ABSTRACT

Based on data from a sample of 305 African American females, the current study examined social and familial factors that influence pregnancy during adolescence. The present study developed and tested a model of various mechanisms whereby quality of parenting effects the likelihood of adolescents’ pregnancy experience, including affiliation with peers who engage in risky sex, school engagement, and risky sexual behaviors. These social contextual variables were examined using a longitudinal design to investigate their relationships with adolescent pregnancy experience during early adolescence and into late adolescence. Findings from structural equation modeling analyses suggest that the association between quality of parenting and teenage pregnancy is mediated by affiliation with peers who engage in risky sex and risky sexual behaviors.

INDEX WORDS: Teenage Pregnancy, African Americans, Adolescents
PREDICTING THE RISK OF TEENAGE PREGNANCY AMONG AFRICAN AMERICANS:
AN INVESTIGATION OF A SOCIAL CONTEXTUAL MODEL

by

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TABLE OF CONTENTS

<table>
<thead>
<tr>
<th>LIST OF TABLES</th>
<th>vi</th>
</tr>
</thead>
<tbody>
<tr>
<td>LIST OF FIGURES</td>
<td>vii</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>CHAPTER</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>I INTRODUCTION</td>
<td>1</td>
</tr>
<tr>
<td>Statement of Problem</td>
<td>2</td>
</tr>
<tr>
<td>Purpose of the Study</td>
<td>5</td>
</tr>
<tr>
<td>II REVIEW OF LITERATURE</td>
<td>7</td>
</tr>
<tr>
<td>Parental Influences</td>
<td>7</td>
</tr>
<tr>
<td>Peer Influences</td>
<td>11</td>
</tr>
<tr>
<td>School Engagement</td>
<td>13</td>
</tr>
<tr>
<td>Sexual Behaviors among Teenagers</td>
<td>14</td>
</tr>
<tr>
<td>Theoretical Background</td>
<td>15</td>
</tr>
<tr>
<td>Research Questions</td>
<td>22</td>
</tr>
<tr>
<td>The Current Study</td>
<td>23</td>
</tr>
<tr>
<td>III METHODOLOGY</td>
<td>26</td>
</tr>
<tr>
<td>Participants</td>
<td>26</td>
</tr>
<tr>
<td>Procedures</td>
<td>28</td>
</tr>
<tr>
<td>Measures</td>
<td>28</td>
</tr>
<tr>
<td>IV RESULTS</td>
<td>32</td>
</tr>
</tbody>
</table>
LIST OF TABLES

<table>
<thead>
<tr>
<th>Table</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>Table 1: Percentage of Respondent Early Pregnancy Experience</td>
<td>73</td>
</tr>
<tr>
<td>Table 2: Frequency of Respondents for each Scale for Variables in Parental Quality Construct</td>
<td>74</td>
</tr>
<tr>
<td>Table 3: Frequency of Respondents Level of School Engagement</td>
<td>75</td>
</tr>
<tr>
<td>Table 4: Frequency of Respondents Affiliation with Peers who Engage in Risky Sexual Behaviors</td>
<td>76</td>
</tr>
<tr>
<td>Table 5: Frequency of Respondents Engaging in Risky Sexual Behaviors</td>
<td>77</td>
</tr>
<tr>
<td>Table 6: Correlation Table for Study Variables for Females (n=305)</td>
<td>78</td>
</tr>
<tr>
<td>Table 7: Model Comparisons</td>
<td>81</td>
</tr>
<tr>
<td>Table 8: Significance of the Indirect Effects for Females (n=305)</td>
<td>82</td>
</tr>
</tbody>
</table>
# LIST OF FIGURES

<table>
<thead>
<tr>
<th>Figure</th>
<th>Description</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>Figure 1</td>
<td>Theoretical Model</td>
<td>79</td>
</tr>
<tr>
<td>Figure 2</td>
<td>Predictors of Pregnancy Experience for females (n=305)</td>
<td>80</td>
</tr>
</tbody>
</table>
CHAPTER 1
INTRODUCTION

Teenage pregnancy has long been recognized as a major focus of public and political concern. A number of these societal concerns are due to the economic and social costs associated with an early pregnancy. After being on the rise for several decades, pregnancy rates among adolescents declined from 1990 to 2005; specifically, pregnancy rates among African American females between the ages of 15 to 19 fell by 45% (from 223.8 per 1,000 to 122.7) between 1990 and 2005 (Guttmacher, 2010). Then for the first time in a decade and a half, the teenage pregnancy rate across all ethnic groups increased by 3% in 2006 and again in 2007. Trends in the past few years indicate that much work needs to be done in order to address the factors associated with preventing teenage pregnancy. Past research has primarily focused on the lasting social and developmental consequences for teenagers who experience an early pregnancy. While extensive research has examined the consequences of teen pregnancy, fewer studies have examined predictors of this phenomenon. Scaramella, Conger, Simons, and Whitbeck (1998) found that social contexts, such as family and peers, predict early pregnancy among adolescents. That study used a sample of rural White girls to test a social contextual model, which has not been tested with diverse samples.

Research using diverse samples is clearly needed with early pregnancy among teenagers continuing to occur disproportionately among minority populations. As of 2006, it was the case that at least 50% of African American teen girls get pregnant at least once before the age of 20 – nearly twice the national average (The National Campaign to Prevent Teen and Unplanned
Pregnancy, 2012). Based on these findings, it is to be expected that African American adolescents may face more risk associated with sexual behaviors when compared to Whites. To address these high rates of teenage pregnancy, especially among African Americans, the present study aims to contribute to existing literature by building upon the findings of Scaramella et al (1998) to develop a model that predicts pregnancy among African American females.

*Statement of the Problem*

The teenage pregnancy rate in the United States is among the highest of Western industrialized nations. Contributing to this high pregnancy rate is the number of adolescents engaging in sexual behaviors. For instance, by the time adolescents have graduated high school in the United States, nearly two-thirds will have had sexual intercourse (Centers for Disease Control and Prevention [CDC], 2002). Comparisons across ethnic groups show that among African Americans, almost one in two high school-aged teens (49%) are currently sexually active compared with just under one-third (31%) of Whites (CDC, 2002). African American adolescents begin engaging in sexual activity earlier than youth from other racial groups (CDC, 2009). Further, research indicates that African American adolescents are more likely to be sexually active and have more sexual partners than White adolescents (Eaton et al., 2005). The prevalence of having had sexual intercourse with four or more persons during their life among African Americans (27.6%) is higher when compared to White adolescents (11.5%). Moreover, among females aged 15 to 19 years, 25.2% of non-Hispanic blacks reported using no method of contraception at last intercourse, compared with 10.3% of non-Hispanic whites (CDC, 2009).

Recent data on teenage pregnancy indicates that one out of six adolescent females is expected to become a teen mother (Child Trends, 2009). The pregnancy rate among African American girls is nearly three times higher than the rate for White teen girls (The National
Specifically, the pregnancy rate of African Americans was 128.0 among adolescents aged 15 to 19 years when compared 45.2 for Whites (CDC, 2009). Most of the births to teenagers are concentrated in the later years of adolescence. For example, pregnancy rates for older girls (ages 18 to 19 years) are more than double those in mid-adolescence (ages 15 to 17 years). In 2005, teens from ages 18 to 19 had pregnancy rates of 117.7, compared with rates of 40.2 among teens from ages 15 to 17 years (Child Trends, 2011; Ventura, Martin, Curtin, & Matthews, 1997). Specifically, among African American teenagers, 68% of all births were to girls from the ages of 18 to 19 years (Hamilton, Martin, & Ventura, 2011). African American girls have considerably higher rates of adolescent births (99.3 per 1000) among 15 to 19 year olds in 1995, when compared to Whites of the same age (39.3 per 1000) (Ventura et al., 1997).

Researchers have found that adolescents who engage in sexual behavior at earlier ages have a greater likelihood of having an unintended pregnancy (Hayes, 1987). According to the most recent data available, 750,000 young women under the age of 20 became pregnant in a single year (Guttmacher, 2010). Of these 750,000 teenage pregnancies, 82% are unintended among teens aged 15 to 17, and 75% of pregnancies to teens aged 18 to 19 are categorized as unintended (either mistimed or unwanted) (Henshaw, 1998). The rates of unintended pregnancies are significantly higher for African Americans when compared with Caucasians. Specifically, unintended pregnancy rates for Blacks were 98 per 1,000 women, whereas Whites had unintended pregnancy rates of 35 per 1,000 women (CDC, 2002; Finer & Henshaw, 2006). It is important to note that researchers report that unintended pregnancies are a result of too early sexual activity, contraceptive inconsistency or nonuse, and method ineffectiveness (Brown & Eisenberg, 1995).
The central aim of most of the extant literature on teenage pregnancy addresses the consequences of experiencing an early pregnancy. Teenage parents must negotiate the tasks of multiple developmental stages simultaneously and often the tasks of parenthood conflict with the teen-aged mother’s role as an adolescent. Research shows that unintended pregnancies can be very stressful for adolescents because of their lack of readiness for parenthood, disruption to their schooling and life plans, and abrupt financial burden associated with the costs of providing for a child, which places them at greater risk of experiencing poverty (Martin, Hill, & Welsh, 1998; Moore et al., 1993). Many adolescent mothers are and remain unmarried, poor, and dependent on public assistance for an extended period of time (Coley & Chase-Lansdale, 1998). National figures indicate that 79% of teenage parents do not share a marital relationship (Boonstra, 2002). Moreover, adolescent mothers have increased psychological problems. Research suggests that adolescent mothers are more likely to feel less competent as parents and have low self-esteem (Osofsky, Hann, & Peebles, 1993). Specifically, younger Black mothers were more likely to be depressed compared to older White mothers (Deal & Holt, 1998).

In addition to the consequences of parenting on teenage pregnancy, research has also focused on the consequences of an early pregnancy on the children of teenage parents. Decades of research has demonstrated that children of adolescent mothers do not fare as well as those of adult mothers. For example, the adolescent children of mothers who gave birth as teenagers have been found to be more likely to participate in risky behaviors including drug use and gang involvement, and are more likely to become a parent during adolescence themselves (Hoffman & Maynard, 2008; Pogarsky, Thornberry, & Lizotte, 2006). In addition, it has also been reported that children of a teenage parent are shown to have increased risks of developmental delay,
academic difficulties, behavioral disorders, early sexual activity, and depression (Nord, Moore, Morrison, Brown, & Myers, 1992).

While a substantial body of research documents the adverse outcomes of teenage pregnancy, comparatively less research has examined the predictors of teenage pregnancy. In order to understand multiple social contextual influences on teenage pregnancy, this dissertation will focus on examining the effect of family, individual, and peer relationship factors on teenage pregnancy. Given that there are many factors that may influence these multiple influences on teenage pregnancy, a better understanding of the predictors of teenage pregnancy will help inform future intervention prevention programs.

