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The Antecedents and Consequences of Adolescent Fatherhood in Black Males

A dissertation submitted in partial satisfaction of the
requirements for the degree of Doctor of Philosophy
in Psychology

by

Olajide Noah Bamishigbin Jr.

2017

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ABSTRACT OF THE DISSERTATION

The Antecedents and Consequences of Adolescent Fatherhood in Black Males

by

Olajide Noah Bamishigbin Jr.

Doctor of Philosophy in Psychology

University of California, Los Angeles, 2017

Professor Annette Louise Stanton, Co-Chair

Professor Christine Dunkel Schetter, Co-Chair

Nearly 11 million adolescent fathers between the ages of 15 and 44 live in the United States. Adolescent fathers are stereotyped as reckless teenagers and uninvolved parents. However, little research has examined the veracity of these negative perceptions about adolescent fathers. The goals of the current two-study dissertation were to (a) systematically review the published peer-reviewed literature on the antecedents and consequences of adolescent fatherhood and (b) test hypothesized antecedents of adolescent fatherhood in a sample of Black males.

Results from the systematic review indicated that the adolescents at greater risk of becoming adolescent fathers (i.e., antecedents) are more likely to be Black or Latino and come from low socioeconomic status backgrounds as characterized by lower parental education and income. Adolescent fathers are also more likely to come from low socioeconomic status

neighborhoods, engage in delinquent behavior and substance use, have lower academic competence, and have peers who engage in deviant behaviors. With regard to consequences, findings demonstrated that the offspring of adolescent fathers are at greater risk for adverse birth outcomes and the children of adolescent fathers are at greater risk for psychological disorders.

Findings from Study 2 demonstrated that over and above other hypothesized individual antecedents, Black male adolescents who engaged in sexual intercourse prior to the age of 15 were three times more likely to become adolescent fathers than adolescents who waited until they were older than the age of 15. Adolescents with mothers who would be more disappointed if they completed college were also less likely to become adolescent fathers, over and above other familial antecedents (e.g., maternal educational attainment, maternal disapproval of sex). Univariate analyses also demonstrated that adolescents who engaged in more delinquent behavior and who had lower educational aspirations were more likely to become adolescent fathers.

Findings from these two studies contribute to our understanding of the adolescents most at-risk of becoming fathers as teens as well as the problems they face as young parents. These findings can guide future research on adolescent fathers and potentially the development of interventions to prevent adolescent fatherhood and to assist adolescents who do become fathers.

The dissertation of Olajide Noah Bamishigbin Jr. is approved.

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University of California, Los Angeles

2017

This dissertation is dedicated to those who are no longer with us, Kevin Meares, Jessica Palmer,
Kenneth White, Sewa Bamishigbin, and Sade Bamishigbin.

“Being a father has been, without a doubt, my greatest source of achievement, pride and
inspiration. Fatherhood has taught me about unconditional love, reinforced the importance of
giving back and taught me how to be a better person.”

Naveen Jain

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Curriculum Vitae

Education

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- 2013 **Bamishigbin, O.,** Dunkel Schetter, C., Guardino, C., Schaefer, P., Hobel, C., Shalowitz, M., Ramey, S., Thorpe, J., & Raju, T. Perceived stress, coping style, and depression in a multi-ethnic sample of fathers. Poster presentation at the meeting of the Paternal Involvement in Pregnancy Outcomes from Preconception to First Year of Life Meeting, National Institute of Child and Health Development, Potomac, MD.
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The Antecedents and Consequences of Adolescent Fatherhood in Black Males

The overarching aim of this two-study dissertation is to examine the antecedents and consequences of adolescent fatherhood. The first study is a systematic review of the published research on the antecedents and consequences of adolescent fatherhood and the second study is an empirical test of hypothesized antecedents of adolescent fatherhood among Black males. This general introduction will provide a justification for why adolescent fathers, and especially Black adolescent fathers, merit further investigation. This introduction will also describe a theoretical framework that guided the project and the psychosocial life course model which was developed to organize hypothesized precursors and outcomes of adolescent fatherhood.

Adolescent Fathers

The World Health Organization (WHO) defines “adolescence” as the period of human growth and development after childhood but before adulthood, from ages 10 to 19 (WHO, 2016). Adolescent fathers, also referred to as teenage fathers, are males who are 19 years old or younger when their female partners give birth to a baby. The precise number of adolescent fathers in the United States is difficult to approximate. One reason is that adolescent mothers are less likely to put fathers’ information on the birth certificate (Landry & Forrest, 1995). Landry and Forrest interviewed mothers who did not put the age of the father on the birth certificate and asked them the age of their child’s father. Results demonstrated that fathers whose ages were not on the birth certificate tended to be younger than fathers whose ages were recorded. Hence, when researchers use birth records in studies, adolescent fathers may be underrepresented. Another reason it is difficult to approximate the number of adolescent fathers is because they are less likely to affirm paternity than older fathers (Paschal, 2013; Weinman, Smith, & Buzi, 2002). In other words, they are also more likely to refuse to put their name on their child’s birth certificate. Despite

these concerns, one nationally representative study of men aged 15 - 44 years from the National Survey of Family Growth estimates that, between 2006 and 2010, there were nearly 11 million adolescent fathers in the United States (Martinez, Daniels, & Chandra, 2012).

Given that there are sufficient numbers of adolescent fathers in the United States to constitute a subgroup of the population, why would they merit study? First, adolescent fathers suffer from a negative reputation in the United States. According to Gottfried (2001), the adolescent males who become adolescent fathers are viewed either as “super studs” who engage in sexual activity with a lot of women to project a masculine image, or adolescents with low self-esteem who engage in sexual activity in a bid to prove their masculinity. As parents, adolescent fathers are perceived to be either “deadbeat dads” who deliberately deny paternity and refuse to financially support their children or “phantom fathers” who are not involved in their child’s lives because they do not care for the baby or their baby’s mother. These negative perceptions may be harmful to adolescent fathers, and research is needed to test the veracity of these claims.

Another reason that adolescent fathers are important to study is because some research suggests that adolescent fathers are less likely to be involved with their child than men who waited to have children (Fagot, Pears, Capaldi, Crosby, & Leve, 1998; Rhein et al., 1997). While these findings at first may support the perception that adolescent fathers are “phantom fathers,” it is important to note that the notion of a “phantom fathers” is based on a value judgment about why adolescent fathers are uninvolved. There may be other reasons why an adolescent father is less involved than an adult father. For example, Mollborn and Lovegrove (2011) suggest that the lower rates of child involvement among adolescent fathers may be due to lower rates of cohabitation with the baby. At the time of birth, only eight percent of adolescent fathers were married, 26% were cohabiting with their partners, and 56% were not living with their child.

These lower rates of cohabitation with their baby's mother may actually be the reason for the lower rates of involvement, not because they do not want to support their children or partner. However, these lower rates of cohabitation with may negatively affect the family unit. Considerable research suggests that not cohabiting with the baby's mother is related to more externalizing child behaviors (Schoppe, Mangelsdorf, & Frosch, 2001) and worse marital quality (Belsky & Hsieh, 1998; Schoppe-Sullivan, Mangelsdorf, Frosch, & Mchale, 2004). These low rates of marriage and cohabitation among adolescent fathers may place the children of these fathers in vulnerable family situations.

In sum, there are millions of adolescent fathers in the United States, and they are negatively stereotyped. While there may be differences in parenting between adolescent fathers and adult fathers, and while those difference may have implications for the family unit, adolescent fathers deserve to be studied without judgment. The current systematic review (Study 1) will examine whether perceptions about adolescent fathers are supported by the research.

Early Fatherhood in the Context of Adolescent Development

In order to better understand the adolescent males at risk for adolescent fatherhood, it is important to understand adolescent fatherhood in the context of normative adolescent development. According to the WHO (2016), adolescent development marks a critical transition in the lifespan at a pace second only to infancy. A large body of research documents normal adolescent developmental changes in physical, cognitive, emotional, and social domains. These developmental changes have important implications for the early entry into fatherhood.

Between the ages of 12 and 14, adolescent boys undergo rapid skeletal growth that typically will not end until the age of 20. The onset of puberty for boys involves the enlargement of the testes at age 11 or 12 and first ejaculation between the ages of 12 and 14. This first

ejaculation marks the beginning of sexual fertility for boys. Later in puberty, boys undergo changes in their body hair and changes in their voice (APA, 2002). With regard to cognitive development, adolescents undergo changes in their ability to think, reason, and understand. It is well-established that during adolescence, risk-taking and impulsivity increase (Romer, 2010). Neuroimaging research suggests that in adolescents, the orbital frontal cortex is more similar to a child's while accumbens activity is more similar to an adult's. This suggests that certain systems in the brain become disproportionately activated in adolescents, which has implications for engaging in risky behaviors such as sexual activity, alcohol use, and drug use (Galvan et al., 2006; Romer, 2010).

Santrock (2001) describes emotional development as when adolescents begin to gain a sense of their identity in the context of others and learn to manage and cope with stressors and emotions. This is a period where self-esteem is salient. Research demonstrates a drop in self-esteem, in both boys and girls, with the transition to junior high school (Wigfield, Eccles, Mac Iver, Reuman, & Midgley, 1991) and low self-esteem is related to more depressive symptoms (Orth, Robins, & Roberts, 2008). Elevated depressive symptoms in adolescence are related to risky sexual behaviors implicated in the entry to adolescent fatherhood such as an increased risk of condom non-use at last sexual intercourse (Shrier, Harris, Sternberg, & Beardslee, 2001) and earlier onset of sexual activity (Longmore, Manning, Giordano, & Rudolph, 2004). Among Black adolescent males, the relationship between depressive symptoms and inconsistent use of condoms has been found longitudinally as well (Brown et al., 2006).

Adolescents also undergo changes in their social relationships. One major change in the social development of adolescents regards peer influences. Research demonstrates how peer influences impact sexual behaviors and drug use. In a group of inner-city adolescents, Anderson

(1989) found that one predictor of adolescent fatherhood was peer admiration and peer approval. In addition, it is well-established that when adolescents have friends who engage in sexual activity and substance use, they are more likely to engage in these behaviors themselves (Biglan et al., 1990; Brook, Lukoff, & Whiteman, 1980; Glynn, 1981). These behaviors also have deleterious relationships with depressive symptoms. In a study of nearly 13,500 adolescents surveyed between seventh grade and 11th grade, Hallfors, Waller, Bauer, Ford, and Halpern (2005) found that engaging in sex, drinking, alcohol, and using drugs preceded an increased likelihood of depression.

These research findings clearly demonstrate that normal adolescent development has an impact on behaviors implicated in the early entry to fatherhood. When studying the precursors of adolescent fatherhood, researchers should ensure that factors related to adolescent development are taken into account. Another factor that should be taken into account when studying adolescent fatherhood is the race/ethnicity of the adolescent.

Black Adolescent Males and Adolescent Fatherhood

A large body of literature has found that Black males are more likely to become adolescent fathers than males of other racial/ethnic backgrounds (Hanson, Morrison, & Ginsburg, 1989; Marsiglio, 1987; Paschal, 2013; Stouthamer-Loeber, 1998; Thornberry, Smith, & Howard, 1997). In one nationally representative sample of males from the National Longitudinal Survey of Youth-1997 cohort, Scott, Steward-Streng, Manlove, and Moore (2012), found that Black males made up 29% of the adolescent fathers, disproportionate to their percentage in the general population. One reason Black males may be more likely to become adolescent fathers than males of other races/ethnicities is because they report less frequent condom use (Grunbaum et al., 2004) and earlier onset of sexual activity (Resnick et al., 1997).

These risky sexual behaviors are well-established predictors of becoming an adolescent father among men of all races/ethnicities (DiClemente et al., 1992; Pears, Pierce, Kim, Capaldi, & Owen, 2005; Sullivan, 1989). In sum, these findings demonstrate that Black adolescents have a greater chance of becoming adolescent fathers, and it may be due to their engagement in the risky sexual behaviors implicated in the early entry into fatherhood. Study 2 will examine hypothesized antecedents of adolescent fatherhood among a sample of Black males from the National Longitudinal Study of Adolescent to Adult Health (Add Health) study.

Theoretical Framework

This study will utilize and extend Parke's (1996) systems view to understand the precursors and outcomes of adolescent fatherhood. Parke suggests using a systems view of four different types of influences when exploring the determinants of father involvement. First, there are *individual influences* such as a father's attitudes about fatherhood, relationship with family of origin, timing of entry into parental role, and child gender. Second, there are *familial influences* such as the father-child relationship, the mother-child relationship, the husband-wife relationship, and the father-mother-child triad. Third, *extra-familial influences* include a father's relationship with his relatives, neighbors, and/or friends, as well as a father's work relationships, family relationships, and hospital and health-care delivery systems. Finally, there are *cultural influences* such as the childhood cultures of boys and girls, attitudes concerning father/mother gender roles, and ethnicity-related family values and beliefs.

One of Parke's individual influences, however, has direct implications for understanding the entry into and the experience of adolescent fatherhood. Within his systems view, Parke (1996) describes the examination of the timing of entry into parental role, an individual influence, as the developmental life course perspective (DLCP). The DLCP describes how a

father's age, lifestyle, and occupation are important determinants of his involvement. A strength of Parke's DLCP (1996) is that accounts for these facets of normative adolescent development. For example, if a researcher is designing a study on adolescent fathers using the systems view and the DLCP, in theory, the researcher should assess important developmental influences, such as their pubertal status, risk-taking behavior, self-esteem, and peer influences, on their involvement with the child. The current study will extend Parke's systems view by identifying and testing influences as predictors of age at entry into fatherhood (adolescent vs. adult father or not father). However, one limitation of this dissertation is that cultural influences will not be examined as they relate to adolescent fatherhood.

Psychosocial Life Course Model of Adolescent Fatherhood

Based upon Parke's model (1996), I have developed a psychosocial life course model of adolescent fatherhood. Figure 1 displays the model. The goals of the proposed model are to (a) explore how particular factors in adolescence are related to early entry into fatherhood, (b) explore how early entry into fatherhood is related to different outcomes related to the father himself and other members of the family unit. Antecedents are divided into individual influences, familial influences, and extra-familial influences and the consequences are categorized into individual outcomes, familial outcomes, and socioeconomic outcomes, based on Parke's systems view. It is important to note, however, that these antecedents and consequences reflect neither every antecedent nor every consequence of adolescent fatherhood. Rather, they represent the constructs examined in the current dissertation project.

A key assumption of this model is that adolescent fathers are having unplanned rather than planned pregnancies. Of course, this is not necessarily true of all adolescent fathers. Two limitations of the proposed model are that (a) it does not account for intentional fatherhood by

adolescent males and (b) it does not account for adolescent males who purposely choose not to use contraception, whether they want their partner to get pregnant or not. In comparison to adolescents who have unplanned pregnancies, there are likely different antecedents for adolescents who plan their pregnancies. However, adolescent fathers who plan the pregnancies of their children might still suffer from some of the adverse consequences proposed in the review as a function of their young age, especially as it relates to socioeconomic status. Future studies could compare adolescent fathers who plan pregnancies to adolescents who do not plan pregnancies to explore this limitation further.

Individual influences. The first individual antecedent category is *risky sexual behaviors* such as lack of contraceptive use, age of entry into sexual behavior, and frequency of joint occurrences of sex and drugs/alcohol. The second antecedent category is *attitudes and knowledge about sex and pregnancy* which includes, knowledge about sex. The third antecedent category is *mental health* such as depressive symptoms. The fourth antecedent category is *substance use* which includes tobacco, alcohol and drug use. The fifth category of antecedents is *delinquent behaviors* such as theft and vandalism. The sixth category is *academic competence* such as recent grades in academic courses at school and educational goals. The seventh antecedent category is *self-esteem* reflecting how good an adolescent feels about themselves and the eighth antecedent category is *aggressive and antisocial behaviors*.

Familial influences. The first familial influence is *parental SES* reflecting parental education, income, and occupational status and the second familial influence is *family characteristics* which represent parental involvement and parental attitudes toward sex.

Extra-familial influences. The first extra-familial influence is *peer associations* which describe an adolescent's relationships with peers and his peer's deviant behaviors such as

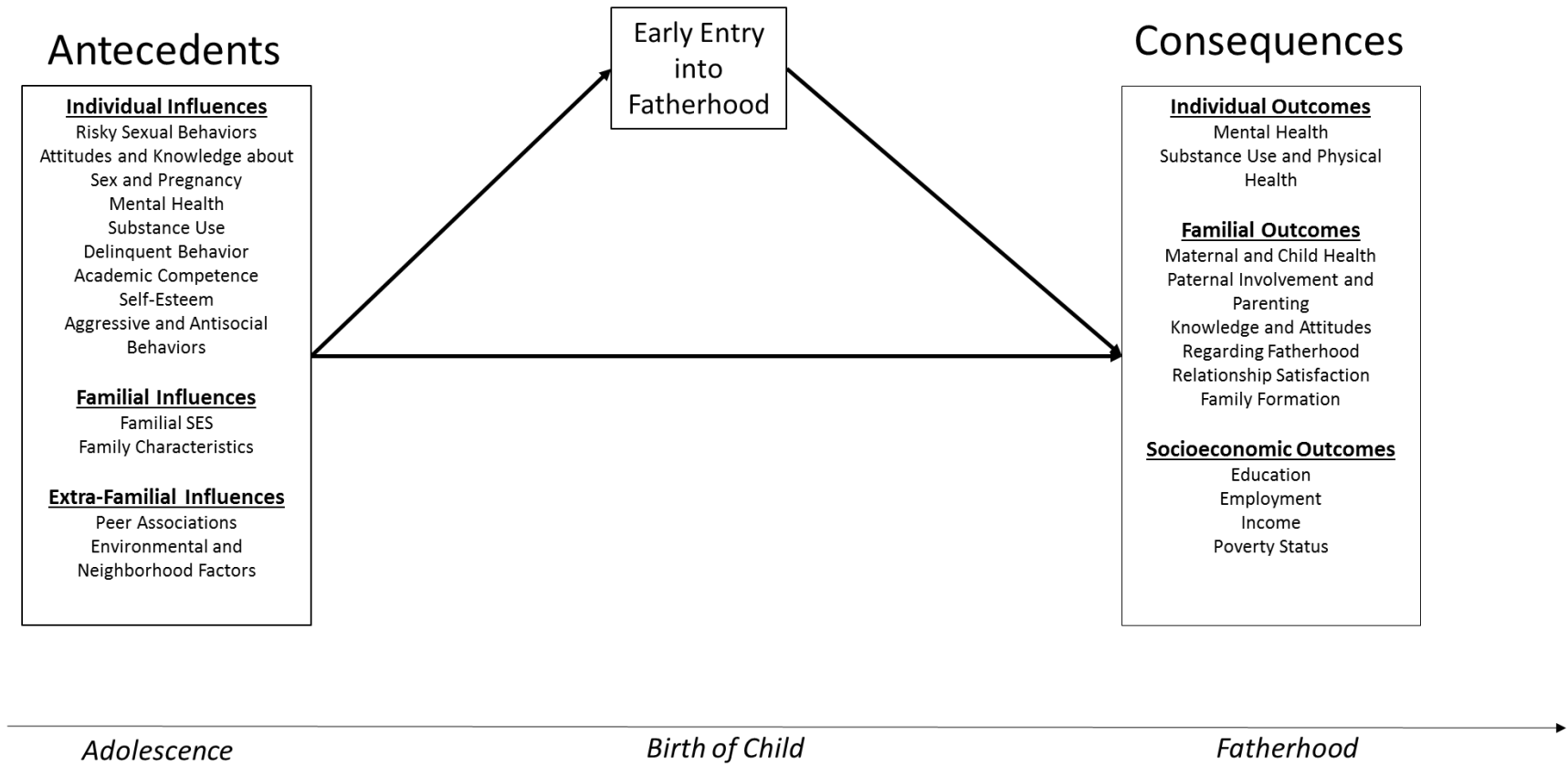
smoking, drinking, or engaging in risky sexual activity. The second extra-familial influence is *neighborhood and environmental factors* such as community arrest rate and percentage of households in poverty.

Individual, Familial, and Socioeconomic Outcomes. After the birth of the child, the model allows us to examine the associations between age at entry into fatherhood and specific outcomes. The first outcome category is *individual outcomes* which include the mental health, substance use, and physical health of the father himself. The second outcome category is *familial outcomes* such as involvement with the child and relationship quality between the father and mother. The final consequence category is *socioeconomic status* as measured by educational attainment and household income.

Summary and Goals

Adolescent fathers, and especially Black adolescent fathers are vulnerable populations in need of more nuanced study in the field of family research, and a more detailed examination of the antecedents and consequences of adolescent fatherhood is warranted. Accordingly, the current dissertation has two goals. The first goal is to conduct a systematic review on the antecedents, correlates, and consequences of adolescent fatherhood (Study 1) and the second goal is to prospectively test the antecedents of adolescent fatherhood among a sample of Black adolescent males (Study 2).

Figure 1. Psychosocial Life Course Model of the Antecedents and Consequences of Adolescent Fatherhood



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The Antecedents and Consequences of Adolescent Fatherhood:

A Systematic Review

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Abstract

Background: Many negative perceptions about adolescent fathers exist in our society.

Compared to adolescents who did not father children under the age of 20, adolescent fathers are thought to be more disadvantaged in their upbringing and less participatory parents. However, little research and no systematic review has been conducted to investigate the veracity of these claims. I developed a theoretical framework to examine the precursors and outcomes of adolescent fatherhood. The aim of this systematic review is to examine existing research in order to specify evidence-based factors that increase the probability of becoming an adolescent father (i.e., antecedents), and consider the evidence regarding outcomes that differ and do not differ between adolescent fathers as compared to two groups, adult fathers and non-father age peers.

Methods: The search strategy included a bibliographic search of PubMed and PsycInfo.

Inclusion criteria were peer-reviewed, quantitative studies published in English, which compared adolescent fathers (13 – 19 years) to adult fathers (> 19 years), or non-father peers (13 – 19 years).

Results: A total of 2,869 unique sources were screened and 39 articles met inclusion criteria.

About half of articles focused on antecedents ($k = 21$), with the most consistent evidence showing that adolescent fathers are disproportionately Black or Latino (vs. non-Hispanic White), and more often come from disadvantaged backgrounds characterized by single-parent households and low parental socioeconomic status. As compared with non-father age peers and fathers older than 19, adolescent fathers also have lower academic competence, engage in more delinquent behavior, and have peers who engage in more deviant behaviors (e.g., smoking, drinking). Articles on the consequences of becoming an adolescent father ($k = 23$) yielded consistent evidence that adolescent fathers have lower educational attainment after the birth of

their child and are at greater risk for adverse birth outcomes and psychological disorders than the children of adult fathers.

Discussion: A substantial amount of this literature on was published prior to the year 2000 and has methodological weaknesses. Nonetheless, findings from this review have implications for understanding adolescent fathers. With a stronger evidence base, a clearer picture should emerge and potentially the development of interventions and policies to assist adolescent males at-risk of adolescent fatherhood can follow to address these fathers' needs.

Keywords: fathers, adolescent fathers, teenage fathers, systematic review, review

The Antecedents and Consequences of Adolescent Fatherhood: A Systematic Review

Negative perceptions of adolescent fathers are evident in the United States. Gottfried (2001) states that adolescent fathers are often viewed as (a) “super studs,” who are very knowledgeable about sex and must protect their macho image by having sex often, (b) adolescents with low self-image who deliberately get females pregnant to prove their masculinity, and/or (c) deadbeat or phantom fathers who are uninvolved in their child’s lives. While there is a substantial body of research on adolescent parents and their functioning, most is focused on adolescent mothers. Indeed, several systematic reviews have been conducted on risk factors for adolescent pregnancy (Blinn-Pike, Berger, Dixon, Kuschel, & Kaplan, 2002; Corcoran, 1999; Miller, Benson, & Galbraith, 2001; Rigsby, Macones, & Driscoll, 1998), consequences of adolescent pregnancy (Corcoran, 1998; Roye & Balk, 1996), and programs to prevent adolescent pregnancy (Bennett & Assefi, 2005; Dicenso, Guyatt, Willan, & Griffith, 2002; Franklin & Corcoran, 2000; Nitz, 1999; Robin et al., 2004). However, no systematic review was located that is dedicated to documenting the precursors and outcomes of becoming a father in adolescence. The goal of this systematic review is to use Parke’s systems view (1996) to develop a conceptual model for comprehensively interrogating the antecedents and consequences of adolescent fatherhood and investigating whether these negative perceptions are supported by previous research.

Theoretical Framework

Parke (1996) proposed a systems view of four different types of influences when exploring the determinants of father involvement. First, there are *individual influences* such as a father’s attitudes about fatherhood, a father’s relationship with his own parents and siblings, timing of entry into parental role, and child gender. Second, *familial influences* include the

father-child relationship, the mother-child relationship, the father-mother relationship, and the father-mother-child triad. Third, there are *extra-familial influences* such as a father's relationship with his friends, as well as his neighborhood context. Finally, *cultural influences* include the childhood cultures of boys and girls, attitudes concerning father/mother gender roles, and ethnicity-related family values and beliefs. While this paper will examine the extent of father involvement as a consequence of early fatherhood, it will extend this view to include how *age at entry into fatherhood* affects a father's own mental health, health behaviors, and other family-related outcomes.

