave V data collection is planned for 2015–2018.

⁴ Retention rate is not recommended for Add Health, as High School seniors in Wave I were not selected to participate in Wave II. Therefore, any calculation of retention rate can be misleading (Harris et al., 2009).

Analytical Sample

The analytical sample for this study consists of individuals who reported a live birth before age 20 and who participated in waves I, III, and IV of data collection. The teen parenting variable was created based on participants' retrospective report on Waves III and Wave IV. Using information on the child and participants' day of birth, the age of the parent at childbirth was determined. Teen parenting was defined as having a child before age 19 and 11 months (N = 1,317; 74.49% females).

The prevalence of teen birth in our sample is higher than national estimates for most groups, except for Black teen fathers (see Table A1 below). National rates are drawn from vital statistics (National Center for Health Statistics, 2003a, 2003c) and include adolescent males and females between the ages of 15 and 19. 'Birth' in the vital statistics report is defined as "every product of conception that gives a sign of life after birth, regardless of the length of the pregnancy." (National Center for Health Statistics, 2003b, p. 7). However, in our analytical sample, participants whose baby died in the hospital or who placed their child for adoption were excluded and, therefore, the numbers are not directly comparable.

Table A1. Teenage Birth Rates in Add Health Compared to National Data.

	Teen mothers		Teen fathers	
	Add Health	National Rate ^a (1994)	Add Health	National Rate ^b (1994)
Total	93.6	58.2	32.7	24.6
White	86.5	50.5	29.9	19.5
Black	123.6	102.9	40.0	54.1

Rates are per 1,000.

^aNational Center for Health Statistics, 2003a.

^bNational Center for Health Statistics, 2003c.

Table A2 summarizes how the analytical sample for the current study compares to other analytical samples of teen mothers and fathers drawn from nationally representative datasets. The greater proportion of participants with more than one child and the higher rates of marriage and cohabitation might be explained by the fact that the teenage parents from Add Health were older compared to other datasets when these two measures were assessed.

Table A2. Participants' Selected Characteristics Compared to Other Samples of Teen Parents from National Data.

	Teen mothers		Teen fathers		
	Add Health	1988-2000 NELS N=269 ^a	Add Health N=336	1988-2000 NELS N=49 ^a	NLSY97 ^c N=490
Race, %					
White	55.6	64.0	55.6	61.0	48.0
Black	31.9	19.0	27.0	10.0	29.0
Other	12.4	17.0	17.4	28.0	23.0
Age at birth, %					
<18	35.9	-	21.7	-	44.0
18-19	64.1	-	78.3	-	66.0
Number of children, %					
One	38.9	74.0	34.2	79.0	51.0
Two or more	60.2	26.0	65.8	21.0	49.0
Marriage/cohabitation	85.9	65.0	86.6	56.0	54.0

^a 1988-2000 National Education Longitudinal Study (Mollborn, 2007, 2010).

^c National Longitudinal Survey of Youth-1997 cohort (Scott et al., 2012).

Measures

Measures were sourced from Waves I, III, and IV of adolescent in-home surveys and the in-home parent survey at Wave I. The variables and constructs used in this study included controls (e.g., age, parental educational attainment, household income at adolescence, ever repeated a grade, school connectedness, marital status), moderators (race and psychosocial maturity), family support (perceived parental emotional support

and perceived parental financial support), subjective age, and indicators of socioeconomic attainment (education, income, and subjective attainment).

Controls

Selection of control variables was guided by theory and current literature. Included in the controls were factors that potentially influence socioeconomic attainment (i.e., education, personal income, and subjective attainment) among teen mothers and fathers. Based on collinearity and bivariate analyses, decisions were made regarding which control variables were included in the final models.

Individual characteristics

Age. Participant age at wave I was included. It is a continuous variable with range: 12.07 – 20.41, mean = 15.69, SE = 0.15 (females), and range 12.74 – 19.71, mean = 15.67, SE = 0.20 (males).

Race. Participants' self-reported on race (White, Black or African American, American Indian or Native American, Asian or Pacific Islander, other) and ethnicity (Hispanic/Latino). Participants were allowed to self-identify with more than one race. In this analytical sample, response options were recoded into 1 = White (56.7% females and 56.0% males), 2 = Black (30.6% females and 27.8% males), 3 = other (12.7% females and 16.2% males). The categories 'White' and 'Black' included those individuals of mixed race (e.g., selected 'White' *and* other race) and those who ethnically self-identified as Hispanics/Latinos. See Appendix I, Table I1 for distribution profile.

Family background

All measures of family background were selected from the parents' survey administered at Wave I. The only exception was the parental involvement scale, which

was selected from the adolescent interview at Wave I due to the high frequency of missing values in the parental involvement items reported by parents. In this analytical sample (teenage mothers and father combined), 95.8% of the parents were females (mother or other female head of the household), and 4.2% were males (fathers or other male head of the household). Parent respondents were mostly the biological mother (N = 931, 84.6%).

Parental educational attainment. Parents answered the question “how far did you go in school?” Response options included 1 = 8th grade or less, 2 = more than 8th grade, but did not graduate from high school, 3 = went to a business, trade, or vocational school instead of high school, 4 = high school graduate, 5 = completed a GED, 6 = went to a business, trade or vocational school after high school, 7 = went to college, but did not graduate, 8 = graduated from a college or university, 9 = professional training beyond a 4-year college or university, and 10 = never went to school. Response options were recoded in order to reduce the number of categories. Those who did not graduate from high school, went to a professional school instead, or never went to school (categories 1, 2, 3 and 10) were coded as 1 = No high school diploma. High school graduates who had a GED and some college (categories 4 through 7) were recoded as 2 = High school/GED. Those with college and beyond (8 and 9) were recoded as 3 = College graduate and beyond. Parental educational attainment distribution in the female sample is as follows: No high school diploma (28.7%), high school graduate/incomplete college (63.5%), college graduate and beyond (7.7%). In the male sample: No high school diploma 30.3%), high school graduate/incomplete college (62.2%), college graduate and beyond (7.5%).

Household income. Parents reported on total family income in the previous year (1994). This measure includes income from all members of the household, public assistance or any other source. It is measured as a continuous variable with a possible range from \$0 to \$999,999. Female sample: $M = \$30,627$ $SE = \$1,268$, range = \$0 - \$426,000; male sample: $M = \$29,534$, $SE = \$2,297$, range = \$ - \$250,000.