**Purpose of the Study**

The purpose of this study was to examine the relationship between parental quality received in early adolescence and pregnancy among teenagers. Specifically, past research suggests that parenting behaviors, such as warmth and monitoring may have an influence on teenage pregnancy by reducing the likelihood of adolescent risk-taking behaviors and teenage pregnancy indirectly through the influence of social contexts (Conger, 1997; Conger & Simons, 1997; Scaramella et al., 1998). Building on past research, the present study investigated the extent to which parental quality is associated with pregnancy experience among adolescents. Specifically, this study has examined how the relationships with parents and peers influence sexual behaviors among adolescents, which can in turn influence the likelihood of experiencing an early pregnancy. Although there has been little consideration of the indirect ways in which parental quality influences teenage pregnancy, some research suggests that there are several factors that may partially mediate the relationship between parenting and teenage pregnancy. A number of mediators have been identified in past research, such as their affiliation with peers
engaged in risky behaviors (Capaldi & Patterson, 1994) and academic commitment. Another variable that has been identified as a mediator of parenting and teenage pregnancy in past research is an individual’s risky sexual behaviors. Researchers indicate that adolescents engaging in risky sexual behaviors perform more poorly in school, dating earlier than their peers, and have more friends that support their sexual behaviors, which are linked to risk for pregnancy during adolescence (Costa, Jessor, Donovan, & Fortenberry, 1995). In order to extend past research, several potential mediators that were identified from past research studies, which include affiliation with peers engaged in risky sexual behavior, an individual’s own risky sexual behavior, and school engagement were examined using a sample of African American adolescents.
CHAPTER II
REVIEW OF LITERATURE

Contextual influences, such as relationships with family and peers, are influential in shaping adolescent behaviors. This review of literature examines the evidence for the impact of parenting on early pregnancy as well as the mediating variables that may partially explain the relationship between those two variables. Several mediators, which include affiliation with peers who engage in risky sexual behaviors and school engagement, will be reviewed. Further, an overview of sexual behaviors among teenagers will be presented with specific attention given to African Americans. The development of the model for the current study was guided by social learning theory and social control theory, therefore, each of these theories will be discussed. Further, theoretical rationale for a social contextual framework developed by Scaramella and colleagues (1998) is presented to provide a framework that supports the following study. The chapter will include the presentation of research hypotheses and the model that was tested in the current study.

**Parental Influences**

There is a sizable body of literature that shows that family influences, such as parenting practices are related to adolescent sexual behaviors and pregnancy risk. Evidence suggests that family environments constitute the basic ecology where children’s behavior is manifested, learned, encouraged, and suppressed (Dishion & Patterson, 2006). Parents’ roles in the family environment have primarily been to prepare children for adulthood through rules and discipline. Parental quality, defined as high levels of warmth and control or authoritative parenting, serves
as a protective factor in preventing pregnancy among adolescents. Past research has grouped various parental behaviors to form a typology of parenting styles, which include authoritative, authoritarian, permissive, and uninvolved (Baumrind, 1981). The vast majority of research has found the authoritative parenting style to be the most effective parenting style and to be a consistent predictor of competence during adolescence due to a combination of warmth and control. Evidence of parental influence on adolescent outcomes have been found in numerous studies that show that adolescents who are reared in homes characterized by authoritative parenting are less likely to engage in risk-taking behavior (Baumrind, 1981; Maccoby & Martin, 1983; Steinberg, Darling, Mounts, & Dornbusch, 1994) than individuals with uninvolved parents (Steinberg, 2001; Fletcher & Jefferies, 1999). Uninvolved parents are often times less aware of their children’s activities and, consequently are less able to respond appropriately to their children’s risk-taking behaviors. Past research has examined the association of several dimensions of parenting and teenage pregnancy. Because the majority of studies have used dimensions of authoritative parenting as measurements of parental quality, the present study will focus on parental warmth/support and monitoring to discuss the research about parental influences on adolescent sexual behaviors and pregnancy experience.

*Parental Warmth and Support*

Many researchers have found that parental warmth and support are important determinants of whether an adolescent engages in risky sexual behaviors that may lead to early pregnancy. For example, in one study (Scaramella et al., 1998) the effects of a lack of parental warmth in 7th grade were shown to be associated with an increase in teen pregnancy rates in 12th grade. Recently, researchers found that the presence of family warmth during early adolescence predicted fewer sexual partners across gender and racial/ethnic groups during late
adolescence (Kan, Cheng, Landale, & McHale, 2010), therefore decreasing the risk of an early pregnancy. Similarly, researchers have suggested that parental support is related to a later onset of teen intercourse (Chewning & Koningsveld, 1998) because adolescents who were satisfied with the relationship with their parent were less prone to initiate sexual activity.

In contrast, sexually active adolescents who had multiple partners and failed to use contraception consistently, perceived their parents as less supportive than their lower-risk peers who consistently used birth control within a monogamous relationship (Luster & Small, 1994). Moreover, researchers have found that adolescents who report distant and problematic relationships with their parents tend to initiate sexual intercourse earlier than their peers (Chase-Landsdale & Brooks-Gunn, 1994). Taken together, parental warmth and support serve as protective factors against adolescent engagement in risk behaviors. These parenting practices are associated with reduced pregnancy risk through adolescents remaining sexually abstinent, having fewer sexual partners, or using contraception more consistently. Based on these findings, I expect that adolescents who experience higher levels of parental quality with low levels of parental hostility will be less likely to engage in risky sexual behaviors that may lead to pregnancy.

Parental Monitoring

Most of the research shows that parental monitoring is related to adolescents’ sexual behaviors in ways that would lower their risk for pregnancy. Researchers define parental monitoring as a parents’ set of behaviors that regulate and provide awareness of their offspring’s whereabouts, conduct, and companions (Dishion & McMahon, 1998; Li, Stanton, & Feigelman, 2000). Adolescents’ perceptions of their parents’ knowledge of where they are and who they are with are key factors in the success of parental monitoring (DiClemente, Wingood, Crosby et
al., 2001). Studies have revealed a strong relation between parents’ knowledge of their teens’ whereabouts and adolescents/sexual initiation. For instance, parental monitoring has been found to be an important parenting practices that is associated with a later onset of adolescent’s sexual initiation (Barber, Stolz, & Olsen, 2005; Dodge, Coie, & Lynam, 2006; Hair, Moore, Garrett, Ling, & Cleveland, 2008; Li, Stanton, & Feigelman, 2000; Longmore, Manning, & Giordano, 2001; Parker & Benson, 2004; Stanton et al., 2002; Whitbeck, Yoder, Hoyt, & Conger, 1999). Although some of these studies used parents’ reports of levels of monitoring, researchers found similar findings when using adolescent reports of parental monitoring. Regardless of reporter information used to measure parental monitoring, evidence has been consistent in finding that parental monitoring levels are associated with less risky sexual behaviors among adolescents. These findings suggest that parental presence can help deter affiliation with risky sexual peers and engagement in risky sexual behaviors that may lead to an early pregnancy.

Empirical evidence suggests that parental monitoring is related to less frequent intercourse (Benda & DiBlasio, 1991) and fewer sexual partners (Miller, Forehand & Kotchick, 1999). Results from this study suggested that parents who monitor their child are more involved in the life of their adolescent, and are therefore more aware of the behaviors of their adolescent. Hence, adolescents who are monitored may have fewer opportunities to be engaged in risky sexual behaviors. In contrast, decreasing levels of parental monitoring are directly associated with increased involvement in risky sexual behavior among adolescents (Luster & Small, 1994; Metzler, Noell, Biglan et al., 1994). These findings suggest that parental monitoring serves as a protective factor against early pregnancy since it is associated with a delay in sexual intercourse and less risky sexual behaviors such as having fewer partners or using contraception.
In summary, families serve as significant socializing contexts for the emergence of or resistance to risky sexual behaviors and early pregnancy. Findings from past studies suggest that poor parenting practices, such as low parental monitoring and warmth, may act in various ways to place adolescents at an elevated risk of teenage pregnancy. Taken together, there is strong evidence that suggests that parental quality is associated with decreased risky sexual behaviors and adolescent pregnancy.

Peer Influences

Although parents continue to maintain substantial influence on their offspring during adolescence, peer group influence becomes increasingly important during this period (Akers & Sellers, 2012). Further, the kinds of peers adolescents associate with play a prominent role in learning both conforming and risky behaviors (Akers & Sellers, 2012). Evidence suggests that behavioral choices by adolescents are influenced by how acceptable the behavior is thought to be among their peers and teenage parenthood occurs at higher rates among those who show problem behaviors and associate with peers who engage in problem behaviors (Mayes & Suchman, 2006). Adolescents’ intentions to engage in sex are strongly influenced by their social context in which peers play a major role in determining normative behavior (Sieving, McNeely & Blum, 2000). For example, results from a national survey indicated that adolescent females had an increased risk of pregnancy when they had friends that were sexually active or pregnant (Bearman & Bruckner, 1999). These findings suggest that more frequent, longer-term, and closer affiliation with peers who are engaged in risky sexual behaviors is strongly associated with one’s own sexual behavior. The influence of peers is found across ethnic groups. For example, in an African American sample, the influence of peer norms was found to shape adolescents’ sexual attitudes and behaviors (Wallace, Miller, & Forehand, 2008).
A number of studies have identified affiliation with peers as a mediating mechanism that could help explain the association between parenting and teenage pregnancy. For instance, researchers have found that family process factors play a central role in determining associations with deviant peers, which in turn predict adolescent risk behaviors (Dishion, Capaldi, Spracklen, & Li, 1995). Quality parenting can protect adolescents from the effects of negative peer influences. Research shows that parents who monitor and are involved with their child are more attuned to their child’s peers and friendships and can influence their child’s choice of peers (Smith, 2003). Monitoring allows for parents to have knowledge of their adolescents’ whereabouts and reflects parents’ control over outside influences such as peers. Hence, parental monitoring serves as a protective factor for unprotected sexual activity and early pregnancy, in part because parents are able to prevent their adolescents from spending time with delinquent peers who influence them to take risks (Scaramella et al., 1998). Specifically, findings from this study found that affiliation with a deviant peer group was a mediating mechanism that explained the link between poor quality parenting and risky adolescent sexual behavior (Scaramella et al., 1998). Findings from this study indicate that high levels of parental monitoring reduced females’ risk of adolescent pregnancy primarily by limiting their deviant peer affiliations.

Protective parenting during early adolescence has been found to be associated with reduced rates of pregnancy even in the presence of high-risk peers (East, Khoo, & Reyes, 2006);

In contrast, researchers have found that a lack of closeness in the parent/teen relationship increases the negative influence of peers on adolescent sexual activity (Whitbeck, Conger, & Kao, 1993). Findings from this study suggest that it is likely that the effects of parenting on adolescent sexuality are largely indirect through their influence on children's emotional states. This suggests that adolescents might compensate for a lack of a close relationship with their
parents by becoming more involved in emotionally and sexually intimate peer relationships. Taken together, the negative influence of peers is intensified for adolescents with poor relationships with their parents and who have parents who engage in low quality parenting practices.

School Engagement

Educational attainment has been found to have a strong delaying effect on parenthood, suggesting that women with good academic or career prospects were more likely to avoid an early pregnancy, perhaps because of greater personal costs they perceived to be associated with early motherhood (Marini, 1984). Studies also indicate that girls who have high academic achievement expectations, positive attitudes about education, and clear educational goals are significantly less likely to become pregnant than girls who have low educational expectations or who are poorly engaged in school (Fergusson & Woodward, 2000; Hockaday, Crase, Shelley, & Stockdale, 2000; Manlove et al., 2002; O’Connor, 1999). These findings suggest that adolescent females with high aspirations may postpone early motherhood to focus on their educational and career goals.