Based upon Parke's model (1996), I developed a conceptual model for understanding the antecedents and consequences of adolescent fatherhood, displayed in Figure 1. This model can be described as a psychosocial life course framework because it considers the life course of men from adolescence to adulthood. The current review categorizes the antecedents into (a) *individual influences* which behaviors and attitudes by the adolescent himself, including risky sexual behaviors, attitudes and knowledge about sex and pregnancy, mental health, substance use, delinquent behavior, academic competence, self-esteem, aggressive and antisocial behaviors, and other individual influences, (b) *familial influences* referring to the adolescent's family, including familial SES and other familial characteristics, and (c) *extra-familial social relationship* influences include peer associations as well as environmental and neighborhood factors. Consequences will be organized similarly. *Individual outcomes* include the mental health and substance use of the father, *familial outcomes* include maternal and child physical health, child mental health, paternal involvement and parenting behaviors, knowledge and attitudes regarding fatherhood, relationship satisfaction, and family formation, and *socioeconomic outcomes*, include a father's educational attainment, income, and occupational status. It is

important to note that because the goal of this systematic review was to investigate the antecedents and consequences of adolescent fatherhood, the findings from cross-sectional studies in which temporal precedence cannot be inferred are not reviewed in text but are reported in Table 3 for completeness.

Method

Search strategy. PubMed was searched using a combination of the following National Library of Medicine’s indexed search terms, known as Medical Subject Headings (MeSH) descriptors, and other key phrases. In several searches, an asterisk, which searches for several related terms (e.g., father* also searches for fathers, fathering, fatherhood, etc.) was used. The six PubMed searches used a combination of the MeSH terms for “father*” and “adolescen*,” a combination of the MeSH term for “pregnancy in adolescence” with the word (fathers), “adolescent fathers” in quotations (which only searches for articles with that exact phrase), a combination of the phrases (adolescent fathers) and (outcomes), a combination of the MeSH term for “paternal ages” with the word (outcomes), and a combination of the phrase (teenage pregnancy) and (fathers).

PSYCInfo was searched using the Psychological Index Terms (APA Subject Heading System), which is similar in function to MeSH terms. The six PSYCInfo searches used “adolescent father,” “adolescent pregnancy” in combination with the term “fathers,” a combination of the phrases (teenage pregnancy) and (fathers), the phrase (teenage fathers), (adolescent fathers) in combination with the word (fathers), a combination of the phrases (adolescent fathers) and (consequences), and a combination of (adolescent pregnancy) and (fathers).

Inclusion criteria. To be included in the review, studies had to (a) be quantitative, (b) be published in English or translated into English, (c) be published in a peer-reviewed journal, (d) compare adolescent fathers to either adult fathers (> 19 years), non-father age peers (13 – 19 years), or not adolescent fathers, a group comprised of men who may or may not have had children as adults, (e) define an adolescent father as younger than 20 years old, (f) focus on males who are fathers (e.g., not expectant fathers), (g) conduct significance testing comparing adolescent fathers to a comparison group, and (h) have a sample of 30 or more adolescent fathers. We chose to exclude expectant fathers because not all pregnancies are carried to term.

A total of 4,358 sources (PubMed: 2,724 sources and PsycInfo: 1,279 sources) were located. After removing duplicate articles, books, and book chapters, 2,869 unique sources remained. Two independent reviewers then screened titles and abstracts for relevance. If articles were not related to fathers, parenting, pregnancy, and/or parental age, they were eliminated. Reviewers had 86% agreement. Discrepancies were resolved by a third independent reviewer.

After title and abstract screening, 445 articles remained; two independent reviewers (the first author and trained undergraduate research assistants) conducted a full-text review. Of those, 380 (85%) articles were excluded by both reviewers based on inclusion criteria and 29 (7%) articles were included by both reviewers based on inclusion criteria, for an interrater agreement of 92% (409/445). The reviewers disagreed on 36 (8%) articles; discrepancies were resolved through discussion between the two reviewers. After discussion, 10 of the 36 articles were included. In total, 39 articles were included in the review. Figure 2 displays the flowchart of the screening process, conducted according to Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA; Moher et al., 2009) guidelines.

Articles were classified into one of three non-mutually exclusive categories: antecedents, consequences, or correlates. An article was identified as an antecedent if it (a) prospectively measured factors prior to entry into adolescent fatherhood or (b) retrospectively measured factors that preceded, or could theoretically precede, entry into fatherhood. Example antecedents are parental education, sexual behaviors measured in adolescence, or adolescent sexual behaviors measured retrospectively. Articles on consequences were those that compared adolescent fathers to non-adolescent fathers after the birth of the child. Example consequences are paternal involvement or depressive symptoms assessed after the birth of the child. Articles on correlates, where temporal precedence could not be inferred, were those that cross-sectionally measured factors that could be either an antecedent or a consequence. An example correlate could be locus of control or problem-solving skills. Those findings are reported in Table 3, but articles on correlate are not reviewed.

Results

In total, 39 articles met criteria for inclusion, of which 54% ($n = 21$) were on antecedents, 59% ($n = 23$) were on consequences, and 23% ($n = 9$) were on correlates. It is noted that an article could describe more than one category. Results are organized by article category.

Study Characteristics

Table 1 displays the characteristics of the included studies. The 39 articles reviewed comprised 28 distinct datasets. Of the 39 articles, 25 articles used longitudinal datasets, five articles used cross-sectional datasets, and nine articles used data from either retrospective chart review, record linkage, or case control studies. Seven (18%) of the articles were not conducted in the United States. When two articles use the same sample or dataset, it is noted in the text.

Longitudinal studies. Of the 25 longitudinal articles, 12 used datasets from seven nationally representative samples in the United States. Four articles used data from the National Longitudinal Survey of Youth-1979 (NLSY-79), three articles used data from the NLSY-1997, and the other five articles reported on independent studies.

Data for the other 13 longitudinal articles were gathered from samples that were not nationally representative. Two articles used data from the Fragile Families and Child Wellbeing Study, two articles used data from the Pittsburgh Youth Study, two articles used data from a sample of Black adolescents in Tennessee, and two articles used data from Transition Research on Adjudicated Youth in Community Setting (TRACS). The other five studies reported on samples from independent datasets.

Cross-Sectional studies. Five articles used cross-sectional datasets. Two studies used data from a nationally representative cross-section of individuals in the United States from the National Survey of Families and Households, and the other three articles reported on samples that were independent of one another.

Retrospective chart review/Record Linkage/Case Control. The final nine articles either used retrospective chart review, record linkage, or a nested case control. Four articles used data from birth certificates or criminal records across the United States, and the other five used birth records or national records outside of the United States. Two articles used the same dataset from the United Kingdom, and one article each from Denmark, Finland, and France.

Sample Characteristics

Table 2 displays the sample characteristics of the studies. Of the 39 articles, 35 provided either a number or a percentage of adolescent fathers in the study. Sample sizes for adolescent fathers ranged from 35 adolescent fathers (Fagot et al., 1998) to more than 28,000 adolescent

fathers (Chen et al., 2008). Four articles (Abel et al., 2002; Card et al., 1978; Kessler et al., 1997; McGrath et al., 2014) did not report a sample size or an estimate of how many adolescent fathers were in the study, however, each of these studies were either nationally representative or population-based. Of the 39 articles, 36 used fewer than 20 years of age as the cut-off to define adolescent fatherhood. Two articles used fewer than 19 years of age (Elster et al., 1987; Stouthamer-Loeber, 1998), and one article used 17 years or younger as the cut-off (McLaughlin et al., 1999).

Of the 39 articles, 18 compared adolescent fathers to non-father peers, 16 articles compared adolescent fathers to adult fathers, and six articles compared adolescent fathers to a heterogeneous control group (i.e., sample of adult fathers combined with non-father age peers). This adds up to 40 because one article compared adolescent fathers to adult fathers and non-father peers both (Dearden et al., 1995). In addition, one article compared adolescent fathers with adolescent female partners or adult female partners to adult fathers with adolescent female partners or adult female partners (Farrie et al., 2011).

Four articles, not mutually exclusive of the others, also explicitly examined teens who had involvement with the criminal justice system (Khurana et al., 2011; McLaughlin et al., 1999; Unruh et al., 2003; Unruh et al., 2004).

Antecedents of Adolescent Fatherhood

Table 3 displays the findings of the 39 studies described below. First, findings by race/ethnicity and age are reviewed followed by individual antecedents, familial antecedents, and extra-familial antecedents.

Race/Ethnicity. Of the 39 articles, 14 tested racial/ethnic differences in adolescent paternity (Table 2). The majority ($n = 9$) of these articles reported that Blacks were significantly

more likely to be adolescent fathers than non-Hispanic Whites (Elster et al., 1987; Hanson et al., 1989; Ketterlinus et al., 1992; Landers et al., 2015; Mollborn et al., 2011; Sipsma et al., 2010; Stouthamer-Loeber, 1998; Thornberry et al., 1997; Wei et al., 2002). Four articles found no significant differences in adolescent fatherhood by race/ethnicity (Biello et al., 2010; Khurana et al., 2011; McLaughlin et al., 1999; Unruh et al., 2004). One study found that in multivariate analyses, adolescents whose partners had abortions were more likely to be Black (vs. White) when compared to adolescent fathers; adolescents whose partners had miscarriages were more likely to be Hispanic (vs. White) than adolescent fathers (Fletcher et al., 2012).

Of the 14 articles that examined race/ethnicity, four included Latinos as a separate racial/ethnic group. Three of the articles found that Latino adolescents were more likely to be adolescent fathers than White adolescents (Landers et al., 2015; Sipsma et al., 2010; Thornberry et al., 1997) and one article found that Blacks were more likely to become adolescent fathers than Latinos (Elster et al., 1987). In addition, one study found that Native American/American Indian males were more likely to become adolescent fathers than White or Asian/Pacific Islander males (Mollborn et al., 2011). The remaining articles did not test race/ethnicity as a predictor of adolescent fatherhood. Some studies focused only, or mostly, on members of one racial/ethnic group and some studies took place in countries outside the United States.

Age. In total, seven articles tested age differences between adolescent fathers and their peers. Four articles found no significant differences in age (Biello et al., 2010; Elster et al., 1987; Fletcher et al., 2010; Landers et al., 2015) and three articles found that adolescent fathers were significantly older than their non-father age peers (Ketterlinus et al., 1992; Khurana et al., 2011; Unruh et al., 2004). Two points are important. First, 16 articles compared adolescent fathers to adult fathers and since age was the independent variable, differences in age were not tested.

Second, four articles reviewed matched adolescent fathers to non-father peers on age, among other characteristics.

Individual influences. A total of 15 unique studies on individual influences are reviewed and reported on in Table 3.

Risky sexual behaviors and attitudes and knowledge about sex. In total, six articles examined risky sexual behaviors and attitudes and knowledge about sex as antecedents of adolescent fatherhood. Four articles tested age at first sexual intercourse as a predictor of adolescent fatherhood; two prospective longitudinal studies found that adolescents who engaged in sexual intercourse at earlier ages were significantly more likely to become adolescent fathers, in comparison to their non-father peers (Stouthamer-Loeber, 1998) and as compared to individuals who were not adolescent fathers (Thornberry et al., 1997). Thornberry et al. found that the relationship was statistically significant even after controlling for relevant covariates (e.g., race/ethnicity, parental education, and parental income). The other two studies, which were also longitudinal, found no significant associations between age at start of sexual intercourse and adolescent fatherhood (Campa et al., 2006; Fagot et al., 1998). Campa et al. (2006) found that adolescents who used birth control less frequently were more likely to become adolescent fathers. Another study found that adolescent fathers were significantly more likely to have an unplanned pregnancy than adult fathers (Sriyasak et al., 2015). Only one study investigated attitudes about sex (Hanson et al., 1989). In comparison to non-father age peers, there was no difference in knowledge of birth control, history of taking a sex education course, or attitudes toward out-of-wedlock children.

Mental health. Four studies investigated measures of mental health as antecedents of adolescent fatherhood. Two longitudinal investigations found that depressed mood or depressive

symptoms did not predict becoming an adolescent father (Fagot et al., 1998; Stouthamer-Loeber, 1998). One longitudinal study found that depression and internalizing symptoms predicted becoming an adolescent father (Thornberry et al., 1997); after controlling for covariates and other risk factors, however, the association was no longer significant. One study with a nationally representative sample that compared adolescent fathers to adult fathers reported that adolescent fathers were significantly more likely to have prior psychiatric disorders such as anxiety disorders, addictive disorders, and conduct disorders (Kessler et al., 1997). However, there was no relationship between affective disorders, such as depression, and adolescent fatherhood. Stouthamer-Loeber (1998) also found no association of ADHD and adolescent father.

Substance use. In total, six studies investigated substance use as a predictor of adolescent fatherhood. Three longitudinal studies found that greater drug use predicted becoming an adolescent father, compared to non-father age peers (Herrenkohl et al., 1998; Thornberry et al., 1997) and adult fathers (Sipsma et al. 2010). However, while Thornberry et al. (1997) found that the relationship was significant in controlled analyses, Sipsma et al. (2010) did not. Substance use was not associated with becoming an adolescent father in two longitudinal studies (Assini-Meytin et al., 2015; Fagot et al., 1998) and another (Herrenkohl et al., 1998) found that alcohol use was not related to adolescent fatherhood. In one longitudinal study, Stouthamer-Loeber (1998) demonstrated that while adolescent fathers were significantly more likely to report being exposed to drugs and reported more positive attitudes toward drug use than non-father age peers, there were no significant differences in actual drug use.

Academic Competence. Twelve studies examined academic competence as an antecedent of adolescent fatherhood and are reviewed in Table 3. Eight longitudinal studies (two using the

same sample) found that adolescent fathers reported significantly lower academic competence (as measured by IQ, grade point average, student academic expectations, teacher ratings of student ability or motivation, or scores on state or national tests) than non-father age peers (Biello et al., 2010; Dearden et al., 1992; Dearden et al., 1995; Fagot et al., 1998; Hanson et al., 1989; Herrenkohl et al., 1998; Stouthamer-Loeber et al., 1998; Thornberry et al., 1997). In Herrenkohl et al. (1998), academic competence was measured through the intelligence quotient (IQ) and although the difference in IQ between adolescent fathers and non-father peers was statistically significant, the IQ's of both adolescent fathers and their non-father peers were in the normal IQ range. In two studies, lower academic competence was a significant predictor of adolescent fatherhood in multivariate analyses (Fagot et al., 1998; Thornberry et al., 1997), but in three studies (two of which used the same dataset), academic competence was not a significant predictor in controlled analyses (Dearden et al., 1992; Dearden et al., 1995; Hanson et al., 1989). Three studies, two of which used the same sample, found no significant differences in academic competence between adolescent fathers and non-father age peers (Campa et al., 2006; Unruh et al., 2003; Unruh et al., 2004) and one study found no difference in academic competence between adolescent fathers and adult fathers (Dearden et al., 1995). One longitudinal study found that adolescent fathers were significantly less likely to attend a private school than non-father age peers (Hanson et al., 1989), while another study found no association between adolescent fatherhood and private school attendance (Fletcher et al., 2012).

Delinquent behavior. Eight total studies tested delinquent behavior as an antecedent of adolescent fatherhood. In four longitudinal studies, delinquent behavior, as measured through composite measures of delinquency, was a significant predictor of becoming an adolescent father, compared to non-father age peers (Dearden et al., 1995; Hanson et al., 1989; Wei et al.,

2002) and adult fathers (Sipsma et al., 2010) and remained a predictor in controlled analyses in three of the studies (Dearden et al., 1995; Hanson et al., 1989; Sipsma et al., 2010) One study comparing adolescent fathers to adult fathers showed no significant differences in delinquent behavior (Dearden et al., 1995). One longitudinal study found that adolescent fathers were more likely to have been gang members and general or violent offenders than non-father age peers (Thornberry et al., 1997), but these associations became nonsignificant when covariates were included. Two studies found no association between history of running away and adolescent fatherhood (Pirog-Good, 1995; Stouthamer-Loeber, 1998), and one of those studies found that adolescent fathers were not more likely to be taken away from parents because of legal trouble (Pirog-Good, 1995). Finally, one longitudinal study found no relationship between number of crimes and number of times adjudicated and adolescent fatherhood (Fagot et al., 1998).

Antisocial and aggressive behaviors. Aggressive or anti-social behaviors as predictors of adolescent fatherhood were reported in four total studies. Adolescent fathers were more likely to engage in aggressive behaviors than non-father age peers, but not adult fathers, in one longitudinal study, (Dearden et al., 1995) and another longitudinal study reported that adolescent fathers were more likely to be cruel to others and more untrustworthy than non-father peers (Stouthamer-Loeber, 1998). Stouthamer-Loeber also found, however, that adolescent fathers were not more likely to be manipulative or have oppositional or conduct disorder problems. Two other studies found no relationship between aggressive behaviors and adolescent fatherhood (Fagot et al., 1998; Sipsma et al., 2010).

Self-esteem. Four studies total examined self-esteem as an antecedent of adolescent fatherhood. In one study with over 650 adolescent fathers, White adolescent fathers (but not other racial/ethnic groups) had significantly lower self-esteem than White not adolescent fathers

(Pirog-Good, 1995). The three other studies showed no association of self-esteem and adolescent fatherhood (Fagot et al., 1998; Herrenkohl et al., 1998; Thornberry et al., 1997).

Other individual antecedent factors. Regarding pubertal development, one longitudinal study found that adolescent fathers were more likely to have earlier self-rated physical development than non-father age peers (Campa et al., 2006) and another found no relationship between puberty and adolescent fatherhood (Fagot et al., 1998). Two longitudinal studies found that adolescent fathers reported a more external locus of control than non-father peers (Hanson et al., 1989) and not adolescent fathers (Pirog-Good, 1995), a relationship which became nonsignificant in multivariate analyses in one of them (Hanson et al., 1989). Two studies examined how adolescent fathers view their future socioeconomic status. One longitudinal study found that compared to non-father age peers, adolescent fathers reported lower educational aspirations and viewed work as less important (Hanson et al., 1989); however, in controlled analyses, the association was no longer significant. Dearden et al. (1992) found no relationship between an adolescent's projected occupation and adolescent fatherhood. One longitudinal study demonstrated no association between adolescent fatherhood and neglect or physical abuse (Herrenkohl et al., 1998). However, adolescent males who reported sexual abuse were marginally significantly more likely to become adolescent fathers than their non-father peers. Two studies investigated attitudes and beliefs as predictors of adolescent fatherhood. Pirog-Good (1995) found that compared to not adolescent fathers, adolescent fathers had more traditional beliefs about sex roles (e.g., women are happier in home when they take care of the children). Hanson et al. (1989) found no difference in religious values between adolescent fathers and non-father peers.

Summary of individual influences. The most consistent finding from this review of the individual influences as antecedents of teenage male pregnancy demonstrates that adolescent males who engage in more delinquent behavior and who report lower academic competence are more likely to become adolescent fathers. Mixed evidence exists for the relationship between adolescent fatherhood and mental health, self-esteem, substance use, antisocial and aggressive behaviors, and risky sexual behaviors; some studies show significant associations and other studies show no relationship. There is limited evidence for the relationship between adolescent fatherhood and attitudes and knowledge regarding sex and pregnancy and other factors related to mental health.

Familial influence: Indicators of socioeconomic status. A total of 12 different articles on familial socioeconomic status as antecedents of adolescent fatherhood are reviewed below and reported in Table 3.

Parental education. In total, nine studies examined parental education as an antecedent of adolescent fatherhood. All nine studies, two of which used the NLSY-79 and two of which used the NLSY-97, found that adolescent fathers had parent(s) with significantly lower educational attainment, in comparison to non-father age peers (Biello et al., 2010; Elster et al., 1987; Fletcher et al., 2012; Hanson et al., 1989; Ketterlinus et al., 1992; Unruh et al., 2004), adult fathers (Sipsma et al., 2010) or individuals who were not adolescent fathers (Pirog-Good, 1995; Thornberry et al., 1997). In four of these studies, parental education was significant over and above covariates (Hanson et al., 1989; Sipsma et al., 2010; Thornberry et al., 1997; Unruh et al., 2004). In only one study was parental education no longer a significant predictor of adolescent fatherhood after covariates were included (Fletcher et al., 2012).

Parental income. Parental income was investigated as a predictor of adolescent fatherhood in four studies total. In all four studies, adolescent fathers were significantly more likely to have parents with a lower income, in comparison to non-father age peers (Elster et al., 1987; Fagot et al., 1998; Fletcher et al., 2012; Hanson et al., 1989). In two of those studies, income was a significant predictor in multivariate analyses (Fagot et al., 1998; Fletcher et al., 2012). In only one study, parental income was not a significant predictor in multivariate analyses (Hanson et al., 1989).

Poverty status. Five studies total examined the relationship between poverty and adolescent fatherhood. In three studies, adolescent fathers were significantly more likely to live in poverty, in comparison to non-father age peers (Biello et al., 2010), or not adolescent fathers (Pirog-Good, 1995; Thornberry et al., 1997). However, Pirog-Good (1995) found that the relationship between poverty and adolescent fatherhood was significant only among White fathers, not Black fathers and Thornberry et al. (1997) found that the relationship was not significant in controlled analyses. One study found that compared to non-father age peers, adolescent fathers were more likely to have a family member that received welfare (Stouthamer-Loeber, 1998), although the relationship became non-significant when covariates were included. The mothers of adolescent fathers reported significantly more financial hardship (Dearden et al., 1995) than the mothers of their non-father age peers, in controlled analyses.

Parental occupation and composite SES. A total of five studies tested parental occupation and composite measures of socioeconomic status as antecedents of adolescent fatherhood. Three studies showed that adolescent fathers were more likely to have a father with a lower prestige job in comparison to not adolescent fathers (Pirog-Good, 1995) and non-father age peers (Unruh et al., 2003; Unruh et al., 2004; these two articles used the same sample). In

one of these studies, however, parental occupation was not a significant predictor after controlling for other predictors (Unruh et al., 2004). In comparison to non-father age peers, one study found that an adolescent's mother having a part-time or full-time job (Hanson et al., 1989) was not a predictor of adolescent fatherhood. One study that used a composite measure of SES demonstrated no significant SES differences between adolescent fathers and non-father age peers, after controlling for other variables (Fagot et al., 1998).

Familial influence: Familial characteristics. A total of 14 studies on familial characteristic influences are reviewed in this section and shown in Table 3.

Siblings. Four studies total investigated the adolescent's number of siblings and relationship with siblings as antecedents of adolescent fatherhood. Two studies found that adolescent fathers were significantly more likely to have older siblings, in comparison to adult fathers and non-father age peers (Dearden et al., 1995) and not adolescent fathers (Pirog-Good, 1995). Dearden et al. (1995) found that this relationship was significant in controlled analyses. Two other studies demonstrated no relationship between adolescent fatherhood and (a) number of siblings (Hanson et al., 1989; Stouthamer-Loeber, 1998) or (b) the quality of relationship between siblings (Stouthamer-Loeber, 1998).

Parental age. Three studies total tested the age of the adolescent's parents as an antecedent of adolescent fatherhood. Compared to adult fathers, adolescent fathers were more likely to have at least one parent who was also an adolescent parent in two studies, over and above covariates (Sipsma et al., 2010; Thornberry et al., 1997). In another study, Campa et al., (2006) also found that adolescent fathers were more likely to have mothers who were adolescents themselves at the time of their birth, however, only if their mother was unmarried.

Parental marital status. In total, two studies examined parental marital status as predictors of adolescent fatherhood. One study reported that adolescent fathers were more likely to be born out of wedlock than non-father age peers (Campa et al., 2006), and this relationship held with covariates in the model. The other study showed that they were less likely to have parents who were married (parents could have never been married or married but divorced; Fletcher et al., 2012).

Living Arrangements. Ten studies total investigated how an adolescent's living arrangements predict adolescent fatherhood. In eight studies, six of which used three of the same samples, adolescent fathers were significantly less likely to live with both of their parents than non-father age peers (Biello et al., 2010; Elster et al., 1987; Hanson et al., 1989; Sipsma et al., 2010; Stouthamer-Loeber, 1998; Unruh et al., 2003; Unruh et al., 2004) or not adolescent fathers (Pirog-Good, 1995). In only one study (Unruh et al., 2004) did parental living arrangement remain significant after controlling for covariates. Other studies demonstrated no association between adolescent fatherhood and coming from a two-parent home (Fagot et al., 1998), being adopted (Unruh et al., 2004), or the number of years an adolescent's father lived in the home (Campa et al., 2006).

Pirog-Good (1995) conducted an in-depth study comparing 650 adolescent fathers to over 5,700 non-father age peers on living arrangements. Black and White adolescent fathers were (a) more likely to not live with a biological, adoptive, or step-parent, and (b) were more likely to ever live in a children's home, detention center, or children's center. In addition, White adolescent fathers, but not Black fathers, were more likely to live with step-parents, to have instances of not living with a parent, to be younger the first time they stopped living with a parent, and if they did not live with a parent, the parent was more likely to have an illness that

precluded their ability to care for them. Living with adoptive parents or living with a foster parent was not associated with adolescent fatherhood.

