

RISK AND PROTECTIVE FACTORS ASSOCIATED  
WITH TEEN FATHERHOOD AMONG A  
SAMPLE OF BLACK, WHITE,  
AND HISPANIC MALES

by

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In everything you do, put God first and he will bless your efforts with success Proverbs 3:6.

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*In loving memory of Nila Ross, Shedric and Addie Dean, and Golden Tim Kelly.*

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ABSTRACT

RISK AND PROTECTIVE FACTORS ASSOCIATED  
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After 14 years of consistent decline, the teen pregnancy rate increased for 2 consecutive years. This increase is concerning due to the adverse consequences associated with teen pregnancy. This study conducted secondary analysis with the 2007 Youth Risk Behavior Survey data. The Risk and Resilience Perspective guided this study to determine key factors associated with teen fatherhood. The overall purpose of the study was to investigate the key factors associated with teen fatherhood risk. Another purpose of the study was to provide pertinent information for pregnancy prevention programs. The sample consisted of 4588 adolescent males between the ages of 15 and 17. Of the 4588 males, 46% (n = 2120) were White, 32.5% (n = 1446) were Hispanic, and 22% (n = 1022) were Black. ANOVA analysis was used to compare mean scores on the investigator developed Teen Fatherhood Risk Scale among age and racial subgroups. The seven questions from the original survey that inquired about sexual behaviors were used to develop the risk scale. Linear regression was employed

to assess whether or not the selected variables were predictors of teen fatherhood. Multiple regression was conducted to determine which variables remained significant in the face of other variables. Of the selected risk factors, race was the best predictor of teen fatherhood, followed by lifetime marijuana use. Being a minority increased risk scores by four points. Lifetime marijuana use increased risk scores by three points. Together these two risk factors accounted for 26% of the variance in risk scores. Of the selected protective factors, HIV/AIDS education was the best protector against teen fatherhood. HIV/AIDS education decreased risk scores by two points. Implications for teen pregnancy prevention specific to adolescent males and future research recommendations are presented.

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## CHAPTER 1

### INTRODUCTION

The United States has the highest teen pregnancy rate in the industrialized world. Nationally, the teen birth rate decreased 38% between 1990 and 2004 (Ventura, Abma, Moscher, & Henshaw, 2008); however, between 2005 and 2007 the teenage pregnancy rate rose by 5% (Hamilton, Martin, & Ventura, 2009). In 2006, 750,000 girls became pregnant, making the national teen pregnancy rate 72 pregnancies per 1,000 girls (Guttmacher Institute, 2010a). During this time, the U.S. teen birthrate was 42 births per 1,000 girls (Kaiser Family Foundation, 2008). A significant gap exists between the pregnancy rate and the birthrate due to abortions and health risks. In fact, the abortion rate increased by 1% in 2005 (Guttmacher Institute, 2010b). Another factor contributing to this gap is the health risk associated with teen pregnancy-not all pregnancies go full-term. Due to complications, 14% of pregnancies end in miscarriage (Guttmacher Institute, 2010a). These alarming statistics demonstrate the prevalence of risky sexual behavior and teenage pregnancy in the U.S.

#### 1.1 Statement of the Problem

Despite efforts to reduce teen pregnancy rates, teen pregnancy remains prevalent, especially for minorities. Nationally, minority adolescent females have disproportionately higher rates of teen pregnancy than White females in the United States (Berry, Shillington, Peak, & Hohman, 2000; Lohman & Billings, 2008; Xie, Cairns, & Cairns, 2001). In 2006, the pregnancy rate for Black adolescent females was 126 per 1,000 girls and 127 for Hispanic females, compared to 44 for White adolescent females (Guttmacher Institute, 2010b). By the age of 20,

32% of Hispanic, 24% of Black, and 21% of American Indian females will have at least one child, compared to only 11% of White females (Martin et al., 2007). These statistics demonstrate the severity of teen pregnancy among minority adolescents. Research shows that teenage pregnancy and parenting have adverse consequences for teen parents, their children, and society as a whole.

#### *1.1.1 Consequences to Teen Parents*

The social, emotional, personal, and economic consequences of teen parenting have adverse effect on teen parents that have not gone unnoticed. Teenage mothers are less likely to receive child support (Brien & Willis, 1997; Dangal, 2006), which contributes to their poverty and dependence on welfare. Martin, Ting, Young, and Young (2001) compared adolescent mothers to nonparenting adolescents, and found that pregnant and parenting adolescents have lower self-efficacy, lower educational aspirations, and a lack of internal locus of control. In addition, teenage mothers complete high school at lower rates, earn considerably less income, are more likely to be single parents as adults, and are more likely to depend on some kind of public assistance than are nonparenting teens ( Bonnell, 2004; Brien & Willis, 1997; Haverman, Wolfe, & Patterson, 1997). When teenage mothers drop out of high school, they inhibit their future success, as it is extremely difficult to find adequate employment to raise a family without a high school education. Becoming a teen parent decreases the odds of escaping poverty, especially when the teenagers lived in poverty prior to becoming teen parents.

#### *1.1.2 Consequences Specific to Teen Fathers*

The transition to adolescent fatherhood is often unsupported, abrupt, complex (Dallas, 2004), and a hindrance (Eister & Lamb, 1982; Hendricks, 1980). Like adolescent mothers, adolescent fathers experience stress from becoming fathers at such young ages (Dellmann-Jenkins, Sattler, & Richardson, 1993; Glickman, 2004; Xie, Cairns, & Cairns, 2001). Stress affects their well-being and their involvement with their children (Miller 1997) and their parenting

(Abidin, 1992, 1995). In their study, Fagon, Bernd, and Whiteman (2007) found adolescent fathers with high levels of stress to be less involved with their children. Teen fathers have stress associated with financial obligations of fatherhood, relationship with their baby's mother, general demands of fatherhood (Hendricks, Howard, & Caesar, 1981), emotional rejection, isolation from peers, blame for the pregnancy (Fry & Trifiletti, 1983; Henderson, Rivara, & Sweeney; 1985), and life in general (Freeman, 1988). On average, adolescent fathers pay less than \$800 a year for child support due to their level of poverty (Brein & Willis, 1997). Teen fathers in the Gohel, Diamond, and Chambers (1997) study reported that they were irresponsible fathers because they did not provide enough child support to their children.

Research shows that adolescent fathers are involved with their children in the early stages of the child's development; however, as times goes on, the involvement decreases (Camp & Nakashima, 1984; Chase-Lansdale & Coley, 1999; Dallas, 2004). Larson, Hussey, Gilmore, and Gilchrist (1996) found that only 25% of teen fathers were involved with their children at 42 months of age compared to 60% at 1 month of age. In the Fagot et al. (1998) study, 40% of the teen fathers did not have contact with their child at age 2. As a result, children born to adolescent parents are often denied a close relationship with their fathers. Adolescent fathers are also more likely to engage in other problem behaviors, and are more likely to drop out of school (Bunting & McAuley, 2004; Elsters, Lamb, & Kimmerly, 1989). Adolescent fathers often lack adequate resources to care for their children (Brein & Willis, 1997; Dallas, 2004) and often earn considerably less income as adults (Brein & Willis, 1997). There is a dire need for increased interventions that are designed to assist teen fathers with their needs.

Majority of what is known about teen pregnancy, before, during, and after, focuses on females. However, researchers have provided possible explanations for the deficiency of literature pertaining to males. Girls are more likely to become teen parents than adolescent boys (Males & Chew, 1996) and will thus be included in the research more. In addition, it is

easier to determine maternity than paternity and there is greater access to adolescent females in hospitals, community centers, health departments, and through public assistance agencies (Xie, Cairns, & Cairns, 2001). The old saying rings true: “momma’s baby, daddy’s maybe!” In addition, because children reside with their mothers, teen fathers may have difficulty providing valid and reliable information about parenting and information regarding their children (Lawson & Rhode, 1995; Lerman, 1993).

### *1.1.3 Consequences to Children Born to Teen Parents*

The consequences of teen parenting can be detrimental to the children born to teen parents, who often suffer from low birth weight (Gilbert, 2007; Khalili, 2005), higher rates of infant mortality, and increased neonatal care (Khalili, 2005). Overall, studies show that infants born to teen mothers are less healthy than children born to nonteenage parents (Corcoran, 1998; Zimmerman, Tuttle, Kiefer, Parker, Caldwell, & Maron, 2001). Children born to teen parents are more prone to participate in delinquent and violent behaviors that result in more arrests than children not born to teen parents (Pogarsky, Lizotte, & Thornberry, 2003). Children born to teen parents are at an increased risk for social, behavioral, and intellectual problems. Exposure to these problems is the result of being raised by single mothers and the education failure of their mother (Bonell, 2004). Children born to teenage mothers are also more likely to live in poverty (Coley & Chase-Landale, 1998), drop out of school, become adolescent parents themselves, and become dependent on welfare (Dangal, 2006).

Comfort, Levine, and Pollack (2001) found that the 7,103 children of adolescent mothers in their study participated in higher rates of early sexual activity, aggressive behavior, and truancy from school. This study also revealed that children of teen mothers had lower math and reading scores and were more likely to have failed a grade. In addition, children born to adolescent parents are at an increased risk of abuse and neglect due to limited parenting

competence (Connelly & Strauss, 1992; Hardy, Welcher, & Standly, 1987; National Campaign to Prevent Teen Pregnancy, 2006).

