

**Are Attitudes Predictive of Non-Marital Childbearing?**  
**Teenagers' Attitudes toward Motherhood Before Marriage and Their  
Relationship to Non-Marital Childbearing.**

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#### **Abstract**

This study makes a unique contribution to the literature on single motherhood by assessing whether favorable attitudes toward single motherhood in adolescence are associated with subsequent childbearing behavior with the use of national data from Add Health. This study employs a longitudinal design, which allows it to link attitudes to behavior over time. Findings indicate important differences in single motherhood attitudes by race and ethnicity, family SES, family structure, religiosity, and future educational expectations. Controlling for theoretical mechanisms known to be associated with single motherhood, including culture (race and religiosity), opportunity costs (educational expectations and SES), and socialization and supervision (family structure), favorable attitudes toward teenage motherhood remain significantly related to the probability of becoming a single mother in early adulthood. Attitudes, therefore, have an impact beyond the theoretical and commonly measured influences upon single motherhood. This independent effect of attitudes is discussed in the paper.

## **Introduction**

Within the past 50 years, family life within the United States has undergone some rather substantial changes (Bumpass 1990; Parnell et al. 1994; Popenoe 1993). In particular, non-marital childbearing is becoming much more commonplace (Bumpass 1990; Parnell et al. 1994; Popenoe 1993). In 1960, the percentage of births to unmarried mothers was 5.3%. That figure has risen steadily over the years, and in 2004, the percentage of births to unmarried women was 35.8% (Child Trends Databank 2004). In addition, teenage childbearing is far more likely to occur outside of the institution of marriage than within it (Bumpass 1990; Furstenberg 2000). In 2003, 81.3% of births to females aged 15 to 19 occurred outside of marriage (Child Trends Databank 2004).

The past several decades have seen not only changes in the family formation behaviors of Americans, but changes in the societal attitudes held toward the family have occurred as well (Pagnini & Rindfuss 1993; Thornton 1989). Since 1974 there has been an overall general trend within society toward an increased acceptance of non-marital childbearing. (Pagnini & Rindfuss 1993)

Many individuals are concerned about the increase in non-marital childbearing because unmarried mothers, especially young unmarried mothers, typically fare worse socioeconomically than their married counterparts (Child Trends Databank 2004; Hoffman et al 1993; Klepinger et al. 1995; Klepinger et al. 1999), and children who are raised in single-parent homes are more likely to experience negative life outcomes such as low educational attainment, early pregnancy, engagement in risky behavior, etc. (Child Trends Databank 2004, Harris et al. 2002).

Due to the concern in some circles over the non-marital birth rates of young women, some researchers have started to examine the reasons why young women give birth as single-

parents. In poor, urban settings in which future academic and career opportunities do not appear to be accessible, the cost of having a child to teenage females does not seem to be particularly high (Edin & Kefalas 2005). Edin and Kefalas (2005) discovered that while many of the teenage females they observed were not actively trying to become pregnant, very few were strongly trying to prevent a premarital pregnancy by, for example, using a form of birth control when engaging in sexual relationships. In light of the notion that the opportunity cost of having a child as a teenager does not seem particularly high, Edin and Kefalas' (2005) discovery does not seem all that surprising.

While future expectations toward work and education undoubtedly factor into the decision-making process of becoming a young, single mother, Edin and Kefalas (2005) believe that they have uncovered an even deeper and underlying reason for the relatively high rates of young, single motherhood among the urban poor. Edin and Kefalas (2005) posit that poor females place motherhood before marriage. According to Edin and Kefalas (2005), while poor young women value marriage in a similar fashion to the middle class, i.e. dream of marrying and moving into the house with a white picket fence in the suburbs, and many refuse to consider marrying the men in their lives until a level of economic security has been met, few are willing to wait until this (for many, highly unattainable) standard has been reached to bear children.

These women value children highly, and in fact, Edin and Kefalas (2005) believe that they value children even more highly than the middle and upper classes do. Poor women, who are often faced with few meaningful opportunities in terms of both future marriage and job prospects, typically find their greatest fulfillment and life's meaning in childbearing and mothering. Women from other classes typically have competing alternatives for life's meaning; they can find actualization and meaning in roles outside of the one of mother, but for poor

women, the role of mother is central not only to their identity and sense of self, but also in terms of their future happiness (Edin & Kefalas 2005).

Edin and Kefalas (2005) drew these conclusions after observing poor, young, single mothers in the Camden and Philadelphia area, and they concisely summarize the mother before marriage viewpoint by noting the following, “poor women consider marriage a luxury – one they desire and someday hope to attain, but can live without if they must. Children, on the other hand, are a necessity” (p. 210).

While Edin and Kefalas (2005) shed much insight into the value of motherhood in poor, urban communities, their study is ultimately unable to determine whether or not an individual who values motherhood over marriage will in fact have a child as a single mother, due to the fact that many of their observations on the attitudes held by single mothers occurred after the birth of the child. Do poor, young females really value motherhood over marriage? Or do they develop these attitudes to rationalize and explain why they have become single mothers? And, if they do value motherhood over marriage, are these attitudes actually predictive of becoming a young, single mother?

This study seeks to build upon the current work and address the questions left unanswered by assessing the validity of the motherhood before marriage hypothesis through an examination of the attitudes teenage females hold toward single motherhood prior to the birth of a child. This study further builds upon the work of Edin and Kefalas (2005) by assessing whether the motherhood before marriage hypothesis is generalizable to a wider population than the poor females studied from the Philadelphia/Camden area? In the exploration of these questions, data from Wave I and Wave III of the National Longitudinal Study of Adolescent

Health (Add Health), a study of a large nationally representative sample of children in grades seventh through twelfth grades during the collection of Wave I data in 1995, will be examined.

This study will furthermore be able to assess whether single motherhood attitudes are in fact predictive of behavior, a unique contribution to the literature on single motherhood that can be made using national data. In order to do so, this study will first examine data from Wave I of Add Health in order to determine who is likely to hold favorable attitudes toward single motherhood. Then, this study will examine whether or not holding favorable attitudes toward single motherhood at Wave I is in fact predictive of becoming a single mother by the end of Wave III. This study, therefore, seeks to answer the following two questions:

Who is likely to hold favorable attitudes toward single motherhood?

Are teens with favorable attitudes toward single motherhood more likely to become young, single mothers than teens with unfavorable attitudes toward single motherhood?

### **Theoretical Frameworks**

Many previous studies on teenagers and pregnancy have focused upon which teenagers are at risk for becoming pregnant. Within these studies, authors have typically employed an *opportunities cost* framework to guide their theoretical discussion of teenage pregnancy risk. In an opportunities cost framework, individuals weigh the costs and benefits of a behavior or action, and their assessment of the costs and benefits helps guide their decision in how to act. Fishbein and Ajzen developed a “reasoned action” theory, which states that individuals perceive the severity of an expected outcome. This perception then helps guide the individual’s behavior (Fishbein & Ajzen 1975; Ajzen & Fishbein 1980). A behavior, therefore, is the product of an intended action, and the intended action is guided by an individual’s attitudes toward the behavior (Ajzen & Fishbein 1980). Applying this theory to teenagers and pregnancy suggests

that teenagers weigh the severity of a pregnancy when they choose to engage in sexual relations. Teenagers, therefore, would perceive the severity of a teenage pregnancy for their future life outcomes, and this perception would help guide a teenager's decision-making process about whether or not to engage in sexual relations, and if engaging in sexual relations, whether or not to use contraception.

Researchers have typically argued that the costs associated with a teenage pregnancy are considerable (Hoffman 1998; Hoffman et al. 1993; Klepinger et al. 1995; Klepinger et al. 1999). Teenage pregnancy particularly affects educational attainment and later economic well-being (Hoffman et al 1993; Klepinger et al. 1995; Klepinger et al. 1999). Klepinger et al. (1999) found that teenage childbearing leads to important wage losses later in life due to reductions in educational attainment and young adult work experience.

Geronimus (1991), however, has argued that the costs associated with teenage pregnancy for disadvantaged females are not as great as previously thought. The females who become mothers during their teen years are very distinct from those who do not. Teenage mothers are more likely to come from economically disadvantaged families, be members of minority groups, and grow up in either inner city neighborhoods or isolated rural areas (Geronimus 1991). Therefore, in order to estimate the costs associated with childbearing for this distinct group of females, it does not make sense to compare these females to those who have not given birth because those who have not given birth typically have far brighter future prospects than those who have given birth. This comparison will lead to inflated costs of childbearing, and Geronimus (1991) therefore advocates comparing sisters, in order to control for family background, to better determine the costs of teenage childbearing. When comparing disadvantaged sisters, one of whom has a teenage pregnancy and one of whom does not, it

appears as if the costs of a teenage pregnancy for disadvantaged teens are overstated (Geronimus & Korenman 1992; Geronimus & Korenman 1993). Differences in future educational attainment levels and family incomes between a sister who has given birth as a teenager, and a sister who has not, are far less than the differences in future educational attainment levels and family incomes of teenage mothers and the general population (Geronimus 1991). In fact, a growing body of evidence contradicts the prevailing notions that teenage childbearing is costly and suggests that postponing childbirth could lead to greater health risks for both disadvantaged mothers and children (Geronimus & Korenman 1992; Geronimus & Korenman 1993). Babies born to young, disadvantaged mothers are more likely to be healthy, and these children will be infants and toddlers when their parents and grandparents will be younger, presumably healthier and more energetic, which means that they'll receive better care and attention. In addition, findings suggest that among poor African-American women, health deterioration is accelerated and may begin during their mid-twenties, often considered the prime childbearing years (Geronimus 1991). These findings suggest that the costs of having a teenage birth for disadvantaged teens is not high and in fact, there may be benefits for teenage pregnancies in disadvantaged populations. Other researchers have agreed that the original costs may have been overstated, but they still maintain that costs associated with teenage pregnancy for disadvantaged teenagers are sizable (Hoffman et al. 1993; Hoffman 1998; Klepinger et al. 1995).