Parenting. Six studies total examined parenting factors as predictors of adolescent fatherhood. Two studies, which used the same dataset and had moderate sized samples of adolescent fathers ($n = 140$ and $n = 178$), showed that adolescent fathers reported marginally significant ($p < .10$) lower parental monitoring than their non-father age peers (Biello et al., 2010; Sipsma et al., 2010). However, Sipsma et al. found that after controlling for covariates, the relationship between parental monitoring and adolescent fatherhood was no longer significant. Other studies found that adolescent fatherhood was not associated with parenting factors such as parenting quality (Campa et al., 2006), parental discipline (Fagot et al., 1998; Stouthamer-Loeber, 1998), parental communication (Hanson et al., 1989; Stouthamer-Loeber, 1998), parental reinforcement of behaviors (Stouthamer-Loeber, 1998), or parental relationship quality or satisfaction (Biello et al., 2010; Campa et al., 2006; Stouthamer-Loeber, 1998).

Maladaptive familial behaviors. Maladaptive familial behaviors were examined as antecedents of adolescent fatherhood in two studies. Both found no association of parental substance use (Stouthamer-Loeber, 1998) or parental antisocial behavior (Fagot et al., 1998) and adolescent fatherhood.

Other family characteristics. In total, six studies tested other family characteristics as antecedents of adolescent fatherhood. Three studies (two using the same dataset) found that the parents of adolescent fathers reported significantly lower educational expectations than their non-father age peers (Dearden et al., 1992; Dearden et al., 1995; Thornberry et al., 1997). In the studies which used the same dataset, the relationship was significant in controlled analyses (Dearden et al., 1992; Dearden et al., 1995), however, in the other it was not significant with

covariates in the model (Thornberry et al., 1997). Compared to non-father age peers (Pirog-Good, 1995), adolescent fathers lived in households less likely to receive magazines or newspapers in the home and they lived in households where it was less likely for someone in their household to own a library card, considered a proxy for cultural capital. Sipsma et al. (2010) found that compared to adult fathers, adolescent fathers were more likely to live in less enriching home environments (e.g., home environment without a computer). However, in controlled analyses, this relationship was no longer significant. One study reported that adolescent fathers had significantly more religious parents in comparison to adolescent males whose female partners had miscarriages (Fletcher et al., 2012). This difference, however, was no longer significant after controlling for covariates and there was no significant difference between adolescent fathers and adolescent males whose partners had abortions.

Summary of familial influences. The most consistent finding from the review of the familial influences is that the parent(s) of adolescent males tend to have lower educational attainment, lower income, and lower prestige occupations, are more likely to be in poverty, and tend to be single parents, in comparison to the parents of adolescent males who waited longer to have children. There is also some evidence that the parents of adolescent fathers tend to be unmarried and were adolescent parents themselves. Mixed evidence exists for the relationship between adolescent fatherhood and an adolescent's number of siblings and little evidence exists supporting a relationship between the substance use of the adolescent's parent(s) and adolescent fatherhood. There is also little research demonstrating an association between parenting factors and adolescent fatherhood.

Extra-familial influences. Extra-familial influences were examined in 10 studies and reported in Table 3.

Peer associations. Three total studies addressed an adolescent's peer associations as antecedents of adolescent fatherhood (Table 3). Two longitudinal studies found that adolescent fathers were more likely to have a girlfriend at an earlier age than adult fathers (Sipsma et al., 2010) and not adolescent fathers (Thornberry et al., 1997). Sipsma et al. (2010) found that this association remained significant with covariates in the model. Two studies found that adolescents with peers who engaged in more deviant behaviors (e.g., smoking, drinking, or being in a gang) were significantly more likely to become adolescent fathers than not adolescent fathers (Thornberry et al., 1997) and adult fathers (Sipsma et al., 2010). Sipsma et al., however, found that this association was no longer significant in multivariate analyses. One study found no association between having peers who engaged in enriching behaviors (e.g., participation in organized activities or religious events) and adolescent fatherhood (Sipsma et al., 2010). One study found that adolescents who had peers with lower academic competence were more likely to become adolescent fathers than adolescent males with peers who had greater academic competence (Hanson et al., 1989).

Neighborhood urbanity and region. Seven studies total examined neighborhood factors as antecedents of adolescent fatherhood. Five studies (two using the same dataset) found no difference between adolescent fathers and either adult fathers or non-father age peers with regard to coming from urban or rural environments (Biello et al., 2010; Fletcher et al., 2012; Ketterlinus et al., 1992; Unruh et al., 2003; Unruh et al., 2004). One study found that, after controlling for covariates, adolescent fathers were significantly more likely to come from the Southern United States than non-father age peers (Hanson, 1989). Pirog-Good (1995) also found that adolescent fathers were more likely to come from the South than non-father age peers, however, the

association was only significant among White fathers, not Black fathers or fathers from other racial/ethnic backgrounds.

Neighborhood SES. As shown in Table 3, there are only four studies on neighborhood SES. One longitudinal study found that in comparison to non-father age peers, adolescent fathers were significantly more likely to live in “bad neighborhoods,” a composite measure of the community’s unemployment rate, percent of female-headed households, percent of families in poverty, and number of juvenile offenders, after controlling for covariates (Stouthamer-Loeber, 1998). In another longitudinal study, Thornberry et al. (1997) assessed those “bad neighborhood” factors separately and found that adolescent fathers were significantly more likely than not adolescent fathers to live in areas with higher rates of poverty, a greater number of female-headed households, a higher community arrest rate, and greater neighborhood disorganization. In multivariate analyses, however, these factors no longer predicted adolescent fatherhood. One longitudinal study found that adolescent fathers were significantly more likely to live in poorer housing conditions than adult fathers, after controlling for covariates, (Sipsma et al., 2010), while another study found no difference between quality of housing between adolescent fathers and non-father age peers (Stouthamer-Loeber, 1998).

One study compared adolescent fathers to adolescents who had impregnated a partner who then had abortions or miscarriages (Fletcher et al., 2012). After controlling for covariates, results showed that adolescent fathers came from communities with lower unemployment rate than adolescents whose partners had a miscarriage. In comparison to adolescents whose partners had abortions, adolescent fathers were significantly more likely to come from communities that received less government aid and had lower median incomes. There were no differences in percentage of the community in poverty or welfare.

Summary of extra-familial influences. There is some evidence that an adolescent male's peer relationships are related to his becoming an adolescent father. Specifically, an adolescent male having a girlfriend at an early age and having peers who smoke, drink, or have low academic competence are associated with his becoming an adolescent father. There is also some evidence that adolescent males who live in low SES neighborhoods are more likely to become adolescent fathers than their peers from higher SES neighborhoods. There was very little evidence for the relationship between a region's urbanity or coming from the Southern U.S and adolescent fatherhood.

Consequences of Adolescent Fatherhood

Individual outcomes. In total, only four studies, reported in Table 3, examined individual consequences of adolescent fatherhood.

Mental health. Three studies total examined mental health consequences of adolescent fatherhood. One study tested the relationship between adolescent fatherhood and depressive symptoms and found that adolescent fathers had significantly greater depressive symptoms than adult fathers, after controlling for covariates (Heath et al., 1995). Two studies investigated composite measures of mental health (i.e., depression and anxiety). One found that adolescent fathers reported worse mental health two years after the birth of the child but not two or four years later (Biello et al., 2010). In controlled analyses, however, there was no longer a significant difference two years after the birth of the child. The other study showed no significant mental health differences, nor mood differences, between Black adolescent fathers and non-father age peers (Rivara et al., 1986).

Substance use. In one study of delinquent youth, rates of marijuana use dropped 23% and hard drug use dropped 29% after adolescent males became adolescent fathers, compared to those who did not become fathers (Landers et al., 2015).

Summary of individual outcomes. This review demonstrates that there is very limited research on outcomes of teen fatherhood related to the father himself. Mixed evidence exists for the relationship between adolescent fatherhood and his mental health, and insufficient evidence exists on the relationship between adolescent fatherhood and substance use.

Familial outcomes. A total of 16 studies, as shown in Table 3, examined familial outcomes of adolescent fatherhood.

Maternal and child physical health. A total of four population-based studies compared adolescent fathers to adult fathers (20-29 or 25-29) on their child's birth outcomes. All reported results are controlling for paternal and maternal race, education, income, and other relevant covariates. All four studies found that adolescent fathers were more likely to have children born preterm (< 37 weeks) and born with low birth weight (< 2,500 g; Abel et al., 2002; Alio et al., 2012; Chen et al., 2008; Mollborn et al., 2011). Adolescent fathers were more likely to have children born very preterm (< 32 weeks; Alio et al., 2012; Chen et al., 2008), small for gestational age (Alio et al., 2012; Chen et al., 2008), or very low birth weight (< 1,500 g; Mollborn et al., 2011). Two studies found no association between adolescent fatherhood and very low birth weight (Abel et al., 2002; Chen et al., 2008).

Chen et al. (2008) also found that the children of adolescent fathers were more likely to have low Apgar scores, a measure of a newborn's health (American Academy of Pediatrics, 2006), than adult fathers, but not very low Apgar scores. Adolescent fathers were also at higher risk for neonatal mortality and post-neonatal mortality than adult fathers (Chen et al., 2008). In

contrast, Alio et al. (2012) found no differences in stillbirth or early stillbirth between the children of adolescent fathers and the children of adult fathers and that the children of adolescent fathers were less likely to have a late stillbirth than the children of adult fathers. Chen et al. (2008) found no relationship between adolescent fatherhood and fetal distress.

One study tested the relationship between paternal age and child health beyond the postpartum period (Mollborn et al., 2011). Children of adolescent fathers had lower general health (as reported by their primary caregiver), and at age two, they had lower cognitive development. There were no differences in acute or chronic illness, motor development, or serious injury. In the sole study of maternal health, Alio et al. (2012) found that the female partners of adolescent fathers were at higher risk of anemia, preeclampsia, and eclampsia than the female partners of adult fathers. However, they were not at higher risk of placental abruption, placental previa, or hypertension.

Child mental health. In total, four studies investigated the mental health of children as an outcome of adolescent fatherhood. One Danish population-based study (McGrath et al., 2014) found that, compared to adult fathers (25-29), the children of adolescent fathers were more likely to have mental and behavioral disorders due to alcohol use, substance use, or cannabis use, more likely to have schizophrenia and related disorders, mood disorders, neurotic stress-related and somatoform disorders, specific personality disorders, mental retardation, behavioral and emotional disorders that usually begin during childhood or adolescence, and hyperkinetic disorders. Their children were also more likely to have any psychiatric disorder than the children of adult fathers. They were not more likely to have schizophrenia, eating disorders, anorexia nervosa, developmental disorders, or childhood autism. In a study of Malaysians, children of adolescent fathers were at higher risk of common mental disorders such as general anxiety

disorder, depressive episode, anxiety disorder, mixed anxiety and depressive disorders, phobic disorders, panic disorder, and obsessive compulsive disorder (Krishnaswamy et al., 2009). A nationwide study from Finland found that adolescent fathers were more likely to have children with ADHD than fathers aged 25-29 (Chudal et al., 2015) and a study of French men in the military found that the those who were the children of adolescent fathers had lower intelligence scores than those who were children of adult fathers (Auroux et al., 2009).

Paternal involvement and parenting behaviors. Four studies tested the relationship between adolescent fatherhood and paternal involvement or parenting behaviors. Sriyasak et al. (2015) found that adolescent fathers reported less positive childrearing behaviors (e.g., physical care, prevention of harm) than adult fathers. Two studies (Fagan et al., 2011; Mollborn et al., 2011) found no difference in paternal involvement based on age at fatherhood. However, Fagan et al. (2011) found an interaction of paternal age and social support such that the social support had a stronger effect on adolescent father's involvement than adult father's involvement. There was no interaction of paternal age and social support on nonromantic involvement however. Farrie et al. (2011) found that in couples where both parents were adolescents, adolescent fathers reported significantly higher engagement with their children than in couples where both parents were older. There were no differences between couples in which only one parent was an adolescent, regardless of sex of the parent.

Knowledge and attitudes regarding fatherhood and parenting. Three studies total examined the relationship between adolescent fatherhood and attitudes toward fatherhood or knowledge about parenting. No significant difference was found in knowledge of child development nine months after the birth of a child between Black adolescent fathers and Black non-father age peers, but at 18 months, Black adolescent fathers knew less about the normal

development and diet of a newborn than their non-father age peers (Rivara et al., 1986). Compared to adult fathers, adolescent fathers were not significantly different in attitudes toward parenting proficiency or beliefs in an involved father role in another study (Mollborn et al., 2011). However, adolescent fathers reported significantly higher average negative attitudes about fatherhood. Sriyasak et al. (2015) found that adolescent fathers reported feeling less competent as a father than adult fathers.

Relationship and parental satisfaction. Four studies tested parental satisfaction and relationship satisfaction (between the father and mother) as consequences of adolescent fatherhood. Three studies examined the relationship between adolescent fatherhood and parental satisfaction. Two studies using the same sample (Heath et al., 1993; Heath et al., 1995) found that adolescent fathers reported greater parental satisfaction than adult fathers, and Mollborn et al. (2011) found that adolescent fathers reported feeling more attached to their child than adult fathers. In contrast, Sriyasak et al. (2015) found that adolescent fathers reported lower attachment to their children than adult fathers. Only one study examined relationship satisfaction between the father and mother as a consequence of adolescent fatherhood and found no significant relationship between adolescent fatherhood and relationship satisfaction (Heath et al., 1993).

Family formation. Five studies total investigated the relationship between adolescent fatherhood and family formation. Mollborn et al. (2011) found that (a) adult fathers were significantly more likely to be married to and lived with their baby's mother at both nine months and two years after the birth of their child, compared to adolescent fathers and (b) adolescent fathers were significantly more likely to cohabit with their baby's mother but be unmarried than adult fathers. One study with a nationally representative sample of 375,000 high schoolers from

around the country showed that adolescent fathers were marginally significantly ($p < .10$) more likely to have more children than not adolescent fathers (Card et al., 1978). In other studies, adolescent fathers were more likely to have more children than adult fathers (Heath et al., 1995) and non-father age peers (Rivara et al., 1987). Rivara et al. (1986) found that Black adolescent fathers were more likely to be heads of their household at 18 months postpartum, but not nine months postpartum and were more likely to plan for marriage than Black non-father age peers.

Summary of familial outcomes. The most consistent evidence regarding familial outcomes is that the offspring of adolescent fathers are at greater risk for adverse birth outcomes including low birth weight and pre-term birth, than the offspring of adult fathers. There is also some evidence that compared to those who waited to have children, adolescent fathers have more children and that the children of adolescent fathers are at greater risk for psychological disorders. Some evidence also suggests that while adolescent fathers have less positive attitudes toward fatherhood, they may have greater parental satisfaction than those who waited to have children. There is mixed evidence for an association between adolescent fatherhood and paternal involvement or parenting behaviors and limited evidence for differences in relationship satisfaction between the father and mother.

Socioeconomic outcomes. This section reviews factors related to the father's socioeconomic status later in life as measured after becoming a father and up to 10 years later. A total of nine studies are shown in Table 3.

Educational attainment. In total, four studies examined differences in educational attainment as a consequence of adolescent fatherhood. In two studies, adolescent fathers reported significantly lower educational attainment, in comparison to non-father age peers (Fletcher et al., 2012), and not adolescent fathers (Pirog-Good, 1996). In contrast, one study found no significant

differences in educational attainment between adolescent fathers and non-father age peers (Assini-Meytin et al., 2015), and another study found no significant differences between Black adolescent fathers and non-father age peers on a composite measure of education and occupation (Rivara et al. 1986).

Employment. Differences in employment were examined as a consequence of adolescent fatherhood in eight studies. One study with a nationally representative sample found that adolescent fathers had significantly less prestigious jobs but did not report lower job satisfaction than “not adolescent fathers” (Card et al., 1978). Card et al. also found that adolescent fathers were more likely to have a job than “not adolescent fathers” five years after high school, but not 11 years after high school. In two studies, adolescent fathers were more likely to be unemployed than not adolescent fathers (Assini-Meytin et al., 2015; Pirog-Good, 1996). Fletcher et al. (2012) found that adolescent fathers were more likely to be idle (i.e., not working or in school) than non-father age peers, but also found that a higher percentage of adolescent fathers were working full-time than teenage peers whose partners had abortions. Four studies found no differences in rates of employment or occupational prestige compared to non-father age peers (Rivara et al., 1986; Unruh et al., 2003; Unruh et al., 2004) and adult fathers (Sriyasak et al., 2015). For incarcerated teens, two articles using the same sample (Unruh et al., 2003; Unruh et al., 2004) found that adolescent fathers were more likely to use career development and vocational rehabilitation services in correctional facilities than their non-father age peers.

Income. Income was tested as a consequence of adolescent fatherhood in five studies. In one study, Sriyasak et al. (2015) found that adolescent fathers reported significantly lower income and were significantly less likely to have saved “enough” money than adult fathers. Two studies found no significant differences in income between adolescent fathers and not adolescent

fathers (Card et al., 1978; Fletcher et al., 2012) and another study reported no difference in poverty status between Black adolescent fathers and Black not adolescent fathers (Assini-Meytin et al., 2015). Pirog-Good (1996) compared adolescent fathers to not adolescent fathers and reported that in late adolescence and their early 20's, adolescent fathers earned a higher hourly wage and higher income than "not adolescent fathers", in their mid-20's there was no difference in income between these groups, but starting at around age 27, adolescent fathers had a lower income than not adolescent fathers.

Indicators of poverty. Five studies total examined the association of poverty and adolescent fatherhood. Two studies using the same dataset of incarcerated fathers demonstrated that adolescent fathers were more likely to use welfare than non-father age peers (Unruh et al., 2003; Unruh et al., 2004), but one study did not (Assini-Meytin et al., 2015). Adolescent fathers and adult fathers did not differ on food insecurity (Mollborn et al., 2011). Black adolescent fathers, but not White adolescent fathers, were more likely to endorse shoplifting if unable to support their family in comparison to non-father age peers (Pirog-Good, 1996).

Summary of socioeconomic outcomes. There is some evidence that adolescent fathers have lower educational attainment than men who wait to have children. Mixed evidence exists on differences in employment, income, or poverty status between adolescent fathers and their peers.

Other consequences of adolescent fatherhood. Other consequences of adolescent fatherhood were examined in five studies. In one study (Farrie et al., 2012) that investigated an index of risk behaviors (e.g., poor parental health, parental substance use, parental incarceration status, parental employment status) and their relation to paternal engagement, adolescent fathers with adult partners, when reporting more than four risk behaviors, reported 57% fewer activities

with their children than adult fathers with adult partners who reported more than four risk behaviors. After having a child, adolescent fathers did not report a significant change in number of arrests compared to “not adolescent fathers” (Landers et al., 2015). Stouthamer-Loeber (1998) found that in the year of fatherhood and the year after fatherhood, adolescent fathers were more likely to engage in delinquent behaviors than “not adolescent fathers.” Juvenile adolescent fathers were not significantly more likely to be recidivist in six months than juvenile non-fathers, but were significantly less likely to be recidivists 12 months later than juvenile non-fathers (Unruh et al., 2003; Unruh et al., 2004).

Discussion

Summary of All Findings

Antecedents. Regarding the 21 studies on antecedents of adolescent fatherhood, consistent evidence indicates that adolescents who come from single-parent homes, lower SES neighborhoods, and have parents with lower educational attainment, lower income, and lower prestige occupations are more likely to become adolescent fathers. In addition, Black adolescents, and possibly Latino adolescents, are more likely to become adolescent fathers than are White adolescents. Some evidence demonstrates that adolescents who engage in more delinquent behavior and have lower academic competence, as well as having friends who engage in delinquent behavior and have lower academic competence, are more likely to become adolescent fathers. Limited evidence exists for a relationship between adolescent depression and adolescent fatherhood, and there is a lack of research on other factors related to mental health. Mixed evidence exists for an association between adolescent fatherhood and the other factors described in this review (i.e., substance use, siblings, parenting behaviors, maladaptive familial behaviors, aggressive or antisocial behaviors, self-esteem, and risky sexual behaviors) with some

studies yielding significant associations and others reporting null findings. Little research is available on the relationship between an adolescent's attitudes and knowledge regarding sex and becoming an adolescent father.

Consequences. Regarding the 23 articles on the consequences of adolescent fatherhood, the most consistent evidence is that the babies of adolescent fathers are likelier to have adverse birth outcomes (e.g., low birth weight and pre-term birth) than the offspring of adult fathers, after controlling for factors such as maternal and paternal education, income, and race/ethnicity. Consistent evidence also demonstrates that the children of adolescent fathers are at greater risk for psychological disorders than the children of adult fathers. Some evidence demonstrates that, in comparison to their peers who waited to have children, adolescent fathers have significantly more children and lower educational attainment. Mixed evidence exists for an association between adolescent fatherhood and poorer paternal mental health, lower income, lower occupational prestige, less paternal involvement, and lower relationship satisfaction, with some articles reporting significant associations, other articles reporting null findings, and some contradictory findings. Insufficient evidence exists to draw conclusions on the association between adolescent fatherhood and their substance use.

There may be a number of reasons for the large number of mixed or contradictory findings from the research on antecedents and consequences. One reason is conceptualization and measurement of the constructs. For example, while "parenting behaviors" reflects a broad category, there are many different ways to operationally define this construct, which could explain why some relationships are significant and others are not. Parenting behaviors were variously operationalized as parental discipline, parental communication, parental reinforcement, and the relationship between the parent and child.

Another factor is the variability in age of study of the men. Some studies investigated adolescent fathers while they were still adolescents (e.g., ages 17-19), some studies examined adolescent fathers a few years after they became fathers (e.g., ages 20-25), and other studies examined adolescent fathers much later in their lives (e.g., up until age 29). These men are still considered adolescent fathers because their partner had a child when the male was at most 19 years old. However, differences that exist at certain stages of the father's life may not exist at other stages. For example, a study (Pirog-Good, 1996) that tested differences in income between adolescent fathers and non-father ages showed no significant differences between adolescent fathers and not adolescent fathers at age 22. However, at age 29, there were significant differences in income. So, the stage in life at which these fathers were studied is also important.

The racial/ethnic background of the different samples may also play a role in inconsistent findings. Certain factors that predict adolescent fatherhood among members of one racial/ethnic group may not predict fatherhood among members of another racial/ethnic group. For example, Pirog-Good (1995) found that lower self-esteem predicted adolescent fatherhood among White adolescents but not Black adolescents. In the current review, many studies had diverse samples but did not examine racial/ethnic differences which may explain inconsistent or null findings.

Finally, some categories of antecedents (e.g., attitudes and knowledge about sex) and consequences (e.g., substance use) received very little investigation. More research is needed on these topics before conclusions can be drawn about their associations with adolescent fatherhood.

Strengths and Limitations

A strength of this literature is that many studies were prospective and longitudinal in design which allows inference of temporal precedence. Several of the studies used samples from

nationally representative samples which allows conclusions to be drawn about adolescent males and adolescent fathers across the United States. In addition, studies also either (a) controlled for race and socioeconomic status in statistical analyses or (b) compared adolescent fathers to matched samples of non-father age peers or adult fathers. Because consistent evidence demonstrates that adolescent fathers tend to be Black and come from low SES backgrounds, matched comparison groups and well-controlled statistical analyses are useful in drawing conclusions about the antecedents and consequences of adolescent fatherhood over and above the established relationship between adolescent fatherhood and race or socioeconomic status.

One limitation of this literature is that the majority of these studies are quite dated. That is, 46% (n = 18) of these studies were published prior to the year 2000, or nearly two decades old, and 21% (n = 8) were published prior to the year 2010. This is important because the rate of adolescent parenting has seen a substantial decrease since the early 1990's and even since the year 2000. The 2014 birth rate for adolescent parents (15 – 19) was 21 per 1,000 births as compared to 48 per 1,000 births in 2000, and a high of 62 per 1,000 births in 1991 (Guttmacher Institute, 2004). Some theorized contributors to this decline are that (a) adolescents are having less sexual intercourse, (b) adolescents are using more contraceptives and using them more effectively, and (c) pregnancy prevention programs aimed at teens may be effective (Boonstra, 2014; Pew, 2016). In light of the change in the rate of adolescent births, a more current and comprehensive assessment of adolescent fathers is warranted as the adolescent fathers of today may differ from the adolescent fathers of previous decades.

Another limitation is that many of the findings come from the same studies. Specifically, although 39 articles were reviewed in this systematic review, the articles reflect only 28 distinct samples. This is important because there is redundancy in the samples being investigated. More

studies with larger samples are needed to better understand whether many of the findings regarding antecedents and consequences of adolescent fatherhood are replicable.