#### *1.1.4 Consequences to Society*

Teen pregnancy is correlated with a variety of complex social issues. Teen pregnancy and childbearing contribute to crucial economic and social costs. Teenage childbearing is a social problem because it brings negative outcomes for the mother and her baby that society becomes responsible for (Bonell, 2004). Nationally, taxpayers pay at least \$9.1 billion a year for teen childbearing expenses (Hoffman, 2006). These expenses covered labor, healthcare, child welfare (foster care and child protective services), and other public assistance programs that serve pregnant and parenting teens. Between 1991 and 2004, Texas taxpayers paid \$15.1 billion for more than 745,000 teen births (Hoffman, 2006). In 2004 alone, Texas taxpayers spent a least \$1 billion on costs associated with teen childbearing. Fifty percent of the expenses were federal costs (\$553 million) and 45% (\$450 million) were state and local costs. These expenses covered the incarceration of sons born to teen mothers in the amount of \$161 million, \$83 million for child welfare, \$165 million for health care, and \$349 million on lost tax revenue (Hoffman, 2006).

#### 1.2 Efforts to Reduce Teen Pregnancy

Efforts to reduce teen pregnancy and the consequences associated with it have been a concern of U.S. presidents and state governors for many years. Under President George W Bush's administration, more than \$1.3 billion in government funds were appropriated to abstinence-only programs (Sexuality Information and Education Council of the United States, 2009). Texas receives more federal dollars appropriated for abstinence only education than any other state. In 2007 alone, \$18 million federal dollars were spent on abstinence instruction (Wiley & Wilson, 2009). However, there was still an increase in the teen pregnancy rate. To address the recent increase in teen pregnancy rates, President Obama has devoted \$178

million dollars for new evidence-based teen pregnancy prevention programs. Of that, \$75 million dollars will be allocated for the replication of evidence-based prevention programs that have been proven effective. Funds are being redirected from abstinence-only programs to replication of effective evidenced-based prevention programs (Department of Health and Human Services, 2009). This will be a \$28 million dollar increase from 2009.

### 1.3 Purpose of the Study

The facts and statistics presented demonstrate the severity of teen pregnancy. Efforts to reduce teenage pregnancy rates in the United States require a comprehensive understanding of the risk and protective factors associated with teen pregnancy. Further research needs to be conducted on adolescent males in order to obtain a more accurate depiction of teen pregnancy. The overall purpose of this study was to identify and further understand key risk and protective factors that contribute to teen fatherhood. This study also sought to fill the gap in teen pregnancy research, which has typically focused on adolescent females. This study is unique in that it focuses on variables that have received far less attention in the literature regarding teen pregnancy, such as tobacco use, sports participation, physical activity, and suicidal behaviors. Results of this study will provide pertinent information for implications for social work practice, policy, and research. Specifically, this dissertation will be helpful in the development of prevention programs for adolescent males. These implications will assist with efforts to combat against teen pregnancy. Chapter 2 presents an empirical and theoretical overview of the literature on factors that have been linked to teenage pregnancy.

## CHAPTER 2

### LITERATURE REVIEW

Teen pregnancy has long been recognized as a social problem. A number of complex factors are thought to influence why adolescents become teen parents. Researchers from a variety of disciplines have investigated the subject. This chapter presents a theoretical perspective that guides this dissertation and a review of the literature.

#### 2.1 Theoretical Review

The Risk and Resilience Perspective is a prominent perspective used to assess outcome behavior in children and adolescents. Therefore, it seems logical to apply this perspective as a guide in the current study to identify risk and protective factors associated with teen fatherhood. First a general overview is presented, followed by the application of this perspective to teen pregnancy.

##### *2.1.1 General Overview*

The Risk and Resilience Perspective has roots in public health. Historically, public health models were deficit focused, identifying the underlying risk and causes associated disease and other health problems. The purpose of identifying these factors was to provide programs and services to prevent the onset of disease and other health problems. However, this public health approach caught the attention of researchers and practitioners from other disciplines who felt that the approach could be adapted to prevent negative outcome behavior among children and adolescents (Hawkins, Catalano, & Miller, 1992; Jenson & Fraser, 2006). Prior to utilizing this perspective with other behaviors, researchers primarily used the approach to identify risk factors associated with substance use and delinquent behavior.

In addition to public health, the risk and resilience perspective embraces environmental assumptions similar to the ecological perspective. Jenson and Fraser (2006) argue that it is imperative to connect public health and ecological theory with an emphasis on risk and resilience. That is, the adolescent must be considered in the context of their environment when investigating risk and protective factors. Bronfenbrenner (1977) emphasizes the dynamic relationship between an individual and his or her environment, stating that the environment has a direct effect on development and behavior. Development is bidirectional, the adolescent is effected by their environment and in turn, the environment is influenced by the adolescent (Fraser, 2004; Lerner, 2006). For example, peers in the adolescent's environment can effect their decision to become sexually active; however, the adolescent can also effect their peers' decision to become sexually active.

The risk and resilience perspective is interdisciplinary, expanding across psychiatry, psychology, public health, education, social work, and criminal justice. Notable social workers, such as Mark Fraser and Jeffrey Jenson, have made tremendous contributions to this perspective. The risk and resilience perspective has been an avenue for researchers and practitioners to identify factors that are consistently associated with outcome behavior. An outcome behavior is defined as a problem behavior that is predicted by risk factors, or lessened or prevented by protective factors (Hawkins et al., 1992). This perspective has enabled researchers to be more knowledgeable of factors that influence negative outcome behavior among adolescents than ever before (Jenson & Fraser, 2006).

The risk and resilience perspective is distinguishes factors across three domains: the individual, the family, and the environment. A domain is a social context in which risk and protective factors exist (Hawkins et al., 1992). The individual domain consists of biological and psychosocial factors, and the environmental domain consists of school, neighborhood, and

community factors. Unlike the ecological perspective, the domains in risk and resilience perspective are not nested or hierarchical.

### *2.1.2 Risk Factors*

Risk is a well-known concept that spans across several disciplines, including social work. Risk factors are defined as characteristics or conditions of an individual, his or her family (low socioeconomic status), school, and community environment that place them at an increased likelihood of engaging in problem behaviors such as teen pregnancy (Hawkins, et al., 1992; Hawkins, Van Horn, & Arthur, 2004). It is important to note that the exposure of a risk factor does not guarantee the existence of a negative outcome behavior. However, exposure to multiple risk factors places adolescents in a vulnerable state, which increases their chances of engaging in negative outcome behaviors (Fraser & Richman, 1999; Fraser, Kirby, & Smokowski, 2004; Hawkins et al., 1992; Jenson & Fraser, 2006; Richman & Fraser, 2001; Rutter, 2001; Rutter, 2004).

Risk factors may have a direct or indirect effect on behavior. Some risk factors do not directly effect behavior, but have the ability to cause other risk factors to coexist; these factors are considered nonspecific risk factors (Fraser, Richman, & Galinsky, 1999; Fraser & Terizan, 2005; Greenberg, Domitrovich, & Bumbarger, 2000). An example of a nonspecific risk factor is low socioeconomic status. Low socioeconomic status can effect parenting and the environment where families reside. Low-income neighborhoods can expose adolescents to violence, drugs, and a host of other problem behaviors. Low socioeconomic status alone does not guarantee adolescent pregnancy, but has the potential to expose adolescents to risk behaviors that increase the risk. On the other hand, specific risk factors tremendously increase the risk of specific problem behaviors. For example, failure to use contraceptives is a direct risk for teen pregnancy and STD's (Rounds 2004; Frost & Darroch, 2008; Guttmacher Institute, 2008).

Failure to use contraceptives is specific risk that is directly linked to teen pregnancy regardless of socioeconomic status.

Researchers from diverse disciplines have conducted extensive research on risk factors associated with a host of negative outcome behaviors. The following is a compiled list of general risk factors associated with negative outcome behavior. Although the list is not exhaustive, these factors are interdisciplinary and are related to a variety of negative outcome behaviors.

**Individual Risk Factors:** Adolescents who have favorable attitudes towards antisocial behavior are also more likely to participate in risky behavior. Poor academic skills, such as failing grades and/or dropping out of school place adolescents at risk for a host of negative behavior outcomes because they are more likely to have behavior problems, skip school, and participate in a host of other negative outcome behaviors. Adolescents with emotional issues or concerns are less likely to use good judgment and more likely to choose negative behaviors to help them cope with their emotional status.

**Family Risk Factors:** the family has a great deal of influence on development and behavior. Family influence affects many aspects of a child's life. Therefore, when children and adolescents are exposed to child maltreatment, low socioeconomic status, high family conflict, and harsh parenting, they are at risk for negative outcome behaviors. Because behavior is learned, if there is a history of antisocial behavior, children and adolescents are at a greater risk of engaging in similar behavior and other negative behaviors.