It does appear as if opportunity costs can and do impact the likelihood of experiencing a premarital birth. Positive attitudes held toward competing alternatives, such as high educational expectations and career success, lead to a lower likelihood of experiencing a premarital pregnancy (Barber 2001). These findings indicate that women with more to lose have much lower odds of experiencing a premarital birth.



In addition, studies that have examined single females' decisions about whether or not to keep their children support the notion that premarital pregnancy is less costly for disadvantaged individuals (Bachrach et al. 1992; Cooksey 1990). According to Bachrach (1992), relinquishment of a child, through adoption, is much more likely the greater the opportunity costs of single motherhood at the time of conception. Women who were no longer in school were only a third as likely to place their children for adoption as women who were still currently in school (Bachrach et al. 1992). Similarly, among white and Hispanic teenagers, the likelihood of aborting a premarital pregnancy, as opposed to giving birth, increases significantly the higher the level of their parents' educational attainment (Cooksey 1990).

A life course framework is a useful concept for understanding teenage pregnancy. According to the life course framework, individuals within a society follow social trajectories of work, education, and family that are scripted by social norms (Elder 1998). Trajectories take place over a duration of time, and a trajectory is marked at both the beginning and the end by a transition (Macmillan & Copher 2005). Transitions typically indicate a change in state for individuals; for example, an individual can transition to becoming a parent (Macmillan & Copher 2005). Transitions can also be viewed as being either "on" or "off" time; in mainstream American culture, transitioning to the role of mother as a teenager would be considered off-time, i.e. it occurs too early. An individual's life choices, however, are contingent upon the opportunities and constraints imposed upon the individual by the social structure and culture of the individual's society (Elder 1998). Using a latent class analysis, Macmillan and Copher (2005) found that the likelihood of becoming an adolescent parent is highest when an individual has limited involvement in both the educational system and the paid labor force. So for disadvantaged individuals, it very well may be that transitioning to the role of mother as a

teenager is not quite as off time as it would be for a non-disadvantaged teenager, due to the fact that disadvantaged teenagers may not have the opportunity to pursue the same educational and career trajectories that others will follow later in life.

### **Previous Research on Teenager's Attitudes Toward and Risks of Single Motherhood**

Many researchers have examined the attitudes teenage females hold toward premarital pregnancy. According to Plotnick (1992), "attitudes are important paths through which family background characteristics transmit their influence on adolescent sexual and marriage behavior" (p. 809). In order to examine whether or not attitudes affect future behaviors, in this case whether or not attitudes affect the likelihood of becoming an unwed mother, it is necessary to know and study the attitudes that females hold toward premarital pregnancy before they become pregnant. Plotnick (2004) found that 10.9% of females expected to become an unwed mother in the future and that 12.3% desired to become an unwed mother. There are racial differences in attitudes held toward single parenthood; black teenagers had a greater probability of expecting and desiring non-marital parenthood than white teenagers (Plotnick 2004).

The educational expectations of teenage females affects their attitudes toward teenage premarital pregnancy. Teenage females who have high educational expectations and high educational achievement hold more negative attitudes toward premarital pregnancy than their peers who have lower educational expectations and achievement, and these teens, if pregnant, are more likely to abort than carry the pregnancy to term (Plotnick 1992). High achieving teenagers who expect to receive a B.A. or higher desire and expect to bear children at later ages than teenagers with lower educational expectations (Plotnick 2004). For Black, Hispanic, and white teenagers, low levels of academic achievement led to an increased expectation of teenage childbearing and an increased expectation of non-marital childbearing (Trent 1994).

Education not only influences a teenager's attitudes and expectations toward teenage premarital pregnancy, but it can also influence a teenager's actual risk of experiencing a teenage pregnancy, which reflects the impact that opportunity costs can have upon teenage childbearing. Teenage girls with low educational expectations are at greater risk of experiencing a non-marital pregnancy than teenage girls with high educational expectations (Beutel 2000; Hockaday et al. 2000; Kalil & Kunz 1999). Teenage girls with high levels of educational engagement, high grades, high test scores, and high postsecondary educational expectations, have reduced risks of experiencing a teenage pregnancy. Conversely, teenage girls who have dropped out of high school are more likely to have a teenage pregnancy than non-dropouts (Manlove 1998). These findings lend support the notion that "cost" of having a child as a teenager affects and impacts whether or not the teenager will in fact experience a teenage pregnancy.

Based on these findings, it seems likely that a teenager's future expectations with regard to education will affect both her attitudes toward young, single motherhood and her risk of becoming a young, single mother. Teenage females with high future educational expectations are hypothesized to view young, single motherhood less favorably than teenage females with low future educational expectations, due to both the costs of the pregnancy, and the likelihood that the birth will be viewed as occurring off-time. Females with high educational expectations most likely expect that pregnancy will occur later in life, and their primary focus in high school is with regard to educational, not familial, goals for the future. The birth of a child as a teenager is most likely viewed as a potential obstacle in completing set educational goals and expectations.

Family structure does influence a teenager's attitudes toward premarital and teenage childbearing. Trent (1994) did not find a significant effect of family structure on Black teenagers' attitudes toward teenage pregnancy, but she, however, did find that family structure

impacted a Black teenager's views toward non-marital childbearing because those living without either biological parent were more likely to expect a non-marital pregnancy than those living with both biological parents. Among white teenagers, those who lived with a stepfather had a greater likelihood of expecting a teenage pregnancy than teenagers who lived with both biological parents and teenagers who lived with their "mother only" had a greater likelihood of expecting a non-marital pregnancy (Trent 1994).

A teenager's family also impacts her risk for early sexual intercourse and teenage pregnancy. Teenage girls who live in step-parent, single-parent, and non-parent family structures have higher risk of first sexual experience than teenage girls who live with two biological parents (Harris et al. 2002). In addition, teenage girls who do not live with their biological mothers have increased risks of experiencing a teenage pregnancy than teenage girls who do live with their biological mothers (Manlove 1998). Furthermore, teenage girls who are not monitored closely by their parents and receive low levels of parental support are more likely to engage in risky sexual behaviors, i.e. have more sexual partners and not use contraception (Luster & Small 1994; Miller et al. 2001).

In addition to the structure of a family, the socioeconomic status of a family also impacts the expectations and risks of pregnancy. For Black, white, and Hispanic teenagers, living in poverty significantly increased the likelihood of expecting a teenage pregnancy, and maternal employment and education led to a decreased likelihood of expecting a teenage pregnancy or a non-marital pregnancy (Trent 1994). In a study conducted in England, Turner (2004) found that teenage females from high socioeconomic families had more negative views, such as being more accepting of abortion and less likely to predict keeping the baby if conceived as a teenager, toward teenage motherhood than teenage females from low socioeconomic families. In addition,

teenagers from a high socioeconomic background associated teenage motherhood with social and economic deprivation while teenagers from a low socioeconomic background did not hold this same association (Turner 2004).

Furthermore, teenagers from a high socioeconomic background viewed teenage pregnancy as more costly than teenagers from a low socioeconomic background; high socioeconomic teenagers believed that a teenage pregnancy would ruin their future career plans whereas low socioeconomic teenagers believed that a teenage pregnancy would alter or postpone career plans (Turner 2004). Teenagers from high socioeconomic background also feared the cost a teenage pregnancy would exact upon their personal relationships because these teenagers feared parental reactions more so than teenagers from low socioeconomic backgrounds (Turner 2004).

Family status impacts not only the attitudes toward premarital pregnancy, but also the risk of experiencing a premarital pregnancy. Teenagers who are at risk for both early-onset of sexual activity and teenage pregnancy are more likely to be from disadvantaged backgrounds. Kowaleski-Jones & Mott (1998) found that sexually active teenagers had mothers with lower educational attainment and lower family economic well-being than non-sexually active teenagers. In addition, neighborhood poverty increases a teenager's risk of engaging in risky sexual behavior (Ramirez-Valles et al. 1998), and teenagers who live in neighborhoods characterized by high residential turnover, poverty, and crime rates are likely to have an early onset of sexual activity, low likelihood of using contraception, and high rates of teenage pregnancy (Miller et al. 2001).

Teenage females who become teenage mothers are more likely to have lived in poverty (Hockaday et al. 2000); have parents who have low educational achievement levels (Hockaday et

al. 2000; Young et al. 2004) and low occupational status (Young et al. 2004). Manlove (1998) found that teenagers of high socioeconomic status have a reduced risk of experiencing a teenage pregnancy. Lopoo (2003) found that maternal employment status can impact a teenager's likelihood of experiencing a teenage pregnancy and that maternal employment status has a differing effect depending upon the family's socioeconomic status relative to its community. Teenagers whose mothers worked and attended schools classified as high SES schools were more likely to become pregnant than their peers whose mothers did not work. For teenagers who attended low SES schools, however, maternal employment led to a reduced risk of experiencing a teenage birth.

A teenager female's family structure and status clearly have an impact upon both attitudes and risks with regard to single motherhood. For teenage females who reside in biological, two-parent homes, and for teenage families who reside in high SES families, motherhood is most likely viewed as a transition that will occur later in life, after other transitions such as educational achievement, career advancement, and marriage have occurred. Therefore, it is expected that teenage females who grow up in disadvantaged, defined by parental educational achievement, public assistance receipt, family structure, neighborhood poverty, families are more likely to hold favorable attitudes toward young, single motherhood as compared to teenage families who grow up in more advantaged families.