Another major limitation of this literature is that many findings from studies of consequences are focused primarily on outcomes related to the rest of the family and the father's SES, rather than on the father himself. Only four studies investigated the mental health of adolescent fathers and only one study examined their substance use. Fathers' physical health also warrants investigation. Consistent evidence from this review demonstrated that the offspring of adolescent fathers are at greater risk for adverse birth outcomes and psychological disorders, after controlling for relevant factors such as maternal and paternal race, education, and income. More research is needed to understand possible mechanisms for these associations. Perhaps insight may be gained from research on older fathers.

A large body of research demonstrates that the offspring of the female partners of adult (> 45) fathers suffer from more adverse birth outcomes (Bray et al., 2006; Yang et al., 2007) and more psychological and developmental disorders (Croen et al., 2007; Zammit et al., 2003), relative to the children of men of normal childbearing age. Researchers have examined possible mechanisms for these relationships such as sperm volume, motility, and morphology (Kidd et al., 2001); telomere length, a measure of biological aging, (Wiener-Megnazi et al., 2012); and paternal health behaviors such as alcohol use and smoking (Savitz et al., 1991). Now that similar associations between younger paternal age and adverse birth outcomes have been demonstrated, researchers are urged to investigate pathways for this relationship. For example, some research has shown that greater psychological stress is associated with worse sperm quality (Collodel et al., 2008; Fenster et al., 1997; Gollenberg et al., 2010). As this systematic review has shown, adolescent fathers are more likely to come from low-SES backgrounds; perhaps the stress

associated with low-SES backgrounds affect their sperm quality. More research is needed on this topic. Also, some studies found that adolescent males who use substances are more likely to become adolescent fathers, perhaps the use of substances is a pathway to understanding why their offspring suffer from adverse birth outcomes. A deeper investigation of the connection between stress and the physical health of adolescent fathers could shed light on how younger paternal age impacts birth outcomes.

One other major limitation of this field of research, although not necessarily of this literature specifically, is that adolescent fathers do not have complete reproductive responsibility. An adolescent male may impregnate; however, having an abortion or keeping the baby is the mother's decision legally and the father must deal with the consequences. An incomplete picture of the adolescent males at risk might result. The only difference between the adolescent father and the adolescent male whose partner had an abortion is a decision out of the father's control. In this review, only one study (Fletcher et al., 2012) compared adolescent fathers to adolescents whose partners had abortions and adolescents whose partners had miscarriages. This distinction allows a better understanding of adolescent males at risk of becoming adolescent fathers. Future studies should investigate differences between adolescent fathers and adolescents who have ever gotten someone pregnant. By investigating this distinction, interventions could help adolescent fathers as well as adolescent males at-risk of adolescent fatherhood. Identifying these adolescent males, however, may also be fraught with complication because a woman may have an abortion or miscarriage and not tell the male that she was pregnant. However, by at least attempting to examine adolescent males whose partners had abortions or miscarriages, a better framework for understanding adolescent fathers and the males at risk for adolescent fatherhood may be developed.

Implications

Despite the limitations of this literature, these findings could help to dispel some apparent myths about the adolescent males who become adolescent fathers as well as myths about adolescent fathers and their parenting ability. As previously described, males who become adolescent fathers are viewed as “super studs” or adolescents with low self-image (Gottfried, 2001). With regard to adolescent fathers as “super studs,” only one study examined attitudes regarding sex and pregnancy and found no differences between adolescent fathers and their peers. With regard to low self-esteem or self-image, one study did find that adolescent fathers had lower self-esteem than their peers and another study found that adolescents who had more internalizing symptoms and depression were more likely to become adolescent fathers. However, three studies found no association between self-esteem and adolescent fatherhood and three studies found no association between depression and adolescent fatherhood. Another myth about adolescent fathers is that they are often viewed as deadbeat dads. Although two studies in this review did find that adolescent fathers were less likely to be involved with their child or engage in positive childrearing behaviors than adult fathers, two other studies found no relationship between adolescent fatherhood and lower paternal involvement.

Mixed findings were apparent with regard to attitudes about fatherhood and parental satisfaction, with some studies showing that adolescent fathers reported more negative attitudes about fatherhood, some studies reporting that adolescent fathers had higher parental satisfaction and felt more attached to their children than older parents, and other studies showing no relationship between attitudes and age at fatherhood. Therefore, limited evidence exists to support negative characterizations of adolescent fathers. Perhaps it is appropriate to take a more compassionate view of adolescent fathers as individuals “trapped by limited education, family

instability, and judgmental behavior on the parts of families, schools, or providers” (Joshi & Battle, 1990, p. 30). Shifting the societal perspective of adolescent fathers to a less judgmental and more empathic view may facilitate better solutions to help address the many barriers fathers face as they transition from adolescence to adulthood.

Findings from this review also suggests that boys who become adolescent fathers have grown up in high-risk social environments, as previously theorized (Elster et al., 1987). Such environments are characterized by “single parent families and households that were financially and educationally disadvantaged” (p. 935). Also, outside the household, these adolescents live in communities that suffer from high unemployment rates and poverty. These findings have implications for intervention. Typical sex education interventions may not be effective because these adolescents are facing serious socioeconomic disadvantage and until social barriers are addressed through comprehensive occupational, vocational, and financial resources, limited change in the rate of fatherhood is likely. Indeed, a systematic review of 26 randomized controlled trials found that sex education interventions, which typically feature information about contraception and pregnancy and the risks early sexual intercourse, did not delay the initiation of sexual intercourse or improve use of birth control (DiCenso et al., 2002). In fact, results suggested that these interventions actually increased reported pregnancies in the female partners of adolescent males.

Some evidence demonstrates that adolescent males are more likely to become fathers if they engage in more delinquent behavior, have lower academic competence, and have peers who do the same. While these factors may precede entry into adolescent fatherhood, it is important to understand delinquent behavior and low academic competence as outcomes related to a third variable, growing up in a low-SES background. Previous research has shown an association

between low-SES and both delinquent behavior (Wright et al., 1999) and lower academic achievement (Sirin, 2005). In fact, Wright et al. (1999) suggest diminished educational and occupational aspirations, as well as financial strain, are mechanisms for the relationship between low SES and greater delinquent behavior such that lower SES is related to lower educational and occupational aspirations, which are in turn related to greater delinquent behavior. Future research should further explore the mechanisms of the relationship between low SES and adolescent fatherhood.

Children of adolescent fathers are themselves at risk for physical and mental health problems. In-depth research on adolescent fathers and their children is needed to understand whether biological factors, such as sperm quality, and psychosocial factors such as tobacco use and alcohol use, contribute to these health disparities. This finding also has implications for the implementation of policies to help adolescent fathers. Clearly, this group faces socioeconomic disadvantage once they become adolescent fathers relative to those who have children at older ages. This disadvantage confers risk for the well-being of their children and could lead to an intergenerational cycle of adolescent fatherhood, since adolescent fathers also tend to have parents with lower educational attainment than men who waited to have children. The Office of Women, Infants, and Children (WIC) could include fathers and provide them with educational and occupational resources or offer support with food for their families. Alternatively, an office similar to WIC could be created specifically to meet the needs of fathers who need help educationally, occupationally, or financially.

Conclusion

This systematic review was founded upon Parke's systems view (1996), which posited that to understand factors related to a father's involvement, attention must be paid to individual,

familial, extra-familial, and cultural influences. This review explored age, an individual influence, as a determinant of paternal involvement but also extended Parke's systems view by investigating individual, familial, and extra-familial determinants of becoming an adolescent father and examining paternal age (adolescent father or not) as a contributor to outcomes related to the father's mental health, the father's socioeconomic status, and the physical and mental health of the child and partner. Future research with fathers, not only adolescent fathers, should use this theoretical framework to better understand how different factors in a father's life can impact his involvement as well as how different identity-related factors, such as age, race, sexual orientation, or the intersection of multiple identities, can affect the father himself. Two interventions have been tested for adolescent fathers and both focused on parenting and engagement with children (Fagan, 2008; Mazza, 2002). Both interventions included parenting classes and both were successful in increasing adolescent fathers' involvement and use of more positive parenting behaviors. Mazza (2002) also included a component in which adolescent fathers met with social workers who addressed their life needs and found that these fathers made significant gains in their employment and vocational planning. Joshi and Battle (1990) also recommend interventions for adolescent fathers that focus on their financial, educational, and occupational needs and suggest sites for interventions in school. They also recommend that existing programs focused on helping mothers should provide assistance for adolescent fathers. Interventions and governmental policy that target these issues may have a substantial positive impact on these adolescents.

In conclusion, the findings from this systematic review have implications for conducting future research on adolescent males and adolescent fathers, shifting the societal perspective of adolescent fathers, developing interventions to assist adolescent fathers, and implementing

policies to meet the needs of adolescent fathers. In comparison to adolescent mothers, adolescent fathers are understudied; but they deserve similar attention and similar resources directed to assist them as they transition from adolescence to adulthood while also transitioning into fatherhood.

Figure 1. Conceptual Model of the Antecedents and Consequences of Adolescent Fatherhood

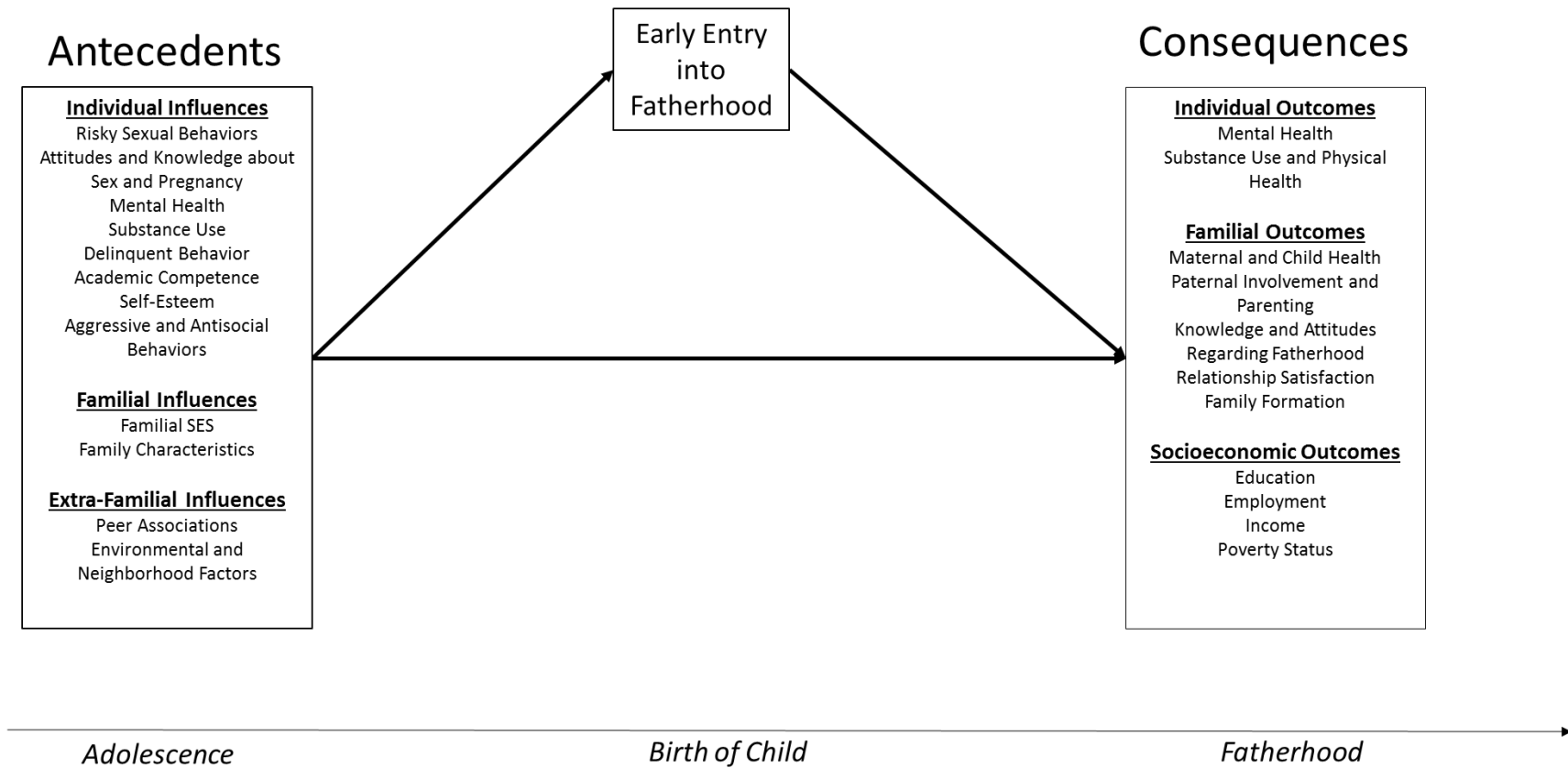


Figure 2. Systematic Review Flow Chart

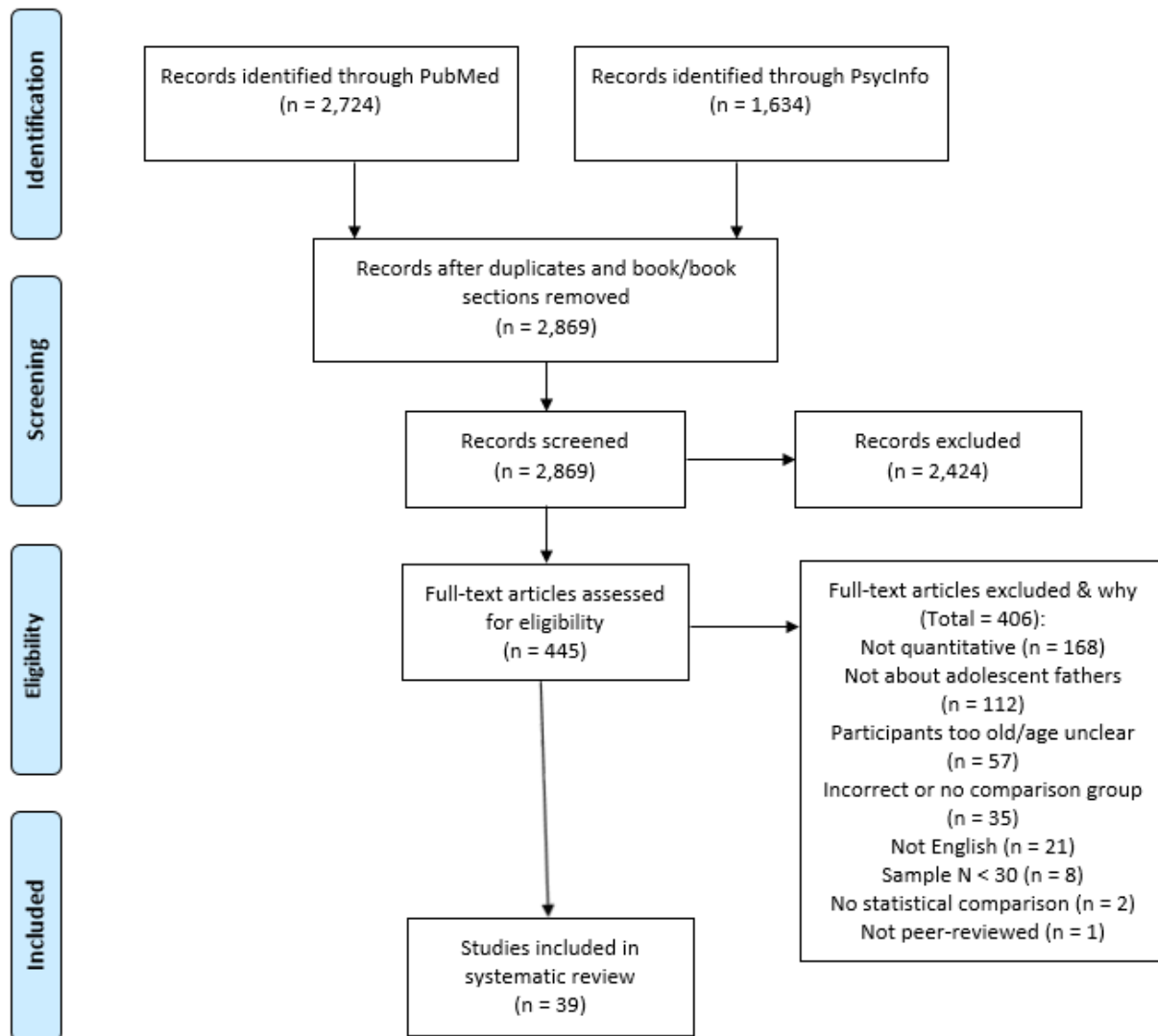


Table 1. Study Characteristics of 39 Reviewed Studies

Authors	Year	Type of Article	Independent Dataset (Yes or No; Dataset)	Study Design	Country
Abel et al.	2002	Consequence	Yes; North Dakota Birth Certificates	Retrospective Chart Review/Record Linkage/Case Control	USA
Alio et al.	2012	Consequence	Yes; Missouri Maternally Linked Vital Statistic Records	Retrospective Chart Review/Record Linkage/Case Control	USA
Assini-Meytin et al.	2015	Consequence	Yes; Woodlawn Study	Longitudinal	USA
Auroux et al.	2009	Consequence	Yes; French Army Survey	Retrospective Chart Review/Record Linkage/Case Control	France
Biello et al.	2010	Antecedent; Consequence	No; Longitudinal Survey of Labor Market Experience of Youth-1997 (NLSY-97)	Longitudinal	USA
Campa et al.	2006	Antecedent	Yes; Elmira Nurse Family Partnership Project	Longitudinal	USA
Card et al.	1978	Consequence	Yes; Project TALENT	Longitudinal	USA
Chen et al.	2008	Consequence	Yes; USA Linked Birth/Infant Dataset	Retrospective Chart Review/Record Linkage/Case Control	USA
Chudal et al.	2015	Consequence	Yes; Finnish Prenatal Study of ADHD	Retrospective Chart Review/Record Linkage/Case Control	Finland

Dearden et al.	1992	Antecedent	No; National Child Development Study	Retrospective Chart Review/Record Linkage/Case Control	UK
Dearden et al.	1995	Antecedent	No; National Child Development Study	Retrospective Chart Review/Record Linkage/Case Control	UK
Elster et al.	1987	Antecedent; Correlate	No; Longitudinal Survey of Labor Market Experience of Youth-1979 (NLSY-79)	Longitudinal	USA
Fagan et al.	2011	Consequence	No; Fragile Families and Child Well-Being Study (FFCWS)	Longitudinal	USA
Fagot et al.	1998	Antecedent; Correlate'	Yes; Oregon Youth Study (OYS)	Longitudinal	USA
Farrie et al.	2011	Consequence	No; Fragile Families and Child Wellbeing Study (FFCWS)	Longitudinal	USA
Fletcher et al.	2012	Antecedent; Consequence	Yes; National Longitudinal Study of Adolescent Health (Add Health)	Longitudinal	USA
Hanson et al.	1989	Antecedent	Yes; High School and Beyond Survey	Longitudinal	USA
Heath et al.	1993	Consequence	No; National Survey of Families and Households (NSFH)	Cross-sectional	USA
Heath et al.	1995	Consequence	No; National Survey of Families and Households (NSFH)	Cross-sectional	USA
Herrenkohl et al.	1998	Antecedent	Yes; Longitudinal Pre-School Study	Longitudinal	USA
Kessler et al.	1997	Antecedent	Yes; National Comorbidity Survey	Longitudinal	USA

Ketterlinus et al.	1992	Correlate	No; Longitudinal Survey of Labor Market Experience of Youth-1979 (NLSY-79)	Longitudinal	USA
Khurana et al.	2011	Correlate	Yes; Mid-Western Juveniles	Cross-sectional	USA
Krishnaswamy et al.	2009	Consequence	Yes; Malaysian Mental Health Study	Cross-sectional	Malaysia
Landers et al.	2015	Antecedent; Correlate; Consequence	No; Longitudinal Survey of Labor Market Experience of Youth-1997 (NLSY-97)	Longitudinal	USA
McGrath et al.	2014	Consequence	Yes; Danish Psychiatric Central Research Register	Retrospective Chart Review/Record Linkage/Case Control	Denmark
McLaughlin et al.	1999	Correlate	Yes; Richmond Juveniles	Retrospective Chart Review/Record Linkage/Case Control	USA
Mollborn et al.	2011	Antecedent; Consequence	Yes; Early Childhood Longitudinal Study-Birth Cohort	Longitudinal	USA
Pirog-Good	1995	Antecedent	No; Longitudinal Survey of Labor Market Experience of Youth 1979 (NLSY-79)	Longitudinal	USA
Pirog-Good	1996	Correlate; Consequence	No; Longitudinal Survey of Labor Market Experience of Youth-1979 (NLSY-79)	Longitudinal	USA
Rivara et al.	1986	Consequence	No; University of Tennessee	Longitudinal	USA
Rivara et al.	1987	Consequence	No; University of Tennessee	Longitudinal	USA
Sipsma et al.	2010	Antecedent	No; Longitudinal Survey of Labor Market Experience of Youth-1997 (NLSY-97)	Longitudinal	USA
Sriyasak et al.	2015	Antecedent; Consequence	Yes; Fathers from Thailand	Cross-sectional	Thailand

Stouthamer-Loeber	1998	Antecedent; Consequence; Correlate	No; Pittsburgh Youth Study	Longitudinal	USA
Thornberry et al.	1997	Antecedent	Yes; Rochester Youth Development Study	Longitudinal	USA
Unruh et al.	2003	Antecedent; Consequence; Correlate	No; Transition Research on Adjudicated Youth in Community Settings (TRACS)	Longitudinal	USA
Unruh et al.	2004	Antecedent; Correlate	No; Transition Research on Adjudicated Youth in Community Settings (TRACS)	Longitudinal	USA
Wei et al.	2002	Antecedent	No; Pittsburgh Youth Study	Longitudinal	USA

Table 2. Sample Characteristics of 39 Reviewed Studies

Authors	Year	Age Cut-Off	Adolescent Father Group	Comparison Group	Racial/Ethnic Differences
Abel et al.	2002	< 20	N not reported for adolescent fathers, although Total N = 154,391 White n = 140,913 (91%) Native American n = 13,478 (9%)	N not reported, although Total N = 154,391 Fathers 21 to 25 White n = 140,913 (91%) Native American n = 13,478 (9%)	Did not assess; Not goal of study
Alio et al.	2012	< 20	N = 24,626 adolescent fathers White n% = 84.81% Black n% = 13.91% Other n% = 1.28%	N = 222,051 25-29 yr old fathers White n% = 91.52% Black n% = 6.92% Other n% = 1.56%	Did not assess; Not goal of study
Assini-Meytin et al.	2015	< 20	N = 97 Black adolescent fathers	N = 406 Black not adolescent fathers	Did not assess; Black Fathers Only
Auroux et al.	2009	< 20	N = 144 men in the French military whose fathers were teens at time of their birth	N = 6,402 men in the French military whose fathers were older than 20 at time of their birth	Did not assess; Not goal of study (France)
Biello et al.	2010	< 20	N = 178 adolescent fathers Non-black/Non-Latino n = 52 (29%) Non-Latino Black n = 82 (46%) Latino n = 44 (25%)	N = 330 non-father peers Nonblack/Non-Latino n = 100 (30%) Non-Latino Black n = 152 (46%) Latino n = 78 (24%)	No significant difference; Black, Latino, White
Campa et al.	2006	< 20	N not reported for adolescent fathers, although Total N = 142 20% adolescent fathers 28-29 adolescent boys who became fathers under 19	N not reported for adolescent fathers, although Total N = 142 113-114 non-father peers	Did not assess; Not goal of study

Card et al.	1978	< 20	N not reported for adolescent fathers, although Total N = 375,000 high schoolers from across the country N not reported for fathers or race	N not reported for adolescent fathers, although Total N = 375,000 high schoolers from across the country compared to older fathers	Did not assess; Race not reported
Chen et al.	2008	< 20	N = 28,257 live births between 1995-2000 by adolescent fathers Specific N not reported 91% White 5% Black 4% other	N = 1,791,815 20-29 year old fathers Specific N not reported 90% White 5% Black 5% Other	Did not assess; Not goal of study
Chudal et al.	2015	< 20	N = 221 Finnish adolescent fathers children with ADHD N = 228 Finnish adolescent fathers children without ADHD	N = 2,951 25-29 adult fathers children with a DHD N = 11,200 25-29 adult fathers children without ADHD	Did not assess; Race not reported (Finland)
Dearden et al.	1992	< 20	N = 209 teen fathers N not reported by race	N = 401 non-fathers matched on social class N = 397 non-fathers unmatched N not reported by race	Did not assess; Race not reported (UK)
Dearden et al.	1995	< 20	N = 200 fathers N not reported for race	N = 844 Adult (20-23) fathers N = 401 Matched non-fathers N = 397 Non-matched non-father peers	Did not assess; Race not reported (UK)