Parental involvement. This scale was based on adolescent reports on shared activities and communication with their mothers and fathers, separately. For activities, participants were asked on whether they have done each of the following activities with their mother/father in the previous four weeks: “gone shopping”, “played a sport”, “gone to a religious service or church-related event”, “gone to a movie, play, museum, concert, or sports event”, “worked on a project for school”. Communication items included the following: “talked about someone you are dating, or a party you went”, “had a talk about a personal problem”, “had a serious argument about your behavior”, “talked about your school work or grades”, “talked about other things you are doing in school”. Response options were 0 = No, 1 = Yes. First, maternal and paternal involvement scales were created separately by adding the ten items. Next, the parental involvement scale was calculated based on the arithmetic mean of the maternal and paternal scales. If the participant had information only for one parent, this value was used as the arithmetic mean. In the female sample, 95.1% of participants had complete information on both parents. In the male sample, 96.1% of participants provided information on both parents. In the female sample $M = 5.63$, $SE = 0.12$, range = 0 – 15; male sample $M = 5.17$, $SE = 0.20$, range = 0 – 15.

School-related characteristics

Measures included are from participants' report at Wave I.

Ever repeated grade. Participants reported on ever repeating or being held back a grade (0 = No, 1 = Yes); 26.7% of females ever repeated a grade, and 38.5% of males.

School connectedness was constructed from the arithmetic mean of five items: "I feel close to people at this school," "I am happy to be at this school," "I feel like I am a part of this school," "The teachers at this school treat students fairly," and "I feel safe in this school." Items were measured on a 5-item Likert scale (1 = Strongly agree to 5 = Strongly disagree). The scale was reverse coded so that greater values indicate higher school connectedness. In this sample, mean = 3.56, SE = 0.04, range = 1 – 5, for females and mean = 3.61, SE = 0.06, range = 1 – 5, for males). Internal consistency for females $\alpha = .75$ and $\alpha = .80$ for males.

Relationship and parenting characteristics

Marital status. Assessed in Wave III with participants' report on ever being married and ever having cohabitated. Based on these items, a composite measure with the following categories was created: 0 = Never married/cohabit, 1 = Ever married, 2 = Ever cohabited. Married individuals may have previously cohabitated, but were coded only as having married. Distributions for females were as follows: 14.1% (never married/cohabited), 42.9% (ever married), and 43.0% (ever cohabited). Among males, 14.5% (never married/cohabited), 41.1% (ever married), and 44.4% (ever cohabited).

Age at first birth. Calculated based on participants' date of birth and report on year their child was born. Consistent with previous literature (Mollborn, 2007), this variable was dichotomized as 'younger' (<18) and 'older' (18 – 19) teenage parents. In

this analytical sample, 64.1% of females and 78.3% of males reported a birth between the ages of 18 and 19.

Number of children. Number of children was measured as a continuous variable at Wave IV. Among females: mean = 2.31, SE = 0.04, range 1 – 7; among males: mean = 2.13, SE = 0.09, range 1 – 7.

Independent Variables

Perceived parental emotional support was selected from Wave III. Consistent with previous research based on Add Health data, a composite measure was created to assess perceived parental emotional support (Needham, 2008; Needham & Austin, 2010). This measure was based on two separate scales: maternal emotional support and paternal emotional support. Participants were asked about their relationships with their current and previous residential mother and father. Questions refer to biological mother, biological father, and other parent-like figures. Three items make up perceived parental emotional support: a) “You enjoy doing things with him/her”, b) “Most of the time he/she is warm and loving towards you”, and c) “How close do you feel to him/her?” All items were measured in a Likert-type scale (1 = Strongly agree to 5 = Strongly disagree). Items were reversed coded so higher values indicated greater perceived parental emotional support. First, maternal and paternal emotional support scales were created by the arithmetic mean of these three items. Following, parental emotional support was calculated based on the arithmetic mean of the maternal and paternal emotional support scales. In order to reduce the amount of missing data, if the participant had information for only one of the parents, this mean was used as a measure of parental support (Needham, 2008). Among females, N = 270 (27.5%) had information on mother only, N = 34 (3.5%) had information on

father only, and $N = 442$ (45.1%) had complete data for both parents, and $N = 235$ (23.9%) had missing data on both parents. Among males, $N = 96$ (28.6%) had information on mother only, $N = 8$ (2.4%) had information on father only, and $N = 150$ (44.6%) had complete data for both parents, and $N = 82$ (24.4%) had missing data on both parents. Among females, internal consistency for perceived emotional support from mother was $\alpha = 0.92$ and perceived emotional support from father was $\alpha = 0.93$. Among males, perceived emotional support from mother was $\alpha = 0.86$ and perceived emotional support from father was $\alpha = 0.93$.

Perceived parental financial support. Similarly to perceived parental emotional support, perceived parental financial support at Wave III was assessed for residential and non-residential mothers and fathers. Participants were asked whether they were given or paid anything significant by their parents in the past 12 months (1 = Yes, 0 = No). Response options for mother and father financial support were combined into one measure of parental financial support. Response option were recoded as 1 = Yes, if participants reported financial support from one or both parents, and 0 = No, if participants reported no financial support from both parents. Among females, $N = 270$ (27.5%) had information on mother only, $N = 34$ (3.5%) had information on father only, and $N = 442$ (45.1%) had complete data for both parents, and $N = 235$ (23.9%) had missing data on both parents. Among males, $N = 96$ (28.6%) had information on mother only, $N = 8$ (2.4%) had information on father only, and $N = 150$ (44.6%) had complete data for both parents, and $N = 82$ (24.4%) had missing data on both parents. Seventy percent of the female sample received parental financial support, and 63.5% of the male sample.

Adult identity profile. Using items from Wave III and informed by Benson and Elder (2011), we reproduced four adult identity profiles based on the combination of high/low ‘subjective age’ and ‘psychosocial maturity’. The indicators of subjective age included: subjective age (“How old do you feel compared to others your age”, 0 = Younger all of the time, 4 = Older all of the time), acquisition pace of social maturity (“In terms of social maturity, would you say you grew up faster, slower, or at about the same rate as other people your age?”, 1 = Slower, 3 = Faster), acquisition pace of adult responsibilities (“In terms of taking on adult responsibilities, would you say you grew up faster, slower, or at about the same rate?”, 1 = Slower, 3 = Faster), and perceived adult status (“How often do you think of yourself as an adult”, 0 = Never, 4 = All the time). Indicators psychosocial maturity included participants’ rate on how independent, confident, and considerate they are (1 = Not at all to 4 = Very). To reproduce the four identity profiles, first, we used z-scores to standardize all the seven indicators. Second, we used K-means clustering, a statistical method that assigns the scores on the seven standardized items into four clusters, which make up the adult identity profiles. The distribution among females is as follows: 25.1% pseudo-adult (old subjective age, low psychosocial maturity), 13.1% anticipatory (young subjective age, high psychosocial maturity), 47.5% early adults (old subjective age, high psychosocial maturity), and 14.2% late adult profile (young subjective age, low psychosocial maturity). Among males 31.5% were classified as pseudo-adult, 16.7% as anticipatory, 41.3% as early adults, and 10.5% as late adult profile.

Dependent Variables

All measures were selected from Wave IV and used as continuous variables.