In studies of teenage pregnancy, a teenager's religiosity is often studied because it is assumed to carry great weight in impacting both her attitudes toward premarital sex and childbearing and her propensity to become a single mother. Werner-Wilson (1998) discovered that the religious participation of a teenager was the most important predictor of a teenager's attitudes toward premarital sex. Highly religious teenagers hold less accepting views toward

premarital pregnancy than their less religious peers (Jeynes 2003; Werner-Wilson 1998), and highly religious teens are also far less likely to become single parents than less religious teens (Jeynes 2003). It seems very likely that a teenager's evaluation of religion's importance and her religious attendance will affect her views toward young, single motherhood. Religious teenagers most likely conceive of pregnancy as occurring within the institution of marriage, and therefore, a pregnancy that occurs outside of marriage is most likely viewed not only as off-time, but also as costly, because for an individual who places great importance upon religion's influence in life will be deviating from religious teaching. Therefore, it is expected that teenage females with low levels of religiosity are more likely to hold positive attitudes toward young, single motherhood than teenage females with high levels of religiosity.

When studying teenagers' attitudes toward non-marital pregnancy, it is also important to consider their attitudes and expectations toward marriage. Teenage females who do not expect to marry in the future might very well be more accepting of non-marital pregnancies than teenagers who expect to marry. Studies have found racial differences with regard to future marital expectations. Studies have found that black teenagers typically have lower expectations of marrying than other teenagers of other racial and ethnic backgrounds (Crissey 2005; Trent 1994). Crissey (2005) found that Black female adolescents are more likely than female adolescents of any race/ethnicity to report that there is almost no chance they will marry by age 25, and Black female adolescents were over three times as likely as white female adolescents to have this low expectation of marriage. Similarly Trent (1994) reported that Black adolescents were less likely to expect to be married and more likely to expect having a child outside of marriage than white and Hispanic adolescents. Trent (1994) also found that Black and Hispanic adolescents were more likely than white adolescents to expect a teenage birth. Based on these

findings, it seems likely that the racial background of a teenage female may impact her attitudes toward premarital pregnancy. If an individual has a low expectation of marriage, but desires to be a mother, her approval of single motherhood will probably be more favorable than an individual who has a high expectation of marriage because she may view single motherhood as her only option to become a mother. It is expected that the race of a teenage female will impact her views toward single motherhood. In particular, it is expected that Black and Hispanic teenage females will hold more positive views toward single motherhood than white teenage females.

### **Conceptual Model**

Based upon an opportunities cost framework, which is guided by a life course perspective, and on prior research on premarital pregnancy attitudes and risks, it is hypothesized that adolescents with less to lose in the future will hold more positive attitudes toward young premarital pregnancy than adolescents with more to lose in the future. In order to capture disadvantage and the opportunity costs associated with teenage pregnancy, the social and economic conditions of female respondents will be examined in relation to teenagers' attitudes toward single motherhood and to answer the question of who is likely to hold favorable attitudes toward single motherhood. In broadly defined terms, it is expected that teenage females from disadvantaged backgrounds will hold more positive attitudes toward young single motherhood than teenage females from advantaged backgrounds.

In addition, this study also examines whether or not favorable attitudes toward single motherhood are in fact predictive of becoming a young single mother in the future. After controlling for social, economic, and background factors, it is expected that females who held positive attitudes toward young single motherhood as teenagers are in fact more likely to be a



young single mother than females who held negative attitudes toward young single motherhood as teenagers.

## **Data**

This study uses data from the National Longitudinal Study of Adolescent Health (Add Health), which is a nationally representative study of teenagers in seventh through twelfth grade in the United States in 1995 that was designed to explore the causes of adolescent health behavior. In particular, Add Health seeks to examine how social contexts affect both adolescent's health and their health behaviors.

Add Health used a cluster sample design that was both school-based and multi-stage. The study began in Wave I, in 1995, with an in-school questionnaire that was administered to a nationally representative sample of seventh through twelfth graders. The in-school questionnaire was completed by more than 90,000 adolescents. Add Health then used school rosters to randomly select 200 students from each school to participate in in-home interviews. These individuals formed the core of the in-home sample, and the size of this sample is roughly 12,000 teenagers. In addition, special samples (based on ethnicity, genetics, etc.) were also selected, based upon the in-school responses, which combined with the core brings Wave I's total sample size to 20,745 adolescents.

In-home interviews for Wave I were conducted from April to December of 1995. Interviews lasted from one to two hours, and interviews were conducted using a laptop computer. Sensitive sections were not interviewer administered; confidential audio-CASI sections were used for questions that focused upon illegal, risky, and otherwise sensitive behaviors. Respondents were followed up six years later for the Wave III in-home interviews, which took

place from August 2001 to April 2002. Harris et al. (2003) provide a more detailed description of the Add Health study.

In order to determine if motherhood attitudes are in fact predictive of childbearing behaviors, the analytic design has taken careful measures to ensure that any attitudinal measures have been taken prior to behavioral measures. This study uses attitudinal measures taken from Wave I and examines how these attitudes are related to childbearing behaviors that occur between Wave I and Wave III interviews. Since this study is interested in examining motherhood, only females are studied. Therefore, this sample is limited to female adolescents who completed all of the premarital pregnancy attitudinal measures during the Wave I in-home interview, had valid data with regard to the proportion of families in poverty in their neighborhood block, did not yet have a child at the time of the Wave I interview, and were interviewed at both Wave I and Wave III. In addition, respondents who met all of the above criteria, but had missing weights, were dropped from the sample so that all estimates from the analyses provide unbiased estimates of parameters, standard errors, and variances. It is important to note that the sample is only comprised of females whose ages ranged from 15 to 18 at Wave I. Only the older female adolescents were asked their views on teenage pregnancy. Therefore, female adolescents who were younger than 15 in 1995 had to be excluded from this study because there are no attitudinal measures for these individuals at Wave I. These decisions result in an analytic sample size of 4,523 female respondents, aged 15 to 19 in 1995. In terms of race, 68.8% of the sample is White, 14.7% is Black, 4.0% is Asian, 11.3% is Hispanic, and 1.3% is classified as an Other Race.

## Measures

Table 1 lists the variables used in the analysis, showing both the range and the weighted sample mean and standard errors for each variable.

[Table 1 About Here]

### *Attitudes Toward Single Motherhood*

Two measures are used to assess teenagers' attitudes toward single motherhood. One will focus upon a teenager's attitudes toward teenage motherhood and the other on a teenager's attitudes toward single motherhood in general. While the questions that form the measure for the teenage motherhood attitudinal measure do not specifically mention single teenage motherhood, this measure will be used as a proxy for a teenager's attitudes toward single teenage motherhood. Due to the fact that most teenage births occur outside of marriage, it is assumed that most teenagers would not envision marriage as occurring prior to a teenage birth.

The first measure assesses attitudes toward teenage motherhood, and this measure is a constructed index based on the following four items:

Getting pregnant at this time is one of the worst things that could happen to you.  
It wouldn't be all that bad if you got pregnant at this time in your life.  
If you got pregnant, it would be embarrassing for your family.  
If you got pregnant, it would be embarrassing for you.

Response categories range from 1 (strongly agree) to 5 (strongly disagree). The responses to the item "it wouldn't be all that bad if you got pregnant at this time in your life" are reverse coded so that the higher values indicate more favorable attitudes toward single motherhood, which mirrors the manner in which the other three items in the index are coded. The respondent's responses for these variables were summed to create a continuous measure that ranges from 4 to 20. The higher the value, the more positive the respondent's attitudes toward teenage motherhood. The mean score for the sample is 7.55. The reliability of the index

(cronbach's alpha) is 0.7484. Principle component factor analysis indicated that all four measures load onto one factor (factor analysis not shown). All four measures loaded onto the first factor with factor loadings greater than 0.7. Correlations for the measures that comprise the attitudes toward teenage motherhood can be found in Table 2.

[Table 2 About Here]

The second measure is a dummy variable that assesses attitudes toward single motherhood in general, and this measure is based upon the following question: "Regardless of whether you've ever had a child, would you consider having a child in the future as an unmarried person?" Responses for this question include "yes" and "no." 27.3% of the sample answered yes, they would consider having a child in the future as an unmarried person.

### *Single Motherhood*

Becoming a single mother is represented by a dummy variable. This analysis is only interested in examining whether or not a woman was a single mother at the time of her first childbirth. In Wave III, respondents were asked to complete childbirth histories. From these histories, it is possible to determine whether or not a respondent has given birth to a child since 1995 and whether or not this birth occurred inside or outside of a marriage. Respondents who have given birth to their first child in a cohabiting, dating, or other romantic relationships are classified as being single mothers. Respondents who have not yet given birth or who gave birth to their first child during a marriage are classified as non-single mothers.

In the discrete time hazard model, the dependent variable is coded 1 in the year that the female has a first birth outside of marriage. The variable is coded 0 in all years in which no birth as a single mother occurred. Once a woman has a first birth as a single mother she does not enter the analysis again. Females are censored if they reached the end of the survey period without

giving birth. In addition, females who married are censored in the year of their marriage. I set exposure time to begin at age 12 so all women are at risk to single motherhood from this age forward.

15.2% of the sample gave birth to their first child as a single mother in between Wave I and Wave III. Conversely, only 8.2% of the sample gave birth to their first child as a married mother in between Wave I and Wave III. 76.4% of the sample had not yet given birth at the time of the Wave III interview.

In order to determine who is likely to hold positive attitudes toward single motherhood, and in order to ascertain who is more likely to become a single mother, many independent and control variables will be examined.

First, in order to assess the impact of growing up in a disadvantaged family on both single motherhood attitudes and becoming a single mother, the following variables will be examined:

#### *Family Structure*

Family structure is represented by four dummy variables: two biological parents (reference category); two parents in which at least one parent is not biological (includes step-, adopted, or foster parents, or a parent's partner who resides with the teenager); single parent (includes both single-mother and single-father structures); and other family structures (families in which teenagers do not reside with a parent, but rather grandparents, other relatives, nonrelatives, or a group home). Respondents who reside with two biological parents are conceptualized as residing in a more advantaged family structure than respondents who reside in alternative family forms.