Elster et al.	1987	< 19	N = 357 M age = 19.0 Latino n = 62 (17%) Black n = 153 (42%) White n = 152 (41%) Ever married n = 117 (32%)	N = 1,000 non-father peers Latino n = 150 (15%) Black n = 244 (24%) White n = 606 (61%) Ever married n = 55 (6%)	Yes (p < .05): Blacks > Whites (Non-Black, Non-Latino groups), Latinos
Fagan et al.	2011	< 20	N = 175 Black n = 100 (58%) Latino n = 52 (30%) White n = 16 (9%) Other n = 33 (2%)	N = 1,365 adult fathers Black n = 762 (56%) Latino n = 377 (28%) White n = 200 (15%) Other 29 (2%)	Did not assess; Not goal of study
Fagot et al.	1998	< 20	N = 35 90% White	N = 160 non-father peers 90% White	Did not assess; White Fathers Mostly (90%)
Farrie et al.	2011	< 20	N = 3,027 couples with both adult parents, both adolescent parents, father is adolescent, or mother is adolescent N = 2,535 couples with both adult parents, both adolescent parents, father is adolescent, or mother is adolescent	N = 3,027 couples with both adult parents, both adolescent parents, father is adolescent, or mother is adolescent N = 2,535 couples with both adult parents, both adolescent parents, father is adolescent, or mother is adolescent	Did not assess; Not goal of study

Fletcher et al.	2012	< 20	N = 177 teen fathers White n = 72-73(41%) Black n = 54-55 (31%) Latino n = 40-41 (23%)	N = 81 non-father peers whose partners had an abortion White n = 30 (37%) Black n = 33 (41%) Latino n = 10 (12%) N = 104 non-father peers whose partners had a miscarriage White n = 40 (38%) Black n = 35 (34%) Latino n = 25 (24%) N = ~5400-7100 not adolescent fathers	Yes (p < .05): Black adolescent more likely to have abortion than become adolescent fathers compared to Whites, Latinos more likely to have miscarriage than become adolescent fathers than Whites
Hanson et al.	1989	< 20	N = 148 adolescent fathers White n = 11 (68%) Black n = 48 (32%)	N = 3,913 non-father peers N not reported by race	Yes (p < .05); Blacks > Whites
Heath et al.	1993	< 20	N = 227 adolescent fathers Black n = 72 (32%) White n = 29 (57%) Latino n = 25 (11%) 64% (n = 145) married	N = 1,032 men who fathered as adults Black n = 177 (17%) White n = 743 (72%) Latino n = 112 (11%) 77% (n = 798) married	Did not assess; Not goal of study
Heath et al.	1995	< 20	N = 227 adolescent fathers Black n = 72 (32%) White n = 129 (57%) Latino n = 26 (11%)	N = 1,032 adult fathers Black n = 177 (17%) White n = 743 (72%) Latino n = 112 (11%)	Did not assess; Not goal of study
Herrenkohl et al.	1998	< 20	N = 36 adolescent fathers	N = 180 adolescent non-father peers	Did not assess; Not goal of study

Kessler et al.	1997	< 20	N not reported for adolescent fathers, although Total N = 2,385 males Adolescent fathers compared to not adolescent fathers	N not reported for adolescent fathers, although Total N = 2,385 males Adolescent fathers compared to not adolescent fathers	Did not assess; Not goal of study
Ketterlinus et al.	1992	< 20	N = 82 adolescent fathers M age = 16.63 Black n = 36 White n = 46	N = 815 Virgin non-father peers M age = 15.86 Black n = 105 (13%) White n = 710 (87%) Sexually experienced non-father peers N = 1,023 M age = 16.28 Black n = 407 White n = 616	Yes (p < .05); Blacks > Whites
Khurana et al.	2011	< 20	N = 101 adolescent fathers from juvenile courts Black n = 49 (49%) White n = 52 (51%)	N = 2,730 non-father peers from Juvenile courts Black n = 1,206 (43%) White n = 1,624 (57%)	No significant difference; Blacks and Whites
Krishnaswamy et al.	2009	< 20	N = 78 Malaysian individuals with adolescent fathers	N = 1,873 Malaysian individuals with adult fathers	Did not assess; Not goal of study (Malaysia)
Landers et al.	2015	< 20	N = 239 adolescent fathers Black n = 76-77 (32%) Latino n = 40-41 (17%) White n = 121-123 (51%)	N = 3,180 not adolescent fathers Black n = 430 - 461 (14%) Latino n = 398 - 429 (13%) White n = 2,290 - 2,352 (72%)	Yes (p < .05); Black, Latino > White
McGrath et al.	2014	< 20	N not reported Age range of fatherhood = 12-19	N not reported Age range of fatherhood = 25-29	Did not assess; Race not reported (Denmark)

McLaughlin et al.	1999	< 17	N = 50 incarcerated adolescent fathers Black n = 40 (80%) White n = 10 (20%)	N = 205 incarcerated non-father peers Black n = 153 (75%) White n = 52 (25%)	No significant difference; Blacks, Whites
Mollborn et al.	2011	< 20	Roughly 150 teen fathers N not reported by race	Roughly 4,700 adult fathers N not reported by race	Yes (p < .10); Blacks, American Indians/Alaska Native, Multi-racial > White, Asian/Pacific Islander
Pirog-Good	1995	< 20	N = more than 650 adolescent fathers	N = at most 5,752 not teen fathers	Did not assess; Not goal of study
Pirog-Good	1996	< 20	N = more than 600 adolescent fathers	Total N = 6,403 young men who are not adolescent fathers	Did not assess; Not goal of study
Rivara et al.	1986	< 20	N = 100 Black adolescent fathers	N = 100 Black non-father peers matched on age	Did not assess; Black Fathers Only
Rivara et al.	1987	< 20	N = 67 Black teenage fathers	N = 66 Black teenage non-father peers	Did not assess; Black Fathers Only
Sipsma et al.	2010	< 20	N = 140 adolescent fathers Black n = 50 (36%) Latino n = 47 (34%) White n = 43 (31%)	N = 1,356 older fathers Black n = 282 (21%) Latino n = 260 (19%) White n = 814 (60%)	Yes (p < .05); Blacks, Latinos > Whites
Sriyasak et al.	2015	< 20	N = 70 Thai adolescent first-time fathers	N = 70 adult fathers aged 25 and up	Did not assess; Race not reported (Thailand)
Stouthamer-Loeber	1998	< 19	N = 62 teen fathers	N = 444 non-father peers matched on age, race	Yes (p < .05); Blacks > Whites
Thornberry et al.	1997	< 20	N = 175 teen fathers from Rochester N not reported by race	N = 440 not adolescent fathers N not reported by race	Yes (p < .05); Black, Latino > White

Unruh et al.	2003	< 20	N = 125 incarcerated juvenile fathers M age of exit from incarceration = 16.86 19.8% of ENTIRE sample is minority but no N reported	N = 317 incarcerated juvenile non-father peers M age of exit from incarceration = 16.54 19.8% of ENTIRE sample is minority but no N reported	Did not assess; White Fathers Mostly (80%)
Unruh et al.	2004	< 20	N = 125 incarcerated juvenile fathers M age of exit from incarceration = 16.86 19.8% of ENTIRE sample is minority but no N reported	N = 317 incarcerated juvenile non-father peers M age of exit from incarceration = 16.54 19.8% of ENTIRE sample is minority but no N reported	No significant difference; Blacks, Whites, American Indians, Asians, Hispanics)
Wei et al.	2002	< 20	N = 81 teenage fathers N not reported by race	N = 344 non-father peers N not reported by race	Yes (p < .05); Blacks > Whites

Table 3. Findings of 39 Reviewed Studies

Authors	Year	Type of Article	Measures	Findings
Abel et al.	2002	Consequence	Birth Records	Consequence: In comparison to the children of older fathers (21-25), logistic regression analyses found that children of adolescent fathers were more likely to have been born preterm and low birth weight. All analyses were controlled.
Alio et al.	2012	Consequence	Birth Records	Consequence: In comparison to older fathers (>20), partners of adolescent fathers had significantly higher rates of anemia, preeclampsia, and eclampsia. In comparison to the children of older fathers (25-29), children of adolescent fathers were significantly more likely to have low birth weight, preterm birth, very preterm birth, and small for gestational age. They were significantly less likely to have a late stillbirth and there were no significant difference in stillbirth or early stillbirth. All analyses were controlled.
Assini-Meytin et al.	2015	Consequence	Parental Supervision; Parental Curfew; 6-item Maternal School Aspiration (for child); Teacher's Observation of Classroom Adaptation; Self-Report Drug Use; 18-	Consequence: At age 32, adolescent fathers, compared to not adolescent fathers, were 1.7 times less likely to have a job. There were no significant differences in educational attainment, poverty status, or receiving welfare and there were no significant differences at age 42.

Auroux et al.	2009	Consequence	item of Frequency of Crimes General Intelligence (General Marks)	<u>Consequence:</u> Compared to men who scored higher on a measure of intelligence, men who scored lower were more likely to have a father who was an adolescent father at the time of the subject's birth.
Biello et al.	2010	Antecedent; Consequence	Mental Health Inventory subscale of SF-36; Peabody Individual Achievement Test	<u>Antecedent:</u> Chi-Square and T-test found that compared to non-father peers, adolescent fathers were more likely to have parents with less education, less likely to have lived with both biological parents, a lower federal poverty level percent (more poverty), and lower academic achievement. There were no significant differences in age, parental monitoring, parental discipline, and residence (urban or rural). <u>Consequence:</u> In unadjusted analyses, teenage fathers had worse mental health at year two. After controlling for covariates, multivariate analyses found no difference in mental health two years, four years, or six years later.
Campa et al.	2006	Antecedent	Stanford Binet Intelligence Test; Home Observation for Measurement of Environment	<u>Antecedent:</u> Adolescent fathers were significantly more likely to have mothers who were adolescents and unmarried than non-father peers. Earlier physical development and less frequent use of birth control predicted adolescent fatherhood. There was no relationship between IQ, home environment, parenting skills, having a father figure in the home, or intercourse by age 15 and adolescent fatherhood.

Card et al.	1978	Consequence	Demographic Factors	Consequence: Adolescent fathers, compared to not adolescent fathers, were significantly underrepresented in professional jobs reflecting high educational attainment and overrepresented in blue-collar jobs. They were also significantly more likely to have a job five years after high school than not adolescent fathers, but not 11 years after. There was no significant difference in income 11 years after high school. Adolescent fathers reported marginally significant ($p < .10$) more children than not adolescent fathers.
Chen et al.	2008	Consequence	Birth Records	Consequence: In controlled analyses, results found that the children of adolescent fathers were at greater risk for preterm birth, very preterm birth, low birth weight, small for gestational age births, low Apgar scores, neonatal mortality, and post-neonatal mortality compared to fathers aged 20-29. There was no relationship between very low birth weight and adolescent fatherhood.
Chudal et al.	2015	Consequence	Finnish Medical Birth Register	Consequence: Chi-square analyses found that adolescent fathers were significantly more likely to have a child with ADHD than fathers between the ages of 25 and 29, in controlled analyses.
Dearden et al.	1992	Antecedent	Demographic Factors; Derived Social Class; Author constructed measures of financial hardship, parental interest in education, teacher assessment of student	Antecedent: Compared to non-father peers, adolescent fathers had parents who were less interested in their education and had lower ratings of their school ability by teachers. Adolescent fathers also had less optimistic perceptions of school, less interest in further education at 16, were more likely to leave school, more likely to be kept at home to help around the house, more likely to start a job after completing secondary school. There was no difference in the adolescents projected occupation (semiskilled or unskilled) at age 11. In multivariate analyses, parents having less interest in their child's education and the age boys left school was the strongest predictor of adolescent fatherhood. Compared to a group of unmatched fathers, being kept at home to help around the house was also a significant predictor in multivariate analyses.

ability, legal
conflict,
aggressive
behaviors

Dearden et al.	1995	Antecedent	Demographic Factors; Derived Social Class; Author constructed measures of financial hardship, parental interest in education, teacher assessment of student ability, legal conflict, aggressive behaviors	<p>Antecedent: Compared to older fathers, adolescent fathers had older siblings, were more likely to leave school at age 16, were more absent from school, and had parents who were less interested in their education at age 11. There was no relationship of adolescent fatherhood and financial hardship, parents beliefs about leaving school at age 16, aggressive behaviors, legal conflict, parents interest in education at 7 and 16, teacher assessment of student ability, the adolescents perceptions of and interest in school at age 16.</p> <p>Compared to non-fathers, adolescent fathers had more older siblings, more financial hardship, had parents who wanted them to leave school at 16, were more likely to leave school at 16, more likely to be absent from school, more aggressive, more legal conflict, had less parental interest in their education at 7, 11, and 16, had lower ratings of ability by teachers at 7, 11, and 16, and had lower perceptions of and interest in school at age 16.</p> <p>In multivariate analyses, compared to older fathers, adolescent fathers were more likely to be absent from school, more likely to have left school at 16, and had lower parental interest in education at age 11.</p> <p>Compared to an unmatched sample of non-father peers, adolescent fathers had more financial hardship at age 11, more older siblings, were more absent from school, left school at age 16, and had lower</p>
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				<p>parental interest in education at age 7. Compared to a matched sample of non-father peers, adolescent fathers had more financial hardship at age 11, more older siblings, were more absent from school, left school at age 16, had lower parental interest in education at age 7, and were less optimistic about school at age 16.</p> <p>This article had further findings, however, due to space constraints they are not reported here.</p>
Elster et al.	1987	Antecedent; Correlate	Demographic Factors	<p><u>Antecedent:</u> Logistic regression found that compared to non-father peers, adolescent fathers were significantly more likely to have lived in a single-parent household at age 14, have parents with lower educational attainment, and come from a family with lower income.</p> <p><u>Correlate:</u> Adolescent fathers were more likely to be married than non-father peers.</p> <p>Further analyses were conducted in each racial/ethnic group, but these are not reported here.</p>
Fagan et al.	2011	Consequence	Demographic Factors	<p><u>Consequence:</u> Multiple regression analyses found that parental age was not a significant predictor of paternal engagement after controlling for co-parenting, social support, nonromantic involvement, and control variables. However, there was an interaction of age and social support such that the magnitude of the relationship between social support and paternal engagement was stronger among adolescent fathers than adult fathers. However, there was no interaction of parental age, social support, and nonromantic involvement.</p>
Fagot et al.	1998	Antecedent; Correlate	Hollingshead Four Factor Socio-Status Index; 8-item Parental Discipline	<p><u>Antecedent:</u> MANOVA found that compared to non-father peers, adolescent fathers had lower parental income and SES, greater parental antisocial behavior and parental discipline, greater participant's antisocial behavior, deviant peer association, and worse academic performance.</p> <p>In multivariate analyses, worse academic performance and lower</p>

			Scale; Child Depression Rating Scale; Kaplan's Global Self-Esteem Scale; Harter's Self-Esteem Scale; Parental Antisocial Behavior	family income were the strongest predictors of adolescent fatherhood.
Farrie et al.	2011	Consequence	Author-constructed Risk questionnaire	<u>Correlate:</u> ANOVA found that adolescent fathers had more juvenile arrests, used more tobacco, marijuana, and hard-drugs, and completed high school at lower rates than non-father peers. There was no significant difference in employment (part time or full time) and alcohol use. <u>Consequence:</u> In couples where both parents were adolescents, fathers were significantly more engaged than fathers in couples in which both parents were older. In couples where fathers face more risk factors for non-engagement with their child, there was a more significant decline in engagement for couples where both parents were adolescents and couples where only the fathers was an adolescent compared to older couples. When fathers were faced with high exposure to risks (greater than 4), adolescent fathers coupled with older mothers reported 57% less engagement than older fathers with older partners.
Fletcher et al.	2012	Antecedent; Consequence	Demographic Factors	<u>Antecedent:</u> In comparison to adolescents whose partners had abortion, adolescent fathers were more likely to be Hispanic, score lower on an academic achievement test, and had parents with lower education and income. In comparison to adolescents whose partners had miscarriages, adolescent fathers had lower parental education, lower family income, and less religious parents. There were no significant differences in age, being Black or White, general health, use of birth control, or having married parents. In multivariate analyses compared to adolescents whose partners had abortions, adolescent fathers were less likely to be Black than White, more likely to be Hispanic than White, had lower academic

achievement, had lower family income, a lower median income for the neighborhood, and less government aid to the neighborhood. Compared to adolescents who had miscarriages, adolescent fathers were older, less likely to be Hispanic, less likely to have married parents, less likely to live in communities with a higher percentage of Black residents and higher unemployment.

There was no association of parent age, parent religious attendance, being from a rural or urban area, attending private or public school, and percent of the neighborhood on welfare.

Consequence: In comparison to adolescents whose partners had abortions or miscarriages, adolescent fathers were less likely to have a high school diploma, had less years of schooling, were more likely to be married and to cohabit, and were more likely to work full-time. There were no significant differences in having a GED, being employed, income, wages, being in the military, or being idle (not in school and not having a job). In comparison to fathers whose partners had miscarriages, adolescent fathers were more likely to have GED's, have less years of schooling, and be married. There were no differences in having a diploma, cohabiting, being employed, full-time work, being idle, total income, or total wages.

Further analyses were conducted. However, due to space, they are not reported here.

Hanson et al. 1989 Antecedent Demographic Factors

Antecedent: Adolescent fathers, compared to non-father peers, were more likely to be Black, come from the South, have a single parent, have a mother with lower educational attainment, have a lower family income, have a more external locus of control, view work as less important, and have lower educational expectations. They were also more likely to consider having a child out of wedlock, to have had peers who valued education less, to have had parents with lower educational expectations, to have discipline problems, to have a girlfriend at an early age, to have a lower GPA, to have a lower math

and reading scores. They were less likely to go to private school as well.

There were no associations of adolescent fatherhood and mother's employment status (full time or part time), number of siblings, religious values, parents concern and communication for and with their child, taking a sex education course, number of hours the adolescent worked per week, or the adolescent having information on birth control.

In multivariate analyses, being Black, coming from the South, lower maternal education, an adolescent viewing work as less importance, considering having a child out of wedlock, having peers who value education less, having parents who communicate with the adolescent more, more discipline problems, and having a girlfriend were all related to becoming an adolescent father.

There was no association of adolescent fatherhood and coming from a single parent family, mothers employment status, family income, number of siblings, locus of control, an adolescents educational expectations, an adolescents religious values, parental concern, an adolescent parents educational expectations, attending a public or private school, GPA, math score, reading score, taking a sex education course, number of hours worked per week, or birth control information.

Heath et al.	1993	Consequence	Marital Satisfaction; Parental Satisfaction	Consequence: Multiple regression analyses found that compared to older fathers, adolescent fathers had significantly higher parental satisfaction, but there was no difference in number of intimate relationships, or marital satisfaction.
Heath et al.	1995	Consequence	CES-D-12; Parental Satisfaction	Consequence: Controlled regression analyses found that adolescent fathers had significantly more children, greater depressive symptoms, and greater parental satisfaction than older fathers.
Herrenkohl et al.	1998	Antecedent	Observations of Parent-Child	Antecedent: Chi-square analyses showed a significant association between IQ, dropping out of school, more assaultive behavior, and more drug use, and becoming an adolescent fatherhood. There was a

			Interactions; Wexler Intelligence Scale for Children- Revised; Achenbach Child Behavior Checklist	marginally significant association between experiencing sexual abuse and becoming an adolescent father. There was no relationship between alcohol use, physical abuse, neglect, or self-esteem and adolescent fatherhood.
Kessler et al.	1997	Antecedent	Composite International Diagnostic Interview	<u>Antecedent:</u> Adolescent fathers were significantly more likely to have anxiety disorders, addictive disorders, and conduct disorders than non-father peers. They were also more likely to have a greater number of disorders than non-father peers. There was no relationship between affective disorders and adolescent fatherhood.
Ketterlinus et al.	1992	Correlate	Demographic Factors	<u>Antecedent:</u> Compared to virgins and sexually experienced adolescents, adolescent fathers were significantly more likely to be Black, to be older, and to have lower maternal education. There was no association between adolescent fatherhood and environment (rural vs. urban). <u>Correlate:</u> Adolescent fathers attend religious services less frequently, and were more likely to have dropped out. In multivariate analyses, there was no association of problem behaviors (i.e., suspension, theft, violence, drugs) and adolescent fatherhood.
Khurana et al.	2011	Correlate	Global Risk Assessment Device	<u>Correlate:</u> Chi-square analyses found that adolescent fathers were more likely to belong to households that contained family members with incarceration histories, to have experienced being in the custody of child protective services, witness biological parents remarry, and reported new family members in the past year. In univariate analyses, significantly more substance use, exposure to trauma, and prior offenses were related to an increased risk of likelihood of becoming an adolescent father. Mental health was not

Krishnaswamy et al.	2009	Consequence	Clinical Interview Schedule Revised	<p>related to adolescent fatherhood.</p> <p>In multivariate analyses, after controlling for race and age, significantly worse mental health, more exposure to trauma and prior offenses and marginally significantly more substance use were related to becoming an adolescent father.</p> <p>Consequence: Chi-squared analyses demonstrated that the children of adolescent fathers had significantly higher rates of common mental disorders (e.g., mixed anxiety and depressive disorder, depressive episode, generalized anxiety disorder, phobic disorders, panic disorder, obsessive compulsive disorder) than the children of adult fathers.</p>
Landers et al.	2015	Antecedent; Correlate; Consequence	Demographic Factors	<p>Antecedent: Adolescent fathers were significantly more likely to be Black and Hispanic than White.</p> <p>Correlate: Adolescent fathers reported more property crimes, assaults, drug sales, arrests, hard drug use than not adolescent fathers. They also reported lower education and lower income. There were no significant differences in age, residence, or marijuana use.</p> <p>Consequence: Adolescent fathers reported significant decreases in marijuana and hard drug use in controlled analyses compared to not adolescent fathers. There was no significant decrease in property crimes, arrests, assaults, or drug sales.</p>
McGrath et al.	2014	Consequence	International Statistical Classification of Diseases, Diagnostic Criteria for Research (ICD-10 DCR)	<p>Consequence: Log linear Poisson Regression found that compared to children whose fathers were aged 25-29 at their birth, children whose fathers are under the age of 20 are significantly more likely to have any psychiatric disorder, mental and behavioral disorders due to substance use (psychoactive, alcohol, cannabis), mood disorders, neurotic stress-related and somatoform disorders, personality disorders, specific personality disorders, mental retardation, and behavioral and emotional disorders that usually being in adolescence, and hyperkinetic disorders. They were not more likely to have schizophrenia, schizoaffective disorder, eating disorders, pervasive developmental disorders, and childhood autism.</p>

McLaughlin et al.	1999	Correlate	Demographic Factors	<p><u>Correlate:</u> In comparison to juvenile non-father peers, Chi-Square analyses found that juvenile adolescent fathers were more likely to be a victim of firearm injury, more likely to have a past or current sexually transmitted disease, and more likely to be re-incarcerated within a two year timeframe.</p> <p>No difference in being a violent offender or selling drugs.</p>
Mollborn et al.	2011	Antecedent; Consequence	Bayley Short Form- Research Edition; Interviewer Observations of Child Behavior	<p><u>Antecedent:</u> In comparison to older fathers, adolescent fathers were more likely to be Black and Native American/American Indian and less likely to be White or Asian/Pacific Islander.</p> <p><u>Consequence:</u> Adolescent fathers reported being significantly more attached to their child and had marginally higher levels of negative attitudes toward fatherhood and less frequently reported being a better than average father. They also reported significantly less education, lower income, less paid child support, a less positive home environment for their child, and lower rates of cohabitation and marriage. They were also more likely to live with their parents or their partner's parents. There were no significant differences in food insecurity.</p> <p>The children of adolescent fathers were marginally significantly more likely to be born very low or moderately low birth weight than the children of adult fathers. They also had poorer health, as reported by their primary parent, and lower cognitive and behavioral scores at age 2.</p>

Pirog-Good	1995	Antecedent	Rotter Locus of Control Scale; Self-esteem scale; Sex-role belief scale	<p>Antecedent: T-tests demonstrated that adolescent fathers reported having mothers, fathers, and older siblings with lower educational attainment, fathers with lower prestige occupations, more siblings, and a greater number of older (in age) siblings. They were also significantly more likely to live in the South, live below the poverty threshold, and significantly less likely to have received magazines, newspapers, or have a family member who had a library card. With regard to living arrangements, adolescent fathers were significantly less likely than not adolescent fathers to have lived with biological parents, and significantly more likely to ever live with stepparents, live without a biological, step, or adoptive parent. They were significantly more likely to live be younger the first time they stopped living with a parent and were more likely to live in a children's home, have more times of not living with parents, to leave the house for marriage, or leave the house to be on their own. Adolescent fathers reported lower self-esteem, a more external locus of control, and more conservative sex-role beliefs. There were no significant differences in living with adoptive parents, living with a foster parent, running away, leaving the house to go to college, get a job, or enter the military, being taken away from parents by the courts due to neglect abuse, or trouble.</p> <p>Findings are also disaggregated by race/ethnicity, however, due to space, racial/ethnic differences are not reported.</p>
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Pirog-Good	1996	Correlate; Consequence	Demographic Factors	<p>Correlate: Compared to not adolescent fathers, adolescent fathers were significantly more dissatisfied with school. Adolescent fathers also reported marginally significantly lower educational aspirations and occupations. Adolescent fathers were significantly more likely to enter job training, apply for food stamps, or shoplift if they could not support their families than not adolescent fathers. There were no significant differences in going on welfare, seeking more education, or feelings of comfort without working.</p> <p>Consequence: Adolescent fathers reported marginally less education, were less likely to have ever received a GED or diploma, and were marginally older at the age they received their high school diploma or GED. Adolescent fathers reported a significantly higher hourly wage than not adolescent fathers between the ages of 18 and 21, between 22 and 26, there were no significant differences, starting at age 27 not adolescent fathers reported a higher hourly wage. Between the ages of 18 and 20, adolescent fathers reported a higher average income. At age 21, there was no significant difference. Starting at age 22, not adolescent fathers had either a marginally significant or significantly higher income. In multivariate analyses, adolescent fathers reported significantly less years of education than not adolescent fathers. They were also significantly less likely to receive a high school diploma.</p>
<p>Racial/ethnic differences were also explored, however, they are not included in this table.</p>				

Rivara et al.	1986	Consequence	Hollingshead Employment Subscale; Iowa Child Development test; Profile of Mood States (POMS)	Consequence: Student's t test, Mann-Whitney U test, and Chi-Square test found that compared to non-father peers, adolescent fathers were more likely to be head of household and had higher SES jobs than non-father peers 18 months postpartum, but no difference in SES or head of household at 9 months postpartum. Fathers were less likely to be in school 18 months postpartum, however, there was no significant difference in high school completion. Non-father peers more likely to attend one year of college than fathers. Adolescent fathers reported lower expectations for educational attainment and occupation than non-father peers. Fathers were also more likely to plan marriage. There was no difference in knowledge of newborn development and newborn health maintenance 9 months postpartum, however, at 18 months, non-fathers knew the normal development and diet of a newborn than fathers.
Rivara et al.	1987	Consequence	Demographic Factors	Consequence: Adolescent fathers were significantly more likely to have more children than non-father peers.
Sipsma et al.	2010	Antecedent	Child Behavior Checklist; Delinquency Index; Substance Use Index; Author-constructed measures of deviant peer behavior, enriching peer behaviors, parental monitoring,	Antecedent: In univariate analyses, compared to non-father peers, adolescent fathers reported significantly higher delinquency and substance use, fewer years of parental education, more children in the home, biological parents not living with the child at age 2, living in a single-parent home, not living with a biological father, higher levels of deviant peer norms, early adolescent dating, and being Black or Hispanic. They also reported a lack of enriching environment, a higher physical risk environment, and were more likely to have parents who were adolescent parents. There was no significant difference in behavioral or emotional problems, not living with a biological mother, parental monitoring, or enriching peer norms. In multivariate analyses, adolescent fathers reported higher delinquent, less maternal education, early adolescent dating, being Black or Hispanic, and a higher physical risk environment. They were also more likely to have fathers who were adolescent parents themselves.