**Environmental Risk Factors:** the environment provides opportunities for children and adolescents to thrive and learn. When adolescents are exposed to low neighborhood attachment, lack of positive youth development, poverty, high levels of crime and violence, poor peer relationships, inadequate teachers, high unemployment rates, they suffer and become at

risk for negative outcome behaviors (Arthur, Hawkins, Pollard, Catalano, & Baglioni, 2002; Corrigan, Loneck, Videka, and Brown, 2007; Fraser et al., 2004; Murraray, 2003; Rew, 2005).

### *2.1.3 Protective Factors*

Historically, a significant amount of research focused on risk factors. Researchers and practitioners were prone to concentrate on factors that place individuals at risk for developing disorders or problem behaviors, rather than focusing on factors that protect individuals from these behaviors and disorders. However, there has been a shift from a deficit model to a strength-based approach, focusing on what protects individuals from engaging in problem behaviors. Rutter (1979) and Werner and Smith (1982) recognized that even while experiencing adversity and risk, children were also displaying positive characteristics that protected them. These children were expressing resilience, the ability to adapt or prevail in the face of risk. For purposes of this dissertation, resilience was used as it relates to protective factors.

Fraser (2004) conceptually defines resilience as protective factors. One cannot experience resilience without the presence of protective factors. Protective factors enable an individual to be resilient in the face of risk (Masten, Best, & Garmezy, 1990; Rutter, 1987). A protective factor is defined as a characteristic or condition (e.g., protective parenting) that buffers individuals from the negative influence of risk factors (Hawkins, Catalano, & Miller, 1992; Hawkins, Van Horn, & Arthur, 2004). Fraser, Kirby, and Smokowski (2004) define protective factors as internal and external resources that protect against risk factors that are known to correlate with negative outcome behavior. Jenson and Fraser (2006) define protective factors as individual characteristics and environmental conditions that offset the effects of risk factors. In essence, protective factors reduce the odds of negative outcomes (Cwikel, 2006).

Protective factors have three main purposes; they reduce, interrupt, or prevent risk factors (Fraser & Terzian, 2005). Positive youth development can reduce the impact of risk

teen fatherhood by providing the adolescent with positive activities that decrease the amount of time they have to participate in risky sexual behavior. Sex or HIV/AIDS education can interrupt the risk of teen fatherhood by increasing awareness and promoting contraceptive use. In addition, protective factors can also prevent the onset of risk of teen fatherhood.

Similar to cumulative risks factors, cumulative protective factors significantly increase the chances that individuals will have positive behavior outcomes in spite of current risk factors (Fraser et al., 2004). This suggests that risk must be present. However, there are times when risk is not present and individuals do well. Promotive factors provide an avenue for positive behavior in the absence of risk (Fraser et al., 2004; Jenson & Terzian, 2005; Sameroff & Fiese, 2000). For example, an adolescent that lives in an affluent community, with attentive parents, and an adequate education system may not be exposed to risk. Thus, the factors in their environment promote positive behavior outcome. Protective factors protect in the presence of risk and promotive factors promote positive behavior in the absence of risk. Both concepts are important to the risk and resilience perspective.

Protective factors are influential in behavior outcome and must be identified when investigating adolescent outcome behavior. The following is a list of common protective factors. Again, this list is not exhaustive; but it is inclusive of several disciplines.

**Individual Protective Factors:** easy temperament (calm, flexible, ability to communicate their feelings), high self-esteem, moderate to high intelligence, strong academic skills, religiosity,

**Family Protective Factors:** positive parent-child attachment/relationship, parental education, parental monitoring,

**Environmental Protective Factors:** opportunities for growth, achievement, and employment, positive community attachment, consistent school-home communication, positive and supportive teachers (Arthur et al., 2002; Corrigan et al., 2007; Fraser et al., 2004; Murraray, 2003; Rew, 2005).

## 2.2 Application to Teen Pregnancy

As previously stated, the risk and resilience perspective was originally intended to predict and identify factors associated with disorders. Bearing children is normal and acceptable as long as it occurs within a certain development context. It becomes a social problem when it occurs outside of a developmental context that causes problems to the parents, their children, and society, such as during adolescence (Franklin, Corcoran, & Harris, 2004). Pregnancy during adolescence is generally followed by unwanted medical, social, economical, and educational consequences. It is important to study risk and protective factors that relate to teen pregnancy in order to prevent and decrease consequences associated with this social problem.

The risk and resilience perspective recognizes that there is more than one pathway leading to teen pregnancy and parenting. It is imperative to investigate the culmination of complex factors, both risk and protective, associated with teen pregnancy. Poverty is a prevalent risk factor associated with teen pregnancy. Nineteen percent of children under the age of 18 live below the poverty level (U.S. Census Bureau, 2009). Although poverty does not guarantee that an adolescent will become a teen parent, it does however, expose adolescent to other risk factors that intensify their risk (Fraser & Richman, 1999). In addition to being poor, if the adolescent also lives in a community where there are positive attitudes about teen parenting and there are no positive youth development programs, the adolescent is more likely to become a teen parent. Application of a risk and resilience perspective has the ability to reduce the prevalence of negative behavior outcomes because protective factors can be identified and promoted.

The risk and resilience perspective is a great lens to use to comprehensively investigate factors that influence teen pregnancy and parenting within multiple domains. In fact, several researchers have applied this perspective to teen pregnancy and parenting (Borkoswki et al.,

2007; East, Khoo, & Reyes, 2006; Franklin, Corcoran, & Harris, 2004; Lohman & Billings, 2008; Miller-Johnson, Winn, Coie, & Malone, 2004; Smith, 1992) and risky sexual behavior (Rounds, 2004). Using this perspective and a thorough review of literature, these researchers have identified several risk and protective factors associated with teen pregnancy. Although not all factors were evaluated in this dissertation, the researcher deemed it important to mention these factors as they shed light on the overall topic of this dissertation. A more detailed description of risk and protective factors are presented in the empirical review section of this chapter.

- **Family Risk factors:** single parent family, chaotic family structure, low socioeconomic status, permissive sexual attitudes, and physical abuse.
- **Environmental Risk Factors:** sexually active peers, lack of community support, peers who do not use contraceptives, permissive sexual norms, inadequate social welfare, health, and educational system
- **Individual Risk Factors:** hopeless attitude towards the future, substance use, lack of contraceptive knowledge, low academic achievement, low career orientation,
- **Family Protective Factors:** open family communication, two-parent family, high parental education, parental involvement
- **Environmental Protective Factors:** evidence-based pregnancy prevention programs, community support, adolescent health services and clinics,
- **Individual Protective Factors:** nonsubstance use, delaying sex until 18 or older, academic achievement, use of contraceptives, goal directed, and hopeful of the future.

### 2.3 Conclusion

The risk and resilience perspective draws from public health and the ecological perspective by recognizing the individual in the context of his or her environment. This perspective has enabled researchers and practitioners to gain knowledge on behavior outcome among children and adolescents. In this section, risk, promotive, and protective factors were

defined and applied to teen parenthood. In addition, the importance of investigating both risk and protective factors was emphasized. Several risk and protective factors of teen parenthood have been identified in the literature. The second part of this chapter focuses on a few of these risk and protective factors.

#### 2.4 Empirical Review

For inclusion in the literature review, studies had to be published in a peer-reviewed journal and empirically examine risk and/or protective factors for teen pregnancy among adolescents. Systematic searches of multidisciplinary databases were conducted. Academic Search Complete, the largest scholarly, multi-discipline full-text data base, was used to search for scholarly studies. Other databases included Education Research Information Center (ERIC), JSTOR, and PsycInfo. Search terms were chosen using conceptual approaches and keywords that were found in other studies. The following words were used to search for articles: “teen pregnancy”; “risk, teen pregnancy”; “risky sexual behavior”; “protective factors, teen pregnancy”; “risk factors teen parenting”; “negative”; “unintended”; “teenager”; “pregnant”; parenting”; “pregnancy”; “contraception”; “birth control”; “contraceptives”; “ambivalence”; “intentions”; “condom”; and “factors.” A combination of these terms and other synonyms were used to search for articles. Critical appraisals of abstracts were conducted to ensure that criteria were met prior to being selected. In addition, reference lists were reviewed for additional publications. A number of articles were read to determine value and potential contribution. In the end, several articles published between 1996 and 2009 were chosen for the current study. Because there is a shortage of male-only samples pertaining to teen pregnancy, a few male-only articles were selected that were more than 10 years old. Although this literature review covers several risks and protective factors, the list is not exhaustive. Not all factors presented are under investigation in the current study. An extensive literature review is presented to provide a

comprehensive overview of teen pregnancy. See Figure 2.1 for the conceptual model of the proposed risk and protective factors in the current study.