Educational attainment was based on the self-report of highest education achieved. Response options included: 1) 8th grade or less, 2) some high school, 3) high school graduate, 4) some vocational/technical training (after high school), 5) completed vocational/technical training (after high school), 6) some college, 7) completed college (bachelor's degree), 8) some graduate school, 9) completed a master's degree, 10) some graduate training beyond a master's degree, 11) completed a doctoral degree, 12) some post baccalaureate professional education (e.g., law school, med school, nurse), 13) completed post baccalaureate professional education (e.g., law school, med school, nurse). Among females, $M = 4.40$, $SE = 0.09$, range = 1 – 9. Among males, $M = 3.98$, $SE = 0.16$, range = 1 – 9.

Income. At Wave IV participants reported on personal earnings before taxes in the previous year. This is a continuous variable with possible range 0 – \$ 999,999. For females, mean = \$18,312 $SE = \$947$, range = 0 – 450,000. For males, mean = \$33,382, $SE = \$2,187$, range \$0 – 165,000. Due to high skewness, this variable was standardized.

Subjective socioeconomic status. Continuous variable (range 0 – 10) measured by participants' responses to the following vignette: "Think of this ladder as representing where people stand in the United States. At the top of the ladder (step 10) are the people who have the most money and education, and the most respected jobs. At the bottom of the ladder (step 1) are the people who have the least money and education, and the least respected jobs or no job. Where would you place yourself on this ladder? Pick the number for the step that shows where you think you stand at this time in your life, relative to other people in the United States." Among teen mothers, mean = 4.42, $SE = 0.08$, range 1 – 10. Among teen fathers, mean = 4.38, $SE = 0.12$, range 1 – 10,

Variable Preparation

All variables included in this study were examined for: a) percentage of missing data, b) frequency distribution, c) normal distribution, and d) outliers. Based on the results of the variable preparation procedures and guidelines from the literature, decisions were made regarding collapsing categories for categorical variables and cut-off points for continuous variables. Finally, to assess internal consistency of the scales among the population of teen parents, Cronbach's Alpha was obtained for the two scales included in the study (school connectedness and perceived parental emotional support).

Missing Data

Multiple imputation (MI) was used for handling missing values (Graham, 2009). Multiple imputation was conducted in Stata/MP 14.0 using Multiple Imputation by Chained Equations (MICE) (White et al., 2011) with theoretically sound independent variables for estimating the missing values. As some authors recommend (Graham, 2009; White et al., 2011), we included in the imputation model covariates and outcome variables from the analysis model. Regression analysis was used to generate 40 imputed datasets in order to maximize statistical power and then datasets were combined using standard combining procedures (Graham et al., 2007). We also used augmentation to address perfect prediction when imputing categorical data. For continuous, non-normal data, we used Predictive Mean Matching (PMM), which is an ad hoc technique that produces imputed values matching the distribution of the observed values. PMM requires defining how many observations are considered as controls (knn). We set $knn = 10$, as researchers suggest that this is the minimum value for datasets with N larger than 10,000

(White et al., 2011). The use of MI has shown to improve statistical power and reduce bias (Graham, 2009).

Attrition

Attrition can be a problem, especially when individuals are assessed over long follow-up periods. Comparing teenage mothers who reported a live birth before age 20 in Waves I and II and who did not remain in the study for the subsequent waves ($N = 109$) to the teenage mothers included in the study ($N = 981$), we found that those lost to follow-up were more likely to come from disadvantaged backgrounds. In Wave I, teen mothers not included in the analysis were older (mean age 17.20 vs. 15.69, $p < .001$), had parents with lower household income (\$23,885 vs. \$30,627, $p = .006$) and educational attainment (46.9% vs. 28.0% did not complete high school, $p < .001$), and reported a greater proportion of grade retention (40.9% vs. 26.7%). No statistically significant differences were found in parental involvement (mean 5.33 vs. 5.63, $p = .461$) and school connectedness (mean 3.40 vs. 3.54, $p = .236$). Attrition analysis in the teenage fathers' analytical sample was not possible, as males were asked about fathering a child only during Waves III and IV; therefore, those who provided birth information necessarily remained in the study until later waves. Despite limitations on the attrition analysis in the male analytical sample, inaccuracies in population estimates due to differential attrition are not anticipated when including sampling weights in the analysis. For example, in an examination of differential attrition in Wave IV, Harris (2013) reported that, similarly to previous waves, females, Whites, and native-born participants had higher response rates. However, the author concluded that the non-response bias in Wave IV is small and, when

using the final sampling weights to calculate population estimates, the sample adequately represents the original population included in Wave I (Harris, 2013).

Power Analysis and Sample Size Considerations

To obtain appropriate power, an adequate sample size is necessary. Given that the number of participants is already pre-determined in this study, a retrospective power analysis was conducted for the subsample of teen mothers and teen fathers, separately. Based on previous similar studies, effect sizes ranged from 0.22 – 0.80, for a sample of teen mothers and fathers combined (Mollborn, 2010), and from 0.25 – 0.85, for samples of teen mothers alone (Oxford et al., 2010; Way & Leadbeater, 1999). Effect size was based on a conservative value of 0.20. Among teen mothers, a sample size of $N = 981$, level of 0.05, and 15 predictors, generated a power of 1.0. When accounting for interaction effects, a power of 0.99 was obtained. Among teen fathers, similar analyses with a sample size of $N = 336$ resulted in a power of 0.99. A power of 0.57 was obtained when accounting for interaction effects. As a power less than 0.80 may be inadequate to protect against Type II error, results from interactions in the male sample will be taken with caution.

Data Analysis Plan

Following guidelines in the Add Health restricted data contract, all statistical analysis were conducted at the Maryland Population Research Center at the University of Maryland, College Park. Data was analyzed using Stata/MP 14.0. The first step in data analysis was to assess whether any of the assumptions for running regression analysis were being violated. Continuous variables were checked for normal distribution and the need for adjusting their values. Adequate fit of linear regression models was made with

the use of scatterplots. To complement the visual screening for outliers and influential cases, we used values of standardized residuals (>3) and Cook's distance (>1). Particular attention was given to multicollinearity among independent variables, including controls and moderators. Collinearity was assessed with correlation matrices. When statistically significant correlation between two variables was identified, decisions on what controls to keep in each model was made based on three criteria: (1) statistical association of the measure with the dependent variable, (2) statistical association of the measure with the independent variable, and (3) importance of the measure to the model based on theory and previous research.

Analyses were conducted with a design-based approach, which takes into consideration the complex survey structure design and incorporates into the statistical analysis weight, strata, and cluster. All analyses conducted, including proportions and means for descriptive statistics, incorporated a design-based approach.

Weights. Wave IV sampling weights were selected based on the “Guidelines for Analyzing Add Health Data” (Chen & Chantala, 2014). According to Chen and Chantala (2014), a cross-sectional weight is the appropriate choice when the outcome of interest is from one wave and the predictors are from the previous wave. The correct choice is the cross-section weight of the wave from which the outcomes are selected. In this study, weights are of particular importance, as more affluent Blacks were oversampled (Chantala & Tabor, 2010). Failure to include sampling weights in the analysis leads to incorrect point estimates. Prior to conducting any statistical analysis, we deleted all the variables with missing sampling weight from the dataset, keeping $N = 14,800$ observations (Chen & Chantala, 2014).