Sriyasak et al.	2015	Antecedent; Consequence	<p>and enriching environment</p> <p>Father's Sense of Competence Questionnaire; Father's Childrearing Behavior questionnaire; Relationship between Father and Child questionnaire</p>	<p>Behavioral/emotional problems, substance use, parental education, living with both biological parents, a single-parent home, parental monitoring, living with a biological father, deviant peer norms, enriching peer norms, an enriching environment, and a mother who is an adolescent parent were not significant predictors.</p> <p>Antecedent: Chi-Square Analyses found that compared to adult fathers, adolescent fathers were more likely to have an unplanned baby.</p> <p>Consequence: Mann-Whitney U Test found that adolescent fathers reported lower education, a significantly less saved money, lower sense of competence, less childrearing behavior, and a weaker relationship between father and child than adult fathers. There were no differences based on income, family size, childrearing experience, their father taking care of the child when the child is sick, shared childrearing, age of the baby.</p>
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Stouthamer-Loeber	1998	Antecedent; Consequence; Correlate	Diagnostic Interview Schedule for Children; California Achievement Test; U.S. Census	<p><u>Antecedent:</u> Chi-square analyses found that adolescent fathers had sex at earlier ages, were more untrustworthy, were cruel to people, engaged in more delinquent behavior, had greater exposure to drugs, had more positive attitudes toward substance use and delinquency, and thought they were less likely to get caught. Adolescent fathers also were significantly more likely to be truant, have low school motivation, be suspended, have negative attitudes toward school, to not get along with peers, to have delinquent peers, and for their peers to use substances. Adolescent fathers were more likely to have a lack of guilt, be old for their grade in school, have low achievement in school, and low organizational participation. They were more likely to have mothers with low educational attainment, be in a family on welfare, be Black, come from a broken home, or live in a bad neighborhood.</p> <p>There was no association between adolescent fatherhood and nonphysical or physical aggression, oppositional problems, or conduct disorder problems. There was also no association between being manipulative or unaccountable, running away, drug use, or positive attitudes toward problem behavior and adolescent fatherhood. There was no association between adolescents disobeying parents after a reprimand or having bad friends and adolescent fatherhood. No association was found between adolescent fatherhood and impulsivity problems, ADHD, depressed mood, parental reinforcement, supervision, or communication, involvement in family activities, low socioeconomic status, or poor housing. Multivariate analyses found that adolescents were more likely to be old for their grade in school, come from a bad neighborhood, and from a broken home. There were no other significant associations with adolescent fatherhood in multivariate analyses.</p> <p><u>Consequence:</u> Adolescent fathers were more likely to be delinquent in the year of fatherhood and the year after fatherhood.</p>
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Thornberry et al.	1997	Antecedent	<p>Life stress measures; Friend's social support; Parental depression; Family violence; Hudson Scale of Attitudes Toward Parents; Parental supervision; Commitment to school; College aspirations; Parent's college expectations; California Achievement Test; Child Behavior Checklist; Delinquent Beliefs</p>	<p>Antecedent: Pearson's r correlations and logistic regressions found that adolescent fathers were more likely to be Black or Hispanic, live in communities with more poverty, female headed households, a higher community arrest rate, and more neighborhood disorganization. Adolescent fathers were more likely to have parents with lower education, families who received welfare, families with a poverty level income, and parents who were younger at the birth of their first child. Adolescent fathers reported less social support from family and friends, a lower reading and math score, and their parents had lower college expectations for them. Adolescents had girlfriends and sexual intercourse at earlier ages, they had more delinquent peers and peers more likely to be in gangs. Adolescent fathers were more depressed, had less internalizing symptoms, and more delinquent beliefs. Adolescent fathers also were more likely to use drugs and be general and violent offenders.</p> <p>There was no association between adolescent fatherhood and recent life stress, parental depression, family violence, living with both parents, attachment to parents, parental supervision, parental involvement, reports of child abuse, commitment to school, attachment to teacher, college aspirations, religious participation, externalizing symptoms, and self-esteem.</p> <p>In multi-variate analyses, being Black or Hispanic, having parents who were younger at the birth of their first child, lower parental education, lower parental expectations for college for their child, early sexual intercourse, drug use, a lower reading scores, being in a gang, and involvement in violent behavior were all related to becoming an adolescent father. There was no association of neighborhood poverty, neighborhood disorganization, poverty level income, recent life stress, social support, and adolescent fatherhood.</p>
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Unruh et al.	2003	Antecedent; Consequence; Correlate	DSM- diagnosed mental disorder; Demographic Factors	<p><u>Antecedent:</u> Adolescent fathers were significantly more likely to not have two parents in the household and to have a parent with alcoholism. There were no differences in maternal education or race/ethnicity.</p> <p><u>Correlate:</u> Adolescent fathers were also more likely to be gang members, have had treatment for drug/alcohol abuse, and have a family member convicted of a crime. In the correctional facility, adolescent fathers were more likely to receive drug and alcohol treatment, attend a support group for children of alcoholics, and to utilize parenting programs, gang intervention programs, drug education, and career development. Adolescent fathers also more likely to use public welfare services, be involved in a serious relationship, and have the death of a close friend. There was no difference in having parole revoked, having a criminal charge in the past three years, age at first adjudication, number of times adjudicated, special education disability, DSM diagnosis, attempted suicide, history of self-abuse, previous placement in supervised community living program, history of running away, highest grade completed, personal social behavior, problem solving, being adopted, having a parent convicted of a crime, maternal education, ethnicity, and setting of most crimes.</p> <p><u>Consequence:</u> Chi-Square tests and t-tests showed that juvenile adolescent fathers were more likely to return to incarceration 12 months after release than juvenile non-father peers. No significant difference at months, no significant differences in education engagement, employment engagement, use of community resources, or overall engagement.</p>
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Unruh et al.	2004	Antecedent; Correlate	Social Skill Rating Form; Hollingshead Four Factor Socio-Status Index	<p><u>Antecedent:</u> Chi-Square tests, T-tests, and logistic regression found that compared to juvenile non-father peers, juvenile adolescent fathers were significantly more likely to be older, not have two parents in the household or have a parent with alcoholism.</p> <p><u>Correlate:</u> Adolescent fathers were more likely to be gang members, have had treatment for drug/alcohol abuse, and have a family member convicted of a crime.</p> <p>There was no significant difference in having parole revoked, having a criminal charge in the past three years, age at first adjudication, number of times adjudicated, special education disability, DSM diagnosis, attempted suicide, history of self-abuse, previous placement in supervised community living program, history of running away, highest grade completed, personal social behavior, problem solving, being adopted, having a parent convicted of a crime, maternal education, ethnicity, and setting of most crimes.</p>
Wei et al.	2002	Antecedent	Self-reported delinquency scale; Extended Child Behavior Checklist; Extended Youth Self Report; Extended Teacher Report Form; Sexual Activity Questionnaire	<p><u>Antecedent:</u> Chi-Square analyses found that 31% of repeat serious delinquents were adolescent fathers which was significantly greater than 15% of moderate delinquents and 14% of minor/non-delinquents. Among Blacks, repeat serious delinquency was associated with adolescent fatherhood, but not for Whites.</p>

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The Antecedents of Adolescent Fatherhood in Black Males

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Abstract

Background: Research demonstrates that adolescent fathers in the United States are disproportionately likely to be Black, but contributors to adolescent fatherhood among Black adolescents are understudied. This study's purpose was to examine individual and familial influences as predictors of becoming an adolescent father in Black adolescents. Hypotheses were that adolescents males who engage in more risky sexual behaviors, more substance use, more delinquent behavior and have lower academic competence, and who have parents with lower socioeconomic status, lower educational expectations, and more permissive attitudes toward sex are more likely to become adolescent fathers compared to adult fathers and non-father peers.

Methods: In data from the National Longitudinal Study of Adolescent to Adult Health (Add Health), adolescents completed surveys at four time points. Wave 1 and Wave 2 assessments were completed while the participants were adolescents (age 12-19). Wave 3 and Wave 4 data were collected during late adolescence to adulthood (age 18-33). In total, 537 Black adolescent males completed surveys. The sample consisted of 33 adolescent (age < 20 years) fathers, 241 men who had children as adults (> 19 years), and 263 non-father age peers who did not report having children by Wave 4.

Results: Univariate analyses demonstrated that adolescent fathers were more likely to engage in sex prior to the age of 15 than adult fathers and non-father peers. Compared to non-father peers only, adolescent fathers had lower educational aspirations and engaged in more delinquent behavior. In multivariate analyses, engaging in early sexual intercourse was the only significant predictor of adolescent fatherhood. Among familial influences, lower perceived maternal disappointment if the adolescent did not complete college was the only significant predictor of adolescent fatherhood.

Future Directions and Implications: Findings have implications for understanding why Black adolescents are more likely to become adolescent fathers and identifying adolescents at risk for becoming adolescent fathers.

Keyword: adolescent fathers, teenage fathers, antecedents, Black, African American

The Antecedents of Adolescent Fatherhood in Black Males

A large body of research demonstrates that Black adolescent males are more likely to become adolescent fathers than adolescent males of other racial and ethnic backgrounds (Hanson, Morrison, & Ginsburg., 1989; Paschal, 2013; Scott, Steward-Streng, Manlove, & Moore, 2012; Stouthamer-Loeber, 1998; Thornberry, Smith, & Howard, 1997). However, only one recently published study (Assini-Meytini & Green, 2015) has comprehensively examined factors that predict adolescent fatherhood among Black males. As such, the purpose of the current study is to use Parke's systems views theory (1996) to investigate hypothesized antecedents of adolescent fatherhood in a sample of Black adolescent males.

Parke's theoretical framework (1996) takes a systems view in proposing that a father's involvement with his child can be predicted by individual, familial, extra-familial, and cultural influences. The current research extends the systems view by examining how these influences can increase the probability of an adolescent male becoming an adolescent father. The current paper will explore individual influences that reflect behaviors and attitudes of the adolescent himself such as his sexual behaviors or substance use, and familial influences that reflect factors related to members of the adolescent's family, such as parental socioeconomic status (SES) and parental involvement as predictors of becoming an adolescent father.

Individual Influences

A systematic review conducted as Study 1 of this dissertation research demonstrated that adolescent males who become adolescent fathers are more likely to engage in delinquent behavior and have lower academic competence and peers who engage in deviant behavior such as smoking, drinking, or being a member of a gang. Adolescent fathers were also more likely to come from low-SES backgrounds characterized by low parental educational attainment and

income, and low-SES neighborhoods. Those findings as well as the available data base for the current study (Harris et al., 2009) guided the selection of individual and familial influences for this study. Extra-familial and cultural influences were not examined because they were not available in the current dataset.

Risky sexual behaviors. One risky sexual behavior related to adolescent fatherhood is early age at the start of sexual intercourse, defined as prior to the age of 15 years (Smith, 1997). In a longitudinal study of 803 Black and Hispanic adolescents, Smith found that earlier sexual activity was associated with an increased risk of childbearing. Other studies have also reported that engaging in sexual intercourse at earlier ages is associated with adolescent fatherhood (Stouthamer-Loeber, 1998; Thornberry, Smith, & Howard, 1997). Early sexual activity is particularly important among Black adolescent males because research shows that they start having sex earlier than adolescents from other racial/ethnic backgrounds. According to the Centers for Disease Control and Prevention (2010), by the age of 13, one in four Black males had engaged in sexual intercourse compared to 10% of Latinos and four percent of whites (CDC, 2010). By 12th grade, 60% of male students had engaged in heterosexual sexual intercourse with the highest rate among Black male students (72%) compared to Hispanics (53%) and whites (40%).

Mental health. Little evidence exists for a direct relationship between depressive symptoms and adolescent fatherhood. While Thornberry, Smith, and Howard (1997) found that greater depressive symptoms and greater internalizing symptoms were related to adolescent fatherhood in univariate analyses, the association was no longer significant in controlled analyses. Three other studies have reported no relationship between depressive symptoms and adolescent fatherhood (Fagot, Pears, Capaldi, Crosby, & Leve, 1998; Kessler et al., 1997;

Stouthamer-Loeber, 1998). Although these studies show no direct relationship between depression and adolescent fatherhood, some research has demonstrated a link between depressive symptoms and risky sexual behaviors, which are related to adolescent fatherhood. In a sample of over 3,200 adolescent males from National Longitudinal Study of Adolescent to Adult Health (Add Health), the dataset used in the current study, greater depressive symptoms were associated with earlier onset of sexual activity (Longmore, Manning, Giordano, & Rudolph, 2004). In another study of the Add Health sample, depressive symptoms were associated with an increased risk of condom non-use at most recent sexual intercourse (Shrier, Harris, Sternberg, & Beardslee, 2001). The association between greater depressive symptoms and less condom use has also been found specifically in Black adolescent males (Brown et al., 2006). Other researchers, however, have not demonstrated a link between depressive symptoms and earlier onset of sexual activity (Spriggs & Halpern, 2009).

Substance use. Mixed evidence exists for a relationship between substance use (i.e., marijuana, hard drugs, and alcohol) and adolescent fatherhood. Some research shows a relationship between greater drug use and becoming an adolescent father (Herrenkohl, Herrenkohl, Egolf, & Russo, 1998; Sipsma, Biello, Cole-Lewis, & Kershaw, 2010). In one study comparing 175 adolescent fathers to more than 400 non-father peers, greater drug use was a significant longitudinal predictor of becoming an adolescent father, after controlling for a host of other variables such as race, poverty status, and parental education (Thornberry, Smith, & Howard, 1997). However, some researchers have found no association between drug use and adolescent fatherhood (Assini-Meytin & Green, 2015; Fagot, Pears, Capaldi, Crosby, & Leve, 1998; Hanna, Yi, Dufour, & Whitmore, 2001). There is also research showing that alcohol, tobacco, and drug use are associated with risky sexual behaviors such as earlier sexual activity

(Donovan & Jessor, 1985), less frequent condom use, and more sexual partners (Biglan et al., 1990). Risky sexual behaviors may be one mechanism by which substance use is related to adolescent fatherhood.

Academic Competence. A large body of literature demonstrates that adolescents are more likely to become adolescent fathers when they have lower academic competence as measured by a lower GPA (Hanson, Morrison, & Ginsburg, 1989), lower educational aspirations and expectations (Dearden, Hale, & Alvarez, 1992; Dearden, Hale, & Woolley, 1995), and scores on standardized tests (Fagot, Pears, Capaldi, Crosby, & Leve, 1998; Stouthamer-Loeber & Wei, 1998). For example, Xie, Cairns, and Cairns (2001) found that lower academic competence, as measured by teachers' rating of students' ability, significantly predicted adolescent fatherhood over and above race, age, and socioeconomic status.

Delinquent Behavior. Several studies demonstrate that adolescent males who engage in more delinquent behavior are significantly more likely to become adolescent fathers (Hanson, Morrison, & Ginsburg, 1989; Sipsma, Biello, Cole-Lewis, & Kershaw, 2010; Thornberry, Smith, & Howard, 1997). One study in particular found that adolescent males who engaged in serious delinquent behaviors repeatedly were twice as likely to become adolescent fathers in comparison to adolescents who engaged in moderate, minor, or no delinquent behavior (Wei, Loeber, & Stouthamer-Loeber, 2002).

Resilience resources. Resilience resources are individual, social, or community characteristics which allow one to cope and function in the face of stressful experiences (Dunkel Schetter & Dolbier, 2011). Examples of resilience resources include social support, self-esteem, approach-oriented coping skills, and optimism. Two types of resilience resources that have been examined among adolescent fathers are locus of control and self-esteem. Individuals with an

external locus of control view their lives as controlled by luck or fate, whereas individuals with an internal locus of control believe their success is determined by individual initiative. In two longitudinal studies, adolescent males with a more internal locus of control were less likely to become adolescent fathers (Hanson, Morrison, & Ginsburg., 1989; Pirog-Good, 1995). Pirog-Good found that the relationship between locus of control and adolescent fatherhood was significant among Black adolescent males. Pirog-Good also found adolescents with higher self-esteem were less likely to become adolescent fathers, but this relationship was only significant among white adolescents, not Black adolescents. Several other studies have found that self-esteem did not predict adolescent fatherhood (Fagot et al., 1998; Herrenkohl et al., 1998; Thornberry et al., 1997). No published research has examined other types of resilience resources and their associations with adolescent fatherhood, which is a clear gap in the literature.

Familial Influences

Family socioeconomic status. It is well-established that adolescent fathers come from lower SES backgrounds than do males who do not become fathers in adolescence. Adolescent fathers tend to have parents with lower educational attainment (Biello, Sipsma, & Kershaw, 2010; Elster, Lamb, & Tavaré, 1987; Fletcher & Wolfe, 2012; Hanson, Morrison, & Ginsburg, 1989; Ketterlinus, Lamb, Nitz, & Elster, 1992; Unruh, Bullis, & Yovanoff, 2004) and lower income (Elster, Lamb, & Tavaré, 1987; Fagot, Pears, Capaldi, Crosby, & Leve, 1998; Fletcher & Wolfe, 2012; Hanson, Morrison, & Ginsburg, 1989) than their peers.

Family characteristics. Mixed evidence exists for the relationship between adolescent fatherhood and family characteristics such as parental involvement, parental attitudes toward sex, and parental expectations for their child's educational attainment. Although two studies which used the same dataset found that lower parental monitoring was marginally associated with

adolescent fatherhood (Biello, Sipsma, & Kershaw, 2010; Sipsma, Biello, Cole-Lewis, & Kershaw, 2010), other studies have found no relationship between adolescent fatherhood and other forms of parental involvement or parenting behaviors such as parental discipline (Fagot, Pears, Capaldi, Crosby, & Leve, 1998; Stouthamer-Loeber, 1998), parental communication (Hanson, Morrison, & Ginsburg, 1989; Stouthamer-Loeber, 1998), or parental relationship quality or satisfaction (Biello, Sipsma, & Kershaw, 2010; Campa & Eckenrode, 2006; Stouthamer-Loeber, 1998).

In contrast, some research shows that parental attitudes play an important role in risky sexual behaviors. In a systematic review of 13 studies on paternal influences on adolescent sexual behaviors, Guilamo-Ramos et al. (2012) found parental approval of sexual activity was related to earlier onset of sexual activity, which, as previously stated, is associated with a greater risk of becoming an adolescent father. That same systematic review found mixed evidence for paternal attitudes predicting frequency of condom use, and no evidence showing an association of paternal attitudes and other risky sexual behaviors. Research also shows that parental educational expectations for their children are related to adolescent fatherhood. Adolescent males with parents who had lower educational expectations for them are more likely to become adolescent fathers than peers whose parents had higher educational expectations (Dearden, Hale, & Alvarez, 1992; Dearden, Hale, & Woolley, 1995; Thornberry, Smith, & Howard, 1997).

Hypotheses

Overall, previous research shows that there are many potential antecedents of adolescent fatherhood. The primary aim of this study is to contribute to the literature on the antecedents of adolescent fatherhood by exploring antecedents among a sample of Black adolescent males.

Specifically, this study investigate the roles of the aforementioned individual influences and familial influences as predictors of adolescent fatherhood.

First, it is hypothesized that more risky sexual behaviors, more substance use, lower academic competence, more delinquent behavior, and lower resilience resources will each independently predict adolescent fatherhood. Second, it hypothesized that lower parental SES, lower parental educational expectations, and more permissive parental attitudes toward sex will each independently predict entry into adolescent fatherhood. Third, it is hypothesized that risky sexual behaviors will mediate the relationship between (a) greater depressive symptoms and adolescent fatherhood and (b) substance use and adolescent fatherhood. Finally, the current study will explore parental involvement as a predictor of adolescent fatherhood and examine risky sexual behaviors as mediators of the relationship between individual and familial influences and adolescent fatherhood.

Method

Study Design and Procedure

The National Longitudinal Study of Adolescent to Adult Health (Add Health) is a longitudinal, prospective study originally developed to examine factors implicated in adolescent health and risk behaviors. Factors studied include personality, peer relationships, family background, romantic relationships, and the environment of the adolescent. As the participants grew older, the aims of the study shifted to explore how those factors studied in adolescence predict decisions, behaviors, and health in adulthood. As of 2016, Add Health has completed four waves of study and is in the process of collecting data for Wave 5 (T5; 2016 – 2018). Wave 1 (T1) was conducted during the school year of 1994 - 1995, Wave 2 (T2) was conducted during the school year of 1995-1996, Wave 3 (T3) was completed during the years of 2001-2002, and

Wave 4 (T4) was completed in years 2007-2008. The current study will use T1, T2, T3, and T4 data in analyses.

A sample of 80 high schools and 52 middle schools in the United States was selected with unequal probability of selection. Incorporating systematic sampling methods and implicit stratification into the Add Health study design ensured this sample is representative of US schools with respect to region of country, urbanicity, school size, school type, and ethnicity (Harris et al., 2009). Adolescents were interviewed at home and/or at their school at various time points. Add Health oversampled for high socioeconomic status Black adolescents with highly educated parents.

Participants

Add Health had 6,504 participants at T1. Less than half the total sample ($N = 3,147$; 48.3%) are male and 24.9% of the sample ($N = 1,619$) self-identify as Black. There were 757 non-Hispanic Black males (11.9% of the total sample) at T1. Ten participants were excluded because they were too old at T1 (> 19 years), and nine participants were excluded because they were already teenage fathers at T1 leaving a total of 738 Black adolescent males. Of these, 73% of these adolescents ($n = 537$) completed measures at T3 and/or T4 when data on parenting was collected.

Measures

Age. Age at each assessment was calculated by subtracting the participant's birth year from the year of the interview (Year of Interview – Birth Year).

Age at fatherhood. The primary outcome variable was based on whether males in the sample became a father and the age they became a father. A categorical variables was created as follows: adolescent fathers (< 20 years), adult fathers (> 19 years), and men who have not

become fathers by T4, hereby referred to as “non-father peers.” Age at fatherhood was calculated by subtracting the age of the participant’s child, reported at T4, from the age of the participant at T4 (Age at Fatherhood = Age at T4 – Child’s Age at T4).

Risky sexual behaviors. Risky sexual behaviors were measured by two variables assessed at T1 and T2. The first measure was whether the participant had sex prior to the age of 15, hereby referred to as early sexual intercourse. This variable was created by subtracting the year the participants reported having sex for the first time from the year of the interview. Then, that figure was subtracted from their current age. The equation is as follows: (Age of Onset of Sexual Behavior = Current age – (Year of Interview – Year of First Sexual Encounter). If their age was younger than 15, they were coded as 1 (having early sex). If they were 15 or older at their first intercourse or virgins, they were coded as 0.