Research indicates that dropping out of school significantly predicts early pregnancy (Yampolskaya, Brown, & Greenbaum, 2002); approximately one-third of teenage mothers drop out of school before becoming pregnant (Maynard, 1995). Further, another study found that females who dislike school were significantly more likely to report a pregnancy by age 16 compared with those who reported liking school (Bonell et al., 2005). This study used a sample of females and concluded that a dislike of school was associated with subsequent increased risk of teenage pregnancy even after adjusting for socioeconomic status. These findings suggest that dislike of school is strongly associated with increased risk of pregnancy outcomes. Taken
together, these findings suggest that school engagement can serve as a buffer against the risk of teenage pregnancy. Academic commitment has also been examined when addressing the association between parenting with risk taking behaviors and teenage pregnancy. Using a sample of White adolescents, Scaramella (1998) tested the indirect effects of academic commitment on teenage pregnancy and unexpectedly found that risky taking behaviors did not serve as a mediator which was inconsistent with their hypothesis. However, in this same study research findings demonstrated that the association between the effects of a lack of parental warmth and involvement in 7th grade and teen pregnancy rates in 12th grade is explained by the mediating mechanism academic commitment (Scaramella et al., 1998).

**Sexual Behaviors among Teenagers**

Researchers have examined the predictors of adolescent sexual behaviors since these behaviors are necessarily associated with pregnancy. For example, factors that are associated with an early pregnancy include the onset and frequency of sexual activity; however, risky sexual behaviors are not always associated with teenage pregnancy. Adolescents must engage in risky sexual behaviors to become pregnant; therefore, examining the predictors of sexual behaviors is important since these risky behaviors are linked to pregnancy. Individuals who initiate sexual activity at earlier ages and engage in unprotected sexual behaviors are more likely to face negative outcomes. For instance, adolescent sexual activity is associated with increased risk of sexually transmitted infections (Bruckner, Martin, & Bearman, 2004). Further, adolescents who engage in sexual behavior at earlier ages have more lifetime sexual partners and a greater likelihood of having an unintended pregnancy.

When examining the sexual behavior of African American adolescents, studies have found that disadvantaged urban African American adolescents were more likely than their White
counterparts to hold positive attitudes toward early sexual behavior (Browning & Burrington, 2006). More specifically, African American adolescents living in inner-city, high-poverty neighborhoods in the United States are at greater risk for engaging in early sexual activity (Brooks-Gunn, Duncan, & Aber, 1997). Given the high rates of risky sexual behaviors among African Americans when compared to Whites, these adolescents may be at increased risk for experiencing an early pregnancy. Further, research indicates that African American adolescents, in particular, are more likely than White adolescents to begin childbearing during the teen years (Stevens-Simon & McArmey, 1996); therefore, it is especially important to identify and understand more about the predictors of pregnancy among African American adolescents. In order to test a social contextual model among African Americans, a sample of female adolescents from the Family and Community Health study will be used.

Theoretical Background

Most theoretical explanations of social contextual factors related to adolescent sexual behaviors and teenage pregnancy are grounded in theories of social behavior that focus on social experiences during childhood and adolescence. Although the research on teenage pregnancy lacks a comprehensive theoretical framework, several theories provide an explanation for different relationships between variables within the proposed model for the study. Some researchers have concluded that seeking to apply a single explanatory framework to adolescent sexuality may have little utility (Miller & Fox, 1987). Therefore, the current study is informed by social control, social learning, and social contextual theoretical perspectives. In this section, social control theory will be discussed first, followed by social control and social contextual theoretical frameworks.
Social Learning Theory

Social learning theory emanated largely from behaviorism (Watson, 1913), which is based on psychological theories that help explain why individuals behave the way they do. The social learning theory focuses on social processes and posits that socialization is an important influence on sexual behavior (DiBlasio & Benda, 1990). One major assumption of social learning theory is that individuals are social beings because they pay attention to the environment around them. For the current study, social learning theory provides a useful framework for understanding the consequences of affiliating with peers who engage in risky behaviors on adolescent sexual behaviors. Applying a social learning perspective to the effects of peers on adolescent sexual behaviors would suggest that individuals are likely to replicate behaviors they have observed from their peers (Bandura, 1977, 1987). According to the social learning perspective, the presence of behavioral models for early intercourse, along with exposure to permissive sexual norms, increases the likelihood of the occurrence of adolescent intercourse which places adolescents at greater risk for experiencing an early pregnancy.

There are some basic assumptions of the social learning theory. First, response consequences influence the likelihood that a person will perform a particular behavior again in a given situation. Next, imitation and modeling are key mechanisms by which adolescents learn behaviors (Bandura, 1977). Imitation refers to the engagement in behavior after the observation of similar behavior in others (Akers & Sellers, 2009). Adolescents learn by observing others, which is referred to as vicarious learning. Adolescents are most likely to model behavior observed by others they identify with and learn by participating in certain behaviors. In other words, individuals who are the closest to one another, such as peer groups, have a major influence in shaping behavior of adolescents. Researchers have used the social learning
theoretical perspective as a guiding framework in their research examining the influence of one individual upon another.

Akers (1977) emphasized that operant conditioning is the primary learning mechanism where behavior is shaped by the rewards and consequences of the behavior. Further, behavior is shaped by the processes of differential association and differential reinforcement (Akers, 1989; 1996). Differential association is based on behavioral-interactional and normative dimensions. The interactional dimension is the direct association and interaction with others who engage in certain kinds of behavior. The normative dimension is the different patterns of norms and values to which an individual is exposed through this association (Clark, 1972). In other words, the probability that individuals will engage in problem behaviors, such as risky sexual behaviors, is increased when they affiliate with others who engage in risky behaviors. By affiliating with peers who engage in risky sexual behaviors, individuals are more likely to adopt definitions favorable to risky sexual behaviors and conform to these risky behaviors. Applying social learning theory to the influence of peers on teenage pregnancy suggests that exposure to and affiliation with peers who engage in risky sexual behaviors and who have permissive sexual attitudes may teach adolescents that risky sexual behaviors have desirable outcomes; therefore, adolescents may be more willing to engage in risky sexual behaviors which can increase the risk of an early pregnancy.

Differential reinforcement refers to the balance of anticipated or actual rewards and punishments that follow or are the consequences of behavior. The probability that an act will be committed or repeated is increased by rewarding outcomes or reactions. Specifically, applying differential reinforcement to teenage pregnancy suggests that pleasant feelings of engaging in sexual behaviors during adolescence would be considered positive reinforcement. Social
reinforcement from an individual’s peer group affects how much committing certain acts are pleasurable and enjoyable (Akers & Sellers, 2012). In other words, the more the behavior is positively reinforced, the greater likelihood that the behavior will be repeated. Further, engagement in risky sexual behaviors is more likely to be enhanced when an individual avoids aversive and unpleasant events or consequences, such as contracting a sexually transmitted disease or experiencing a pregnancy during adolescence.

Peers can also encourage sexual activity through normative definitions or rationalization (Akers, 1996). Adolescents are exposed to differing definitions of deviant behaviors as either positive or negative through associations with different people, such as peers. The greater the extent to which one holds attitudes that disapprove of certain acts either because they are not in line with one’s general values or specific attitudes, the less one is likely to engage in risky behaviors (Akers and Sellers, 2012, p. 310). However, if an adolescent has parents who engage in quality parenting where their behavior is monitored they may not be allowed to associate with peers who engage in risky sexual behaviors and therefore less likely to adopt favorable attitudes toward risky sexual behaviors and to be involved in problem behaviors.

Overall, the learning process in a context of social structure, interaction, and situation, produces both conforming and deviant behavior (Akers, 1996). For instance, the probability that a person will engage in risky sexual behaviors is increased when they associate with others who are engaging in risky sexual behaviors and define it as desirable behavior with greater rewards than punishment for the behavior. This study was guided by social learning theory. Specifically, social learning theory informs the hypothesized association between affiliation with peers who engage in risky sexual behavior and early pregnancy in the current study.
Social Control Theory

Social control theory is based on Hobbesian assumption that humans are motivated by instinctual desires for gratification (e.g., sexual gratification). Social control theory suggests that the reasons for conforming behavior are to be found in the bonds the individual establishes with the conventional order, including parents and their values. When adolescents have weak bonds to conventional order, social control theory predicts a greater likelihood of deviance, such as risky sexual behaviors. As noted earlier, empirical evidence suggests that parental monitoring, which is related to parental quality and the parent-child relationship, is related to less frequent intercourse (Benda & DiBlasio, 1991) and fewer sexual partners (Miller et al., 1999). Hirschi (1969) suggested that the primary or initial element of bonding leading to control over natural desires for gratification under any conditions is attachment to parents, an empathic identification that fosters adoption of parental commitments to and beliefs in conventional norms and achievement that influence their offspring. In addition, according to Hirschi (1969), parental attachment, commitment, involvement and beliefs are the critical elements of bonding that lead to restraint of natural urges to gratify oneself at the expense of others (Kornhauser, 1978). Individuals who have authoritative parents tend to have better outcomes, which make them less vulnerable to negative peer influences. In contrast, adolescents who have tenuous family relationships are prone to drift into peer associations that encourage and offer normative definitions or rationalizations for risky sexual behaviors (Crockett et al., 1996; Miller & Fox, 1987).

In general, research based on social control typically views individuals as naturally being inclined toward deviance, but bonds to conventional society, such as school, help most individuals to refrain from such behavior. Deviance, then, occurs among individuals whose
bonds to conventional peers and other social institutions are weak (Crockett et al., 1996). Social control theory suggests that adolescent intercourse is a form of norm-breaking or deviance. Past research suggest that risky sexual behavior during adolescence is associated with a weak association to parents and low involvement or achievement in conventional institutions such as school. Specifically, numerous studies indicate that girls who have high academic achievement expectations, positive attitudes about education, and clear educational goals are significantly less likely to become pregnant than girls who have low educational expectations or who are poorly engaged in school (Fergusson & Woodward, 2000; Hockaday et al., 2000; Manlove et al., 2002; O’Connor, 1999). Findings from these studies suggest that adolescent females with high aspirations may postpone early motherhood to focus on their educational and career goals, which reflect their conventional behaviors. Based on the social control theory, in the model, I include parental and school engagement variables to examine the influence social control variables on teenage pregnancy.

Social Contextual Theoretical Framework

In addition to the social learning theory and social control theory, another theoretical perspective proven to be useful in past research on teenage pregnancy is the social contextual model. Social learning and social control theories inform the social contextual theoretical framework. The current study is guided by the theoretical rationale of the social contextual model developed by Scaramella and colleagues (1998). The conceptual model outlines the potential influences of parenting on teenage pregnancy outcomes while considering the influence of social contextual factors on teenage pregnancy.

Parents serve as the primary socialization agent for their children and shape the various contexts that their children are embedded within. Families exert indirect influence on
adolescents’ selection of peers through the choice of the neighborhoods they live in, the schools their child attends, and the types of extracurricular activities their child participates in (Ladd, Profilet, & Hart, 1992; Scaramella et al., 1998). Parents can remain in control of their child’s social networks by structuring their child’s social environments to encourage or discourage interaction with certain peers who are engaged with behaviors that align with what parents approve. In addition, parents can also directly influence their child’s social networks by their interaction with their child. For instance, parents who engage in quality parenting practices are more likely to establish clear rules about behavior expectations and discipline adolescents when they act in unconventional ways (Conger, 1997).