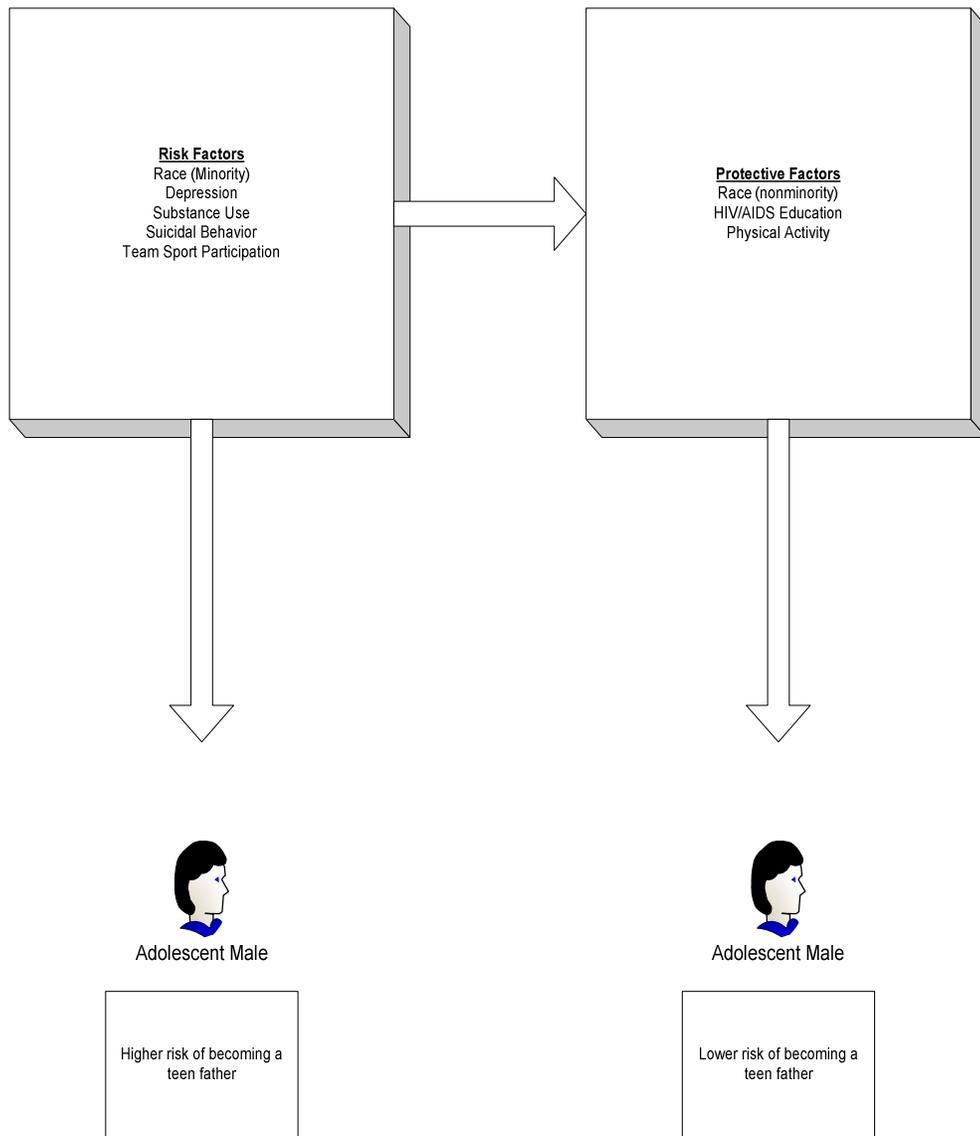


Figure 2.1 Conceptual Model of the Proposed Risk and Protective Factors in the Current Study.

This section summarizes the results from the critical analysis of factors associated with teen pregnancy. First, literature pertaining to critical risk factors predictive of teen pregnancy are presented followed by literature specific to protective factors. Factors are presented under three domains: individual, family, and environmental factors.

#### *2.4.1 Individual Risk Factors*

##### *2.4.1.1 Low academic achievement.*

A prominent risk factor is poor academic achievement. Students who have poor academic achievement are at risk for teenage pregnancy. Poor math and reading scores are predictors of teen pregnancy (Fagot et al., 1998; Pears et al., 2005; Thornberry et al., 1997). Both Xie et al. and Fagot et al. found poor academic achievement to be the strongest predictor of teen fatherhood among the males in their study. Berry et al. (2000) found adolescent female high school dropouts were more likely to become mothers than adolescent females who completed high school. Young et al. (2004) found adolescent girls with negative attitudes and expectations about finishing high school in the eighth grade to become teen mothers. These results are consistent with other studies that found low academic achievement as a risk factor of teen pregnancy (Silver & Bauman, 2006; Hansen, Stroh, & Whitaker, 1978).

##### *2.4.1.2 Low future expectations/aspirations*

Adolescents that do not have clear goals for themselves or those who do not have future career or academic goals are more likely to become teen parents (Gohel et al., 1997; Young et al., 2004). Gohel et al. found that teen fathers were more than two times as likely to report that they did not have a 5-year plan for themselves prior to becoming fathers compared to males who were not teen fathers. Young et al. found that when teenagers have goals and future aspirations, they are more likely to realize that having a baby could interfere with reaching their personal goals. On the hand, when teenagers do not have goals, anything goes and having a baby does not affect future plans because they did not have any. In fact, having a baby

may give them a reason to set future goals and aspirations. In their longitudinal study, Young et al. investigated locus of control among eighth-grade girls. As eighth-graders, those who became mothers before age 20 were more likely to report higher levels of external locus of control. In addition, they were more likely to report that they did not think they would graduate from high school. However, there was no difference between the two groups on future occupation aspirations. Interestingly, there was a difference between the two groups in regards to the education that it would take to achieve desired occupations. Girls who became teenage mothers did not make the connection between education and a high-status career.

#### 2.4.1.3 Race

Being a minority, has been shown to place adolescents at risk for a number of problem outcome behaviors including teen pregnancy (Berry et al. 2000; Lohman & Billings., 2008; Thornberry et al., 1997; Xie et al., 2001). Berry et al. found that being Black increased the odds of pregnancy by 3.29 times compared to any other race. Moreover, Thornberry et al. found Hispanic males to be at higher risks for teen fatherhood than Black males were. Being a Hispanic male increased the probability of teen fatherhood by .52, and being a Black male increased the probability by .46. Consistent with other results, Xie et al. also found Black females to be more likely to become parents than White females. While 26% of the Black females in their study became mothers, only 16% of the White females did. However, this was not the case with Black adolescent males. There was not a statistically significant difference between Black and White males. Although Black males had higher rates of teen fatherhood than White males, it was not statistically significant.

#### 2.4.1.4 Substance use

One in four adolescents reported that they used drugs at their last sexual encounter (Kaiser Family Foundation, 2008). Several studies investigated substance use as a risk factor for teen pregnancy (Averett et al., 2004; Berry et al., 2000; Broman, 2007; East & Rubin, 1999;

Fagot et al, 1998; Miller-Johnson, et al., 2004; Pears et al., 2005; Rashad & Kaestner, 2004; Rees et al., 2001; Thornberry et al., 1997, Zapata et al., 2008). Fagot et al. (1998) compared teen fathers and nonteen fathers and found that teen fathers used substances at higher rates than those that were not teen fathers. Miller-Johnson et al. (2004) predicted teen parenthood based on sixth and eighth grade alcohol use among the males in their study. Boys that used substances in the sixth and eighth grade were more likely to become teen fathers. Pears et al. (2005) found substance use to increase the probability of becoming a teen father by 40%. Substance use was also found to decrease contraceptive use and increase the number of sexual partners. Thornberry et al. (1997) found substance use to increase the probability of teen fatherhood by .43. Similarly, Bachanas et al. (2002) found substance use to be the greatest predictor of teen pregnancy among a sample of Black adolescent females. Although the previous research demonstrates that substance use as a predictor of teen pregnancy among Black adolescents, Berry et al. (2000) found marijuana use to be associated with teen parenthood only for White teens in their study. Substance use was not associated with teen pregnancy among Hispanic or American Indian teens. One would assume that substance use would put teenagers of all races at risk for teen parenting due to the fact that substance use generally impairs judgment.

Zapata et al. (2008) investigated the relationship between methamphetamine use and risky sexual behavior among adolescents and found 70.4% of methamphetamine users to report sexual activity in the past 3 months compared to 31.4% of nonusers. In addition, 34.9% of methamphetamine users reported being sexually active with at least two people in the past 3 months compared to 7.3% of nonmethamphetamine users. In fact, adolescents who used methamphetamines were 3.1 times more likely to have had at least two sexual partners than adolescents who drank alcohol, and 3 times more likely than adolescents who used marijuana.

According to Zapata, methamphetamine users are more likely to have sexual intercourse, to have more sexual partners, and to have been pregnant or gotten someone pregnant.

Everyday approximately 4000 adolescents between the ages of 12 and 17 try their first cigarette (Substance Abuse and Mental Health Services, 2006). Tobacco use has been found to lead to other risky behaviors and the use of more serious drugs (American Academy of Child and Adolescent Psychiatry, 1999). Although tobacco use is not a prominent risk factor associated with teen pregnancy, it is a risk factor. However, Rashad and Kaestner (2004) found cigarette smoking to increase the likelihood sexual intercourse and sexual intercourse without contraceptives. Tobacco use can be viewed as an indirect risk of teen pregnancy. Tobacco is an addictive substance that may influence adolescents to experiment with more severe addicting substances.