The second risky sexual behavior was measured at T1 and T2 and is a measure of joint occurrences of sexual behavior and alcohol or drugs. Of those who had sex, participants are asked whether they were drinking, drunk, or under the influence of drugs the first time they had sex and the most recent time they had sex. In total, participants can report having experienced up to 6 joint occurrences. Participants are coded as either a 1 (*at least one joint occurrence*) or a 0 (*no joint occurrences*). Participants who reported at least one joint occurrence at T1 are automatically coded as having experienced a joint occurrence at T2.

Mental health. Mental health at T1 was measured by a 19-item Center for Epidemiologic Studies Depression Scale (CES-D; Radloff, 1977). An example item is “I felt depressed” and answers range from 0 (*never or rarely*) to 3 (*most or all of the time*). Four positively worded items were reverse coded. The original CES-D has 20 items, but Add Health researchers removed one item; “my sleep was restless.” Scores range from 0 to 57 and higher

scores indicate greater depressive symptoms. This scale had somewhat low internal consistency (Cronbach's alpha = .66).

Substance use. Substance use was measured by three variables at T1, alcohol use, marijuana use, and tobacco use. To measure alcohol use, participants reported how many days they drank alcohol over the last 12 months. Answers range from 1 (*every day or almost every day*) to 7 (*never*). Marijuana and tobacco use were measured by the number of days the participant used marijuana or tobacco over the past 30 days. Answers can range from 0 to 30. Alcohol use, marijuana use, and tobacco use were positively skewed, so they were each coded as a 1 if the participant reported using the substance at all, or a 0 if they never used the substance.

Academic competence. Academic competence was measured by two variables. The first was their average grade in the last academic grading period in English, Math, History, and Science. One was coded as an (A), 2 (B), 3 (C), and 4 (*D or lower*). Scores were reverse-coded so that higher scores indicate greater average grades, and then they were averaged across subjects. Some participants were missing because they were not currently taking that subject or were not graded in that way. If they were missing up to two of the subjects, means were calculated for the two available subjects. If they were missing on three subjects or did not reply, they were not included in analyses.

The second measure of academic competence was educational aspirations. Participants were asked "How much do you want to go to college?" and "How likely is it that you go to college?" and responses ranged from 1 (*low*) to 5 (*high*). Scores were summed and higher scores indicate greater educational aspirations.

Delinquent behavior. Delinquent behavior was measured by a 15-item revised version of the Street Crimes scale (Huizinga, Loeber, & Thornberry, 1994). Example delinquent

behaviors were stealing money and driving a car without the owner's permission. Responses range from 0 (*never*) to 3 (*five or more times*) and are summed. Scores can range from 0 to 45; higher scores indicate greater delinquency. This scale had good internal consistency (Cronbach's alpha = .85).

Perceived resilience resources. Participants completed a 36-item scale on factors such as parental support, good physical health, self-esteem, internal locus of control, problem solving skills, knowledge of safe sexual practices, having friends with knowledge of safe sexual practices. I operationalized this scale as resilience resources because the items theoretically reflect resources that may help adolescents in the face of stress (Dunkel Schetter & Dolbier, 2011). I removed three items because they did not reflect resilience resources (You usually go out of your way to avoid having to deal with problems in your life; Difficult problems make you very upset; When making decisions, you usually go with your "gut feeling" without thinking too much of the about the consequences or the alternative). On their face, these items do not reflect resilience resources.

So, the final scale had 33 items. Responses ranged from 1 (*strongly agree*) to 5 (*strongly disagree*), but were reverse coded so that higher scores indicate greater resources. The average score was calculated for individuals who completed at least 75% ($n = 25$) of the 33 selected items. The scale had good internal consistency (Cronbach's alpha = .87).

Parental SES. Parental socioeconomic status (SES) was measured at T1 by the adolescent's report of their parent's educational background. Categories are dichotomized into college graduate or not. Due to fathers' high rate of non-residence ($n = 221$; 42%) and mother's low rate of non-residence ($n = 67$), only maternal educational attainment for residential mothers was used in analyses.

Maternal involvement. Parental involvement at T1 was measured by a 10-item scale of common activities over the past four weeks such as going shopping, going to a movie, or playing a sport. Participants respond either 1 (*yes*) or 0 (*no*). Scores are summed and range from 0 to 10. Higher scores indicate greater parental involvement in respondents' activities. These items separately referred to residential parents and non-residential parents. However, due to fathers' high rate of non-residence (n = 221; 42%) and mothers' low rate of non-residence (n = 67), maternal involvement for residential mothers was selected for analysis.

Perceived maternal attitudes toward sex. A three-item measure of perceived parental disapproval toward sexual activity was collected at T1. An example item is "How would she/he feel about you having sex at this time in your life?" Participants were told to think of their residential mothers and residential fathers when responding to the question. If participants did not report having a residential mother or father figure, they did not complete this scale. Responses range from 1 (*strongly disapprove*) to 5 (*strongly approve*). Scores are reverse-coded and summed separately for mother and father. Scores range from 3 to 15; higher scores indicate greater perceived parental disapproval of sexual activity. This scale had acceptable internal consistency in mothers (Cronbach's alpha = .76). Due to fathers high rate of non-residence (n = 221; 42%), only maternal involvement was used.

Perceived maternal educational disappointment. At T1, participants reported how disappointed their residential mothers would be if they (a) did not finish high school and if they (b) did not finish college. Scores range from 1 (*low*) to 5 (*high*). Higher scores indicate greater disappointment. Due to fathers high rate of non-residence (n = 221; 42%), only maternal disappointment by residential mothers was used in analyses.

Overview of Data Analyses

First, descriptive statistics for all study variables were computed. Second, Pearson's Correlation Coefficients were computed to explore relationships between continuous study variables. Next, analyses of variance (ANOVAs) comparing adolescent fathers, adult fathers, and non-father peers on study variables and Tukey-Kramer post-hoc tests were conducted.

Regression analyses. To test hypotheses, four logistic regression analyses were conducted with fatherhood status as the dependent variable (i.e., adolescent father vs. adult father and adolescent father vs. not father). First, two logistic regressions tested all the individual influences as predictors of becoming an adolescent father (vs. an adult father or not father). Second, two logistic regressions tested all the familial influences as predictors of fatherhood status.

Because only six percent ($n = 33$) of the sample became adolescent fathers, it is considered a rare event. Research demonstrates that the estimates from analyses with rare events are biased (Leitgob, 2013). Therefore, a penalized maximum likelihood function (firthlogit) was used instead of normal logistic regression which produces less biased estimates (Coveney, 2015). All logistic regression analyses that compared adolescent fathers to adult fathers controlled for age because that there were significant differences in age at T1 between the adolescents who became adolescent fathers and those who became adult fathers.

Mediation analyses. To test risky sexual behaviors as a mediator of the relationship between individual and familial influences and adolescent fatherhood, unstandardized indirect effects were computed for 500 bootstrapped samples and the 95% confidence interval was computed.

Results

Demographic Characteristics

Table 1 presents demographic characteristics of the participants at T1. The average age was 16 years of age (Range = 12 to 19 years). Grade levels were evenly distributed between 7th and 12th grade. By T4, approximately half of the participants had not become fathers, six percent of the sample had become adolescent fathers (M age at fatherhood = 18.06, SD = 1.20; Range: 14 – 19), and the rest of the participants became fathers between the ages of 20 and 31. The average age at fatherhood for the adult fathers was 24.45 (SD = 3.19)

The adolescent males reported the educational background of their parents. Table 2 presents demographic characteristics of the residential mothers (i.e., mother, grandmother, aunt, or sister), residential fathers (i.e., father, grandfather, uncle, or brother), non-resident biological mothers, and non-resident biological fathers of the participants.

Descriptive Statistics of Study Variables

Table 3 shows descriptive statistics for the entire sample for all individual level variables. By T2, nearly 40% of the sample had had sex prior to the age of 15 and 12% of the sample reported at least one joint occurrence of sex and drugs or alcohol. At T1, on average, the adolescents reported feeling depressive symptoms “not at all” to “some or a little of the time.” With regard to substance use at T1, a third of the sample consumed alcohol at least once in the past 12 months, while 12% reported using marijuana in the last 30 days and 14% reported tobacco use in the past 30 days. For academic competence at T1, these adolescents reported, on average, having a 2.53, similar to 2.57 national average GPA for high school students in 1994 on the core subjects (Nord et al., 2011), the year this study began. The adolescent’s educational aspirations were relatively high as well. On average, at T1 adolescents “agreed” that they had

resilience resources and reported very little delinquent behavior. Approximately 21% (n = 108) of the sample did not engage in any of the delinquent behaviors.

Table 4 displays descriptive statistics on the entire sample for all familial variables. Approximately one-third of the adolescents' residential mothers had at least a college degree. At T1, adolescents reported doing between three and four activities with their residential mother in the past four weeks. The reports on mothers attitudes toward the young men having sex at T1 range from "neither disapprove nor approve" to "disapprove" of them and they reported that, on average, their mothers would be highly disappointed if they did not complete high school or college.

Pearson's Correlation Coefficients for Continuous Study Variables

Table 5 contains Pearson's correlation coefficients between study variables for the sample as a whole. Older age was significantly ($p < .05$) correlated with greater depressive symptoms, lower educational aspirations, less maternal involvement, and lower perceived maternal disapproval of sex and marginally significantly ($p < .10$) associated with lower average grades and lower perceived maternal disappointment if the adolescent did not graduate from college. Age was not related to resilience resources, delinquent behavior, or perceived maternal disapproval if the adolescent did not graduate high school. Greater depressive symptoms were correlated with lower average grade, lower educational aspirations, less resilience resources, more delinquent behavior, and lower perceived maternal disapproval if the adolescent did not complete high school or college. There were no significant relationships between depressive symptoms and maternal involvement or maternal disapproval of sex. Higher average grade was also correlated with greater educational aspirations, more resilience resources, less delinquent behavior, and greater perceived maternal disapproval of sex. There were no associations between

average grade and maternal involvement or perceived maternal disappointment if the adolescent did not complete high school or college.

Greater educational aspirations were associated with greater resilience resources, less delinquent behavior, greater maternal involvement greater maternal disapproval of sex, and greater perceived maternal disappointment if the adolescent did not complete college. There was no association of educational aspiration and maternal disappointment if the adolescent did not complete high school. Greater resilience resources were associated with less delinquent behavior, greater maternal involvement, and greater maternal disappointment if the adolescent did not finish college. There was no association between resilience resources and maternal disapproval of sex or maternal disappointment if the adolescent did not finish high school. Greater delinquent behavior was associated with lower maternal disapproval of sex. There were no associations between delinquent behavior and maternal involvement or maternal disappointment if the adolescent did not finish high school or college. Maternal involvement was significantly positively correlated with greater perceived maternal disappointment if the adolescent did not finish college and marginally significantly correlated with greater disappointment if the adolescent did not finish high school. Perceived maternal disapproval of sex was not related to perceived maternal disappointment if the adolescent did not complete high school or college. Finally, greater perceived maternal disappointment if the adolescent did not complete high school was associated with greater perceived maternal disappointment if the adolescent did not complete college.

Pearson's correlation correlations were also computed separately for adolescent fathers, adult fathers, and non-father peers and these findings are displayed in Tables 6, 7, and 8, respectively. Two patterns are of note. First, in the entire sample, there was a significant but

relatively weak negative correlation ($r = -.15$) between greater resilience resources and less delinquent behavior. However, that association was stronger among adolescent fathers ($r = -.36$; Table 6) and only marginally significant among adult fathers ($r = -.11$; Table 7). Second, among only adolescent fathers, greater resilience resources were associated with greater perceived maternal disappointment if the adolescent did not complete high school. However, there was no similar relationship among adult fathers or non-father peers.

ANOVA's Comparing Adolescent Fathers, Adult Fathers, and Non-Fathers

Next, ANOVAS were conducted to test for significant differences in individual influences and familial influences by fatherhood status (see Table 9). Results revealed that adolescent males who became adolescent fathers were significantly more likely to have had sex prior to the age of 15 by T2 compared to both adult fathers and non-father peers. Also, adolescent fathers reported significantly lower educational aspirations at T1 and significantly greater delinquency at T1 than non-father peers. Adolescent males who became adolescent fathers were also significantly younger at T1 than men who became adult fathers. Adult fathers and non-fathers also differed significantly on some variables. At T1, men who became fathers after adolescence were significantly older than men who were not fathers, had sex at earlier ages than not fathers, had lower average grades in school, and had lower educational aspirations. In addition, adult fathers reported greater resilience resources than their non-father peers, while those men perceive that their mothers were significantly more disapproving of sex than older fathers.

Logistic Regression Analyses

Table 10 contains results of two separate logistic regressions with adolescent fatherhood regressed on individual influences. The middle column compares adolescent fathers to adult

fathers (controlling for age) and the right column compares adolescent fathers to non-father age peers (no need to control for age). Results showed that adolescent males who became adolescent fathers were more than three times as likely to have engaged in sex prior to the age of 15, compared to both adult fathers and non-father peers. Compared to adult fathers only, adolescent fathers were less likely to report alcohol use. There were not significant effects of becoming an adolescent father and joint occurrences of sex and drugs/alcohol, depressive symptoms, alcohol use, marijuana use, tobacco use, average grades, educational aspirations, or delinquent behavior.

Table 11 contains two separate logistic regressions with adolescent fatherhood regressed on familial influences. The middle column compares adolescent fathers to adult fathers, after controlling for age, and the right column compares adolescent fathers to non-father age peers. Results indicate that lower perceived maternal disappointment if the adolescent did not finish college was a significant predictor of adolescent fatherhood compared to adult fathers but not non-father age peers. There were no significant associations between becoming an adolescent father and maternal educational attainment, maternal involvement, perceived maternal disapproval of sex, or perceived maternal expectations for the adolescent to finish high school.

Mediation Analyses

Mediation analyses were conducted with each individual and familial influence as the independent variable, early sexual intercourse or joint occurrences as the mediator, and adolescent fathers vs. adult fathers (or vs. non-father age peers) as the dependent variable. Results showed no significant ($p < .05$) mediators of the relationship between any of the individual or familial influences and adolescent fatherhood.

Discussion

The current study is an investigation into the antecedents of adolescent fatherhood among Black males using existing data from Add Health to partially test Parke's (1996) theoretical framework and hypotheses derived from it. Several individual and familial factors were hypothesized as predictors of adolescent fatherhood in a large sample of Black adolescent males. This study found that adolescents who engaged in early sexual intercourse, more delinquent behavior, used less alcohol, and those with lower educational aspirations were more likely to become adolescent fathers. Also, adolescent males with mothers who would be less disappointed if they did not attend college were more likely to become adolescent fathers. These findings came from controlled analyses similar to earlier research and have implications for future research with adolescent males at-risk for adolescent fatherhood.

Early Sexual Intercourse

As hypothesized, adolescent males who engaged in sexual intercourse at earlier ages were more likely to become adolescent fathers than both adult fathers and non-fathers. In fact, in this study, adolescent males who had sex prior to the age of 15 were three times more likely to become adolescent fathers than those who waited to engage in sexual intercourse, over and above other individual influences. This study's finding on early sexual intercourse as a predictor of adolescent fatherhood in controlled analyses is consistent with previous research (Thornberry et al., 1997). However, the current study found this relationship in a sample of high-SES Black adolescents while Thornberry et al. found this relationship in students at-risk for delinquent behavior and drug use and from neighborhoods with high arrest rates. A reason that early sexual intercourse predicts adolescent fatherhood might be due to the relationship between age and contraceptive use. In a sample of more than 800 Black and Hispanic adolescents, Smith (1997)

found that adolescents who engaged in sex at earlier ages were less likely to use contraceptives during sexual intercourse, and previous research has shown that adolescents who engage in more unprotected sex are more likely to become fathers at earlier ages (Pears, Pierce, Kim, Capaldi, & Owen, 2005). Although it was not tested in the current study, lack of contraceptive use and consequent unplanned pregnancies may be an important mechanism by which earlier onset of sexual intercourse is associated with adolescent fatherhood.

Early sexual intercourse as a predictor of adolescent fatherhood may provide insight into why adolescent fathers are more likely to be Black than white. Research has shown Black adolescent males engage in sex at earlier ages than males from other racial/ethnic backgrounds (CDC, 2010) possibly due to peer norms (Furstenberg Jr., Morgan, Moore, & Peterson, 1987; Stanton et al., 1993) and lower socioeconomic status (Cubbin, Santelli, Brindis, & Braveman, 2005; Lammers, Ireland, Resnick, & Blum, 2000), although the current study did not test peer norms as a predictor of adolescent fatherhood and there was no significant association of SES and early sexual intercourse in this sample. There is also research showing Black adolescent males report less frequent condom use than males from other racial/ethnic backgrounds (Grunbaum et al., 2004). However, this was also not tested in the current study. Future research should examine age at start of sexual intercourse as a potential mediator of the relationship between race/ethnicity and adolescent fatherhood and future research should identify explanations for why Black adolescent males use less contraception than whites.

Educational Aspirations and Maternal Attitudes toward Education

Adolescents' perceptions of maternal attitudes toward their completion of college, as well as their own educational aspirations for college, were significant predictors of becoming an adolescent father, as hypothesized. Both of these findings are consistent with previous research

showing that the adolescent's own educational goals (Hanson, Morrison, & Ginsburg., 1989) as well as parental educational expectations for their adolescent son (Dearden, Hale, & Alvarez, 1992; Dearden, Hale, & Woolley, 1995; Thornberry, Smith, & Howard, 1997) predict becoming an adolescent father. A potential reason that attitudes toward future educational attainment predict adolescent fatherhood is that having a child may be viewed as an impediment to successful completion of a college degree. Indeed, research shows that adolescent fathers report lower educational attainment than peers who do not become adolescent fathers (Fletcher & Wolfe, 2012; Pirog-Good, 1996). Because these adolescents want to attend college, they may purposely wait to initiate sex. Indeed, in the current study, independent samples t-tests revealed that adolescents who engaged in sex prior to the age of 15 ($M = 4.22$, $SD = 1.08$) reported significantly lower educational aspirations than those who engaged in sex at later ages ($M = 3.96$, $SD = 1.16$; $t(505) = 2.62$, $p < .01$). Previous research by Schvaneveldt, Miller, Berry, and Lee (2001) that found lower educational aspirations did not predict earlier sexual intercourse among Black adolescent males. Schvaneveldt et al. suggested that this relationship was not significant among Black males because they perceive fewer educational opportunities available to them in the United States. However, for this group of Black adolescents from relatively high-SES backgrounds, it is clear educational aspirations are associated with adolescent sexual behavior.

Overall, the significant effect of educational aspirations and maternal disappointment if the adolescent did not complete college may demonstrate how critical goal-orientation is in adolescent behaviors. In a review of goal-orientation during adolescence, Nurmi (1991) describes how goal-orientation is developed within the family context. First, parents set normative standards for their children, which affect their interests, values, and goals. Second, parents serve as models for their children with regard to planning skills and coping strategies, so

children see, develop, and use those strategies. Third, the children internalize their parents' beliefs. In this context, adolescents with high educational aspirations may have parents who set the standard that college is important and modeled the behaviors necessary to get to college. Then, the adolescents internalized this standard. Because they now had the internal goal of attending college, they were less likely to engage in behaviors that would place them at risk of not attending college. This reasoning is consistent with previous research showing that high parental expectations are a protective factor for teens from early sexual intercourse (Lammers, Ireland, Resnick, & Blum, 2000). Also in line with Nurmi's (1991) model, the adolescent's educational aspirations and the adolescent's perceived maternal disappointment toward the adolescent not finishing college were correlated in this study ($r = .27, p < .001$). It is important to note, however, that this is speculative and it is also plausible that adolescents are self-motivated to attend college and those beliefs are transmitted to their parents. Future research with adolescents should assess goal orientation and its effect on adolescent behaviors.

Delinquent Behavior

This study also found that adolescents who engaged in more delinquent behavior were significantly more likely to become adolescent fathers, as compared to non-father peers. This finding is consistent with previous research (Hanson, Morrison, & Ginsburg., 1989; Sipsma et al., 2010; Wei et al., 2002). Previous research also demonstrates that delinquent behavior is associated with early sexual intercourse (Biglan et al., 1990; Capaldi, Crosby, & Stoolmiller, 1996). This was also true in the current study as independent samples t-tests revealed that adolescents who engaged in sex prior to the age of 15 ($M = 5.33, SD = 5.40$) were significantly more likely to engage in delinquent behavior than those who waited until they were 15 or older

($M = 3.65$, $SD = 4.91$; $t(508) = -3.65$, $p < .001$). Nonetheless, causality cannot be inferred as these variables are clustered.

A potential reason that delinquent behavior is associated with adolescent fatherhood involves sensation-seeking. Sensation-seeking, also referred to as impulsivity or risk-taking, is known to increase during adolescence (Romer, 2010). Previous research has shown that greater sensation-seeking among adolescents is associated with greater delinquent behavior, riskier sexual behaviors, and substance use as well (Arnett, 1996; Donohew et al., 2000; Hansen & Breivik, 2001). It is plausible that sensation-seeking explains the relationship between delinquent behavior and risky sexual behaviors, although it was not tested in this study so this is speculative. However, not every adolescent high in sensation-seeking becomes an adolescent parent. Perhaps a person by environment interaction exists whereby sensation-seeking must occur under certain environmental circumstances to lead to adolescent parenthood. Future research can explore the role of sensation-seeking in adolescent fatherhood.

Alcohol Use

Adolescent males who used alcohol were significantly less likely to become adolescent fathers than adolescents who reported no alcohol use. This is contrary to hypotheses and previous researching showing that greater substance use predicts teen fatherhood (Herrenkohl, Herrenkohl, Egolf, & Russo, 1998; Sipsma, Biello, Cole-Lewis, & Kershaw, 2010; Thornberry, Smith, & Howard, 1997). However, this may be a spurious relationship. First, a subsequent chi-square analysis showed no association of alcohol use and adolescent fatherhood as well. Second, age, alcohol use, and the outcome (adolescent fathers vs. adult fathers) are confounded. As adolescents get older, they report greater alcohol use, and the adult fathers tended to be older at T1. More research is needed to test the association of alcohol use and adolescent fatherhood.

The current study found no significant associations between adolescent fatherhood and depressive symptoms, grade point average, substance use, or resilience resources. Possible reasons for the lack of significant effects may be related to measurement. For example, this study used a 19-item version of the Center for Epidemiologic Studies-Depression scale (CES-D; Radloff, 1977), a commonly used measure of depressive symptoms. There is research showing that the CES-D has low construct validity for Black men (Torres, 2012), but other research has validated this measure among Black adolescents (Roberts & Sobhan, 1992). Perhaps it may have been more appropriate to examine internalizing symptoms and externalizing symptoms separately among adolescents because they are shown to be present for months or years prior to the onset of a first depressive episode (Rueter, Scaramella, & Ebert Wallace, 1999). Future research with adolescents should investigate internalizing and externalizing symptoms when studying adolescents. It is also possible that there is no significant association between depressive symptoms and adolescent fatherhood, which would be consistent with previous research (Fagot, Pears, Capaldi, Crosby, & Leve, 1998; Kessler et al., 1997; Stouthamer-Loeber, 1998).

Another potential reason some findings were not significant may be related to the nature of this sample of adolescents. Contrary to hypotheses, there were no significant differences in maternal educational attainment between adolescent fathers and adult or non-fathers. It is well-established that adolescent fathers tend to come from household with lower parental educational attainment than their peers (Biello, Sipsma, & Kershaw, 2010; Elster, Lamb, & Tavaré, 1987; Fletcher & Wolfe, 2012; Hanson, Morrison, & Ginsburg, 1989; Ketterlinus, Lamb, Nitz, & Elster, 1992; Unruh, Bullis, & Yovanoff, 2004). However, Add Health researchers specifically oversampled for Black adolescents who had at least one parent with a college degree. As a result,

this may be a more advantaged sample and findings may not generalize to other samples of Black adolescent males. This may also account for the lack of an effect between adolescent fatherhood and grade point averages, substance use, and resilience resources.

A possible reason for the lack of a relationship between resilience resources and adolescent fatherhood may be related to the different experiences of Blacks and whites in the United States. It is well-established that Blacks in the United States have lower income on average than non-Hispanic whites, and the income gap persists even among Blacks and whites with college degrees (Pew Research Group, 2016). This racial/ethnic income gap was also present within Add Health as Black adolescents were more likely to come from households with lower parental income and lower maternal education than white adolescents (Richmond, Hayward, Gahagan, Field, & Heisler, 2006). Even though Add Health oversampled for Black adolescents from high-SES backgrounds, the Black participants still came from lower-SES backgrounds than white participants. Adolescents are probably still in the process of developing resilience resources such as self-esteem and mastery, but coming from a lower income background, as many Black adolescents do, may make it more difficult to build these resources and in turn, make them less effective in the face of stress. Indeed, in the current study, independent samples t-test revealed that resilience resources were significantly higher among adolescents whose mothers had a college degree ($M = 4.01, SD = .37$) than the adolescents whose mothers had less than a college degree ($M = 3.93, SD = .38; t(476) = -2.01, p < .05$). However, it is also possible that these particular resilience resources are not protective in the face of adolescent fatherhood. Future research should identify resilience resources, such as religiosity (Holder et al., 2000; Regnerus & Elder, 2003), or a strong racial identity (Miller & McIntosh,

1999; Wallace & Fisher, 2007), that may be more salient for Blacks and test whether they can protect adolescents at-risk of becoming adolescent fathers.