Strata. Refers to the region of the country from which schools were recruited into the study (Northeast, Midwest, South, and West). As the Add Health sampling structure did not incorporate a stratification variable prior to school recruitment, a post-stratification variable was created to adjust for the unequal probability of schools from different regions being selected into the study (Chen & Chantala, 2014). Not taking into account stratification can lead to inaccurate estimates of variances, standard errors, and confidence intervals.

Cluster. Reflects the sampling units, which are middle and high school in the U.S. Failure to include clustering leads to inaccurate estimates of variances, standard errors, and confidence intervals (Chantala & Tabor, 2010).

Subpopulation option was included across all statistical analysis. Chen and Chantala (2014) highlight the importance of including a subpopulation option when analyzing a subgroup of respondents. If the subpopulation option is not included, the standard errors of the estimates will be inaccurate. A dummy variable was created representing the subgroup that belongs to teen mothers versus all others. This variable was included in the subpopulation command in Stata/MP 14.0 when running the statistical models for teen mothers. Similarly, a dummy variable was created representing teen fathers versus all others and was used in the statistical model with teen fathers.

Analysis plan for RQ1: Does family support provided in the transition to adulthood predict socioeconomic attainment among teen mothers and among teen fathers in their adulthood and does this association vary by race?

For this research question, educational attainment, income and subjective attainment in adulthood were predicted based on perceived parental emotional support

and perceived parental financial support. In addition, the relationship between each of the independent and dependent variables was tested to investigate whether they changed by race. These relationships were examined separately for teen mothers and teen fathers.

Figure A1 depicts the analytical model for research question 1.

The analysis comprised three steps. First, bivariate linear regression models were used to identify the independent association between predictors (controls, perceived parental emotional support, and perceived parental financial support) and each outcome. In the second step, multivariate linear regression models were used to investigate the associations between perceived parental emotional support and perceived parental financial support and each outcome, controlling for background characteristics. In the third step, interaction terms were added to the model to test race as a moderator. These analyses were restricted to 859 teenage mothers and 278 teenage fathers, thereby excluding those of other races. Statistical significance was set at $p < 0.05$.

Results from analysis examining research question 1 can be found in Appendix E.

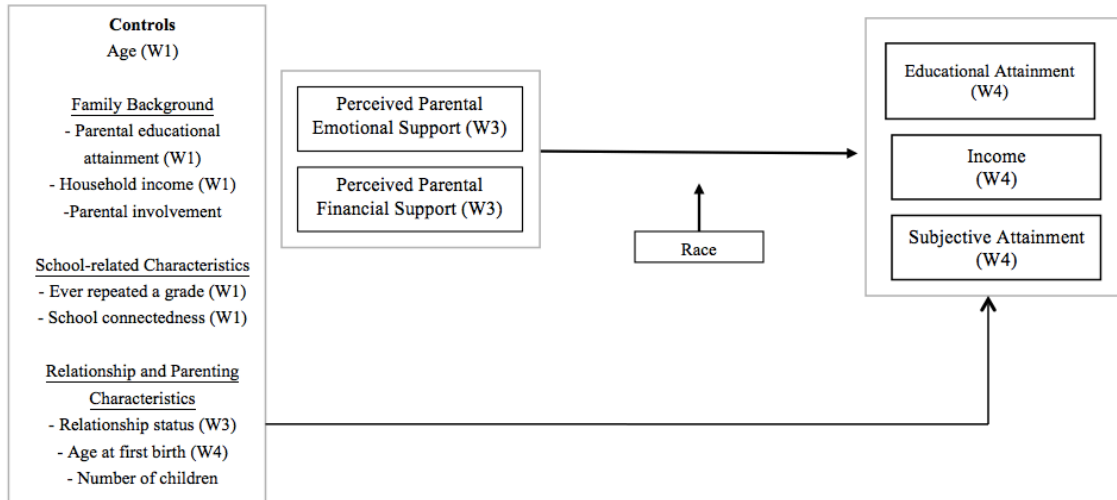


Figure A1. Analytical Model for Research Question 1: Perceived Parental Support as Predictor of Socioeconomic Attainment in Adulthood Among Teen Mothers and Teen Fathers and Moderation Effect.

Analysis plan for RQ2. Does subjective age affect socioeconomic attainment in adulthood among teen mothers and teen fathers and does this relationship vary by psychosocial maturity levels?

This research question explored the role of subjective age in predicting educational attainment, income, and subjective attainment in adulthood, and whether these relationships vary by the levels of psychosocial maturity among teen mothers and teen fathers. To investigate this research question, we created a composite variable named “Adult Identity Profile” based on high/low levels of subjective age and psychosocial maturity (see full description of variable in “Measures” section). Figure A2 shows the analytical model for Research Question 2.

As with the analysis plan for Research Question 1, three steps comprised the analysis. First, we used linear regression to investigate binary associations between independent (i.e., adult identity profile) and each outcome variable. Following,

multivariate linear regression models were used to test the association between adult identity profile and each outcome, controlling for the background characteristics. These analyses were conducted separately for males and females and included participants from all races. Statistical significance was set at $p < .05$.

See Chapter 4 (Study 2) for results from analysis examining research question 2 among females and Appendix F for results among males.

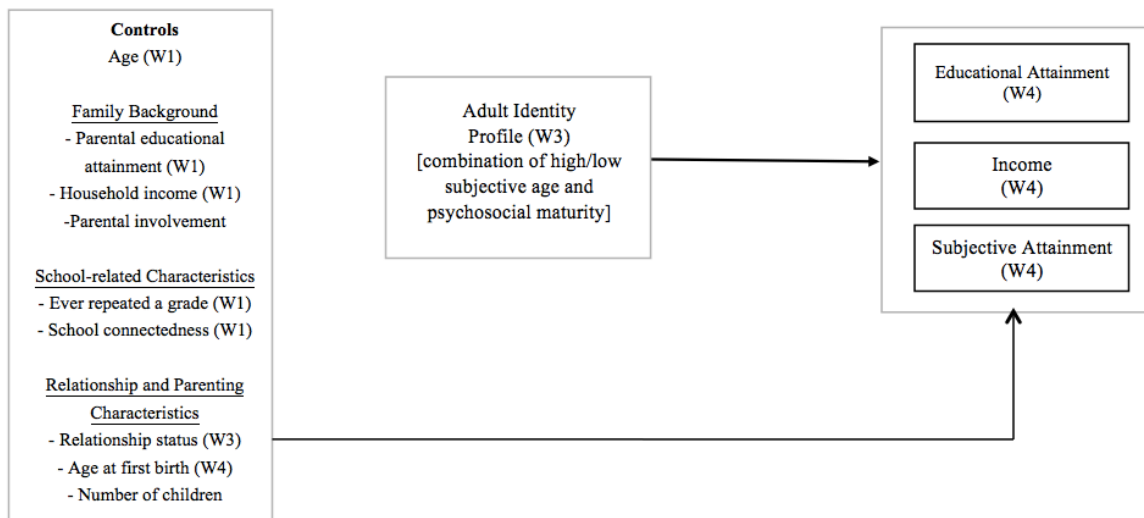


Figure A2. Analytical Model for Research Question 2: Adult Identity Profile (combination of high/low subjective age and psychosocial maturity) as Predictor of Socioeconomic Attainment in Adulthood Among Teen Mothers and Teen Fathers.