### *Public Assistance*

Public assistance is measured by whether the respondent's mother receives public assistance (1 = yes; 0 = no). The questions about public assistance receipt are only asked of respondents with a residential mother. Therefore, the public assistance receipt of respondents with non-residential mothers is unknown. Respondents whose families do not receive public assistance are conceptualized as growing up in a more advantaged family structure than respondents whose families do receive public assistance.

### *Parental Education*

Parental education refers to the highest level of education completed by either a respondent's mother or father and is represented by five dummy variables: less than a high school degree (includes never went to school, completed less than eighth grade, completed more than eighth grade but less than a high school degree, or went to a business, trade, or vocational school instead of high school); high school degree (includes high school graduate, or completed a GED); more than a high school degree (includes went to a business, trade, or vocational school after high school or went to college, but didn't graduate); college degree and beyond (includes graduated from a college or university or professional training beyond a four-year college or university; reference category); unknown (includes respondents who do not have a residential mother and father and respondents who were unsure of their parent's educational attainment, which encompasses parent went to school but respondent doesn't know level, respondent doesn't know if parent went to school, or don't know). Respondents who have at least one parent that has attained an educational level of college graduate or higher are conceptualized as growing up

in a more advantaged family than respondents whose parents have lower educational attainment levels.

### *Maternal Employment*

Whether or not the teenager's mother worked for pay is represented by three dummy variables: mother employed (respondent reports that mother works for pay outside the home), mother not employed (respondent reports that mother does not work for pay outside the home), and maternal employment unknown (respondent does not have a residential mother, respondent doesn't know employment status, respondent refused to answer). The questions about maternal employment were only asked of respondents who lived with a mother. Therefore, the work status of respondents with non-residential mothers is unknown.

In order to assess the impact of growing up in a disadvantaged neighborhood on both single motherhood attitudes and becoming a single mother, the following variables will be examined:

### *Neighborhood Safety*

Whether or not respondents feel safe in their neighborhoods is represented by a dummy variable. Teenagers were asked whether or not they usually feel safe in their neighborhoods. Responses include "yes" and "no." Respondents who feel safe in their neighborhood are conceptualized as growing up in a more advantaged neighborhood than respondents who do not report feeling safe.

### *Neighborhood Contextual Variables*

In order to more fully understand the impact of growing up in a disadvantaged neighborhood has upon attitudes toward single motherhood, the proportion of families with

incomes in 1989 below poverty level will be examined. This measure is taken at the Census block level for each respondent.

### *Religiosity*

A teenager's religiosity was assessed through both a teenager's religious service attendance and the importance of religion in a teenager's life. Religious service attendance is measured by four dummy variables: once a week or more (reference group); more than once a month, but less than once a week; less than once a month; and never (includes teenagers who responded never, don't know, and those who indicated that they do not have a religion). Respondents who indicated that they do not have a religion were not asked any further questions about their religiosity/experiences with religion. Therefore, there is no measure of how often respondents without a religion report attending religious services so the decision was made to group these respondents with the lowest reported measure of religious attendance since religion does not appear to be particularly salient in these teenagers' lives.

The importance of religion in a teenager's life was measured by four dummy variables: very important; fairly important; fairly unimportant; not important at all (includes those who indicated that they do not have a religion). Again, respondents who indicated that they do not have a religion were not asked any further questions about their religiosity/experiences with religion. Therefore, there is no measure of the importance of religion in their lives so the decision was made to group these respondents with the lowest reported measure of religious importance since religion does not appear to be particularly salient in these teenagers' lives.

### *Educational Expectations*



In order to assess a teenager's educational expectations, measures that asked about the respondent's expectations toward higher educational achievement are examined. Teenagers were asked, "On a scale of 1 to 5, where 1 is low and 5 is high, how likely is it that you will go to college?" A dummy variable was created in order to capture high educational expectations. Any respondent who answered 5 on the scale was classified as having high educational expectations while respondents who answered with a score of 1 to 4 or don't know on the scale were classified as not having high educational expectations.

### *Race*

A teenager's race is represented by five dummy variables: Non-Hispanic White (reference group); Non-Hispanic Black; Non-Hispanic Asian-American, Hispanic, and Non-Hispanic Other (includes Native Americans, other, and missing).

### **Analytic Strategy**

For the first stage of the analysis, bivariate analyses between the independent variables and dependent variables are conducted in order to replicate previous findings and explore theoretical hypotheses. Correlations between each variable were run, but this matrix is not shown due to the large number of variables. Religiosity, family structure, race, parental educational attainment, and educational expectations are all significantly related to both teenage and single motherhood attitudinal measures. In addition, maternal employment, public assistance receipt, the safety of neighborhoods, and the level of neighborhood poverty are all significantly related to teenage motherhood attitudes. All of the correlations are in the expected and hypothesized directions. Table 3 displays the relationship between known covariates (race and parental educational attainment) and the attitudinal measures. In particular, this table displays the relationship between a teenager's future expectations and the attitudinal measures

because this relationship provides some insight into an opportunity costs hypothesis. Finally, the relationship between the attitudinal measures and the single motherhood measure are presented graphically in order to display the relationship between attitudes and childbearing.

In order to examine the relationship between teenage motherhood attitudes and other variables, a categorical variable was created from the teenage motherhood attitudinal scale. Respondents with scores that ranged from 4 to 9 (approximately 73% of the sample) were classified as “low” on the teenage motherhood attitudinal scale. Respondents with scores that ranged from 10 to 20 (approximately 27% of the sample) were classified as “high” on the teenage motherhood attitudinal scale.

For the first stage of the multivariate analysis, in which an examination of who is likely to hold favorable attitudes toward single mothers is undertaken, two different regression analyses will be conducted. For the teenage motherhood attitudinal measure, models will be analyzed using ordinary least squares regression. For the single motherhood attitudinal measure, models will be analyzed using binomial logistic regression.

Five models will be analyzed to examine both attitudinal dependent variables. The first model is one that simply controls for the respondent’s race and the respondent’s parental educational attainment to establish prior differentials. In the second model, additional family characteristics are examined in order to determine their impact upon teenage motherhood and single motherhood attitudes. In the third model, neighborhood factors are added to the previous models in order to determine the effects that the local community and structure have upon teenage motherhood and single motherhood attitudes. Then, in the fourth model, religiosity is addressed in order to determine how a teenager’s religious attendance and the importance of religious faith impact attitudes toward teenage and single motherhood. Finally, the fifth model

examines how future orientations toward both higher education and marriage impact a teenager's attitudes toward teenage and single motherhood. All models are nested models.

For the second stage of the analysis, in which an examination of whether or not attitudes are predictive of childbearing behavior will be undertaken, a discrete time hazard model will be estimated. The hazard model indicates whether or not holding favorable attitudes toward single motherhood as a teenager has an effect on the timing of becoming a single mother.

Four models will be used to examine the dependent variable of single mother status. The first model examines the impact that attitudes toward single motherhood have upon childbearing behavior. The second model examines the relationship between attitudes toward teenage motherhood and childbearing behavior. The third model examines the impact that both attitudinal measures have upon childbearing behavior. The fourth model adds all of the independent variables from the first analysis to the third model. This fourth model, therefore, is a nested model of the third. These two nested models will help answer the question of whether or not these attitudes are related to non-marital childbearing, and whether or not these attitudes' influence upon non-marital childbearing is mediated by other variables. In all four models, duration will be controlled. The duration variable is a measure that equals the age of the respondent for each year in the discrete time hazard model.

### **Bivariate Results**

Table 3 display the relationship between known covariates and the attitudinal measures. Blacks and Hispanics hold more favorable views toward both single motherhood and teenage motherhood than whites do. Approximately 35% of Black teenage females and 34% of Hispanic teenage females hold favorable attitudes toward single motherhood compared to 25% of white teenage females, 18% of Asian teenage females, and 13% of teenage females of other races. The

relationship between race and single motherhood attitudes is statistically significant at the 0.001 level. Approximately 41% of Black teenage females and 34% of Hispanic teenage females have favorable teenage motherhood attitudes as compared to 22% of white teenage females, 18% of Asian teenage females, and 15% of teenage females of other races. This relationship is also significant at the 0.001 level.

Table 3 also displays the relationship between parental educational attainment and the attitudinal measures. Teenage females' attitudes toward both single motherhood and teenage motherhood become less favorable as their parents' educational attainment levels increase. Teenage females whose parents have attained a college degree or higher have less favorable attitudes than teenage females whose parents have attained less than a college degree. While not displayed in the table, respondents with unknown parental educational attainment levels hold the most favorable attitudes toward single and teenage motherhood, a finding that is difficult to interpret. Thirty-nine percent of teenage females who have missing parental education data have a favorable view towards single motherhood as compared to 29% of teenage females whose parents have attained less than a high school degree, 29% of teenage females whose parents have graduated from high school, 27% of teenage females whose parents have attended schooling past high school, and 25% of teenage females whose parents have attained at least a college degree. This relationship is close to being statistically significant at the 0.05 level (p-value of 0.059). Approximately 46% of teenage females with unknown parental educational attainment hold favorable views toward teenage motherhood as compared to 35% of teenage females whose parents have attained less than a high school degree, 32% of teenage females whose parents have graduated from high school, 25% of teenage females whose parents have attended schooling past

high school, and 17% of teenage females whose parents have attained at least a college degree. This relationship is statistically significant at the 0.001 level.