#### 2.4.1.5 Inconsistent Contraceptive Use

Researchers have investigated explanations for inconsistent contraceptive use among adolescents (Afable-Munsuz et al., 2006; Crosby et al., 2002; Davies et al., 2003; Frost & Darroch, 2008; Guttmacher Institute, 2008). Davies et al. reported that girls in their study who had a desire for pregnancy were two times more likely to report a barrier to contraceptive use. Unfortunately, these authors did not elaborate on what the barriers to contraceptive use were. Did these girls not have access to contraceptives or did their partner insist on not using them? In a 3-month period, 61% of adolescent condom users in the Frost and Darroch (2008) study reported that they did not use a condom every time, or that they used a condom after sexual intercourse had already started. Twenty-five percent of adolescents in the same study reported that they did not have a condom available, and another 12% reported that they or their partner did not want to use a condom, things got out of hand, or they thought they could not get pregnant at the time. Regardless of the reason, inconsistent contraceptive use is a major risk not only for teen pregnancy, but also for sexually transmitted diseases and HIV/AIDS.

Guttmacher Institute (2008) reported that 21% of males failed to use condoms because their partners were on birth control. The latter results demonstrate a possible lack of knowledge. Birth control does not protect against HIV/AIDS and other STDs. In order to protect against disease, condoms must be worn, if the partner states she is on birth control. Prevention programs must continue to address these issues.

It is not surprising that infrequent contraceptive use is a risk for teen pregnancy. Pears et al. (2005) reported that males who infrequently used condoms increased the odds of fatherhood by 30%. Environmental conditions and characteristics influence contraception use. Cubbin et al. (2005) found contraceptive use to be lower for adolescents who lived in neighborhoods with fewer resources such as, family planning clinics, than for adolescents in more affluent neighborhoods with access to more resources. Adolescents in disadvantaged neighborhoods in were also more sexually experienced than adolescents in affluent neighborhoods. Their sexual behavior and the lack of resources placed these adolescents at an even greater risk of teen pregnancy. Another variable that has been found to influence contraceptive use is age. The Guttmacher Institute (2008) found that 76% of ninth-grade males reported that they used condoms at their last sexual encounter compared to 60% of twelfth-graders. That is a 16% decrease in condom use in a 4-year time span.

#### 2.4.1.6 Early Age of Sexual Activity

Having sexual intercourse at an early age places adolescents at risk for becoming parents at much younger age. The average age that boys engage in sexual intercourse is 16.9 years of age (Kaiser Family Foundation, 2008). In their study of adolescent boys, Lohman and Billings (2008) found 21% of White males, 26% of Hispanic males, and 35% of Black males to have their first sexual intercourse encounter by age 15. Lohman and Billings study demonstrate that a higher percentage of Black males had sexual intercourse at a young age. Thornberry et

al. (1997) reported that males who later became fathers were more likely to report younger ages of first intercourse than males who did not become fathers.

#### 2.4.1.7 Depression

During adolescence, depression becomes more prevalent and depression rates increase (Chaplin, Gillham, & Seligman, 2009; University of Michigan, 2007). In fact, 20% of adolescents will experience depression and 5% of adolescents suffer from a major depressive disorder (Teen Depression, 2005). Several researchers have investigated depression as a risk factor for teen pregnancy (Brooks, Harris, Thrall, & Woods, 2002; Burns et al. 2004; Crosby et al. 2003; Dawson, Shih, Moor, & Shrier, 2008; Davies et al. 2003; Mollborn & Morningstar, 2009; Thornberry et al., 1997). Literature regarding depression has been inconsistent. However, research has shown depression to be a statistically significant risk factor (Brooks et al., 2002; Burns et al. 2004; Dawson et al., 2008; Mollborn & Morningstar, 2009; Thornberry et al., 1997). Brooks et al. found unprotected sex among adolescent males and females to be associated with higher rates of depression. Similar to the previous results, Dawson et al. found 12% of depressed males and females to report that they had sex in the past week to manage their mood. In their longitudinal study, Mollborn and Morningstar (2009) found teenage mothers to suffer from higher rates of psychological distress than their peers prior to becoming teen mothers. Burns et al. and Thornberry et al. found depression to be a risk factor; among a diverse sample of adolescent males.

There have been inconsistent findings regarding depression among ethnic groups. Mollborn and Morningstar (2009) found psychologically distressed minority adolescents to have increased risks of becoming teen parents than their non-white distressed peers. However, Brooks et al. did not find depression to be a risk factor among Black and Hispanic males and females. Both Crosby et al. (2003) and Davies et al. (2003) found depression to be unrelated to

teen parenthood among Black females. These inconsistent results in the literature demonstrate that further research needs to be conducted in this area.

The previous research presented demonstrates that depression has a direct link to risky sexual behaviors that increase teen pregnancy risk. However, depression also predisposes adolescents to other risky behaviors that place adolescents at risk for teen pregnancy and other negative outcome behaviors. Depressed adolescents are also more likely to use substances. According to *Teen Depression* (2005), 30% of adolescents that have depression develop a substance abuse problem. In their four-year longitudinal study, Sihvola et al. (2008) found depressed boys and girls reported higher frequency of drug use, intoxication, and smoking. In fact, 39% of adolescents that reported depression at age 14 reported daily smoking at age 17.5 compared to 26% of their nondepressed peers. At three-year follow-up, 15.3% of depressed males and 8% of depressed females reported frequent alcohol use compared to 8.1% of nondepressed males and 6.4% of nondepressed females. Similar to these findings, Fergusson and Woodward (2002) found depressed adolescent males to report more frequent alcohol use when compared to nondepressed males and depressed adolescent females. Brooks et al. and Engels, Hale, Noom, and De Vries (2005) found higher self-reports of smoking among depressed adolescents. In the Brooks et al. study, a 1.10 increase in the odds of depression was reported for female tobacco users. Therefore, in the process of self-medicating, adolescents are ultimately placing themselves at an increased risk for teen pregnancy.

#### 2.4.1.8 Suicidal Behavior

The Centers for Disease Control and Prevention (2007a) reported that the suicide rate for individuals between the ages of 10 and 24 increased by 8% in 2003. In addition, depression increases and is more prevalent during adolescence, which exposes adolescents to risk of suicidal behaviors. Suicidal behavior is not an isolated risk behavior and is usually associated with other risk behaviors. Compared to other prominent risk factors, suicidal behavior is not a

well documented factor associated with risk of teen pregnancy. Far less attention has been devoted to suicidal behavior in this field of research. However, research has shown that females with a high risk of becoming a teen parent contemplated suicide more often than other sexually active adolescent females (Luster & Small, 1994). In addition, research has demonstrated a strong association between substance use and suicidal behavior (Goldsmith, Pellmar, Kleinman, & Bunney, 2002). Some suicidal adolescents use substances as a source of self-medication. King et al. (2001) found suicidal behavior to be associated with unprotected sex, which is a prominent risk factor for teen pregnancy.

#### *2.4.2 Family Risk Factors*

##### *2.4.2.1 Low Parental Education*

Teens who have parents with less education are also more likely to become teen parents (Afable-Munsuz et al., 2006; Berry et al., 2000; Lohman & Billings, 2008; Thornberry et al., 1997; Young et al., 2004). Half of the mothers of never pregnant teens in the Afable-Munsuz et al. study had at least one year of college education compared to one fifth of mothers of pregnant and parenting teens. Berry et al. found mothers of never-pregnant teens had more than 11 years of education while mothers of pregnant and parenting teens reported less than 10 years of education. Young et al. (2004) found the parent's highest level of education to be a significant predictor of teen pregnancy. Mirroring these results, Thornberry et al. found that each additional year of parental education decreased the risk of teen fatherhood by .03.

##### *2.4.2.2 Low Socioeconomic Status*

In 2009, 62% of Black children and 63% of Hispanic children lived in low-income families, income below twice the federal poverty level (Chau, Thampi, & Wight, 2010). Teens that are poor are more likely to become teen parents than those who grow up in a higher socioeconomic status (Berry et al., 2000; East et al., 2006; Fagot et al., 1998; Lohman & Billings, 2008; Pears et al., 2005; Thornberry et al., 1997; Xie et al., 2001; Young et al., 2004).

Berry et al. investigated the effects of poverty on teen parenting, and found poverty at age 14 predicted a teen pregnancy for 50% of the girls in the study. Not only did Xie et al. find low socioeconomic status to be a predictor of teen pregnancy, but low socioeconomic status among peers was also a risk factor for teen pregnancy for both males and females. Young et al. found low socioeconomic status among eighth grade students to predict motherhood prior to graduating from high school. These results are consistent with prior research results on low socioeconomic status as a risk factor of teen pregnancy (Desmond, 1994; Gest, Mahoney, & Cairns, 1999; Hardy, Astone, Brooks-Gunn, Shapiro, & Miller, 1998).