Research has shown that parental quality decreases the risk for problems associated with peers. Specifically, research shows that individuals with more involved parents have fewer relationships with peers involved in risky behaviors (Maggs & Galambos, 1993). Monitoring allows parents to be able to prevent their adolescent from spending time with peers who are engaged in risky behaviors and who influence them to take risks such as engaging in risky sexual behaviors. On the other hand, researchers indicate that prosocial influences of the family may be counteracted by differential peer association (Akers & Sellers, 2012; Simons, Simons, & Wallace, 2004); however, parents continue to influence their child’s peer relationships.

An association between parental quality and academic performance at school has been clearly identified in past research. Parents engaging in warm and involved parenting can directly affect adolescent school engagement (Glasgow, Dornbusch, Troyer, Steinberg, & Ritter, 1997; Melby & Conger, 1996; Scaramella et al., 1998) through their own involvement in their child’s education. Parents can reinforce greater school engagement by becoming invested in the education of their child. Further, adolescents who are more committed to academics might be
less likely to engage in risky sexual behaviors that might lead to pregnancy in fear of giving up academic aspirations.

The social contextual model, as proposed by Scaramella and colleagues (1998), posits that parents’ efforts to monitor their child influence the emergence of the sexual behaviors of their adolescent. Parental monitoring serves as a protective factor against early pregnancy that directly influences adolescents behavior by adolescents delaying sexual intercourse or engaging is less risky sexual behaviors. Indeed, this perspective is consistent with evidence indicating that parenting practices indirectly influence adolescent’s risky sexual behaviors through peers and school context (Conger & Simons, 1997; Scaramella et al., 1998). Similar to the model tested by Scaramella and colleagues (1998), risky sexual behaviors of the adolescent have been identified as a potential mediator of the association between affiliation with peers who engage in risky sex and teenage pregnancy experience as well as academic commitment and teenage pregnancy experience. Behavior of peers has been linked to adolescents’ own risky sexual behaviors and is expected to lead to pregnancy. Although risky sexual behaviors do not always lead to a pregnancy, adolescents who engage in risky sexual behaviors are at increased risk of experiencing a pregnancy during adolescence. Although there is existing research examining the social contextual model, this research has been based upon white samples. The present research is based upon prospective analyses of longitudinal data because this model proscribes that parental quality influences the behavior of adolescents over time.

Research Questions

Based on the previous review of the literature, it is clear that parental quality can have an effect on adolescent sexual behaviors. A careful consideration of the contextual factors, specifically peers and school engagement, may also lend a great deal of insight into
understanding how these factors influence sexual risk behaviors that may lead to an early pregnancy. The current study seeks to examine the following research questions:

1. How does risky sexual behaviors help explain the association between parental quality in early adolescence and pregnancy? In other words, to what extent does risky sexual behaviors mediate the association between parental quality and an early pregnancy?

2. To what extent does affiliation with peers who engage in risky sexual behaviors mediate the association between parental quality with risky sexual behavior and early pregnancy?

3. To what extent does school engagement mediate the association between parental quality and risky sexual behaviors and early adolescent pregnancy?

*The Current Study*

The current study seeks to explore the antecedents of adolescent pregnancy and to address limitations of past research. Despite these recent studies, large gaps persist in our understanding of the risk factors for early pregnancy. Many variables have been examined in an effort to understand the effects of parental quality on adolescent’s risky sexual behaviors while less research exists on the antecedents of teenage pregnancy (Scaramella et al., 1998 is an exception). Drawing on findings on the literature, this study focuses on parental quality, affiliation with peers who engage in risky sex, adolescent sexual behavior, and adolescent school engagement, as antecedents of adolescent pregnancy experience. While similiar factors have been explored on a White sample by Scaramella et al (1998) this model has not been tested on more diverse samples. This study extends past research by examining the mediating influence of a number of variables on teenage pregnancy among a sample of African American females using a longitudinal study design. Further, previous research has often been limited in several other respects. Much of the work has examined low-risk samples; however, the sample used in the
current study extends past research by using a high-risk sample where individuals in the sample are mostly disadvantaged and low socioeconomic status. In addition, past research has only included measures on deviant-peer affiliations when examining the association between parental quality and teenage pregnancy. To extend past research, the current study includes measures of affiliation with peers who engage in risky sexual behaviors. The mediated social contextual model is depicted in Figure 1.

The theoretical perspectives and empirical results indicate that parental quality may be related to teenage pregnancy, but that the association will likely depend on a number of social contextual factors. I therefore expect several possible associations. The model shown in Figure 1 includes social contextual variables that include family-, peer-, and individual-level factors that are associated with adolescents’ pregnancy experience. The paths in the theoretical model were all conceptually derived. This study will test hypotheses regarding the extent to which constructs such as school engagement, affiliation with peers engaged in risky sexual behavior, and risky sexual behavior mediate the impact of parenting on pregnancy experience. Based on past literature, I expect that parental quality, measured through warmth, consistent discipline, and parental monitoring will result in less adolescent engagement in risky sexual behaviors, therefore influencing pregnancy outcomes. Secondly, I expect to find that parents influence adolescents’ peer relationships. More specifically, I expect that quality of parenting is negatively related to affiliation with peers who engage in risky sex and that affiliation with peers who engage in risky sex would, in turn, be positively related to risky sexual behavior. Next, I expect that higher levels of parental quality will be positively associated with adolescents’ school engagement, which then is expected to be negatively related to risky sexual behavior. Social contexts are expected to be interrelated where affiliation with deviant peers will influence the adolescent’s
school engagement. I expect risky sexual behavior to mediate the relationship between the parental quality and pregnancy experience, as well as the relationships between affiliation with peers who engage in risky sex and school engagement on the pregnancy outcome.

Using a longitudinal dataset than spans the entire adolescent years, this dissertation builds upon and extends the existing research on parental quality and teenage pregnancy, with particular attention to the social contextual factors. I examine how these variables are related to a teenage pregnancy. In addition, family socioeconomic status was included as a control variable in the study. I controlled for SES in this study since research findings suggest that young women from socially disadvantaged family backgrounds characterized by poverty, welfare dependence, large family size, early motherhood, academic underachievement, and low parental educational aspirations are at an increased risk of becoming pregnant at an early age (Furstenberg, Brooks-Gunn, Morgan, 1987; Hardy, Astone, Brooks-Gunn, Shapiro & Miller, 1998; Haveman, Wolfe, & Peterson, 1997; McCormick & Brooks-Gunn, 1989; Yamaguchi & Kandel, 1987). By examining several social contextual variables, I provide new insights into the predictors of teenage pregnancy, which is an important but understudied aspect of early pregnancy.
CHAPTER III
METHODOLOGY

This section addresses the methodology used in the current study. A description of the participants and study procedures will be provided in this section. The proposed model includes multiple waves of data; therefore, quantitative analyses will be conducted using structural equation modeling as the analytic strategy.

Participants

The Family and Community Health Study (FACHS) is a multi-site investigation of neighborhood and family effects on the health and development of African American families. The FACHS sample consists of 867 African American children and their primary caregivers that were recruited from small towns and cities in Iowa and Georgia. More specifically, block groups, taken from 1990 census data, were identified in neighborhoods in Iowa and Georgia where the percentage of African American families was high enough for economically practical recruitment. Families were recruited from neighborhoods that varied on demographic characteristics, specifically racial composition (percent African American) and economic level (percent of families living below poverty line). The majority of families were recruited by telephone and the response rate for the contacted families was 84%. The sample was economically diverse in that at least 10% of families with children lived below the poverty line. Two hundred fifty-nine blocks (115 in Georgia and 144 in Iowa) were identified and families were recruited from these areas. Families with at least one child in the fifth grade were randomly selected from rosters. The average number of children was 3.42. Median income was $26,227.
The education level of primary caregivers ranged from less than high school (19%) to advanced graduate degrees (3%). The mode and median was a high school degree (41%). Respondents reported their employment status; the majority of the primary caregivers reported being employed full-time or part-time (71%) or unemployed (15%), and some were disabled (6%) or were full-time homemakers (5%). Most of the target children reported their primary caregiver as their biological mother (84%), and others reported their primary caregiver as their biological father (6%) or their grandmother (6%). The primary caregivers mean age was 37.1 years and ranged from 23-80 years. The majority of target children reported living in cohabiting or married stepparent families (38%) and others reported their living with a single parent (35%). Children who lived with both biological parents were 28%.

The project includes six waves of data. Waves three, four, and five were selected for the present study because the study analyzed adolescents during early adolescence through late adolescence. In the longitudinal study, data is collected every two years which allows for testing the lasting effects of various influences on adolescent pregnancy experience. The retention rate was quite high across the five waves of data collection. At wave 5, 689 (80%) individuals of the original sample, were re-interviewed. The attrition rate was 10% from wave 3 to wave 5. When the data was collected for the first time, all study participants lived in Georgia or Iowa. By wave 5, survey participants lived in across 23 states. Parenting quality, affiliation with peers engaged in risky sexual behavior, and school engagement were examined in wave 3, when the target adolescents were between 14 and 15 years old. Risky sexual behaviors were examined at wave 4 when the target adolescents were between 16 and 17. Pregnancy experience was assessed at wave 5 when the target female was around 19 to 20 years old. The average age of first birth for women has increased from 21.4 years of age in 1970 to 24.9 by 2000 (Sutton &
Matthews, 2004); however, past research indicates that the average age at first birth is 22 for African American women (Wise et al., 2004); therefore, pregnancy experience by wave 5 constitutes an early pregnancy. Because adolescents must be sexually active in order to become pregnant, only adolescent females who reported engaging in sexual intercourse were considered for the study. The total sample for the study is n=305.

Procedures

Data in this study were collected through the Family and Community Health Study (FACHS). Similar procedures were used at each wave of data collection. Pilot studies were conducted with focus groups consisting of African Americans who lived in the communities where the study participants were selected from. Community members that were African Americans and students from the University of Georgia collected the data at each wave. Each researcher received one week of training before administering the self-report instruments. Two home visits were completed with each family. The first home visit focused on the informed consent for both the primary caregiver and the target child. Each home visit contained a self-report questionnaire administered in an interview format using a computer-assisted personal interview (CAPI) and was presented to the primary caregiver, child, siblings, and secondary caregiver if applicable. The researcher read each question aloud and responses were entered on a keypad operated solely by the respondent. Caregivers received $100 and the target child received $70 for participating in the study.

Measures

On the basis of the extant literature pertaining to adolescent pregnancy outcomes, several variables were included in this study. Variables examined in the present study are described below. Lists of all variables from each scale are listed in the appendices. Reliability is the
notion that items within a construct are measuring the same thing, or the level of homogeneity among scale items (Cronbach, 1951); to indicate the reliability of each construct, the Cronbach’s Alpha is provided to indicate the internal consistency among scale items used to form construct in the current study.