A final and important factor that may affect these results is the lack of reproductive responsibility a man has after a woman becomes pregnant. Legally, if the woman wants to have an abortion, and the man wants to have the child, or vice versa, the final decision belongs to her. As a result, in this study's sample of adult fathers or non-father peers, there may be individuals whose partners had miscarriages or abortions, but they are not differentiated from adolescents who have never gotten someone pregnant. This is an important distinction and future researchers should examine these differences because it may provide a clearer picture about the adolescent males at risk of adolescent fatherhood.

Limitations

One limitation of this study is the number ($n = 33$; 6%) of adolescent fathers in this study. Statistically, it is considered a rare event and estimates from logistic regressions can be biased with rare events. However, a penalized maximum likelihood logistic regression technique was used to make the analyses more conservative and reduce the possibility of finding an effect. Another limitation of this study is that condom use and the adolescent's attitudes and knowledge about sex were not tested as predictors of adolescent fatherhood. In Add Health, frequency of contraceptive use and knowledge about sex were only asked of participants who were at least 15 years old. As a result, more than 20% of the sample did not complete these items at T1. Future research with adolescents should ensure that these questions are asked of every participant regardless of age because if an adolescent started engaging in sex prior to the age of 15, it is still important to gain a sense of whether he is engaging in safe sexual practices. A further limitation of this study is that the only measure of parental SES was maternal. While data on paternal

education were also collected, over 40% of the fathers were non-resident fathers, so they were not included in analyses. However, because paternal educational attainment was not included in analyses, there may be an incomplete picture of parental SES in the adolescent's household. A final limitation is that extra-familial and cultural influences were not studied. As a result, this is only a partial examination of Parke's model and may be missing important cultural and structural factors.

Implications and Future Directions

A future study could prospectively follow a large sample of Black adolescents from early adolescence until adulthood. These adolescents would be assessed every other year on individual influences such as sexual behaviors, delinquent behavior, academic competence, and personality factors such as sensation-seeking. Familial influences such as parental education, parental attitudes and family context, extra-familial influences such as peer associations and neighborhood factors, and cultural influences such as beliefs about masculinity and racial identity, would also be assessed in these teens. Finally, resilience resources such as optimism, coping style, social support, and spirituality would be assessed. These teens would be followed and the adolescent parents would be compared to adolescents whose partners had abortions or miscarriages, and adolescents who never impregnated someone to identify which factors predicted becoming an adolescent father or a male at-risk for adolescent fatherhood. We could also compare these men on their involvement with their families, their educational attainment, as well as their own mental and physical health during adulthood. Based on this study, the field of family research could gain a better sense of how these different influences predict adolescent fatherhood and how adolescent fatherhood predicts adult outcomes that can affect the family and father himself.

Future research on adolescent parenthood should explore predictors of adolescent fatherhood among Latino adolescent males as well. Similar to Black adolescents, research suggests that Latino males are at greater risk of becoming adolescent fathers than whites (Landers, Mitchell, & Coates, 2015; Sipsma, Biello, Cole-Lewis, & Kershaw, 2010; Thornberry, Smith, & Howard, 1997). However, no study has comprehensively assessed the factors associated with adolescent fatherhood in a sample of Latinos. Also, in the United States (as of 2014), Latinos had a higher adolescent pregnancy rate (38 per 1,000 births) than Blacks (35 per 1,000 births) and whites (17 per 1,000 births; Martin, Hamilton, & Ventura, 2015). This group should be studied to assess which predictors of adolescent fatherhood are consistent among Latino, Black, and white adolescents and which predictors are not consistent by race/ethnicity. Based on these findings, researchers could better understand of the phenomenon of adolescent fatherhood in the United States and how it manifests itself among adolescents from diverse backgrounds.

Findings from this study could also have implications for interventions to reduce the risk of fatherhood among adolescents. This study shows that certain behaviors earlier in adolescence can predict an important outcome, having a child or not, later in adolescence. Informed by findings from this study as well as findings from previous studies on the antecedents of adolescent fatherhood, the students at risk for adolescent parenthood could be identified and provided resources to steer them down a different life path.

In conclusion, it is important to understand adolescent fatherhood because the age at which one becomes a father has serious implications for the child and the father himself. The offspring of adolescent fathers are at greater risk of adverse birth outcomes compared to adult fathers (Abel, Kruger, & Burd, 2002; Alio et al., 2012; Chen et al., 2008; Mollborn &

Lovegrove, 2011), their children are at greater risk of psychological disorders compared to adult fathers (Chudal et al., 2015; McGrath et al., 2014), and the adolescent fathers themselves have lower educational attainment than adult fathers (Fletcher & Wolfe, 2012; Pirog-Good, 1996). And since Black males are at greater risk of becoming adolescent fathers, their children may be at risk for worse outcomes as well. If research can identify the factors associated with early fatherhood, perhaps interventions targeted specifically toward evidence-based factors can be developed to reduce the rate of adolescent fatherhood in the United States.

Table 1. Participant Demographic Characteristics (N = 537)

Demographic Characteristics	M (SD) or N (%)
Age at T1	16.04 (1.73)
Grade at T1	
7 th Grade	89 (16.6%)
8 th Grade	76 (14.1%)
9 th Grade	108 (20.1%)
10 th Grade	104 (19.4%)
11 th Grade	80 (14.9%)
12th Grade	74 (13.8%)
Other*	6 (1.1%)
Fatherhood Status by T3/T4	
Adolescent Father (<20 Years)	33 (6.1%)
Adult Father (>19 Years)	241 (44.9%)
Never Father	263 (49.0%)

*Adolescent is in a school that does not do grade levels this way.

Table 2. Parental Educational Attainment as Reported by Adolescents at T1 (N = 537)

Demographic Characteristics	Residential Mother* (N = 512)	Residential Father* (N = 278)	Non- Residential Mother* (N = 67)	Non- Residential Father* (N = 259)
Education				
Less than High School	42 (8.2%)	19 (6.8%)	6 (9.0%)	28 (10.8%)
High School or Equivalent	162 (31.6%)	88 (31.7%)	29 (43.3%)	107 (41.3%)
Some College or Trade School	100 (19.5%)	51 (18.3%)	12 (17.9%)	31 (12.0%)
College Graduate or More	181 (35.4%)	92 (33.1%)	13 (28.4%)	49 (18.9%)
Does Not Know	27 (5.3%)	28 (10.1%)	7 (10.4%)	44 (17.0%)

*Categories are not mutually exclusive (e.g., an adolescent may have a residential parent who is a step-parent and a non-residential parent who is their biological parent)

Table 3. Descriptive Statistics of Individual Influences (N =537)

Variables	Mean (SD) or N (%)	Actual Range
Early Sex by T2	210 (39.11%)	-
Joint Occurrences of Sex and Alcohol/Drugs by T2	62 (11.66%)	-
Depressive Symptoms at T1	10.45 (6.66)	0 – 46
Alcohol at T1	179 (33.33%)	-
Marijuana at T1	64 (11.92%)	-
Tobacco at T1	77 (14.34%)	-
Average Grade at T1	2.53 (.72)	1 – 4
Educational Aspirations at T1	8.57 (1.92)	2 – 10
Resilience Resources at T1	3.97 (.38)	1 – 5
Delinquent Behavior at T1	4.19 (5.11)	0 – 39

Table 4. Descriptive Statistics of Familial Influences (N =537)

Variables	Mean (SD) or N (%)	Actual Range
Maternal College Education at T1	181 (33.71%)	-
Maternal Involvement at T1	3.72 (1.95)	0 – 10
Perceived Maternal Disapproval of Sex at T1	3.47 (1.00)	3 – 15
Perceived Maternal Educational Disappointment if < HS at T1	4.68 (.94)	1 – 5
Perceived Maternal Educational Disappointment if < College at T1	4.06 (1.26)	1 – 5

Table 5. Pearson's r Correlations at T1 for Entire Sample (N = 537)

Variables	1.	2.	3.	4.	5.	6.	7.	8.	9.
1. Age	-								
2. Depressive Symptoms	.10*	-							
3. Average Grade	-.11*	-.21***	-						
4. Educational Aspirations	-.08 ^t	-.20***	.32***	-					
5. Resilience Resources	-.05	-.33***	.10*	.13**	-				
6. Delinquent Behavior	.01	.20***	-.18***	-.15**	-.14**	-			
7. Maternal Involvement	-.09*	<-.01	.04	.13**	.10*	.06	-		
8. Perceived Maternal Disapproval of Sex	-.35***	-.07	.22***	.14**	.05	-.17***	.02	-	
9. Perceived Maternal Educational Disappointment if < High School	<-.01	-.11**	<.01	.06	.07	<-.01	.08 ^t	-.01	-
10. Perceived Maternal Educational Disappointment if < College	-.09 ^t	-.15***	.07	.27***	.10*	.03	.09*	.04	.47***

*** p < .001, ** p < .01, * p < .05, t < .10

Table 6. Pearson's r Correlations at T1 for Adolescent Fathers (n = 33)

Variables	1.	2.	3.	4.	5.	6.	7.	8.	9.
1. Age	-								
2. Depressive Symptoms	.19	-							
3. Average Grade	-.23	-.16	-						
4. Educational Aspirations	-.24	-.04	.38*	-					
5. Resilience Resources	-.37*	-.36*	.12	.23	-				
6. Delinquent Behavior	-.03	.19	-.16	-.36*	-.16	-			
7. Maternal Involvement	-.31 ^t	<-.01	.23	.19	.16	.17	-		
8. Perceived Maternal Disapproval of Sex	-.33 ^t	.27	.18	.25	-.09	.17	-.20	-	
9. Perceived Maternal Educational Disappointment if < High School	-.05	<-.01	.25	.33 ^t	.45*	-.28	.03	.26	-
10. Perceived Maternal Educational Disappointment if < College	.22	-.09	.27	.41*	.14	-.20	-.33 ^t	.07	.33 ^t

*** p < .001, ** p < .01, * p < .05, t < .10

Table 7. Pearson's r Correlations at T1 for Adult Fathers (n = 241)

Variables	1.	2.	3.	4.	5.	6.	7.	8.	9.
1. Age	-								
2. Depressive Symptoms	.08	-							
3. Average Grade	.01	-.16*	-						
4. Educational Aspirations	-.04	-.13*	.37***	-					
5. Resilience Resources	-.08	-.34***	.16*	.18**	-				
6. Delinquent Behavior	-.02	.21***	-.15*	-.08	-.11 ^t	-			
7. Maternal Involvement	-.10	.02	-.02	.09	.11 ^t	.02	-		
8. Perceived Maternal Disapproval of Sex	-.27***	-.02	.15*	.13*	.11 ^t	-.13 ^t	.08	-	
9. Perceived Maternal Educational Disappointment if < High School	.05	-.01	-.03	-.06	.01	.08	-.03	-.09	-
10. Perceived Maternal Educational Disappointment if < College	-.15*	.01	.09	.19**	.08	.16*	.12 ^t	.08	.53***

*** p < .001, ** p < .01, * p < .05, t < .10

Table 8. Pearson's r Correlations at T1 for Non-Father Peers (n = 263)

Variables	1.	2.	3.	4.	5.	6.	7.	8.	9.
1. Age	-								
2. Depressive Symptoms	.13*	-							
3. Average Grade	-.14*	-.26***	-						
4. Educational Aspirations	-.07	-.29***	.25***	-					
5. Resilience Resources	-.04	-.31***	.09	.10	-				
6. Delinquent Behavior	.03	.19**	-.20	-.15*	-.20**	-			
7. Maternal Involvement	-.08	-.02	.07	.17**	.07	.08	-		
8. Perceived Maternal Disapproval of Sex	-.39	-.16*	.25	.09	.04	-.27	-.01	-	
9. Perceived Maternal Educational Disappointment if < High School	-.05	-.21**	.01	.14*	.10	-.05	.20	.03	-
10. Perceived Maternal Educational Disappointment if < College	-.10	-.29***	.02	.32***	.10	-.04	.12 ^t	<-.01	.44***

*** p < .001, ** p < .01, * p < .05, t < .10

Table 9. Descriptive Statistics of Study Variables by Fatherhood Status and ANOVA's Comparing Adolescent Fathers, Adult Fathers, and Not Fathers on Study Variables (N = 537)

	Teen Fathers M (SD) = 1	n	Older Fathers M (SD) = 2	n	Not Fathers M (SD) = 3	n	F (2,482) ^x	η^2	Tukey- Kramer
Individual Influences									
Age	15.72 (1.88)	33	16.47 (1.62)	241	15.68 (1.72)	263	14.32***	.05	2 > 1,3
Early Sex	.65 (.49)	31	.46 (.50)	226	.34 (.47)	253	7.44***	.03	1,2 > 3
Joint Occurrences	.06 (.24)	33	.10 (.30)	241	.11 (.32)	263	.50	<.01	-
Depressive Symptoms	10.91 (7.03)	33	10.10 (6.42)	241	10.72 (6.83)	261	.63	<.01	-
Alcohol	.28 (.46)	32	.39 (.49)	241	.30 (.46)	256	2.26	<.01	-
Marijuana	.19 (.40)	31	.12 (.33)	233	.11 (.32)	257	.84	<.01	-
Tobacco	.09 (.30)	32	.16 (.36)	236	.15 (.35)	255	.45	<.01	-
Grade Average	2.44 (.68)	32	2.45 (.68)	235	2.62 (.75)	253	3.54*	.01	3 > 2
Educational Aspirations	7.82 (1.93)	33	8.44 (1.89)	240	8.78 (1.91)	260	4.66*	.02	3 > 1
Delinquency	6.06 (7.64)	33	4.39 (5.43)	241	3.77 (4.32)	262	3.30*	.01	1 > 3
Resilience Resources	4.00 (.33)	31	4.02 (.39)	240	3.93 (.38)	259	3.68*	.01	2 > 3
Familial Influences									
Maternal Education	.26 (.44)	31	.38 (.49)	219	.38 (.49)	235	.94	<.01	-
Maternal Involvement	3.77 (2.06)	31	3.78 (2.02)	228	3.65 (1.88)	252	.28	<.01	-
Maternal Disapproval of Sex	9.73 (3.35)	30	10.04 (3.00)	224	10.83 (2.95)	246	4.89**	.02	3 > 2
Mom HS Expectations	4.75 (.72)	32	4.69 (.93)	228	4.66 (.98)	251	.18	<.01	-
Mom College Expectations	3.71 (1.34)	31	4.22 (1.24)	227	4.06 (1.26)	250	1.38	<.01	-

*** p < .001, ** p < .01, * p < .05, t < .10, x = df varies by analysis

Table 10. Logistic Regression of Individual Influences Predicting Teen Fatherhood vs. Older Fatherhood and Teen Fatherhood vs. Not Fatherhood

Predictor	Adolescent Father vs. Adult Father (n = 234)				Adolescent Father vs. Not Father (n = 254)			
	Log	SE	e ^B	CI	Log	SE	e ^B	CI
Age	-.42	.14	.66**	[-.69, -.15]	-	-	-	-
Early Sex	1.23	.49	3.41*	[.26, 2.19]	1.27	.46	3.54**	[.36, 2.17]
Joint Occurrences	-1.34	.97	.26	[-3.24, .55]	-.43	.93	.65	[-2.25, 1.39]
Depressive Symptoms	.02	.03	1.02	[-.04, .08]	-.01	.04	.99	[-.07, .06]
Alcohol	-1.40	.62	.25*	[-2.61, -.20]	-1.10	.64	.33	[-2.36, .16]
Marijuana	.93	.70	2.55	[-.45, 2.31]	.55	.69	1.73	[-.81, 1.90]
Tobacco	-1.08	.89	.34	[-2.82, .66]	-.67	.91	.51	[-2.46, 1.11]
Average Grade	.31	.35	1.36	[-.38, 1.00]	-.10	.30	.90	[-.69, .49]
Educational Aspirations	-.13	.12	.88	[-.36, .10]	-.18	.10	.84	[-.38, .03]
Delinquent Behavior	.02	.03	1.02	[-.05, .09]	.05	.04	1.05	[-.03, .14]
Resilience Resources	.20	.64	1.22	[-1.06, 1.46]	1.01	.60	2.75	[-.18, 2.19]
Wald X ²			19.87*				18.36	
df			222				243	
% adolescent fathers			10.68				9.84	

* p < .01, * p < .05, t < .10

Table 11. Logistic Regression of Familial Influences Predicting Teen Fatherhood vs. Older Fatherhood and Teen Fatherhood vs. Not Fatherhood

Predictor	Adolescent Father vs. Adult Father (n = 229)				Adolescent Father vs. Not Father (n = 245)			
	Log	SE	e ^B (OR)	CI	Log	SE	e ^B (OR)	CI
Age	-.45	.14	.64**	[-.72, -.19]	-	-	-	-
Maternal Education	-.26	.45	.77	[-1.14, .61]	-.31	.44	.73	[-.21, .20]
Mom Involvement	-.09	.11	.93	[-.29, .14]	-.01	.10	1.00	[-.21, .19]
Mom Disapproval of Sex	-.08	.07	.92	[-.23, .06]	-.08	.07	.92	[-.21, .05]
Mom High School Expectations	.26	.24	1.29	[-.24, .75]	.18	.23	1.19	[-.28, .63]
Mom College Expectations	-.35	.27	.71*	[-.67, -.02]	-.28	.15	.76	[-.58, .02]
Wald X ²			14.60*				5.04	
df			222				239	
% adolescent fathers			11.79				11.02	

** p < .01, * p < .05, t < .10

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General Discussion

The aims of this dissertation were to identify the antecedents and consequences of adolescent fatherhood and to test hypothesized antecedents of adolescent fatherhood among a sample of Black males. A psychosocial life course model was developed to organize the antecedents and consequences of adolescent fatherhood based on an existing theoretical framework (Parke, 1996). Next, a systematic review (Study 1) was completed which examined the published literature on the antecedents and consequences of adolescent fatherhood. Finally, an empirical test was conducted of the antecedents of adolescent fatherhood among a sample of Black males (Study 1) from the National Longitudinal Study of Adolescent to Adult Health (Add Health). Findings from this dissertation have implications for conducting future research with adolescent fathers and for better understanding and potentially assisting the adolescent males at-risk of becoming adolescent fathers.

Study 1 was a systematic review of 39 peer-reviewed articles on the antecedents and consequences of adolescent fatherhood. Findings demonstrated that adolescent fathers are more likely to be Black or Latino (than white) and come from low-SES backgrounds as characterized by lower parental SES and lower SES neighborhoods. Adolescents who engaged in more delinquent behavior, had lower academic competence, and had peers who engaged in deviant behaviors (e.g., smoking, drinking, gang membership) were more likely to be adolescent fathers as well. There was mixed evidence for the associations between adolescent fatherhood and substance use, self-esteem, depressive symptoms, and risky sexual behaviors. There was insufficient evidence to draw conclusions about adolescent fatherhood and an adolescent's knowledge and attitudes about sex. With regard to consequences, the most consistent finding was that the offspring of adolescent fathers were at greater risk for adverse birth outcomes such as

low birth weight and pre-term birth. Findings also demonstrated that the children of adolescent fathers were also at greater risk for psychological disorders. There was also some evidence that adolescent fathers had lower educational attainment than adult fathers and non-father peers. There were mixed findings as it relates to adolescent fatherhood and the adolescent father's involvement with his child, relationship quality, and parental satisfaction.

Study 2 was an empirical test of hypothesized individual and familial antecedents of adolescent fatherhood among Black males from Add Health. First, univariate analyses demonstrated that adolescents who engaged in sexual intercourse prior to the age of 15, engaged in delinquent behavior, to have had lower educational aspirations, and to have mothers who would be less disappointed if they did not complete college. In multivariate analyses, controlling for other individual influences such as delinquent behavior and educational aspirations, results showed that adolescents who engaged in sex prior to the age of 15 were three times more likely to become adolescent fathers than those who waited to have sex. Also, over and above other familial influences such as maternal educational attainment, maternal involvement, and perceived maternal disapproval towards sex, only lower maternal disappointment if the adolescent did not complete college was a significant predictor of adolescent fatherhood. There were no relationships between adolescent fatherhood and joint occurrences of sex and drugs or alcohol, depressive symptoms, substance use, average grades, and resilience resources.

Taken together, findings from this dissertation can combat myths about adolescent fathers. Adolescent fathers are negatively stereotyped in our culture as either teenagers who engage in sexual activity to prove their masculinity or as fathers who are intentionally uninvolved with their families (Gottfried, 2001; Paschal, 2006). However, the findings from the systematic review do not support these characterizations. As it relates to the antecedents of

adolescent fatherhood, the perception of adolescent fathers as studs was not adequately tested, only one study examined differences in knowledge about sex between adolescent fathers and their peers, and there was no association. There were also mixed findings, at best, for the relationship between low self-image and adolescent fatherhood. There was also very little evidence to support the claim that young fathers do not want to be involved with their families, in fact, some studies found that teenage fathers had greater parental satisfaction than adult fathers. Findings from this study could shift the public discourse on adolescent fathers. Instead of viewing adolescent fathers through a negative lens, these fathers could be viewed as teens who often grew up in tough social circumstances. By shifting this discourse, societally, we can be more empathic and less judgmental towards teen fathers.

Findings from this dissertation also have implications for future research with adolescent fathers. First, there is a need for more up-to-date research with adolescent fathers. Almost half of the articles in the systematic review were published prior to 2000, nearly two decades ago. And the data from Wave 1 of Add Health, used in Study 2, were collected in 1994. New research is warranted to investigate how the antecedents and consequences of adolescent fatherhood from the 1980's and 1990's differ from the antecedents and consequences of today. Many of the studies reviewed in the systematic review also had relatively small sample sizes of adolescent fathers, which was also true of Study 2 ($n = 33$). As such, these findings may not be representative of adolescent fathers more generally. Hence, researchers should recruit and retain large samples of adolescent fathers to better understand fathers and help to draw conclusions that can help teen fathers more broadly. Many of the studies examined in the systematic review utilized the same datasets such as the National Longitudinal Survey of Youth-1979 (NLSY-79), the NLSY-97, and the Fragile Families and Child-Wellbeing study. While these are national

datasets with large samples, the fact that many articles are published on these datasets demonstrates that the knowledge base is smaller than it seems and continued research is needed.

Future empirical research on the consequences of adolescent fatherhood is also warranted. Specifically, research should examine the consequences of adolescent fatherhood through the postpartum period and beyond. In the systematic review, one study (Pirog-Good, 1996) found that differences in income between adolescent fathers and not adolescent fathers varied depending on their age. In early adulthood, adolescent fathers had greater income than not adolescent fathers but as they reached their late 20's, adolescent fathers had a lower income. If future researchers can better understand the trajectory of income as well as other outcomes such as relationship quality and paternal involvement, and how they vary based on stage in the father's life, we may gain a far better understanding of the experience of adolescent fatherhood and how it may affect the family unit.

This dissertation has several strengths. First, the systematic review addresses the gaps in the literature on adolescent fathers which can guide other researchers on topics that merit further investigation. Second, Study 2 is a longitudinal study which allows for temporal precedence to be established and to test the individual and familial influence as predictors of adolescent fatherhood over time. Third, Study 2 is focused on Black adolescent males, a group that is relatively understudied in comparison to white adolescents.

This dissertation also has limitations. First, cultural influences were not examined in Study 1 or in Study 2. With regard to cultural influences being absent from Study 1, this reflects how little attention previous researchers paid to cultural influences. For Study 2, cultural influences were absent because the Add Health study did not assess cultural factors. Future research should examine how cultural attitudes surrounding race, masculinity, and parenthood

play a role in adolescent fatherhood. Second, the systematic review only reviewed published research. As such, there may be unpublished findings which may change some conclusions drawn about adolescent fathers. A final limitation was that sample of adolescent fathers in Study 2 was relatively small. These findings are not necessarily representative of Black adolescent fathers. As such, a study with a larger sample of adolescent fathers is warranted.

Despite these limitations, findings from this dissertation provide a substantial and novel contribution to the literature on adolescent fatherhood and the field of family research more generally. The systematic review is the first on the antecedents and consequences of adolescent fatherhood and provides an organizational framework for understanding (a) the impact of antecedent variables on the early entry to fatherhood and (b) the impact of early entry to fatherhood on outcomes related to the family and father himself. Study 2 demonstrates identifiable factors which predict adolescent fatherhood, and interventions could be developed and targeted toward those specific behaviors, which may reduce the rate of adolescent fatherhood. Focusing greater attention on adolescents at risk for adolescent fatherhood and men who are already adolescent fathers will enable the development of interventions to positively impact the well-being of the father and in turn, the entire family unit.

References

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