#### 2.4.2.3 Low Parental Monitoring and Parenting Style

Adolescents with parents who fail to monitor them are at a greater risk for teen parenting than adolescents with parental monitoring (East et al., 2006; Pears et al., 2005; Young et al. 2004). East et al. found that 18% of the girls who reported low parental monitoring became teen parents. In their longitudinal study, Young et al. compared eighth grade girls who later became mothers with those who did not. The girls who became mothers before they graduated from high school were more likely to report that their parents used an authoritarian parenting style and those who did not become pregnant reported that their parents were authoritative. Authoritarian parenting style places a high value on obedience and child conformity, and adolescents may not understand why their parents do not want them to participate in certain activities and behaviors. Parents using an authoritarian style generally do not discuss the reasons with their teen; they just expect them to obey. On the other hand, an authoritative parenting style involves more discussion and explanation. In addition, parents explain and provide opportunities for autonomy; within boundaries and limits. Adolescents raised with an authoritative parenting style are generally more balanced psychosocially than adolescents raised with an authoritarian parenting style (Chase-Lansdale, Brooks-Gunn, & Zamsky, 1994; Pittman & Chase-Lansdale, 2001; Rueter & Conger, 1995; Steinberg, 2005).

Authoritative parents are more likely to discuss with their teen the consequences of sexual intercourse and the proper measures to take in order to prevent an unwanted pregnancy.

#### 2.4.2.4 Mother's Age at First Pregnancy

Adolescents who have parents who were teen parents are at a greater risk of becoming a teen parent themselves (East et al. 2006; Gohel et al., 1997; Pears et al., 2005; Thornberry et al., 1997). In their study of Black males, Gohel et al. found that 74% of those who were teen fathers reported that their mother was a teen parent. Although Pears et al. found having a mother that was a teen parent to be a risk factor; they also found that for every year of increase in the mother's age of her first birth decreased the risk of teenage pregnancy by 8%. Becoming a parent at a young age may be considered normal behavior in families with generations of teen pregnancy and parenting. In fact, it may even be a rite of passage for some adolescents. Teenagers may also feel that they have nothing to lose and that their parents were young parents, so it is acceptable. These results are consistent with some studies (Hardy et al., 1998; Chase-Landale et al, 1994).

#### 2.4.2.5 Low Family Social Support

Low levels of family social support have also been investigated as a risk factor of teen pregnancy (Davies et al., 2003; East & Rubin, 1999; Steven-Simon et al., 1996; Thornberry et al., 1997). Davies and colleagues found that girls who reported a desire for teen pregnancy were also more likely to report low family support. They also explain that these girls may desire to become parents in hopes of gaining a better relationship with their family. East and Rubin and Stevens-Simon et al. found that girls who were ambivalent about teen pregnancy reported low levels of family support compared to girls with negative attitudes towards teen pregnancy. Although males in Thornberry et al.'s study who became fathers reported lower levels of social support, it was not statistically significant.

#### 2.4.2.6 Being Raised by a Single Parent

In 2007, the percentage of children in poverty headed by a female was 47% for Hispanics and 44% for Blacks (National Center for Education Statistics, 2010). Being raised by a single parent increases the risk of becoming a teen parent (Bonell, 2004). Consequently, adolescents who became teen parents were more likely to report that they resided in a single-parent home, usually female-headed (Davies et al., 2003; East et al., 2006). These findings are consistent with prior studies that found single parenting to be a risk factor to teen pregnancy (Fiscella, Kitzman, Cole, Sidora, & Olds, 1998; Hogan & Kitagawa, 1985; Kahn & Anderson, 1992). However, few studies selected for this literature review investigated single parenting as a direct factor, leading this researcher to believe that the other variables addressed in the analysis are more critical. However, single parenting exposes teenagers to other risks, such as poverty and low parental monitoring. These risks coupled with single parenting increase the risk of teen parenting.

#### 2.4.3 *Environmental Risk Factors*

##### 2.4.3.1 Deviant Peer Association

Association with peers who commit deviant behavior increases the risk for teen pregnancy (Fagot et al., 1998; Miller-Johnson et al., 2004; Pears et al., 2005), but again, all three studies investigated male-only samples. All found that those who became fathers reported higher rates of association with peers who committed deviant behaviors. In addition, these boys were also more aggressive and committed deviant behaviors themselves. These findings make sense in that children and adolescents usually choose peers based on a shared commonalities.

##### 2.4.3.2 Sexually Active Peers

In addition, research has shown that peers also have similar sexual behaviors (East et al., 2006; Kirby, 2002; La Greca, Prinstein, & Fetter, 2001; Maxwell, 2002; Silver & Bauman,

2006). Adolescents who have sexually active peers are more likely to be sexually active themselves, thus increasing their chances of teen pregnancy. In their study, Silver and Bauman (2006) found that inexperienced teens in their study reported that their friends were virgins at higher rates than teens who were sexually experienced. These results are consistent with previous studies on peer influence (Cvetkovich & Grote, 1980; Hofferth & Hayes, 1987).

#### 2.4.3.2 Neighborhood Characteristics

Children that grow up in communities and neighborhoods that have fewer resources and high crime rates are also at risk for teen pregnancy (Berry et al., 2000; Lohman & Billings, 2008; Thornberry et al., 1997). Lohman and Billings found boys who lived in neighborhoods with high crime rates and other problems engaged in risky sexual activity and other deviant behaviors. They explain that poverty-stricken neighborhoods expose adolescents other risks, such as drugs, gangs, and violence. The more risk factors adolescents are exposed to, the greater the risk of engaging in early risky sexual behavior that has the potential to lead to teen pregnancy and parenting. Berry et al. found that adolescents who became fathers before age 20 were more likely to report that they lived in impoverished rural neighborhoods at age 14. These results are consistent with Khalili (2005) who found that neighborhoods with high populations of minorities were impoverished, and had higher rates of teen pregnancy, less home ownership, higher rates of infant mortality, and higher unemployment rates.

Improvised communities increase the likelihood of adolescent exposure and experimentation of risky sexual behaviors and other risk behaviors (Hale, 2007). Upchurch, Aneshensel, Mudgal, and McNealy (2001) found that Hispanic males that lived in rundown communities with social disorder to report higher percentage of sexual intercourse. Similar to these results, Upchurch et al., (1999) found Black and Hispanic adolescents who lived in underclass neighborhoods and Hispanic adolescents who lived in working class neighborhoods to report younger ages of first sexual intercourse.

Anderson (1999) investigated codes and mentalities of young Black males in an urban community and concluded that young Black males use their masculinity to gain status and power. Young Black males are denied power and status in society through unemployment, discrimination, and unfair laws. As a result, they use their masculinity as a tool to make themselves feel powerful. This power enables them to stand strong in front of peers, who view them as “the man”. Adolescent males that grow up in communities with fewer opportunities may view sexual intercourse as way to feel like a man in a society where they are considered worthless and invaluable.

#### 2.4.3.3 Team Sport Participation

Playing sports is an American tradition and has been used as a tool to turn boys into men (Messner, 2009; Smith, 2010). Most boys are just expected to play sports and are exposed to organized sports at young ages. Messner (2009) interviewed several retired professional athletes and when asked how they started playing sports, majority of them reported that they were handed a ball at young age and were just expected to play. During this interview, retired athletes also reported that playing sports also showed that they were men. This study sets up the context of sports and the prominent role it plays in America.

Far less attention has been devoted to sports participation and adolescent males' sexual behaviors. The literature that does exist for males is inconsistent and dated. Some study results reveal no statistically relationship between sports participation and risky sexual behavior among adolescent males (Miller et al., 1998; Page, Hammermeiser, Scanlan, & Gilbert, 1998; Sabo et al., 1999). Adolescent male athletes were no more likely to be involved in a pregnancy (Page et al., 1998; Sabo et al., 1999), to contract a sexually transmitted infection (Page et al.), or higher frequency of sexual intercourse (Miller et al., 1998; Sabo et al.) than adolescent males that did play sports.

Contrary to the previous findings, research shows that adolescent male athletes are more likely to participate in risky sexual behavior than adolescent female athletes are (Miller et al., 2002; Miller et al., 2005; Miller et al., 1999; Pate, Trost, Levin, & Dowda, 2000). Research has also demonstrated racial differences. In the Miller et al. (2005) study, black male athletes that identified themselves as jocks engaged in sexual activity at an earlier age, had more sexual partners, and engaged in sex more frequently. Interestingly, White males that identified themselves as jocks participated in dating. Pate et al. (2000) also found Black athletes to report more sexual intercourse partners. These results demonstrate differences in gender and race. Although Hispanic males were sampled in the Miller et al. (2002) study and the Pate et al. (2000) study, no significant association was found between sports participation and risky sexual behavior. In fact, the literature is weak in the area pertaining to Hispanic males. Hispanics are often time excluded from the sample.

Several explanations have been provided for racial differences in sports participation and risky sexual behavior. One explanation is that minority males may view sports as an avenue to for financial gain (Smith, 2009). Some minority males are socialized to become athletes, especially in communities lacking positive youth development. Playing sports may be their only option. When surveyed, 70% of Americans reported that they felt that Black and other minority males had the greatest opportunities for success in professional sports than in any other field (Coakley, 1990). Society has agreed that the institution of sports is “the place” for minority males. For it is in the institution of sports that minority males are honored, well respected, and put on a pedestal for the world to admire. Disadvantaged minority youth may feel that playing professional sports as the only means to gain status and acceptance from larger society.

Another possible explanation of racial differences in team sport influence is the media. MTV Cribs is a show where athletes showcase their elaborate houses and fancy cars. In

addition, the media reports athletes' immoral behavior and fans continue to support and praise them. This sends the message that immoral behavior is accepted as long as the athlete continues to perform well.