Protection of Human Subjects

The University of Maryland Institutional Review Board (IRB) approved this study. See Appendix B for exempt letter.

Appendix B: IRB Exempt Letter



1204 Marie Mount Hall
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DATE: October 26, 2015

TO: Luciana Assini, MS
FROM: University of Maryland College Park (UMCP) IRB

PROJECT TITLE: [667063-2] Impact of adolescent childbearing on the future life of disadvantaged urban youth: exploring pathways to positive outcomes

SUBMISSION TYPE: Amendment/Modification

ACTION: DETERMINATION OF EXEMPT STATUS
DECISION DATE: October 26, 2015

REVIEW CATEGORY: Exemption category #4

Thank you for your submission of Amendment/Modification materials for this project. The University of Maryland College Park (UMCP) IRB has determined this project is EXEMPT FROM IRB REVIEW according to federal regulations.

We will retain a copy of this correspondence within our records.

If you have any questions, please contact the IRB Office at 301-405-4212 or irb@umd.edu. Please include your project title and reference number in all correspondence with this committee.

This letter has been electronically signed in accordance with all applicable regulations, and a copy is retained within University of Maryland College Park (UMCP) IRB's records.

Appendix C: Descriptive Statistics of Measures

Table C1. Descriptive Statistics of Measures by Race, Teen Mothers (N=981).

	Total (N=981)	White (N=546)	Black (N=313)	Other (N=122)
<i>Individual Characteristics</i>				
Age (W1), <i>M(SE)</i>	15.69 (0.15)	15.72 (0.16)	15.82 (15.27)	15.25 (28.7)
Age (W3), <i>M(SE)</i>	22.05 (0.17)	22.04 (0.18)	22.21 (0.29)	21.75 (0.28)
Age (W4), <i>M(SE)</i>	28.57 (0.15)	28.59 (0.16)	28.69 (0.26)	28.20 (0.26)
<i>Family Background (W1)</i>				
Parent educational attainment (%)				
Less than high school	28.7	23.5	34.7	44.1
High school graduate/ Incomplete college	63.5	68.5	57.7	50.4
College graduate and beyond	7.7	8.1	7.6	5.6
Household income (W1), <i>M(SE)</i>	\$30,627 (\$1,269)	\$33,759 (\$1,571)	\$22,969 (\$1,833)	\$29,592 (\$4,405)
Parental involvement scale (W1), <i>M(SE)</i>	5.63 (0.12)	5.66 (0.12)	5.55 (0.23)	5.69 (0.35)
<i>School Related Characteristics (W1)</i>				
Ever repeated a grade, (%)	26.7	25.4	33.4	17.5
School connectedness scale, <i>M(SE)</i>	3.54 (0.04)	3.59 (0.04)	3.35 (0.09)	3.70 (0.91)
<i>Relationship and Parenting Characteristics</i>				
Marital status (W3), %				
Never married/cohabited	14.1	8.2	27.8	14.8
Ever married	42.9	49.5	25.2	47.8
Ever cohabited	43.0	42.3	47.0	37.3
Age at first birth (W3/W4), %				
<18	35.9	32.6	38.8	47.8
18 – 19	64.1	67.4	61.2	52.2
Number of children (W4), <i>M(SE)</i>	2.31 (0.04)	2.26 (0.5)	2.44 (0.08)	2.31 (0.17)
<i>Parental Support (W3), %</i>				
Perceived parental emotional support	4.30 (0.03)	4.25 (0.04)	4.38 (0.06)	4.32 (0.10)
Reports parental financial support	68.0	66.5	69.9	76.1
<i>Adult Identity Profile (W3), %</i>				
Pseudo-adult	25.1	29.7	13.7	25.6
Anticipatory	13.1	8.9	24.3	9.2
Early adult	47.5	45.9	53.3	45.4
Late	14.2	15.4	8.5	19.7
<i>Socioeconomic Attainment (W4), <i>M(SE)</i></i>				
Educational attainment	4.40 (0.09)	4.39 (0.11)	4.53 (0.19)	4.19 (0.25)
Income	\$18,312 (\$947)	\$18,410 (\$1,326)	\$16,098 (\$1,294)	\$23,223 (\$2,190)
Subjective attainment	4.42 (0.08)	4.35 (0.10)	4.57 (0.14)	4.46 (0.17)

*Results are weighed and adjusted for cluster and strata.

†p<.10; *p<.05; **p<.01; ***p<.001.

Table C2. Descriptive Statistics of Measures by Race, Teen Fathers (N=336).

	Total (N=336)	White (N=187)	Black (N=91)	Other (N=58)
<i>Individual Characteristics</i>				
Age (W1), <i>M(SE)</i>	15.67 (0.20)	15.79 (0.21)	15.42 (0.37)	15.62 (0.44)
Age (W3), <i>M(SE)</i>	22.16 (0.20)	22.24 (0.23)	21.95 (0.36)	22.07 (0.45)
Age (W4), <i>M(SE)</i>	28.62 (0.20)	28.73 (0.22)	28.39 (0.37)	28.56 (0.42)
<i>Family Background (W1)</i>				
Parent educational attainment (%)				
Less than high school	30.3	28.4	24.6	46.9
High school graduate/ Incomplete college	62.2	64.3	64.9	49.4
College graduate and beyond	7.5	7.3	10.4	3.6
Household income (W1), <i>M(SE)</i>	\$29,534	\$31,827	\$22,823	\$29,936
	\$ 2,297	(\$2,371)	(\$3,200)	(\$8,263)
Parental involvement scale (W1), <i>M(SE)</i>	5.17 (0.20)	5.08 (0.27)	5.62 (0.40)	4.85 (0.39)
<i>School Related Characteristics (W1)</i>				
Ever repeated a grade, (%)	38.5	36.2	37.0	49.9
School connectedness scale, <i>M(SE)</i>	3.61 (0.05)	3.61 (0.07)	3.67 (0.09)	3.48 (0.16)
<i>Relationship and Parenting Characteristics</i>				
Marital status (W3),%				
Never married/cohabited	14.5	14.2	21.6	4.5
Ever married	41.1	48.9	23.3	37.5
Ever cohabited	44.4	36.8	55.0	57.9
Age fathered first child (W3/W4), %				
<18	21.7	23.6	29.3	28.3
18 – 19	78.3	76.3	70.7	71.7
Number of children (W4), <i>M(SE)</i>	2.13 (0.09)	2.12 (0.11)	2.19 (0.22)	2.14 (0.29)
<i>Parental Support (W3)</i>				
Perceived parental emotional support, <i>M(SE)</i>	4.38 (0.05)	4.36 (0.06)	4.52 (0.11)	4.26 (0.13)
Reports parental financial support, %	64.6	61.4	76.2	59.3
<i>Adult Identity Profile (W3), %</i>				
Pseudo-adult	31.5	35.5	26.4	23.5
Anticipatory	16.7	14.9	17.9	21.8
Early adult	41.3	40.1	43.9	41.9
Late	10.5	9.4	11.7	12.7
<i>Socioeconomic Attainment (W4), <i>M(SE)</i></i>				
Educational attainment	3.98 (0.16)	4.17 (0.18)	3.58 (0.38)	3.85 (0.35)
Income	\$33,382	\$40,224	\$15,613	\$31,447
	\$2,187	\$2,630	\$1,813	\$5,125
Subjective attainment	4.38 (0.12)	4.57 (0.15)	3.86 (0.27)	4.43 (0.21)