**Parental Quality.** Adolescents rated parents’ behaviors on questions involving warmth (e.g., “During the past 12 months how often did your parent help you do something that was important to you?”), hostility (e.g., “During the past 12 months, how often did your parent throw things at you?”) monitoring (e.g., “How often do your parent(s) know where you are and what you are doing?”), consistent discipline (e.g., “How often does your parent give up when they ask you to do something and you do not do it?”), inductive reasoning (e.g., “When you don’t know why your parent(s) make certain rules, how often do they explain the reason?”), and positive reinforcement (e.g., “When you have done something your parent(s) like or approve of, how often do they let you know that they are pleased about it?”) (Appendix A). These combined parenting practices have been found to predict a variety of adolescent outcomes (see Conger et al., 1992). The response format for all items ranged from 1 (*never*) to 4 (*always*). All items were standardized and summed to form a composite measure. All items, except for hostility, were recoded so that high scores were indicative of high levels of the behavior being assessed. Hostility was reverse coded so that the composite measure served as an indicator of the extent to which, during adolescence, the child experienced parenting that combined high warmth and low hostility with high levels of control, consistent with authoritative parenting. Cronbach’s alpha for the combined 35-item scale was .88.

**Affiliation with Peers who Engage in Risky Sex.** Adolescents reported on their affiliation with peers who engage in risky sex. Items used to measure this include “How many of your close
friends have had sex,” “How many of your friends have had sex without using a condom,” and “How many of your friends have gotten pregnant” (Appendix B). The response format for the items ranged from 1 (none) to 3 (all of them). All items were coded so that high scores indicated affiliation with more sexually peers. Cronbach’s alpha for the scale was approximately .70.

School engagement. Participants were asked to report their school engagement. A six-item scale measured adolescents’ effort at school and attitudes toward academics and school. Sample items from this construct include “Do you like school a lot,” “To what extent does school bore you,” and “Are grades very important to you” (Appendix C). The response format for the items ranged from 1 (strongly agree) to 4 (strongly disagree). All items were coded so that high scores indicated high levels of school engagement. Cronbach’s alpha for the scale was .74.

Risky Sexual Behavior. An index of adolescent pregnancy risk variables were constructed using the aggregate scores for sexual debut, number of sexual partners, condom usage, and frequency of intercourse at Wave 4. Sexual debut was measured by asking the adolescent “How old were you when you first had sexual intercourse?” Number of sexual partners was assessed by asking adolescents “With how many people have you had sex?” (Appendix D). Frequency of sexual intercourse was measured by asking the adolescent “In the last 3 months, about how many times have you had sexual intercourse?” Condom usage was measured by asking the adolescent “In the last 3 months, how many times have you had sex without using a condom (rubber)?” All items were standardized and summed together to create the construct. Items were coded so that high scores were indicative of more risky sexual behavior. Cronbach’s alpha for the scale was .717.

Pregnancy Experience. Participants were asked in Wave 5 whether they had ever been pregnant. Response options ranged on a scale from zero to two with zero being indicative of having never
been pregnant, one being having been pregnant once, and two having been pregnant more than once. The pregnancy experience variable was treated as a continuous variable with a high score indicating more pregnancies.

Socioeconomic Status. Family socioeconomic status was measured using family income and was included as a control variable in the study.
CHAPTER IV

RESULTS

In the following chapter, results from the current study are presented. Descriptive statistics and correlations between the study variables are presented. Then, the results from the SEM analyses will be presented for each research question examined in the current study.

Descriptive Statistics and Correlational Analyses

Adolescent females who reported engaging in sexual intercourse were only considered for the study, because adolescents must be sexually active in order to become pregnant. The final sample included 305 adolescent females who reported having had sex at least once. Table 1, reports on the experience of an early pregnancy by age 19 or 20. Table 2 present the mean and standard deviations for each of the items used to measure parental quality construct. Table 3 presents the mean and standard deviations for the items used to measure the level of school engagement among adolescents in the study, and Table 4 presents the mean and standard deviations for items used to measure affiliation with peers who engage in risky sexual behaviors among study participants. Table 5 presents the proportion of the sample who indicated that they had engaged in risky sexual behaviors. Table 6 provides correlations and the means and standard deviations for variables used in the current study.

Analytic Strategy

The social contextual hypothesized model was estimated in MPlus (Muthen & Muthen, 2004) using structural equation modeling (SEM). There are several advantages for using structural equation modeling for the current analyses. First, SEM allows for the evaluation of
entire models, which brings a higher-level perspective to the analysis (Kline, 2011). Further, indirect effects and mediating relationships can be tested using SEM. Full Information Maximum Likelihood (FIML) in MPlus was used to handle missing data. FIML is a direct-model-based technique, which means that estimates of the same parameters and their confidence intervals may vary analysis to analysis (Myung, 2003). FIML is a preferred method of handling missing data; this method deals with missing data and parameter estimation is one step, therefore eliminating the need to create imputed values (Acock, 2005).

In order to determine if the model was properly specified, a range of indices were used in the current study to evaluate the fit of the model. It is important to note that each index evaluates fit differently and has certain strengths and limitations (Wickrama, Conger, Wallace, & Elder, 2003). No single indicator for model fit is unbiased in all analytic conditions; therefore to measure the goodness-of-fit indices, I used the comparative fit index (CFI), the root mean squared error of approximation (RMSEA), and the Chi-Square test to evaluate the theoretical model. Although there are around 100 different measures of fit, one of the most useful measures is the comparative fit index (CFI) in which all of the model’s correlations are assumed to be zero with the variances allowed to vary (Kenny, Kashy, & Cook, 2006). The CFI is a relative measure of fit where the model is compared with or relative to the null model to identify if there is any improvement (Kenny et al., 2006). CFI values close to 1.0 indicate a good fitting model.

Another useful measure of goodness of fit is the root mean squared error of approximation (RMSEA) which is an absolute measure of fit which corrects for the model’s complexity. The RMSEA was used to evaluate the theoretical model in this study because this index is not directly related to sample size; however, this measure is sensitive to the number of parameters being estimated. RMSEA values less than 0.05 indicate that the model fits the data.
well and values greater than .08 represent errors in approximation (Yoder, 1998; Jöreskog & Sorbom, 1981).

In addition, the model fit will be evaluated using chi-square tests in which a nonsignificant test indicates a model that fits the data well. The chi-square statistic reflects the difference between the observed covariance matrix and the estimated covariance matrix, and is the basis for nearly all of the other fit indices. One major limitation of the chi-square statistic is that it can be a misleading indicator of whether the model is a good- or bad-fitting model due to its dependence on the sample size. If the sample size is very large (i.e. greater than 400), it is almost certain that the chi-square test will be statistically significant, indicating a poor model fit (Kenny et al., 2006). Moreover, the p-value should be interpreted with caution when the sample size is relatively large (Yoder, 1998). Evidence for adequate model fit exists if the chi-square p-value is over 0.05 (Camines & McIver, 1981).

Given each of the strengths and weaknesses of each measure of model fit, it is necessary for all three fit indices to provide favorable values in order for there to be enough evidence to suggest that the model fits the data well. Each of these three fit indices are sensitive to model misspecification to differing degrees; however, model misspecification is minimized by specifying the hypotheses based on strong theoretical and empirical evidence (Wickrama et al., 2003). CFI, RMSEA, and Chi-Square values will be presented with the structural equation model tested in the current study (see Figure 2).

The correlation matrix for the constructs used in the current study as well as the mean and standard deviation for each construct used in the current study are presented in Table 6. All of the correlations were generally correlated in the expected directions at the bivariate level and were significant at $p < .05$. The pattern of significant associations is mostly consistent with the
hypothesized model. It was expected that parental quality would be negatively correlated with affiliation with peers who engage in risky behaviors and an individual’s risky sexual behaviors; this expectation was found between these variables. The bivariate correlations of parental quality with affiliation with risk sexual peers and risky sexual behaviors is -.29 and -.19, respectively. Based on past research, it was also expected that parental quality and school engagement would be positively correlated. The correlations for each variable indicate that the association between parental quality and school engagement is .16. The correlations between affiliation with risky sexual peers with risky sexual behaviors is .27. Therefore, the correlations indicate that females who had a high level of contact with peers who engaged in risky sexual behaviors would have higher levels of risky sexual behaviors. Next, I expected that school engagement would be negatively associated with risky sexual behaviors. The association between school engagement and risky sexual behavior is significantly correlated at -.14. The final expectation regarding the bivariate correlations was that risky sexual behaviors would be positively associated with an early pregnancy experience. This expectation was supported with the bivariate association between risky sexual behaviors and early pregnancy experience at .31. No relationship was found between early pregnancy experience with school engagement, affiliation with peers who engage in risky sexual behaviors and parental quality which suggest that the influence of early pregnancy experience on three socio-contextual variables may be indirect through the variables stated above. Family SES was controlled for in the study and was not significantly correlated with any of the study variables.

Mean scores for parental quality was 116.45 with a standard deviation of 12.23. Mean scores for affiliation with peers who are engaged in risky sexual behaviors is 5.07 with a standard deviation of 1.34. School engagement construct has a mean of 18.80 with a standard
deviation of 2.78. The scale for risky sexual behaviors is created by five standardized scores so the overall mean score for risky sexual behavior is .024 with a standard deviation of 4.00.

**Structural Equation Modeling**

Structural equation modeling (SEM) analysis was undertaken using the MPlus statistical program, Version 5.2, to test the causal relationships between model variables (Muthen & Muthen, 2004). I began by analyzing the fully recursive model. Some of the associations in these model did not approach statistical significance. To obtain a more parsimonious model, the model was re-run only including paths with a $t > 1.5$. The difference in chi square between the fully recursive and reduced model was not significant ($\Delta \chi^2 = 1.978$, $p = .577$ for females) indicating that the reduced model provided a more parsimonious fit of the data (Table 7). The reduced model is presented in Figure 2. All coefficients presented in the model are standardized.

Three research questions were examined. First, to what extent does risky sexual behaviors mediate the association between parental quality and an early pregnancy? Second, to what extent does affiliation with peers who engage in risky sexual behaviors mediate the association between parental quality and early pregnancy? Finally, to what extent does school engagement mediate the association between parental quality and risky sexual behaviors? The data were analyzed for females and included participants that reported having sex ($n=305$). In the analyses, the pregnancy experience outcome variable had a skewness of .616. Since the skewness of the pregnancy experience variable was less than two, in the current analysis I used the pregnancy experience variable as a continuous variable.

As noted earlier, the model fit was evaluated using a comparative fit index (CFI), Chi-square statistic, and RMSEA. The model fit statistics all indicate that the model adequately fits the data. The model is good-fitting with the CFI that is .997, Chi-square test is .3913 and the
RMSEA is .011. The model shows partial support for some of the theoretical perspectives discussed earlier. Findings for each research question will be discussed in the following sections. As noted earlier, family socioeconomic status was controlled for in the current study.

*Research Question One*

The first research question was focused on the relationship between parental quality in early adolescence and teenage pregnancy during late adolescence. As was expected, Figure 2 shows that the effect of parenting was indirect through the mediators. Specifically, parental quality was negatively related to daughter’s risky sex (-.12). Risky sexual behaviors, in turn, were positively related to increased risk of early pregnancy (.31).