A combination of the subculture norms and expectations associated with sports, an idealized potential for financial gain, and the view that having a baby will not jeopardize future goals are plausible and empirical explanations for racial differences in team sport participation and its influence on sexual behaviors.

#### *2.4.4 Individual Protective Factors*

##### *2.4.4.1 Academic Achievement Skills and Expectations*

Low academic achievement was found to be a risk factor for teen pregnancy, so it seems fitting that high levels of academic achievement would protect adolescents from teen pregnancy. Research demonstrates a link between academic achievement as a protective factor from teen pregnancy (Lohman & Billings, 2008; Pears et al., 2005; Thornberry et al., 2000; Young et al., 2004). Lohman & Billings found that as academic achievement increased, the probability of engaging in early sexual behavior decreased among females in their sample, but not for adolescent males. Pears et al. found high reading and math scores among adolescent males decreased the odds of becoming a teen father by 33.4%. Thornberry et al. found high reading scores to reduce the risk of teenage fatherhood among their sample of male adolescents. In their longitudinal study of eighth graders, Young et al. found girls that did not become mothers possessed more confidence and assurance about graduating from high school. Girls who became teen mothers were less likely to have a positive attitude towards graduating from high school. In addition, Thornberry et al. found males whose parents had expressed that they expected them to attend college were less likely to become teen fathers. Adolescents that have A's and B's on their report card and positive attitudes towards school were less likely to become teen parents (East et al., 2006; Fergusson & Woodward, 2000;

Lohman & Billibgs, 2008). Parents and educators must provide adequate resources that will encourage adolescents to have an optimistic view of their education.

#### 2.4.4.2 Physical activity

Less research has been conducted on the impact of physical activity and sexual behaviors. Similar to depression, the lack of physical activity places adolescents at risk for participating in other risk behaviors that are correlated with teen pregnancy and parenting. According to Pate, Heath, Dowda, and Trost (1996) low physical activity was associated with cigarette smoking and marijuana use. Marijuana use has been found to place adolescents at risk for teen pregnancy.

Kulig, Brener, and McManus (2003) investigated the effect of sports participation and physical activity and found that the impact of these variables on risky sexual behavior varies according to gender and race. Males that were physically active and participated in a team sports were less likely to use drugs. However, they were no more likely to participate in risky sexual behavior than their peers who did not participate in a team sport or physical activity. Physical activity and team sport participation provided the greatest protection for adolescent females. These females reported less pregnancies, had a lower frequency of sex, less sexual partners, and higher reports of virginity. They were also less likely to use cigarettes. However, Miller et al. (2002) found both exercise and team sport participation to increase the odds of sexual risk among adolescent males.

#### 2.4.4.3 Religiosity

Religious affiliation has been found to protect adolescents from participating in risky sexual behaviors (Zaleski & Schiaffino, 2000). Specifically, engaging in religious activities, attending church, religious meditation, and having a personal devotion to a higher being have been found to buffer adolescents from teen pregnancy (McCree, Wingood, DiClemente, Davies, & Harrington, 2003; Miller & Gur, 2002). McCree et al. (2003) found adolescent females with

strong religious beliefs were 2.1 times more likely to refuse unprotected sex and 1.5 times more likely to engage in first sexual intercourse at a later age than females who did not report strong religious beliefs. Similar to these findings, Miller and Gur (2002) found adolescents girls who reported high levels of religiousness were found to have fewer sexual partners, increased insight on the negative consequences of risky sexual behavior, and protected sexual activity. It is important to note that majority of these studies were female only studies.

#### *2.4.5 Family Protective Factors*

##### *2.4.5.1 Parenting Style, Monitoring, and Expectations*

While low parental monitoring and an authoritarian parenting style marked by punitive punishment and an emphasis on obedience without discussion have been found to increase the risk of teen pregnancy, an authoritative parenting style and parental monitoring has been found to protect against teen pregnancy (East et al., 2006; Lohman & Billings, 2008, Thornberry et al., 2000). East et al. found parental monitoring to protect against pregnancy for adolescents who had peers who had multiple risky behaviors. Involved parents that expressed clear expectations and consequences were more likely to protect their daughters from teen pregnancy and involvement in delinquent behavior. In line with these findings, Lohman and Billings (2008) found risky sexual behavior to decrease for males with parents that were involved and monitored their activities.

#### *2.4.6 Environmental Protective Factors*

##### *2.4.6.1 HIV/AIDS Education*

More than 500,000 people have died from AIDS from the beginning of the epidemic through 2007 (Centers for Disease Control and Prevention, 2008). An estimated 1.1 million people were living with HIV at the end of 2006 (Centers for Disease Control and Prevention, 2010a). In 2007, 42,655 new cases of HIV were diagnosed. Of those new cases, 4% were between the ages of 13 and 19 (Centers for Disease Control and Prevention, 2008). Providing

comprehensive education to adults and adolescents is one way to decrease the prevalence, incidence, transmissions, and deaths associated with HIV/AIDS.

Research shows that minority males are disproportionately effected by HIV/AIDS. In 2007, Black teens accounted for 69% of AIDS cases among adolescents between the ages of 13 and 19. Hispanic teens accounted for 19% of AIDS cases in that same year (Centers for Disease Control and Prevention, 2009). Furthermore, HIV is the fourth leading cause of death among Black males between the ages of 25 and 44 (Centers for Disease Control and Prevention, 2009). These statistics are alarming and devastating. It is paramount that prevention programs address these issues among minority adolescent males.

HIV/AIDS education is generally discussed with sex education. The purpose of HIV/AIDS education is to deter adolescents from unprotected sex that leads to HIV/AIDS, STD's, and teen pregnancy. There continues to be a debate regarding whether, when, the form of education, and the impact of sex education. Critics of /HIV/AIDS education argue that these programs encourage sexual activity among adolescents, thus increasing the incidence of HIV/AIDS and teen pregnancy. Proponents of HIV/AIDS education view it as a necessary tool to prevent and decrease the incidence of HIV/AIDS and teen pregnancy. There is a current shift from focus of abstinence only programs to evidenced-based comprehensive sex education programs.

There is inconsistency in the literature regarding the impact of HIV/AIDS education on sexual behaviors among adolescents. In their study, Tremblay and Ling (2005) found a gender difference regarding the impact on sex education. After completing a sex education program, adolescent females had an increase in protected sex. However, this was not the case for adolescent males. Sex education did not have an effect on their sexual choices pertaining to sexual intercourse and condom use for males. In addition to gender differences, research shows an age difference regarding the impact of HIV/AIDS education. HIV/AIDS education

programs have less of an impact on older adolescents and adolescents with older siblings (Oettinger, 1999; Tremblay & Ling, 2005). A possible explanation for these findings could be that these adolescents have additional sources of education that reinforces or counters previous information. In addition, Tremblay and Lings found HIV/AIDS education increased abstinence among younger adolescents and condom use for older adolescents. Results demonstrate that as adolescents get older they participate in higher rates of sexual intercourse.

Sabia (2006) found that HIV/AIDS education did not have a positive impact on protected sex at one-year follow-up among 4,621 eighth, ninth, and tenth graders. A 1 to 3% increase in pregnancy was reported at follow-up. Follow-up results revealed racial differences in regards to program impact on sexual intercourse. Nonwhites, 27.6%, were more likely to report having sex at least once, compared to 14.4% of whites. Contrary to these results, Zimmerman et al. (2008) investigated the effects of a modified HIV/AIDS education course and found that the program had a stronger impact for minority students. Overall, students in the modified version of the course were less likely to have intercourse in the ninth grade and less likely to use alcohol during intercourse. However, condom use declined slightly for all groups by the end of ninth grade. In addition, the statistically significant difference in HIV/AIDS knowledge between the groups disappeared by the end of 10<sup>th</sup> grade. These results show that as time goes on, the education has less of an impact. In addition, these results reveal that the impact of HIV/AIDS education programs greatly depend on the age, race, and sex of the individual.

Kirby, Laris, and Roller (2007) reviewed 83 studies that implemented HIV education programs that measured program impact on at least one of the following behaviors: initiation of sex, frequency of sex, number of sexual partners, condom use, contraceptive use in general, and sexual risk-taking behaviors. The education programs had significant impacts on sexual behaviors; 42% (22 studies) delayed intercourse for at least 6 months after the program, 29% reduced frequency of sex, 35% decreased sexual partners, 48% increased condom use, 6%

increased general contraceptive use, and half of the 28 studies that measured sexual risk-taking significantly reduced these behaviors. Contrary to the previous studies presented, this study demonstrates positive a program impact on sexual behaviors.

Although the results are inconsistent, HIV/AIDS education is viewed as a protective factor in this dissertation. There has been a recent shift to evidenced-based educational programs. It will be interesting to see if this shift in education presents more favorable results.