*Results are weighed and adjusted for cluster and strata. Statistical significant reflects comparison between White and Black teenage mothers.

†p<.10; *p<.05; **p<.01; ***p<.001.

Table C3. Descriptive Statistics of Measures by Age at Birth, Teen Mothers and Teen Fathers.

	Teen Mothers N=981		Teen Fathers N=336	
	<18 N=629	18-19 N=352	<18 N=73	18-19 N=263
<i>Individual Characteristics</i>				
Age (W1), <i>M(SE)</i>	15.45 (0.21)	15.83 (0.14)	15.39 (0.29)	15.77 (0.21)
Age (W3), <i>M(SE)</i>	21.80 (0.24)	22.19 (0.15)	21.82 (0.32)	22.26 (0.22)
Age (W4), <i>M(SE)</i>	28.36 (0.20)	28.69 (0.14)	28.37 (0.28)	28.71 (0.22)
Race (W1), %				
White	57.3	28.9	56.9	62.6
Black	14.3	25.0	27.1	22.6
Other	14.3	8.8	16.8	14.8
<i>Family Background (W1)</i>				
Parent educational attainment (%)				
Less than high school	36.7	24.1	32.6	29.6
High school graduate/ Incomplete college	57.7	66.9	61.9	62.3
College graduate and beyond	5.6	8.9	5.5	8.1
Household income (W1), <i>M(SE)</i>	\$29,078 (\$2,072)	\$31,514 (\$1,632)	\$31,229 \$4,819	\$28,937 \$2,339
Parental involvement scale (W1), <i>M(SE)</i>	5.68 (0.17)	5.61 (0.15)	5.16 (0.34)	5.18 (0.26)
<i>School Related Characteristics (W1)</i>				
Ever repeated a grade, (%)	28.1	25.9	52.4	33.7
School connectedness scale, <i>M(SE)</i>	3.54 (0.07)	3.54 (0.04)	3.69 (0.11)	3.57 (0.06)
<i>Relationship and Parenting Characteristics</i>				
Marital status (W3), %				
Never married/cohabited	14.6	13.7	12.0	15.3
Ever married	39.1	45.1	32.9	43.9
Ever cohabited	46.3	41.2	55.0	40.7
Number of children (W4), <i>M(SE)</i>	2.41 (0.08)	2.26 (0.05)	2.18 (0.21)	2.12 (0.10)
<i>Parental Support (W3)</i>				
Perceived parental emotional support, <i>M(SE)</i>	4.26 (0.06)	4.31 (0.04)	4.33 (0.14)	4.40 (0.06)
Parental financial support, %	65.9	69.9	74.2	61.3
<i>Adult Identity Profile (W3), %</i>				
Pseudo-adult	24.0	25.6	24.8	33.8
Anticipatory	9.8	14.8	17.6	16.4
Early adult	49.8	46.7	41.1	41.3
Late	16.4	12.8	16.3	8.4
<i>Socioeconomic Attainment (W4), <i>M(SE)</i></i>				
Educational Attainment	4.18 (0.19)	4.53 (0.09)	4.05 (0.35)	3.95 (0.15)
Income	\$17,395 \$1,075	\$18,827 \$1,290	\$26,587 \$3,401	\$35,405 \$2,287
Subjective attainment	4.37 (0.14)	4.45 (0.09)	3.97 (0.25)	4.53 (0.13)

*Results are weighed and adjusted for cluster and strata.

†p<.10; *p<.05; **p<.01; ***p<.001.

Appendix D: Associations Between Demographic Characteristics and Independent Variables

Table D1. Unadjusted Associations Between Control Variables (Waves 1 and 3) and Independent Variables (Wave 3), Teen Mothers (N=981).

	Perceived Parental Support		Pseudo-Adult	Adult Identity ^a	
	Emotional Support <i>B(SE)</i>	Financial Support OR [95%CI]		Anticipatory OR [95%CI]	Late Adult OR [95%CI]
Age (W1)	0.01 (0.02)	0.92 [0.81, 1.03]	0.95 [0.82, 1.11]	1.10 [0.92, 1.32]	0.94 [0.78, 1.13]
Race/Ethnicity (W1)					
White (Ref.)					
African American/Black	0.13 (0.07) [†]	1.18 [0.66, 2.09]	0.40 [0.23, 0.70]**	2.35 [1.19, 4.59]**	0.47 [0.24, 0.94]*
Other	0.05 (0.11)	1.58 [0.78, 3.26]	0.68 [0.29, 1.57]	0.73 [0.23, 2.32]	0.72 [0.29, 1.78]
Parent educational attainment (W1)					
Less than HS (Ref.)					
HS graduate/Incomplete college	-0.03 (0.08)	1.40 [0.89, 2.19]	1.19 [0.66, 2.14]	0.67 [0.34, 1.28]	1.07 [0.53, 2.16]
College graduate and beyond	0.09 (0.13)	2.98 [1.17, 7.57]*	1.30 [0.48, 3.51]	0.99 [0.33, 2.97]	1.31 [0.40, 4.27]
Household income, log (W1)	0.01 (0.06)	1.72 [0.91, 3.23] [†]	0.99 [0.56, 1.75]	0.78 [0.30, 2.02]	1.21 [0.67, 2.16]
Parental involvement (W1)	0.03(0.10)***	1.06 [0.99, 1.14] [†]	1.04 [0.96, 1.13]	0.97 [0.88, 1.08]	1.02 [0.92, 1.13]
Ever repeated a grade (W1)	-0.07 (0.08)	1.18 [0.73, 1.88]	0.63 [0.36, 1.25]	1.22 [0.65, 2.32]	0.64 [0.28, 1.46]
School connectedness scale (W1)	0.13 (0.04)**	1.20 [0.89, 1.62]	1.50 [0.79, 1.39]	1.17 [0.82, 1.66]	1.06 [0.74, 1.52]
Marital status (W3)					
Never married/cohabited (Ref.)					
Ever married	0.05 (0.09)	0.42 [0.21, 0.84]*	2.04 [0.94, 4.39] [†]	0.39 [0.17, 0.92]*	0.73 [0.30, 1.74]
Ever cohabited	-0.03 (0.10)	0.62 [0.29, 1.31]	1.23 [0.62, 2.23]	0.63 [0.31, 1.27]	0.86 [0.36, 2.05]

Results are weighted and adjusted for cluster and strata. ^a Reference category is 'Early Adult'.