*Research Question Two*

The second research question examines the extent to which affiliation with peers that engage in risky sexual behaviors mediate the association between parental quality and early pregnancy. Parental quality was expected to be negatively associated with affiliation with peers who engage in risky sexual behaviors, while affiliation with sexually active peers was expected to be positively related to risky sexual behaviors. Findings from this study are consistent with the hypotheses and Bandura’s social learning theory. The SEM results show that parenting was negatively related to daughters’ affiliation with peers who engage in risky sexual behaviors (-.29), which in turn, increased the likelihood of daughter’s risky sexual behaviors (.23).

*Research Question Three*

The third research question aimed to answer whether the association between parental quality with school engagement and early pregnancy was mediated by risky sexual behaviors. Earlier I contended that social control theory might be interpreted as suggesting that school engagement would have a direct effect on the sexual behaviors of adolescents that would then be
associated with teenage pregnancy. However, there is not a significant path between these two constructs. Unexpectedly, Figure 2 shows that while parenting was positively related to school engagement (.16), that variable was not related to either risky sexual behavior or early pregnancy. These results provide mixed support for the social control theoretical perspective. As expected there is a significant path from parental quality to school engagement, but the path from school engagement to risky sexual behaviors is not significant which was similar to findings in the study by Scaramella and colleagues (1998). As indicated in the fully recursive model, the path from academic commitment and early pregnancy experience was not significant. This finding was not consistent with the Scaramella (1998) article stated above. Once the effects of parental quality with affiliations with peers engaged in risky sexual behaviors and teenage pregnancy were estimated the significant correlation between academic commitment and risky sexual behaviors of -.14 was reduced to -.09 in SEM. It is important to note that academic engagement and affiliation with peers who are engaged in risky sexual behaviors was significantly correlated. These findings from the study suggest that school engagement may not serve as a protective factor against risky sexual behaviors and teenage pregnancy for African American females.

As a final step in the analysis, I re-estimated the right side of the model in Figure 2, treating pregnancy experience as an ordered categorical variable using MPlus software (not shown in figures). I predicted the increase in the odds of pregnancy experience for a one level increase in the predictor risk sexual behaviors. These results were consistent with the results from the structural equation models. The log-odds of moving from a given level to any higher category of pregnancy status significantly increased by .15 (or odds ratio increased by 16%) for each one unit increase in the initial level.
**Indirect Effects**

Next, I tested for indirect effects among the female model using MPlus, which provides a significance test (e.g. bootstrapping). Table 8 shows the \( t \)-values derived from the bootstrapping method for all indirect effects. Parental quality had a significant indirect effect on early pregnancy experience through its association with risky sexual behaviors. Parenting quality had a significant indirect effect on risky sexual behaviors through its association with affiliation with peers who engage in risky sexual behaviors. Further, affiliation with peers who engage in risky sex had a significant indirect effect on early pregnancy experience through its association with risky sexual behaviors.

Overall, the various theories that informed the model suggest that parental quality in the family of origin during early adolescence is associated with an individual’s peer group and their engagement in risky sexual behaviors that may lead to an early pregnancy. The results also suggested that the level of school engagement has little impact on risky sexual behaviors and teenage pregnancy among female African Americans, as this construct shows neither a direct or indirect effect on early pregnancy experience.
The goal of the current study was to examine the predictors of teenage pregnancy among a sample of African Americans. While many studies have focused on the consequences of teenage pregnancy, there has been little attention paid to the predictors of teenage pregnancy, and the few that exist typically use a White sample. Building on the socio-contextual model developed by Scaramella et al., (1998) the current study examined, family, peer, and individual influences on an early pregnancy experience for African Americans. Engaging in risky sexual behavior was expected to be the critical link between the identified social contextual variables and involvement in a pregnancy. Based upon past research findings, I expected to find that parental quality during early adolescence would be associated with less affiliation with peers who engaged in risky sexual behaviors, higher levels of school engagement, and less engagement in risky sexual behaviors, therefore reducing the risk of an early pregnancy. The findings from the current study largely support the research hypotheses by clearly showing that parents and peers influence adolescents’ risky sexual behaviors that may lead to an early pregnancy. Further, findings from this study suggest that sexual behaviors serve as the factor that is most strongly associated with experiencing an early pregnancy.

First, I was interested in the extent to which risky sexual behaviors helped explain the association between parental quality in early adolescence and teenage pregnancy in late adolescence. Past research has established that the presence of family warmth during early adolescence predicted fewer sexual partners across gender and racial/ethnic groups during late
adolescence (Kan et al., 2010), therefore decreasing the risk of an early pregnancy. Based upon these findings, I expected to find that parental quality, measured through behaviors such as warmth, consistent discipline, and parental monitoring would result in less adolescent engagement in risky sexual behaviors, therefore influencing teenage pregnancy. Similar to findings from past studies, results from this study show that parental quality was negatively associated with an adolescent’s risky sexual behavior, which in turn were positively associated with early pregnancy experience. These findings support the social contextual theoretical rationale and social control theory which posit that parents’ efforts to monitor their child influence the emergence of sexual behaviors of their adolescent. Consistent with past research, these findings support the idea that parental quality can influence teenage pregnancy through an adolescent’s risky sexual behaviors. Past research suggests that parents who are authoritative in their disciplinary practices are more likely to have children who internalize their standards (Grusec & Goodnow, 1994; Kochanska, 1995) and exhibit few behavioral problems (Campbell, 1995; Kennan & Shaw, 1997). In other words, these individuals have more favorable outcomes at all ages.

Second, this study also examined the extent to which affiliation with peers who engage in risky sexual behaviors mediate the association between parental quality with risky sexual behaviors and an early pregnancy since adolescent’s own behavior is often influenced by their peers’ behaviors. This was an improvement upon past research because few studies have examined the risky sexual behavior of peers and instead have primarily focused on the deviant behavior of peers on adolescent’s risk taking behaviors. Based on past research, it was expected that quality of parenting would be negatively related to affiliation with peers who engage in risky sex. For instance, research shows that parents who monitor and who are involved with their
child are more attuned to their child’s peers and friendships and can influence their child’s choice of peers (Smith, 2003). More specifically, past literature suggests that parental monitoring serves as a protective factor for unprotected sexual activity and early pregnancy, in part because parents are able to prevent their adolescents from spending time with delinquent peers who influence them to take risks (Scaramella et al., 1998). Although this study used a measure of affiliation with peers engaged in risky sexual behaviors instead of a measure of deviant behavior of peers, similar to past research findings from this study indicate that parental quality is negatively associated with affiliation with peers who engage in risky sexual behaviors. Specifically, past research suggests that parental monitoring, which is related to parental quality and the parent-child relationship, is related to less frequent intercourse (Benda & DiBlasio, 1991) and fewer sexual partners (Miller et al., 1999). The research findings suggest that the more positive parental behaviors in an adolescent’s family of origin during early adolescence, the less likely individuals are to affiliate with peers who engage in risky sexual behaviors. Findings in the current study are consistent with the social control theory. This theory suggests that the reasons for conforming behavior are to be found in the bonds the individual establishes with the conventional order, including parents and their values. When adolescents have weak bonds to conventional order, social control theory predicts a greater likelihood of deviance, such as risky sexual behaviors.

Next, related to the second research question, I focused on examining the extent to which affiliation with peers who engage in risky sexual behaviors influence an adolescent’s risky sexual behaviors and an early pregnancy experience. As noted earlier, social learning theory posits that imitation and modeling behaviors of peers is how adolescents learn behaviors. Consistent with social learning theory as well as findings from Scaramella et al., (1998), results
from this study show that the influence of peers engaged in risky sexual behaviors was indirectly related to early pregnancy through adolescent’s risky sexual behavior. In other words, adolescents who affiliated with peers who engaged in risky sexual behaviors participated in risky sexual behaviors themselves, which placed them at a greater risk of experiencing an early pregnancy.

Third, I was interested in examining the extent to which the association between parental quality and early pregnancy was mediated by school engagement. Based on social control theory, which posits that parental quality can foster the development of conventional norms in their adolescent, I hypothesized that higher levels of parental quality would be positively associated with adolescents’ school engagement. Findings from this study indicate that parental quality was positively associated with school engagement which was consistent with past research and suggest that parents influence the how engaged their adolescents are in school. This finding is consistent with the social contextual theoretical framework. For instance, past research suggests that parents engaging in warm and involved parenting can directly affect adolescent school engagement (Glasgow, Dornbusch, Troyer, Steinberg, & Ritter, 1997; Melby & Conger, 1996; Scaramella et al., 1998) through their own involvement in their child’s education. In other words, parents can reinforce greater school engagement by becoming invested in the education of their child.

To further understand the influence of school engagement, I was also interested in the extent to which risky sexual behaviors mediated the association between school engagement and early pregnancy. Based on the social control theory, which suggests that bonds to conventional society, such as school, help most individuals refrain from engaging in problem behaviors, I expected that school engagement would be negatively related to risky sexual behavior whereas
risky sexual behavior would be positively associated with an early pregnancy. Past studies indicate that girls who have high academic achievement expectations, positive attitudes about education, and clear educational goals are significantly less likely to become pregnant than girls who have low educational expectations or who are poorly engaged in school (Fergusson & Woodward, 2000; Hockaday et al., 2000; Manlove et al., 2002; O’Connor, 1999). Prior research has also suggested that females who dislike school were significantly more likely to report a pregnancy by age 16 compared with those who reported liking school (Bonell et al., 2005); these findings suggest that the dislike of school is strongly associated with an increased risk of pregnancy. In other words, adolescent females with high academic aspirations may postpone early motherhood to focus on their educational and career goals. Findings from other studies found a direct effect of academic commitment on teenage pregnancy but did not find risky taking behavior as a mediating mechanism that explained the association between academic commitment and teenage pregnancy (Scaramella et al., 1998). In the current study, parental quality was associated with school engagement; however, this was not the case for the association between school engagement with risky sexual behaviors and early pregnancy experience. In other words, findings from the study indicated that while parenting was positively associated with school engagement, it was not related to either risky sexual behavior or an early pregnancy. Findings from the current study suggest that adolescents with even high levels of school engagement may be engaging in risky sexual behaviors that may lead to teenage pregnancy. This finding suggests that for African Americans, school engagement is not a sufficient deterrent in participating in risky sexual behavior or avoiding early pregnancy.

There are several possible explanations for this finding. It is important to note that there has been minimal literature regarding the predictors of an early pregnancy among a diverse
sample. Although much of the past research has found that school engagement is associated with sexual behaviors that may lead to pregnancy, some of the previous research examining more diverse groups of adolescents has found results similar to the current research study. For example, researchers found no relationship between liking school and initiation in sexual activity, but reported a relationship between liking school and more consistent contraceptive use among African American girls (Cvetkovich & Grote, 1980). In another study, which used a cross-sectional research design with a sample of African American girls, found that career aspirations, a measure based on educational and occupational aspirations and expected income at age 30, were not associated with the rates of initial intercourse or pregnancy (Hogan & Kitagawa, 1985). Findings from these studies using samples of African American girls could help explain the findings of why school engagement was not found to be associated with risky sexual behaviors or an early pregnancy among the diverse sample of African Americans used in the current study.