Table 3 also displays the relationship between educational expectations and the attitudinal measures. Teenage females with high educational expectations hold less favorable views toward both single motherhood and teenage motherhood than teenage females with low educational expectations. This finding seems to support the opportunity costs framework in which teenage girls with “more to lose” in the future hold more negative views toward young, single motherhood. Approximately 34% of teenage females with low expectations of attending college in the future hold favorable attitudes toward single motherhood as compared to 23% of teenage females with high expectations of attending college in the future. This relationship is statistically significant at the 0.001 level. Approximately 38% of teenage females with low expectations of attending college in the future hold favorable views toward teenage motherhood as compared to 20% of teenage females with high expectations of attending college in the future. This relationship is statistically significant at the 0.001 level.

[Insert Table 3 Here]

The relationship between attitudes and childbearing behavior is displayed graphically in Figures 1 and 2. As evidenced by both figures, teenage females who hold more favorable views toward both single motherhood and teenage motherhood have a greater likelihood of becoming a single mother in the future. Approximately 21% of females who held favorable attitudes toward single motherhood as a teenager became a single mother as compared to 13% of teenage females who held unfavorable attitudes toward single motherhood as a teenager. This relationship is statistically significant at the 0.001 level. Approximately 26% of females who held favorable views toward teenage motherhood became single mothers as compared to 11% of females who

held unfavorable attitudes toward teenage motherhood as a teenager. This relationship is also statistically significant at the 0.001 level. These results lend support to the motherhood before marriage hypothesis and suggest that attitudes held toward single motherhood as a teenager may in fact be predictive of future childbearing behaviors. This bivariate relationship is substantively significant because it is based on the most recent national and longitudinal data on this topic.

[Insert Figure 1 and Figure 2 Here]

### **Multivariate Results**

The first stage of the multivariate analysis examined who is likely to hold favorable attitudes toward single motherhood. The results for this analysis can be found in Table 4, and this table displays the log odds, odds ratios, and standard errors for each variable within Models 1, 2, 3, 4, and 5. Model 1 indicates that both Black and Hispanic teenage females have a 50% higher odds of holding a positive attitude toward single motherhood than White teenage females. This relationship is also found in Models 2 through 5; in all five models Black and Hispanic teenage females have a greater likelihood of holding positive attitudes toward single motherhood than white teenage females. In all five models, Asian-Americans and females of other races do not differ in their attitudes toward single motherhood as compared to Whites. In terms of parental educational attainment, in Model 1, teenage females who did not know the level of their parents' educational attainment were more likely to hold favorable attitudes toward single motherhood than teenage females whose parents had attained a college degree or more. This relationship, however, was not significant in later models. In all five models, there were no significant differences in attitudes held toward single motherhood between teenage females whose parents had attained less than a college degree (less than a high school graduate, high school graduate, some college) and those whose parents had attained at least a college degree.

Model 2 indicates that only one variable affects the attitudes held toward single motherhood. Teenage females who grow up in single-parent families are more likely to hold favorable attitudes toward single motherhood than teenage females who grew up in biological, two-parents homes. This relationship is only found in Model 2 and Model 3, and then ceases to be significant when additional independent variables are added to the analysis. All other family structures, maternal employment, and receipt of public assistance do not affect the attitudes held toward single motherhood. The lack of a relationship between these variables and the attitudes held toward single motherhood are also found in the last three models.

Model 3 indicates neighborhood contextual variables do not affect the attitudes held toward single motherhood. The lack of a relationship between neighborhood contextual variables and the attitudes held toward single motherhood can also be observed in Model 4 and Model 5.

Model 4 illustrates that religion impacts a teenage female's attitudes toward single motherhood. Teenage females who never attend religious services have a greater likelihood of holding favorable attitudes toward single motherhood than teenage females who attend religious services at least once a week. The odds of holding favorable attitudes are 71% higher for teens who never attend religious services. This relationship can also be found in Model 5.

In addition to weekly service attendance, the importance of religious faith also impacts a teen's attitudes toward single motherhood. Teenage females who report that their faith is fairly important, fairly unimportant and not at all important to them all have a greater likelihood of holding favorable attitudes toward single motherhood than teenagers who report that their faith is very important to them. The odds of having favorable attitudes toward single motherhood are 71% higher for teenage females who report that their faith is fairly important to them compared

to teenage females who report that their faith is very important to them. Teenage females who report that their faith is fairly unimportant to them have 100% higher odds to hold favorable attitudes toward single motherhood as teenage females who report that their faith is very important to them. Finally the odds of having favorable attitudes toward single motherhood are 81% higher for teenage females who report that their faith is not at all important to them compared to teenage females who report that their faith is very important to them. These relationships can also be observed in Model 5.

Model 4 also reveals that, after the addition of religious variables, the size of the race effect increases. The race effect most likely increases due to the fact that Blacks and Hispanics are more likely to be religious than whites, and religiosity is associated with less favorable attitudes toward single motherhood. The Black coefficient in Model 3 is suppressed by higher levels of religiosity among Blacks. This increase in the race effect is also found in Model 5.

Model 5 indicates that a teenage female's educational expectations impact her attitudes toward single motherhood. Teenage females with high expectations of attending college in the future are less likely to hold favorable views toward single motherhood than teenage females with low expectations of attending college in the future. Teenage females with high expectations of attending college have 44% lower odds than teenage females with low expectations of attending college to hold favorable attitudes toward single motherhood.

Model 5, the final model, reveals that race, religious service attendance, religious faith, and educational expectations affect a teenage female's attitudes toward single motherhood. Black and Hispanic females, compared to white females, are more likely to hold favorable attitudes toward single motherhood. In addition, more religious individuals and individuals with



high educational expectations are less likely to hold favorable views toward single motherhood as compared to less religious individuals and individuals with low educational expectations.

[Insert Table 4 Here]

Results for the second dependent variable, favorable attitudes toward teenage motherhood, are shown in Table 5 (betas and standard errors for Models 1 through 5). The relationship between race, religiosity, and educational expectations and teenage motherhood attitudes are very similar to the relationships found in Table 4. There are, however, significant findings that are unique to teenage motherhood attitudes. Parental educational attainment and family structure are significantly related to the attitudes held toward teenage motherhood.

Teenage females whose parents have attained less than a college degree hold more favorable attitudes toward teenage motherhood than teenage females whose parents have attained a college degree or more. Teenage females who reside in a two parent stepfamily, a single parent family, and with other relatives all hold more favorable views toward teenage motherhood than teenage females who reside with two biological parents. The reason why these factors are significantly related to teenage motherhood attitudes, and not to single motherhood attitudes, may be due to the costs associated with each type of motherhood. Teenage females may associate the costs with teenage motherhood as being greater than the costs associated with single motherhood, which may occur at any point in the future. This evaluation of the costs associated with each type of childbearing may make a respondent's family structure and SES more discriminating with regard to the attitudes held toward each type of childbearing.

Model 5, the final model, reveals that race, parental educational attainment, family structure, religiosity, and educational expectations affect the attitudes held toward teenage motherhood. Blacks, teenage females whose parents have attained less than a college degree,

teenage females who reside in a two parent or other relative family forms, and less religious teenage females hold more favorable attitudes toward single motherhood than Whites, teenage females whose parents have attained a college degree or more, teenage females who reside with two biological parents, and more religious teenage females. In addition, teenage females with high educational expectations hold less favorable views toward teenage motherhood than teenage females with low educational expectations.

[Insert Table 5 Here]

The last stage of analysis examines whether attitudes in adolescence are predictive of subsequent behavior of giving first birth as a single mother. This analysis is a discrete time hazard model so the dependent variable is the time to first birth. The results are shown in Table 6, and this table displays the log odds, odds ratios, and standard errors for each variable within Models 1 and 2.

Model 1 indicates that there is a relationship between single motherhood attitudes and the likelihood of becoming a single mother. Females who hold favorable attitudes toward single motherhood have 57% higher probability of becoming a single mother than females who hold unfavorable attitudes toward single motherhood. In addition, the duration variable is significantly related to becoming a single mother. For each one year increase in age, the probability of becoming a single mother increases by 28%. The duration variable is significant in all models.

Model 2 indicates that there is a relationship between teenage motherhood attitudes and the likelihood of becoming a single mother. For each additional point increase on favorable attitudes toward teenage motherhood, the probability of becoming a single mother increases by 15%.

Model 3 examines the independent effect of the two attitudinal measures together, revealing that the attitudes held toward single motherhood no longer significantly affect the likelihood of becoming a single mother. Evidently once attitudes toward teenage motherhood are taken into account, attitudes toward single motherhood are not important in relation to behavior.

Model 4, the final model, reveals that teenage motherhood attitudes, race, parental educational attainment, family structure, public assistance receipt, and educational expectations affect the likelihood of becoming a single mother. Females who held favorable teenage motherhood attitudes, Blacks, females whose parents have attained less than a college degree, females who grew up in alternative family structures, and females whose mothers received public assistance all have a greater likelihood of becoming a single mother. These results are consistent with the literature on single parenthood. With the addition of other measures, the teenage motherhood attitudes no longer have as large of an impact upon the probability of becoming a single mother, but they still do have a rather sizable effect. For each additional point increase on favorable attitudes toward teenage motherhood, the probability of becoming a single mother increases by 9%.

## **Conclusions**

The results from this study lend support to the notion that disadvantaged teenagers will be more likely to hold favorable attitudes toward single motherhood than non-disadvantaged teens. In addition, the preliminary results suggest that attitudes toward single motherhood can, in fact, be predictive of becoming a single mother in the future. This study supports the motherhood before marriage hypothesis, proposed by Edin and Kefalas (2005), and it extends their work because this study uses recent, nationally representative data. By using Add Health, a nationally

representative data set, this study suggests that the motherhood before marriage hypothesis is generalizable to females who reside outside the Philadelphia area. In addition, this study employs a longitudinal design, which allows it to link attitudes to behavior over time.