[†]p<.10; *p<.05; **p<.01; ***p<.001.

Table D2. Unadjusted Associations Between Control Variables (Waves 1 and 3) and Independent Variables (Wave 3), Teen Fathers (N=336).

	Perceived Parental Support		Pseudo-Adult	Adult Identity ^a	
	Emotional Support	Financial Support		Anticipatory	Late Adult
	<i>B(SE)</i>	OR [95%CI]	OR [95%CI]	OR [95%CI]	OR [95%CI]
Age (W1)	0.03 (0.03)	0.94 [0.78, 1.14]	1.00 [0.81, 1.24]	0.76 [0.59, 0.99]	0.89 [0.65, 1.22]
Race/Ethnicity (W1)					
White (Ref.)					
African American/Black	0.16 (0.12)	2.04 [0.79, 5.31]	0.67 [0.24, 1.87]	1.09 [0.35, 3.36]	1.10 [0.24, 5.10]
Other	-0.10 (0.14)	0.92 [0.36, 2.33]	0.63 [0.25, 1.56]	1.40 [0.40, 4.89]	1.28 [0.42, 3.97]
Parent educational attainment (W1)					
Less than HS (Ref.)					
HS graduate/Incomplete college	0.11 (0.12)	0.93 [0.43, 1.99]	1.21 [0.55, 2.66]	0.63 [0.23, 1.71]	0.51 [0.14, 1.90]
College graduate and beyond	0.02 (0.17)	1.62 [0.43, 6.18]	0.39 [0.07, 2.10]	0.67 [0.13, 3.62]	0.28 [0.03, 2.49]
Household income, log (W1)	-0.02 (0.08)	1.31 [0.67, 2.54]	1.02 [0.53, 2.04]	0.52 [0.14, 1.94]	0.65 [0.22, 1.97]
Parental involvement (W1)	0.02 (0.02)	1.06 [0.94, 1.19]	0.99 [0.86, 1.13]	0.96 [0.82, 1.11]	0.91 [0.75, 1.11]
Ever repeated a grade (W1)	0.01 (0.12)	1.69 [0.83, 3.43]	0.70 [0.34, 1.42]	0.77 [0.32, 1.81]	1.54 [0.51, 4.60]
School connectedness scale (W1)	0.11 (0.05)*	0.97 [0.63, 1.50]	0.75 [0.48, 1.19]	1.03 [0.58, 1.85]	0.99 [0.61, 1.59]
Marital status (W3)					
Never married/cohabited (Ref.)					
Ever married	-0.03 (0.13)	0.58 [0.22, 1.53]	1.60 [0.55, 4.69]	0.63 [0.18, 2.28]	1.84 [0.34, 10.16]
Ever cohabited	-0.16 (0.15)	0.99 [0.93, 5.74]	1.55 [0.49, 4.90]	0.82 [0.21, 3.29]	3.39 [0.60, 19.04]

Results are weighted and adjusted for cluster and strata. ^a Reference category is 'Early Adult'.

†p<.10; *p<.05; **p<.01; ***p<.001.

Appendix E: Perceived Parental Support Predicting Socioeconomic Outcomes and Race Interactions

Table E1. Linear Regression Models of Perceived Parental Support (Wave 3) Predicting Socioeconomic Outcomes (Wave 4) and Race Interactions, Teen Mothers (N=859).

	Education		Income		Subjective attainment	
	<i>B</i>	<i>SE</i>	<i>B</i>	<i>SE</i>	<i>B</i>	<i>SE</i>
Emotional support	0.01	0.15	-0.01	0.04	0.29	0.12*
Financial support	0.15	0.21	-0.03	0.07	0.11	0.21
Race						
White (Ref.)						
Black	0.15	0.19	0.22	0.16	-0.05	0.04
Emotional support*Race	-0.07	0.30	0.06	0.06	0.05	0.24
Financial support*Race	-0.03	0.47	0.14	0.11	-0.24	0.39

Results are weighted and adjusted for cluster and strata. Models are restricted to teen mothers who self-identified as 'White' or 'Black'.

*p<.05.

Table E2. Linear Regression Models of Perceived Parental Support (Wave 3) Predicting Socioeconomic Outcomes (Wave 4) and Race Interactions, Teen Fathers (N=278).

	Education		Income		Subjective attainment	
	<i>B</i>	<i>SE</i>	<i>B</i>	<i>SE</i>	<i>B</i>	<i>SE</i>
Emotional support	0.09	0.29	-0.06	0.12	-0.13	0.27
Financial support	0.10	0.34	-0.09	0.12	-0.21	0.30
Race						
White (Ref.)						
Black	-0.59	0.43	-0.49	0.09***	-0.72	0.30*
Emotional support*Race	-0.36	0.79	0.06	0.18	-0.53	0.61
Financial support*Race	-0.84	0.97	-0.05	0.19	0.17	0.61

Results are weighted and adjusted for cluster and strata. Models are restricted to teen fathers who self-identified as 'White' or 'Black'.

*p<.05.

Table E3. Linear Regression Models of Perceived Parental Support (Wave 3) Predicting Socioeconomic Outcomes by Racial Groups, Teen Mothers.

	Education		Income		Subjective attainment	
	<i>B</i>	<i>SE</i>	<i>B</i>	<i>SE</i>	<i>B</i>	<i>SE</i>
Teen Mothers, White (N=546)						
Emotional support	0.02	0.16	-0.02	0.05	0.27	0.14*
Financial support	0.15	0.24	-0.07	0.09	0.04	0.25
Teen Mothers, Black (N=313)						
Emotional support	-0.05	0.28	0.04	0.04	0.05	0.28
Financial support	0.12	0.41	0.07	0.06	0.28	0.34

Results are weighted and adjusted for cluster and strata.

*p<.05

Table E4. Linear Regression Models of Perceived Parental Support (Wave 3) Predicting Socioeconomic Outcomes by Racial Groups, Teen Fathers.