Most of the studies which found that academic orientation served as a protective factor of adolescent pregnancy (Fergusson & Woodward, 2000; Scaramella et al., 1998) used samples of low-risk, exclusively White girls. It may be that school engagement has less of a protective effect among higher-risk samples of African American adolescents. Moreover, Scaramella and colleagues (1998) used a measure of academic performance. It may be that academic performance compared to school engagement is more likely to reflect an adolescent’s academic success and opportunities for higher education. In addition, in the current study, I used a longitudinal sample where data was collected once every two years where the Scaramella (1998) study used longitudinal data that was collected each year. Collecting data each year on school related constructs may provide a more reliable measurement of school related variables due to
the fluctuating nature of school involvement over time. Future research is needed to further explore the relationship between school engagement and risky sexual behaviors and early pregnancy in order to better understand the influence of school context on adolescent risky sex and pregnancy experiences. Specifically, further research needs to examine the effects of school engagement on adolescent pregnancy experience with a sample of high-risk ethnically diverse adolescents while considering other variables that may mediate the association between school engagement and pregnancy experience.

In summary, the current study was an extension of past literature given that the predictors of an early pregnancy have only been examined in a few studies. Findings from this study point to various social contextual mechanisms whereby parental quality is associated with teenage pregnancy. Findings were generally consistent with previous studies that have addressed the influence of social contextual factors on teenage pregnancy among Whites, as well as theories of social behaviors. The exception was the lack of support for school engagement as a protective factor against early pregnancy. Future research should strive to obtain nationally representative samples of the general population of adolescents. Further, findings in the current study must be replicated with other samples. A major strength of the study was the use of longitudinal data to properly test mediation and to examine the predictors of teenage pregnancy among a sample of African American female adolescents. Further, to my knowledge, this study is the first study in which the predictors of an early pregnancy for African Americans have been examined.

Limitations

Although the current study builds upon past research, several limitations are present in the current study. First, adolescents who experienced pregnancy were considered in the study; however, the outcome of the pregnancy is not known. Such insight might enhance researchers’
understanding of the ways in which social contextual factors influence how the adolescent handles an early pregnancy. In the future, it will be important to consider the predictors of the outcomes of an early pregnancy. Further, future research could also examine pregnancy wantedness or intendedness. Some studies on adolescent pregnancy have categorized pregnancy into three-categories which included intended, unwanted, and mistimed. The model in the current study could be considered using the trichotomy of categorizing pregnancies to examine how predictors of pregnancy might change based on the intentions of the adolescent. Secondly, the study focused on an African American sample; therefore the findings from this study may not be generalizable to studies using other racial/ethnic groups. Future research should examine the model in the current study across other ethnic groups. Next, the model suggested that parents influence adolescents’ peer affiliations and behavioral outcomes. The bidirectional influence of adolescents on their parent’s behaviors was not accounted for in the current study. I recommend that future research evaluate bidirectional influences of adolescents and their parents to understand more about how the interactions of parents and adolescents influence adolescent behaviors. Despite these limitations, the current study extended past research by using a longitudinal data from African Americans to assess family, individual, and peer influences on early pregnancy.

Implications

Findings from the current study suggest that sex preventative intervention programs should move beyond focusing on the sexual act itself and add program curriculum that focuses on the social contexts within which sexual behavior unfolds (Kirby 2002). Findings from the current study provide support for the important influence of parents and peers on teenage pregnancy. Therefore, it is suggested that the curriculum of prevention intervention programs
should be designed not only for individuals but for their parent(s) and peers as well. Based on the social contextual approach, adolescents may be more likely to benefit from pregnancy prevention intervention programs when parents, peers, and schools are involved. As a result of this study’s findings, prevention intervention programs should encourage parents to engage in authoritative parenting.

Family-based prevention intervention programs for parents and adolescents can be designed to inform parents and adolescents on how to develop skills that strengthen family relationships. Past research has focused on factors within the family that protect adolescents from risky behaviors. One example of an intervention program for parents and adolescents is the Strong African American Families program (SAAF), which is a universal intervention to deter alcohol use and sexual risk behavior among African American adolescents. The program is based on a contextual model in which intervention effects on parental behavior and youth protective factors lead to behavior changes, such as the prevention of the development of conduct problems (Brody, Kogan, Chen, & Murry, 2008). SAAF addresses protective factors, such as consistent discipline, positive parent-child relationships, racial socialization, and parent-child communication about drugs, alcohol, and sex. Youth protective processes targeted in SAAF include academic competence, self-esteem, future orientation, and negative attitudes about substance use and early-onset of sexual activity. Results from the analyses on the long-term effects of the SAAF program on adolescent outcomes indicate that the program is effective in preventing the development of conduct problems among youth (Brody et al., 2008). However, high risk youth, such as those individuals who had low self-control or affiliation with deviance-prone peers, were impacted more by the SAAF program than youth at less risk of developing conduct problems. These findings suggest that the influence of protective processes is strongest
under conditions of highest risk. The evaluation of the SAAF program indicates positive effects of parenting education on parenting and adolescent outcomes. Based on past findings and findings from the current study, further prevention intervention efforts are needed that focus on educational engagement.

Specifically through prevention intervention programs, parents can learn how to effectively monitor their adolescents’ whereabouts and peer affiliations. Findings from the study indicate that parents influence their adolescent’s engagement in risky sexual behaviors which can lead to pregnancy. For instance, studies have found that greater parental monitoring is associated with an increase in the age of an adolescent’s first sexual intercourse and decreased sexual risk behavior (Barber et al., 2005; Dodge et al., 2006; Hair et al., 2008; Li et al., 2000; Longmore et al., 2001). During adolescence, parents’ knowledge of their adolescent’s whereabouts and friends becomes important for reducing and preventing problem behaviors since peers become more influential, and adolescents tend to spend more time with friends instead of family.

Parental monitoring efforts differ from childhood to adolescence since parents often rely on their offspring to inform them about their location and activities when away from home, therefore effective parental monitoring relies upon a good parent-child relationship. Some researchers have suggested that parental knowledge of adolescents’ activities is an aspect of monitoring that is most closely associated with lower levels of problem behavior (Kerr & Stattin, 2000; Stattin & Kerr, 2000). However, findings indicate that the quality of the relationship between parents and their adolescents plays a substantial role in determining how much information parents can gather about their children’s whereabouts (Smetana, 2008; Soenens, Vansteenkiste, Luyckx, & Goossens, 2006). Knowledge of whereabouts reflects parents’ control over outside influences such as peers. Therefore, knowledge of whereabouts is related to less
affiliation with peers who engage in risky sexual behaviors, in part, because parents are able to prevent their adolescents from “hanging out” with a risky peer group. More importantly, interventionists working with parents need to focus on ways to provide opportunities for their adolescent to find healthy ways to develop a sense of autonomy in the adolescent years.

As noted earlier, although parents continue to maintain substantial influence on their offspring during adolescence, peer group influence becomes increasingly important during this period. Previous research suggests that the kinds of peers adolescents associate with play a prominent role in learning both conforming and risky behaviors (Akers & Sellers, 2012). It may be that during adolescence, when individuals increase their desire for autonomy, interventions involving peers may be the most beneficial in offsetting the risky sexual behaviors that may lead to an early pregnancy.

Adolescents’ intentions to engage in sex are strongly influenced by their social context in which peers play a major role in determining normative behavior (Sieving et al., 2000). Past findings suggest that more frequent, longer-term, and closer affiliation with peers who are engaged in risky sexual behaviors is strongly associated with one’s own sexual behavior (Bearman & Bruckner, 1999). Therefore, prevention intervention programs should help adolescents understand the importance of affiliating with a positive peer group. Working with both the adolescent as well as their peers may help them understand benefits of having a prosocial peer group on their behaviors.

Previous research conveys that an adolescent’s academic success and engagement in a school setting can buffer against the risk of teenage pregnancy. For instance, adolescent’s who had positive attitudes about education, and clear educational goals were significantly less likely to become pregnant than girls who have low educational expectations or who are poorly engaged
in school (Fergusson & Woodward, 2000; Hockaday et al., 2000). Although findings in the current study do not fully support past research findings, prevention intervention programs need to recognize this relationship between parents and schools in order to build academic goals of adolescents, which might serve as a protective factor against teenage pregnancy among some ethnic groups.

Conclusions

In conclusion, the present study has identified mediators in the relationship between parental quality and the experience of early pregnancy. The findings presented here generally align with past research which indicates that parents influence the sexual behaviors of their child during adolescence. The current results provide evidence that parental quality, defined as authoritative parenting, is associated with less affiliation with peers who engage in risky sexual behaviors and less risky sexual behaviors, which, in turn, is associated with less early pregnancy risk among African American adolescents. Professionals working with adolescents might benefit from knowing the social contextual factors that serve as predictors of an early teenage pregnancy. Findings from this study suggest that prevention intervention programs during adolescence which are designed to increase authoritative parenting and decrease affiliation with peers engaged in risky sexual behaviors and an individual’s risky sexual behaviors may help to reduce the risk of teenage pregnancy. Specifically, prevention intervention programs should provide a series of programs that begin before adolescence to facilitate the development of quality parenting, goals for academic achievement and engagement in school, as well as positive peer affiliations.
REFERENCES


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Adolescent Research, 3, 269-282.


APPENDIX A

ITEMS MEASURING PARENTAL QUALITY

1. During the past 12 months how often did your parent(s) help you do something that was important to you?

2. How often do your parent(s) know where you are and what you are doing?

3. How often does your parent(s) give up when they ask you to do something and you do not do it?

4. When you don’t know why your parent(s) make certain rules, how often do they explain the reason?

5. When you have done something your parent(s) like or approve of, how often do they let you know that they are pleased about it?

6. How often does your parent(s) give you a reward like money or something you would like when you get good grades, do your chores, or something like that?

7. During the past 12 months, how often did your parent(s) let you know [HE/SHE] really cares about you?

8. During the past 12 months, how often did your parent(s) listen carefully to your point of view?

9. During the past 12 months, how often did your parent(s) act supportive and understanding toward you?
10. During the past 12 months, how often did your parent(s) act loving and affectionate toward you?

11. During the past 12 months, how often did your parent(s) have a good laugh with you about something that was funny?

12. During the past 12 months, how often did your parent(s) let you know that [HE/SHE] appreciates you, your ideas or the things you do?

13. During the past 12 months, how often did your parent(s) tell you [HE/SHE] loves you?

14. During the past 12 months, how often did your parent(s) understand the way you feel about things?

15. How often would you be disciplined at home if your parent(s) knew you broke a school rule?

16. When your parent(s) tells you to stop doing something and you don't stop, how often does [HE/SHE] discipline you?

17. When you do something wrong and your parent(s) decides on a type of discipline, how often can you get out of it?

18. How often does your parent(s) discipline you for something at one time, and then at other times not discipline you for the same thing?

19. When your parent(s) disciplines you, how often does the type of discipline you get depend on [HIS/HER] mood?

20. How often does your parent(s) know how well you are doing in school?

21. How often does your parent(s) know if you do something wrong?

22. How often can you do whatever you want after school without you parent(s) knowing what you are doing?
23. During the past 12 months, how often did your parent(s) argue with you whenever you disagreed about something?