The results also reveal that the race effect is suppressed by religion. The effects of race upon attitudes increase when religion is also examined. Previous research has indicated that Blacks are more religious than whites. This research reveals that Blacks both publicly and privately practice religion more often than whites because they are more likely to attend church services and other church activities and more likely to read the Bible and pray than Whites (Pattilo-McCoy 1999; Taylor et al. 1996). The differences in religiosity between Blacks and Whites has also been found at the adolescent level. Black adolescents are more likely to attend religious services and religious youth groups than White adolescents (Smith et al. 2002). While Hispanic adolescents are not more likely to attend religious services and religious youth groups than White adolescents, approximately 56% of Hispanic adolescents are Catholic (Smith et al. 2002). Catholicism in mainstream culture is often viewed as holding very traditional views toward contraception and non-marital childbearing so the identification with Catholicism may be the force behind the suppression effect with regard to Hispanic teens. Therefore, in an examination of the relationship between race and attitudes toward non-marital childbearing it is very important to also examine religiosity. Otherwise, the effects of race will be suppressed due to differing levels of religiosity among various racial groups.

The main finding of this study reveals that attitudes can in fact be linked to childbearing behavior. Not all attitudes, however, have the same effect upon childbearing behavior. It appears that teenage motherhood attitudes are more closely linked to behavior than single motherhood attitudes. It very well may be that attitudes toward teenage motherhood are more

indicative of attitudes held toward young, single motherhood. Favorable attitudes held toward teenage motherhood may indicate that females have an orientation toward young, single motherhood and foresee becoming a young, single mother in the future. Since the respondents are still relatively young (in their twenties) at Wave III, when childbearing behavior is examined, it may be that the effects of attitudes held toward teenage motherhood are more indicative of who will become a young, single mother than attitudes held toward single motherhood. It would be interesting to see whether or not the attitudes held toward single motherhood are indicative of becoming a single mother at later ages.

After controlling for culture (race and religiosity), opportunity costs (educational expectations and SES), and family structure, which indicates socialization and supervision, favorable attitudes toward teenage motherhood are still significantly related to the probability of becoming a single mother. Attitudes, therefore, have an impact beyond the theoretical and commonly measured influences upon single motherhood. While this study reveals that attitudes do in fact impact non-marital childbearing, it immediately raises the question of why? It very well may be that some teenage girls highly value motherhood, and this high value of motherhood is not captured by measures related to culture, opportunity costs, and family structure. For females who value motherhood, they may envision future trajectories centered upon family, especially children, and therefore, they may be more amenable to giving birth as a young, single mother than other females who have stronger career or educational orientations. For females with stronger career and educational orientations, motherhood may be envisioned as a stage that happens later in life, not in the near future. Therefore, the notion of motherhood before marriage may be more widespread than within poor communities, as observed by Edin and Kefalas (2005).

While this research has made an important contribution by linking attitudes toward childbearing behavior, there are limitations to this study, and future work can build upon the results of this work by examining some of the questions that still need to be explored in order to fully understand the relationship between attitudes and behavior.

One limitation of this study is that the attitudinal measure may be measuring unobservables for which no measures have been used in the analysis. The attitudinal measure may simply be a measure of the value of motherhood, as mentioned previously. It is important to note, however, that few measures of future expectations are included in this study. The only measure toward future expectations is with regard to educational expectations. Measures with regard to career expectations and orientations are not examined in this study nor are more detailed measures of educational expectations, such as the highest degree attainment respondents desire. The attitudes held toward teenage motherhood most likely differ depending upon future expectations with regard to various trajectories that individuals may envision taking in both the labor market and educational realm. Therefore, the attitudes held toward teenage motherhood may also be a reflection upon attitudes and expectations held toward other realms of life.

In addition, a factor that has not been examined in this study is the male partner of female respondents. Some researchers argue that single motherhood has been rising due to the lack of marriageable men in some communities. Women who see a lack of marriageable men in their future may be more likely to hold favorable attitudes toward teenage motherhood. Furthermore, there are no measures of relationship quality, which can in turn affect an individual's attitudes toward both marriage and single motherhood.

Another limitation of this study is the age range of respondents. Because attitudinal questions about motherhood were only asked of adolescents aged 15 or older at Wave I, the links

between attitudes and behavior is only observed for older adolescents at the first time point. Therefore, this study cannot assess the impact of attitudes toward future childbearing behaviors for younger adolescents. In some respects it may be more crucial to know and understand how attitudes impact the childbearing behaviors of younger adolescents because for these younger adolescents, a non-marital birth can be even more problematic and detrimental to future outcomes than for older adolescents.

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**Table 1. Weighted means and ranges of variables (n=4,523)**

<i>Description of Variable</i>	<i>Range</i>	<i>Mean<sup>a</sup></i>	<i>Stand. Error</i>
<i>Motherhood Attitudes</i>			
Teenage Motherhood	4-20	7.553	0.108
Single Motherhood	0-1	0.273	0.012
<i>Motherhood</i>			
Single Mother	0-1	0.152	0.014
Married Mother	0-1	0.083	0.008
Not a Mother	0-1	0.764	0.015
<i>Family Background</i>			
Family Structure:			
Live w/2 biological parents	0-1	0.573	0.018
Live w/2 parents	0-1	0.170	0.009
Live w/single parent	0-1	0.212	0.011
Live w/other relatives	0-1	0.045	0.006
Race:			
White	0-1	0.688	0.040
Black	0-1	0.147	0.027
Asian	0-1	0.040	0.011
Hispanic	0-1	0.113	0.024
Other	0-1	0.013	0.003
Parental Education:			
Less than high school	0-1	0.124	0.014
HS diploma or GED	0-1	0.282	0.014
More than high school	0-1	0.218	0.011
College degree or more	0-1	0.334	0.023
Education Unknown	0-1	0.043	0.005
Maternal Employment:			
Mother Employed	0-1	0.749	0.013
Mother Not Employed	0-1	0.076	0.007
Mother Employment Unknown	0-1	0.175	0.011
Public Assistance Receipt:			
Yes	0-1	0.080	0.010
No	0-1	0.870	0.012
Missing	0-1	0.051	0.004

*Neighborhood Context*

Safe Neighborhood	0-1	0.899	0.010
Families in Poverty	0.000-0.859	0.116	0.011

*Religiosity*

Religious Attendance:

Weekly or more	0-1	0.385	0.015
More than once a month	0-1	0.191	0.011
Less than once a month	0-1	0.200	0.011
Never	0-1	0.224	0.015

Religious Importance:

Very important	0-1	0.425	0.020
Fairly important	0-1	0.347	0.012
Fairly unimportant	0-1	0.066	0.008
Not important at all	0-1	0.162	0.011

*Future Expectations*

High Expectation of Attending College	0-1	0.633	0.016
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<sup>a</sup> All means are for Wave I measures, except for the means of the motherhood variables, which represent Wave III.

**Table 2. Correlations Between Teenage Motherhood Attitudinal Measures (n=4,523)**

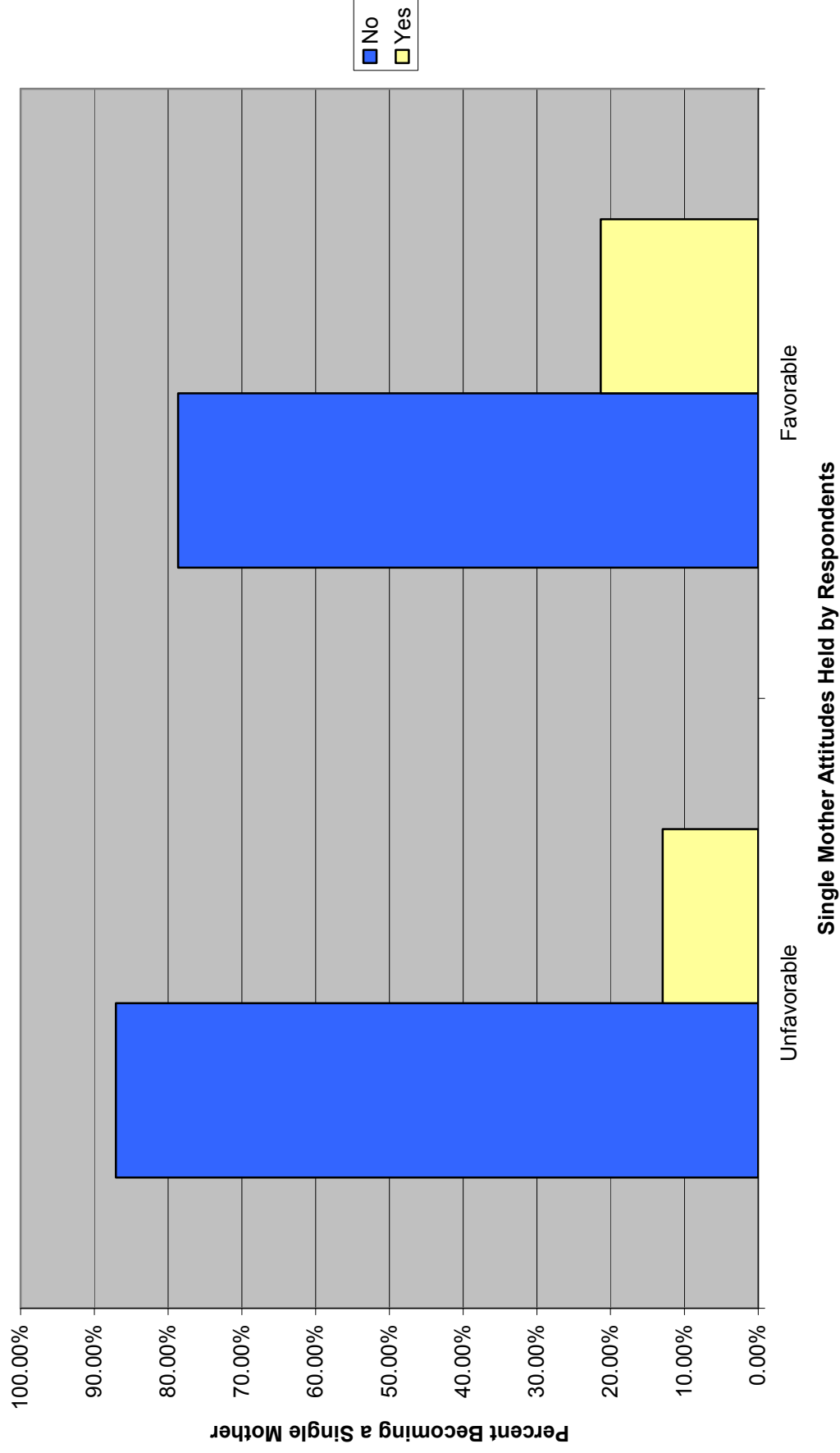
	(1)	(2)	(3)	(4)
(1) Family Embarrassed	1.000			
(2) Self Embarrassed	0.686 ***	1.000		
(3) Worst Thing Could Happen	0.288 ***	0.398 ***	1.000	
(4) Not All Bad (Reverse Coded)	0.281 ***	0.392 ***	0.519 ***	1.000