	Education		Income		Subjective attainment	
	<i>B</i>	<i>SE</i>	<i>B</i>	<i>SE</i>	<i>B</i>	<i>SE</i>
Teen Fathers, White (N=187)						
Emotional support	0.23	0.27	-0.03	0.15	0.07	0.29
Financial support	0.36	0.36	-0.03	0.15	-0.15	0.32
Teen Fathers, Black (N=91)						
Emotional support	-0.14	0.74	0.04	0.09	-0.13	0.75
Financial support	-0.48	0.89	-0.04	0.11	0.01	0.58

Results are weighted and adjusted for cluster and strata.

Appendix F: Adult Identity Profiles Predicting Socioeconomic Outcomes, Teen Fathers

Table F1. Linear Regression Models of Adult Identity (Wave 3) Predicting Socioeconomic Outcomes (Wave 4), Teen Fathers (N=336).

	Education		Income		Subjective attainment	
	<i>B</i>	<i>SE</i>	<i>B</i>	<i>SE</i>	<i>B</i>	<i>SE</i>
Adult Identity Profile						
Pseudo-adult	0.04	0.39	0.03	0.15	0.26	0.28
Anticipatory	-0.54	0.43	-0.22	0.12 [†]	-0.02	0.35
Late	-0.66	0.45	-0.23	0.13 [†]	-0.82	0.48 [†]
Early adult (Ref.)						

Results are weighted and adjusted for cluster and strata.

[†]p<.10

Appendix G: Adult Identity Profiles

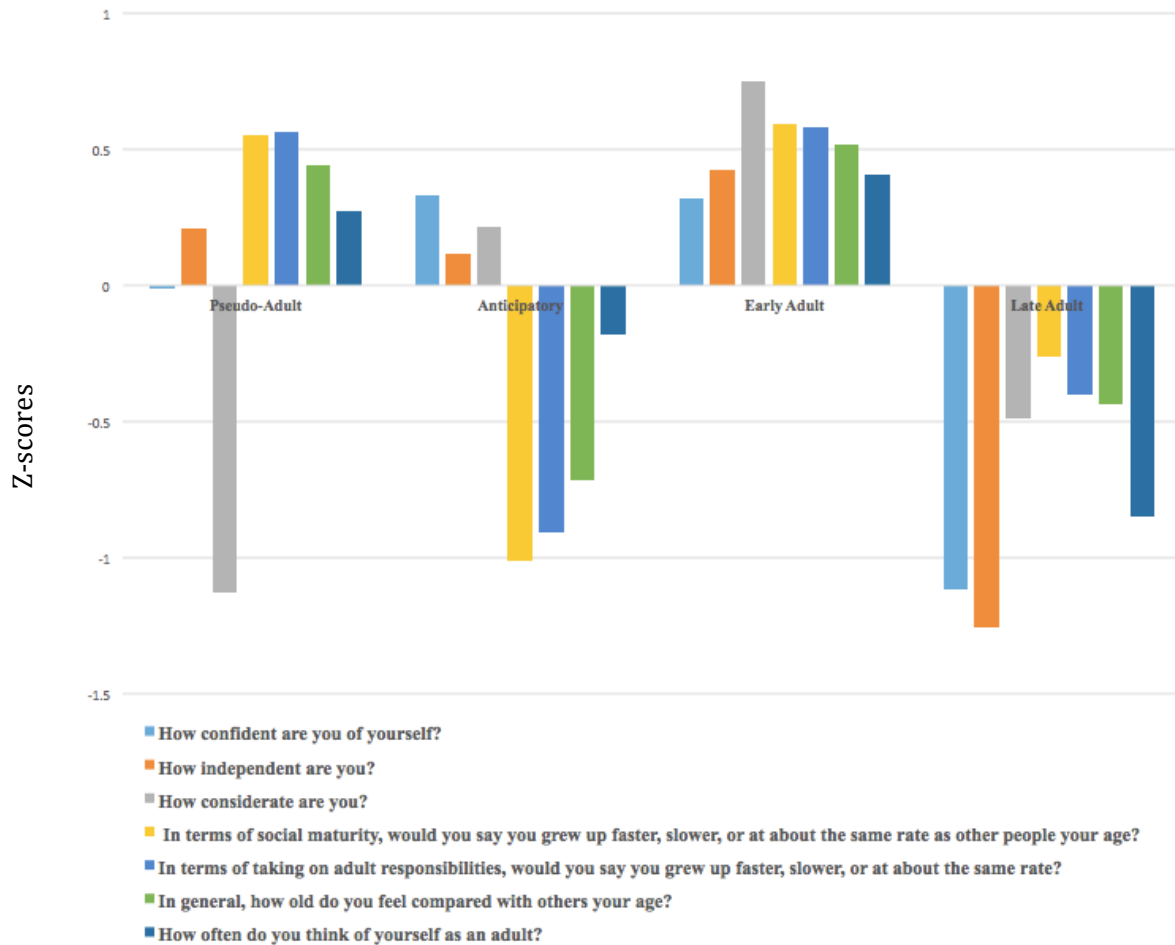


Figure G1. Adult Identity Profiles (k-means clustering).

Appendix H: Correlations Between Dependent Variables

Table G1. Correlations Between Dependent Variables (W4), Teen Mothers (N=981).

	Educational attainment	Income	Subjective attainment
Educational attainment	-		
Income	0.178***	-	
Subjective attainment	0.206***	0.155***	-

Results are weighted and adjusted for cluster and strata.

Non-imputed data is used in the analysis.

***p<.001

Table G2. Correlations Between Dependent Variables (W4), Teen Fathers (N=336).

	Educational attainment	Income	Subjective attainment
Educational attainment	-		
Income	0.158*	-	
Subjective attainment	0.180***	0.342***	-

Results are weighted and adjusted for cluster and strata.

Non-imputed data is used in the analysis.

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

Appendix I: Participants' Racial Profile Distribution

Table I1. Participants' Racial Profile Distribution.

	Teen Mothers			Teen Fathers		
	N=981			N=336		
	White N=546	Black N=313	Other N=122	White N=187	Black N=91	Other N=58
White	448	0	0	151	0	0
Black/African American	0	304	0	0	90	0
Asian	4	0	26	2	0	12
Native American	17	0	6	4	0	2
Hispanic	75	9	83	30	1	41
Other	2	0	7	0	0	3

Appendix J: List of Study's Variables by Wave of Data Collection

Table J1. Study's Variables by Wave, Add Health.

Wave I	Wave III	Wave IV
Age	Adult identity	Age at birth
Alcohol use	Age at birth	Educational attainment
Delinquency	Alcohol use	Ever arrested
Ethnicity	Marijuana use (past year)	Income
Ever repeated a grade	Marital status	Number of children
Household income ^a	Other drug use (past year)	Resides with child
Location	Perceived parental emotional support	Subjective attainment
Marijuana use (ever/never)	Perceived parental financial support	Work participation
Other drug use (ever/never)	Resides with child	
Parent educational attainment ^a	Work participation	
Parental involvement		
Public assistance ^a		
Race		
Risk behavior		
School connectedness		

^aParent report.

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