24. During the past 12 months, how often did your parent(s) get angry at you?

25. During the past 12 months, how often did your parent(s) get so mad at you that [HE/SHE] broke or threw things?

26. During the past 12 months, how often did your parent(s) shout or yell at you because [HE/SHE] was mad at you?

27. During the past 12 months, how often did your parent(s) threaten to hurt you physically?

28. During the past 12 months, how often did your parent(s) criticize you or your ideas?

29. During the past 12 months, how often did your parent(s) push, grab, hit, or shove you?

30. During the past 12 months, how often did your parent(s) slap or hit you with [HIS/HER] hands?

31. During the past 12 months, how often did your parent(s) strike you with an object?

32. During the past 12 months, how often did your parent(s) boss you around a lot?

33. During the past 12 months, how often did your parent(s) insult or swear at you?

34. During the past 12 months, how often did your parent(s) tell you [HE/SHE] is right and you are wrong about things?

35. During the past 12 months, how often did your parent(s) throw things at you?

Response format for Items 1-22 (scale listed below reflects the recoded scale):

1= never
2=sometimes
3=often
4=always
Response format for Hostility Items 23-35:

1=always
2=often
3=sometimes
4=never
APPENDIX B

ITEMS MEASURING AFFILIATION WITH PEERS WHO ENGAGE IN RISKY SEX

1. During the past 12 months, how many of your close friends have had sex without using a condom?

2. During the past 12 months, how many of your close friends have had sex?

3. During the past 12 months, how many of your close friends have gotten pregnant or gotten a girl pregnant?

Response format:

1= none of them
2=some of them
3= all of them
APPENDIX C

ITEMS USED TO MEASURE SCHOOL ENGAGEMENT

How much do you agree or disagree with these statements about school?

1. In general, you like school a lot.
2. School bores you.
3. You do not do well at school.
4. You do not feel like you really belong at school.
5. You try hard at school.
6. Grades are very important to you.

Response format Items 2, 3 and 4:
1=strongly agree
2=agree
3=disagree
4=strongly disagree

Response format (recoded) for Items 1, 5, and 6:
1=strongly disagree
2=disagree
3=agree
4=strongly agree
APPENDIX D

ITEMS USED TO MEASURE RISKY SEXUAL BEHAVIOR

1. How old were you when you first had sexual intercourse?

2. With how many people have you had sex?

3. In the last 3 months, about how many times have you had sexual intercourse?

4. In the last 3 months, how many times have you had sex without using a condom (rubber)?

5. When you have sex, how often do you use a condom?

   Response Categories for Items 1: 0 thru 22 years old

   Response format for Item 2:

   1=None
   2=One
   3=Two
   4=three or four
   5=five or six
   6=seven or more

   Response Categories for Items 3 and 4: Zero thru seventy-seven times

   Response Categories for Item 5:

   1= Never
   2=Sometimes
   3=Most of the time
   4=All of the time
APPENDIX E

ITEMS USED TO MEASURE EARLY PREGNANCY

1. Have you ever been pregnant?

   Response options:

   0 = I have never been pregnant
   1 = I have been pregnant once
   2 = I have been pregnant more than once
Table 1.

*Percentage of Respondent Early Pregnancy Experience*

<table>
<thead>
<tr>
<th>Have you ever experienced a pregnancy?</th>
<th>Never</th>
<th>Yes, one time</th>
<th>Yes, more than one time</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>52.5</td>
<td>25.9</td>
<td>21.6</td>
</tr>
</tbody>
</table>
Table 2.

*Frequency of Respondents for each Scale for Variables in Parental Quality Construct*

<table>
<thead>
<tr>
<th>Variable</th>
<th>Mean</th>
<th>Std. Deviation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Warmth</td>
<td>29.81</td>
<td>5.49</td>
</tr>
<tr>
<td>Hostility</td>
<td>22.36</td>
<td>4.73</td>
</tr>
<tr>
<td>Monitoring</td>
<td>16.88</td>
<td>2.86</td>
</tr>
<tr>
<td>Consistent Discipline</td>
<td>17.92</td>
<td>2.71</td>
</tr>
<tr>
<td>Inductive Reasoning</td>
<td>13.79</td>
<td>3.57</td>
</tr>
<tr>
<td>Positive Reinforcement</td>
<td>6.50</td>
<td>1.42</td>
</tr>
</tbody>
</table>
### Frequency of Respondents Level of School Engagement

<table>
<thead>
<tr>
<th>Variable</th>
<th>Mean</th>
<th>Std. Deviation</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. In general, you like school a lot</td>
<td>2.16</td>
<td>.759</td>
</tr>
<tr>
<td>2. You try hard at school</td>
<td>3.49</td>
<td>.625</td>
</tr>
<tr>
<td>3. Grades are very important to you</td>
<td>3.55</td>
<td>.621</td>
</tr>
<tr>
<td>4. School bores you</td>
<td>2.46</td>
<td>.813</td>
</tr>
<tr>
<td>5. You do not do well at school</td>
<td>3.24</td>
<td>.680</td>
</tr>
<tr>
<td>6. You do not feel that you really belong at school</td>
<td>3.26</td>
<td>.713</td>
</tr>
</tbody>
</table>
Table 4.

*Frequency of Respondents Affiliation with Peers who Engage in Risky Sexual Behaviors*

<table>
<thead>
<tr>
<th>Variable</th>
<th>During the past 12 months…</th>
<th>Mean</th>
<th>Std. Deviation</th>
</tr>
</thead>
<tbody>
<tr>
<td>How many of your close friends have had sex</td>
<td></td>
<td>1.96</td>
<td>1.79</td>
</tr>
<tr>
<td>without using a condom?</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>How many of your close friends have had sex?</td>
<td></td>
<td>1.56</td>
<td>.530</td>
</tr>
<tr>
<td>How many of your close friends have gotten</td>
<td></td>
<td>1.98</td>
<td>.610</td>
</tr>
<tr>
<td>pregnant or gotten a girl pregnant?</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Table 5.

*Frequency of Respondents Engaging in Risky Sexual Behaviors*

<table>
<thead>
<tr>
<th>Variable</th>
<th>Mean</th>
<th>Std. Deviation</th>
</tr>
</thead>
<tbody>
<tr>
<td>How old were you when you first had sexual intercourse?</td>
<td>15.56</td>
<td>1.97</td>
</tr>
<tr>
<td>With how many different people have you had sex?</td>
<td>3.68</td>
<td>1.46</td>
</tr>
<tr>
<td>In the last 3 months, about how many times have you had sexual intercourse?</td>
<td>10.50</td>
<td>18.32</td>
</tr>
<tr>
<td>In the last 3 months, how many times have you had sex without using a condom (rubber)?</td>
<td>6.58</td>
<td>16.27</td>
</tr>
<tr>
<td>When you have sex, how often do you use a condom?</td>
<td>1.83</td>
<td>.997</td>
</tr>
</tbody>
</table>
Table 6.

*Correlation Table for Study Variables for Females*

<table>
<thead>
<tr>
<th></th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>Mean</th>
<th>Std. Deviation</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Early Pregnancy Experience</td>
<td>-</td>
<td>-.09</td>
<td>.07</td>
<td>.31***</td>
<td>-.04</td>
<td>-.08</td>
<td>1.69</td>
</tr>
<tr>
<td>2</td>
<td>School Engagement</td>
<td>-</td>
<td>-.17**</td>
<td>-.14**</td>
<td>.16**</td>
<td>-.08</td>
<td>18.80</td>
<td>2.78</td>
</tr>
<tr>
<td>3</td>
<td>Affiliation with Risky Sexual Peers</td>
<td>-</td>
<td></td>
<td>.27***</td>
<td>-.29***</td>
<td>-.05</td>
<td>5.07</td>
<td>1.34</td>
</tr>
<tr>
<td>4</td>
<td>Risky Sexual Behavior</td>
<td>-</td>
<td>-.19**</td>
<td>-.01</td>
<td></td>
<td>.024</td>
<td>4.00</td>
<td></td>
</tr>
<tr>
<td>5</td>
<td>Parental Quality</td>
<td>-</td>
<td></td>
<td>.02</td>
<td></td>
<td>116.45</td>
<td>12.23</td>
<td></td>
</tr>
<tr>
<td>6</td>
<td>Family SES</td>
<td>-</td>
<td></td>
<td>.006</td>
<td></td>
<td>1.51</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

*p<.10, **p<.05, ***p<.01; (n=305)*
Figure 1: Theoretical Model

1. Parental Quality Time 1
2. School Engagement Time 1
3. Affiliation with Peers who Engage in Risky Sex Time 1
4. Risky Sexual Behavior Time 2
5. Early Pregnancy Experience Time 3

Control Variable: Family SES
Figure 2. Predictors of Pregnancy Experience for Females (n=305)

Note: All measures used Target reports and Family SES was used as a control variable; Standardized coefficients displayed Bold lines indicate paths significant at p≤ .05.
Table 7.

Model Comparison

<table>
<thead>
<tr>
<th>Model</th>
<th>(\chi^2)</th>
<th>df</th>
<th>(p)</th>
<th>RMSEA</th>
<th>CFI</th>
<th>Model Comparison Test</th>
<th>(\Delta\text{df})</th>
<th>(\Delta\chi^2)</th>
<th>(p)-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Model 1: Fully Recursive Model</td>
<td>4.314</td>
<td>3</td>
<td>.2295</td>
<td>.032</td>
<td>.981</td>
<td>Model Comparison Test</td>
<td>3</td>
<td>1.978</td>
<td>.577</td>
</tr>
<tr>
<td>Model 2: Reduced Model</td>
<td>6.292</td>
<td>6</td>
<td>.3913</td>
<td>.011</td>
<td>.997</td>
<td>Model Comparison Test</td>
<td>3</td>
<td>1.978</td>
<td>.577</td>
</tr>
<tr>
<td>Model 1 verses Model 2</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Model Comparison Test</td>
<td>3</td>
<td>1.978</td>
<td>.577</td>
</tr>
</tbody>
</table>
### Table 8.

**Significance of the Indirect Effects for Females (n=305)**

<table>
<thead>
<tr>
<th>Predictors</th>
<th>Mediators</th>
<th>Outcomes</th>
<th>Significance</th>
<th>p-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Parental Quality</td>
<td>Risky Sexual Behavior</td>
<td>Early Pregnancy Experience</td>
<td>-.037 (t=-2.078)</td>
<td>.038</td>
</tr>
<tr>
<td>Parental Quality</td>
<td>Affiliation with Peers who Engage in Risky Sex</td>
<td>Risky Sexual Behavior</td>
<td>-.065 (t=-3.082)</td>
<td>.002</td>
</tr>
<tr>
<td>Parental Quality</td>
<td>School Engagement</td>
<td>Risky Sexual Behavior</td>
<td>-.015 (t=-1.147)</td>
<td>.251</td>
</tr>
<tr>
<td>Affiliation with Peers who Engage in Risky Sex</td>
<td>Risky Sexual Behaviors</td>
<td>Early Pregnancy Experience</td>
<td>.070 (t=3.092)</td>
<td>.002</td>
</tr>
<tr>
<td>School Engagement</td>
<td>Risky Sexual Behavior</td>
<td>Early Pregnancy Experience</td>
<td>-.028 (t=1.236)</td>
<td>.217</td>
</tr>
</tbody>
</table>

*Note:* The values presented are standardized parameter estimates.