\*\*\* p < 0.001

Table 3. Bivariate Relationships Between Race, Parental Education, Educational Expectations and Favorable Attitudes Toward Single and Teenage Motherhood (N = 4,523)

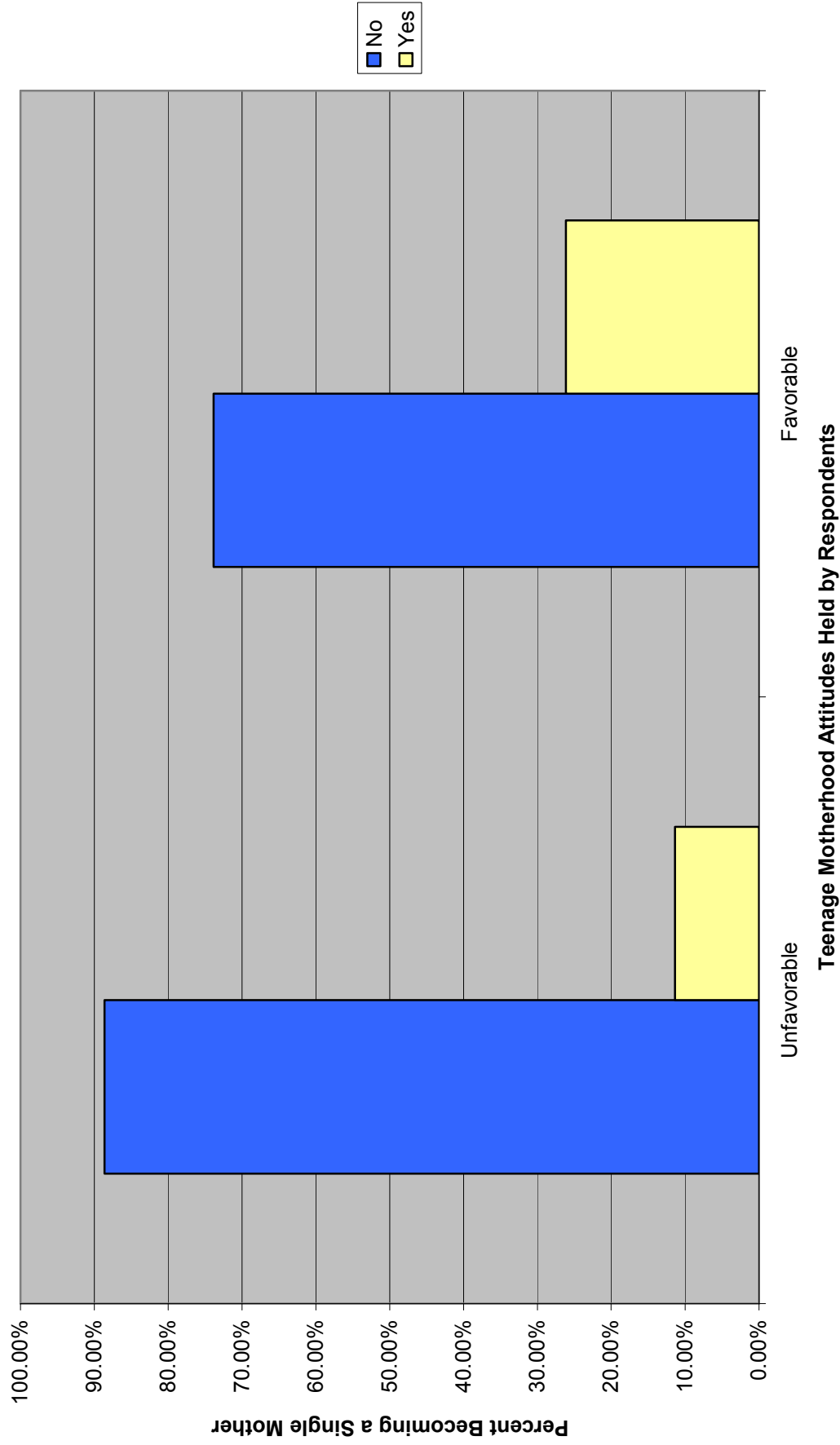
	Single Motherhood Attitudes	Teenage Motherhood Attitudes
	Favorable	Favorable
Race		
White	25.34%	22.47%
Black	34.60%	41.17%
Asian-American	18.24%	17.79%
Other	12.64%	14.43%
Hispanic	34.46%	33.70%
Parental Education		
Less than a High School Degree	28.70%	35.42%
High School Degree/GED	28.74%	31.50%
More than a High School Degree	27.02%	25.02%
College Degree or More	24.35%	16.71%
Educational Expectations		
Low	34.24%	37.76%
High	23.32%	19.54%

**Figure 1. Relationship Between Attitudes Toward Single Mothers and Becoming a Single Mother**





**Figure 2. Relationship Between Teenage Motherhood Attitudes and Becoming a Single Mother**



**Table 4. Estimated Logistic Regression Coefficients for Single Motherhood Attitudes (N = 4,523)**

	Model 1			Model 2			Model 3					
	Coeff	Odds Ratio	Std Error	Sig	Coeff	Odds Ratio	Std Error	Sig	Coeff	Odds Ratio	Std Error	Sig
Race ( <i>White</i> )												
Black	0.405	1.499	0.135	**	0.350	1.418	0.139	*	0.464	1.591	0.173	**
Asian-American	-0.399	0.671	0.335		-0.389	0.678	0.330		-0.371	0.690	0.325	
Other	-0.614	0.541	0.164		-0.624	0.536	0.377		-0.575	0.562	0.384	
Hispanic	0.405	1.500	0.382	*	0.431	1.538	0.163	**	0.467	1.560	0.157	**
Parental Education ( <i>College Degree or More</i> )												
Less than a High School Degree	0.076	1.079	0.198		0.049	1.051	0.200		0.106	1.111	0.210	
High School Degree/GED	0.168	1.183	0.107		0.139	1.149	0.111		0.173	1.189	0.114	
More than a High School Degree	0.092	1.096	0.128		0.071	1.073	0.133		0.088	1.092	0.133	
Unknown	0.538	1.713	0.246	*	0.429	1.536	0.258	^	0.468	1.596	0.258	^
Family Structure ( <i>Two Biological Parents</i> )												
Two Parents					0.146	1.157	0.115		0.154	1.167	0.115	
Single Parent					0.227	1.255	0.106	*	0.234	1.264	0.106	*
Other Relatives					0.385	1.469	0.208	^	0.376	1.457	0.206	^
Maternal Employment ( <i>Works</i> )												
Mother Doesn't Work					-0.216	0.806	0.176		-0.206	0.814	0.176	
Maternal Employment Missing					-0.259	0.853	0.119		-0.138	0.871	0.120	
Public Assistance Receipt					0.022	1.022	0.178		0.062	1.064	0.174	
Safe Neighborhood									0.050	1.051	0.147	
Poverty									-0.747	0.474	0.487	
Religiosity ( <i>Weekly Service or More</i> )												
More than once a month												
Less than once a month												
Never												
Importance of Faith ( <i>Very Important</i> )												
Fairly Important												
Fairly Unimportant												
Not at all Important												
High Educational Expectations												
Constant	-1.174		0.107	***	-1.200		0.103	***	-1.214		0.167	***
Prob > F	0.001				0.001				0.002			

Note: \* p ≤ 0.05; \*\* p ≤ 0.01; \*\*\* p ≤ 0.001, ^ marginally significant, p ≤ 0.10

**Table 4 ctd. Estimated Logistic Regression Coefficients for Single Motherhood Attitudes (N = 4,523)**

	Model 4				Model 5			
	<i>Coeff</i>	<i>Odds Ratio</i>	<i>Std Error</i>	<i>Sig</i>	<i>Coeff</i>	<i>Odds Ratio</i>	<i>Std Error</i>	<i>Sig</i>
Race ( <i>White</i> )								
Black	0.783	2.190	0.172	***	0.785	2.219	0.169	***
Asian-American	-0.281	0.755	0.345		-0.273	0.761	0.346	
Other	-0.610	0.543	0.385		-0.580	0.560	0.382	
Hispanic	0.628	1.873	0.154	***	0.584	1.794	0.155	***
Parental Education ( <i>College Degree or More</i> )								
Less than a High School Degree	0.029	1.030	0.207		-0.114	0.892	0.206	
High School Degree/GED	0.140	1.150	0.114		0.025	1.026	0.118	
More than a High School Degree	0.063	1.064	0.135		0.007	1.007	0.139	
Unknown	0.321	1.378	0.267		0.185	1.202	0.269	
Family Structure ( <i>Two Biological Parents</i> )								
Two Parents	0.051	1.052	0.120		0.012	1.012	0.119	
Single Parent	0.151	1.164	0.107		0.134	1.144	0.107	
Other Relatives	0.365	1.441	0.208	^	0.343	1.409	0.206	^
Maternal Employment ( <i>Works</i> )								
Mother Doesn't Work	-0.249	0.779	0.172		-0.256	0.775	0.171	
Maternal Employment Missing	-0.181	0.835	0.123		-0.196	0.825	0.125	^
Public Assistance Receipt	0.020	1.021	0.172		-0.022	0.979	0.170	
Safe Neighborhood	0.044	1.044	0.149		0.072	1.075	0.151	
Poverty	-0.460	0.631	0.504		-0.523	0.593	0.502	
Religiosity ( <i>Weekly Service or More</i> )								
More than once a month	0.117	1.124	0.122		0.105	1.111	0.121	
Less than once a month	0.280	1.323	0.143	^	0.277	1.319	0.145	^
Never	0.535	1.707	0.196	**	0.524	1.688	0.193	**
Importance of Faith ( <i>Very Important</i> )								
Fairly Important	0.541	1.717	0.114	***	0.507	1.660	0.117	***
Fairly Unimportant	0.700	2.013	0.223	**	0.680	1.974	0.221	**
Not at all Important	0.592	1.807	0.229	*	0.548	1.730	0.228	*
High Educational Expectations								
					-0.421	0.656	0.110	***
Constant	-1.800		0.191		-1.441		0.213	***
Prob > F	0.000				0.000			

Note: \* p ≤ 0.05; \*\* p ≤ 0.01; \*\*\* p ≤ 0.001, ^ marginally significant, p ≤ 0.10

**Table 5. Estimated OLS Regression Coefficients for Teenage Motherhood Attitudes (N = 4,523)**

	Model 1			Model 2			Model 3		
	$\beta$	Std Error	Sig	$\beta$	Std Error	Sig	$\beta$	Std Error	Sig
Race ( <i>White</i> )									
Black	1.230	0.250	***	1.154	0.246	***	1.227	0.274	***
Asian-American	-0.413	0.362		-0.339	0.344		-0.377	0.326	
Other	-0.579	0.484		-0.700	0.506		-0.647	0.514	
Hispanic	0.393	0.269		0.460	0.264	^	0.456	0.264	^
Parental Education ( <i>College Degree or More</i> )									
Less than a High School Degree	1.498	0.276	***	1.391	0.309	***	1.400	0.316	***
High School Degree/GED	1.295	0.183	***	1.202	0.191	***	1.217	0.195	***
More than a High School Degree	0.777	0.179	***	0.693	0.178	***	0.708	0.176	***
Unknown	2.435	0.379	***	2.023	0.386	***	2.022	0.391	***
Family Structure ( <i>Two Biological Parents</i> )									
Two Parents				0.775	0.182	**	0.773	0.183	***
Single Parent				0.543	0.184	**	0.535	0.185	**
Other Relatives				1.093	0.367	**	1.077	0.369	**
Maternal Employment ( <i>Works</i> )									
Mother Doesn't Work				-0.094	0.247		-0.074	0.248	
Maternal Employment Missing				-0.139	0.193		-0.124	0.194	
Public Assistance Receipt				-0.181	0.305		-0.163	0.308	
Safe Neighborhood							-0.361	0.230	
Poverty							-0.698	0.588	
Religiosity ( <i>Weekly Service or More</i> )									
More than once a month									
Less than once a month									
Never									
Importance of Faith ( <i>Very Important</i> )									
Fairly Important									
Fairly Unimportant									
Not at all Important									
High Educational Expectations									
Constant	6.532	0.134	***	6.358	0.130	***	6.744	0.261	***
Prob > F	0.000			0.000			0.000		

Note: \* p ≤ 0.05; \*\* p ≤ 0.01; \*\*\* p ≤ 0.001, ^ marginally significant, p ≤ 0.10

**Table 5 ctd. Estimated OLS Regression Coefficients for Teenage Motherhood Attitudes (N = 4,523)**

	Model 4			Model 5		
	$\beta$	<i>Std Error</i>	<i>Sig</i>	$\beta$	<i>Std Error</i>	<i>Sig</i>
Race ( <i>White</i> )						
Black	1.522	0.289	***	1.512	0.274	***
Asian-American	-0.273	0.361		-0.266	0.342	
Other	-0.669	0.477		-0.594	0.430	
Hispanic	0.600	0.275	*	0.484	0.280	^
Parental Education ( <i>College Degree or More</i> )						
Less than a High School Degree	1.250	0.304	***	0.913	0.316	**
High School Degree/GED	1.135	0.194	***	0.876	0.185	***
More than a High School Degree	0.635	0.178	***	0.511	0.179	**
Unknown	1.799	0.394	***	1.467	0.382	***
Family Structure ( <i>Two Biological Parents</i> )						
Two Parents	0.625	0.183	***	0.527	0.180	**
Single Parent	0.420	0.179	*	0.371	0.174	*
Other Relatives	1.007	0.377	**	0.935	0.390	*
Maternal Employment ( <i>Works</i> )						
Mother Doesn't Work	-0.106	0.244		-0.125	0.243	
Maternal Employment Missing	-0.159	0.194		-0.185	0.192	
Public Assistance Receipt ( <i>Yes</i> )	-0.244	0.307		-0.349	0.298	
Safe Neighborhood	-0.358	0.223		-0.289	0.213	
Poverty	-0.399	0.581		-0.532	0.551	
Religiosity ( <i>Weekly Service or More</i> )						
More than once a month	0.447	0.171	**	0.416	0.174	*
Less than once a month	0.605	0.170	***	0.588	0.174	***
Never	0.994	0.237	***	0.956	0.228	***
Importance of Faith ( <i>Very Important</i> )						
Fairly Important	0.409	0.152	***	0.323	0.157	*
Fairly Unimportant	0.055	0.275		0.007	0.268	
Not at all Important	0.319	0.326		0.207	0.313	
High Educational Expectations						
High Educational Expectations				-1.043	0.185	***
Constant	6.151	0.268	***	7.048	0.301	***
Prob > F	0.000			0.000		

Note: \*  $p \leq 0.05$ ; \*\*  $p \leq 0.01$ ; \*\*\*  $p \leq 0.001$ ; ^ marginally significant,  $p \leq 0.10$

**Table 6. Discrete Time Hazard Model (N = 4,523)**

	Model 1			Model 2			Model 3			
	Coeff	Odds Ratio	Smd Error Sig	Coeff	Odds Ratio	Smd Error Sig	Coeff	Odds Ratio	Smd Error Sig	
Single Motherhood Attitudes	0.452	1.572	0.142 **	0.142	1.152	0.018 ***	0.117	1.124	0.134	0.017 ***
Teenage Motherhood Attitudes				0.250	1.284	0.011 ***	0.250	1.284	0.011	0.011 ***
Duration	0.246	1.280	0.011 ***							
Race ( <i>White</i> )										
Black										
Asian-American										
Other										
Hispanic										
Parental Education ( <i>College Degree or More</i> )										
Less than a High School Degree										
High School Degree/GED										
More than a High School Degree										
Unknown										
Family Structure ( <i>Two Biological Parents</i> )										
Two Parents										
Single Parent										
Other Relatives										
Maternal Employment ( <i>Works</i> )										
Mother Doesn't Work										
Maternal Employment Missing										
Public Assistance Receipt										
Safe Neighborhood										
Poverty										
Religiosity ( <i>Weekly, Service or More</i> )										
More than once a month										
Less than once a month										
Never										
Importance of Faith ( <i>Very Important</i> )										
Fairly Important										
Fairly Unimportant										
Not at all Important										
High Educational Expectations										
Constant	9.327		0.217 ***	10.416		0.277 ***	-10.412		0.276	0.276 ***
Prob > F			***			***				***

Note: \* p ≤ 0.05; \*\* p ≤ 0.01; \*\*\* p ≤ 0.001, ^ marginally significant, p ≤ 0.10

**Table 6 ctd. Discrete Time Hazard Model (N = 4,523)**

	Model 4		
	Coeff	Odds Ratio	Std Error
Single Motherhood Attitudes	0.091	1.095	0.132
Teenage Motherhood Attitudes	0.089	1.093	0.018
Duration	0.258	1.294	0.012
Race ( <i>White</i> )			
Black	0.522	1.686	0.186
Asian-American	-0.823	0.439	0.431
Other	-0.505	0.604	0.437
Hispanic	-0.087	0.917	0.263
Parental Education ( <i>College Degree or More</i> )			
Less than a High School Degree	0.683	1.980	0.240
High School Degree/GED	0.488	1.628	0.179
More than a High School Degree	0.269	1.309	0.215
Unknown	0.515	1.674	0.266
Family Structure ( <i>Two Biological Parents</i> )			
Two Parents	0.461	1.586	0.169
Single Parent	0.645	1.907	0.152
Other Relatives	0.557	1.745	0.223
Maternal Employment ( <i>Works</i> )			
Mother Doesn't Work	0.004	1.004	0.234
Maternal Employment Missing	0.229	1.258	0.133
Public Assistance Receipt	0.325	1.383	0.154
Safe Neighborhood	-0.031	0.970	0.183
Poverty	0.710	2.033	0.535
Religiosity ( <i>Weekly Service or More</i> )			
More than once a month	-0.043	0.958	0.185
Less than once a month	-0.020	0.980	0.176
Never	0.271	1.311	0.229
Importance of Faith ( <i>Very Important</i> )			
Fairly Important	0.199	1.220	0.147
Fairly Unimportant	0.129	1.137	0.241
Not at all Important	-0.212	0.809	0.206
High Educational Expectations	-0.235	0.790	0.121
Constant	-11.002		0.366
Prob > F			

Note: \* p ≤ 0.05; \*\* p ≤ 0.01; \*\*\* p ≤ 0.001, ^ marginally significant, p ≤ 0.10