#### 2.4.6.2 Sports Participations

Physical activity, sports, and exercise have long-term health benefits for adults. These activities prevent and decrease the effects of heart disease, diabetes, obesity, certain cancers, and other chronic health diseases (Centers for Disease Control and Prevention, 2010b). The same principals have been applied to adolescents. The institution of sports is a social network with interaction between peers and adults who provide supervision and mentorship. In addition, time spent in sports is time away from risky behavior. Thus, team sport participation does provide protection. However, research has shown that the effect of sports participation on sexual behavior differ by gender. Adolescent female athletes are more likely to have protected sex, fewer sexual partners, and significantly fewer incidents of sexual intercourse under the influence of drugs and alcohol (Eitle & Eitle, 2002; Lehman & Koerner, 2004; Miller, Barnes, Melnick, Sabo, & Farrell, 2002; Miller, Farrell, Barnes, Melnick, & Sabo, 2005; Miller, Sabo, Farrell, Barnes, & Melnick, 1998; Sabo, Miller, Farrell, Melnick, & Barnes, 1999). Far more research has been conducted with adolescent females in this area of research.

In addition, sports participation also protects adolescents from other risk behaviors that place adolescents at risk for teen pregnancy. When adolescents do not participate or decrease their sports participation, they are at an increased risk of participating in other risky behaviors. In their longitudinal study, Rodriguez, and Audrian-McGovern (2004) found adolescents that decreased their sports participation to be at an increased risk of smoking in the eleventh grade.

Sports participation can deter adolescents from engaging in other risk behaviors that place them at risk for teen pregnancy. Coaches and teammates may stress to athletes that smoking or other substances are not healthy and may affect their level of performance. In addition, several schools are also performing random drug and alcohol tests on athletes. These factors may discourage adolescent athletes from participating in these risky behaviors.

### 2.5 Factors Specific to Adolescent Males

Literature on teen pregnancy regarding females outweighs that of males. However, literature specific to adolescent males tends to focus on aggressive and delinquent behavior (Fagot et al., 1998; Lohman & Billings, 2008; Miller-Johnson et al., 2004; Pears et al., 2005; Thornberry et al., 2007). In their longitudinal study of 335 Black males, Miller-Johnson et al., 2004 were able to predict teenage pregnancy as early as age 8. These predictions were based on childhood aggression; two thirds of the boys who exemplified aggression in two or more grades were more likely to report that they were an adolescent father. In their longitudinal study, Fagot et al. found that males who became teen fathers had a mean of 5.5 for juvenile arrests compared to a mean of 2.2 for those who did not. Thornberry et al. found males in their study who were a member of a gang to be at a higher risk of teenage fatherhood. In addition, they found chronic violence to increase the odds of fatherhood by 18%. Boys are socialized to be masculine and aggressive, but according to research, these behaviors also place males at risk of becoming teen fathers.

### 2.6 Discussion

The purpose of this chapter was to present a general overview of risk and protective factors of teen pregnancy. The studies selected for this literature review represent a small sample of a larger body of research in this domain. Several hundred studies have investigated risk and protective factors of teen pregnancy, and not all of those studies could be identified in

one paper. However, the studies presented do provide a comprehensive overview of the factors associated with teen pregnancy and parenting.

The risk and resilience perspective is a model that researchers and practitioners have utilized to assess complex social problems. With this model, factors can be identified and the necessary interventions for each domain can be implemented. When studying a complex social problem like teen pregnancy, it is imperative that researchers investigate both risk and protective factors.

Research suggests that there are several risk factors associated with teen pregnancy: low socioeconomic status, low parental monitoring, deviant behavior, association with deviant peer behavior, substance use, low parental education, mother was a teen parent, low self-esteem, depression, team sport participation, and low academic achievement. Protective factors include academic achievement, parenting style, parental monitoring, parental expectations, and religiosity. The results of this literature review demonstrate the complexity of teen pregnancy. The purpose of such an extensive review was to demonstrate that after decades of research, unanswered questions and gaps remain.

### 2.7 Gaps in Knowledge

This Literature pertaining to teen pregnancy presents limitations. First, Literature tends to focus on adolescent females. Literature pertaining to adolescent males is limited and dated. For example, there were only six male-only samples presented in this literature review. Of those six, only three were conducted in the past 10 years. It should also be noted that even the most current study, Lohman and Billings (2008), analyzed data from 1999 and 2001. Second, sample sizes are generally small. The largest sample size presented in this literature review was 615, and that study was conducted in 1997. Third, the ethnic make-up of the sample is generally limited to White and Black adolescents or only Black adolescents. Last, studies generally focus on risk factors, rather than a combination of risk and protective factors. These

limitations demonstrate gaps in knowledge regarding adolescent pregnancy. Perhaps the strongest limitation is the fact that adolescent males are underrepresented in the literature. Therefore, this researcher is solely interested in a sample of adolescent males.

Another gap is the effect of sports participation and physical activity on sexual behaviors. Less research has been devoted to this area, particularly among adolescent males. Studies generally investigate team sport participation or combine the two variables. Very few studies have investigated the effects of physical activity independent from sports participation. In the current study, physical activity and team sport participation are measured separately. Males that participate in regular exercise are not exposed to the culture norms and influences that males in team sports are exposed to. Therefore, it seemed logical to measure them separately. In addition, the impact of sports participation is inconsistent and most studies have failed to include Hispanic males. It is also important to mention that the several of the studies presented analyzed data that was collected in the late 80's and early 90's. Therefore, results of these studies should be interpreted carefully. Adolescent influences and behaviors have changed drastically and current trends of adolescent behaviors must be investigated. Gaps and limitations in this area of research deserve more attention. Therefore, the current study analyzed recent data to investigate the impact of sports participation on sexual behaviors among a diverse sample of adolescent males.

Although substance use in general has been found as a risk factor for teen pregnancy, this dissertation is unique because it will provide a breakdown of substances, including tobacco. Tobacco has received far less attention compared to other prominent substances. In addition, lifetime and current substance use will be evaluated.

Substance use and depression are risk factors under investigation in this study. It has been noted that both factors place adolescents at risk for other risky behaviors. Substance use and depression are strong predictors of suicidal behavior. After an extensive review of the

literature, this researcher only found a few studies that linked suicidal behavior to risk of becoming a teen parent. One study was conducted in over 15 years ago. Suicidal behavior deserves further investigation and is a variable of interest in the current study.

### *2.7.1 Approach of the Current Study*

It would seem, therefore, that further investigations of these gaps are needed in order to provide a panoramic view of teen pregnancy in the United States. This study will contribute to existing literature by utilizing the risk and resilience perspective to identify risk and protective factors predictive of teen fatherhood. The current study consists of a large diverse sample of adolescent males and analyses recent data from the 2007 Youth Risk Behavior Survey. In addition, this study will investigate factors that have received far less attention: team sport participation, physical activity, tobacco use, and suicidal behavior. It is the hope of this researcher that the results of this study will provide pertinent information for program and policy development in the area of teen pregnancy prevention.

This study is intended to answer the following questions: Is there a relationship between the risk of becoming a teen father and the following risk factors: minority status, substance use, depression, suicidal behavior, and team sport participation? Do the following factors protect adolescents from the risk of becoming a teen father: physical activity and HIV/AIDS education? The following hypotheses are proposed:

***Hypothesis 1:*** Race is risk factor predictive of teen fatherhood. Minority males are at a greater risk of becoming a teen father.

***Hypothesis 2:*** Depression is a risk factor predictive of teen fatherhood. Those males that are more depressed are at a greater risk of becoming teen fathers.

***Hypothesis 3:*** Substance use is a risk factor predictive of teen fatherhood. Substance users are at greater risk of becoming teen fathers.

**Hypothesis 4:** Suicidal behavior is a risk factor predictive of teen fatherhood. Those who attempt or contemplate suicide are at a greater risk of becoming a teen father.

**Hypothesis 5:** Participation in a team sport is a risk factor predictive of teen fatherhood. Males who participate in a team sport will have a higher risk of becoming a teen father.

**Hypothesis 6:** HIV/AIDS education is a protective factor predictive of teen fatherhood. Males who have had HIV/AIDS education will have a lower risk of becoming a teen father.

**Hypothesis 7:** Physical activity is a protective factor predictive of teen fatherhood; males that are physically active will have a lower risk of becoming a teen father.

**Hypothesis 8:** Of all the risk factors, race will be the best predictor of teen fatherhood

**Hypothesis 9:** Of all the protective factors, HIV/AIDS education will be the best protector against teen fatherhood.

## CHAPTER 3

### METHODOLOGY

#### 3.1 Introduction

This researcher conducted secondary analysis using a cross-sectional, comparative, retrospective design. Survey research is a popular research design for many researchers (Rubin & Babbie, 2008). Cross-sectional research is designed to collect data at one time and is considered to be a correlation research design because the researcher is generally attempting to find a possible relationship or association between variables (Black, 2005; Rubin & Babbie, 2008).

Secondary analysis refers to the use of data that has been collected, and/or processed by another researcher, agency, university, organization, or the government (Sales, Lichtenwalter, & Fevola, 2006). Secondary analysis has become a popular choice for researchers. Technology advancement has afforded data sets to be more accessible and easy to share. Although secondary analysis presents limitations, which is discussed in the limitations section of this chapter, it does present some notable advantages for use in this study. Secondary analysis has afforded this researcher the opportunity to conduct research on a large sample of students (Rubin & Babbie, 2008). It is often times difficult to obtain a large sample of diverse, high school male students. Attempting to collect sensitive information from vulnerable populations often presents challenges with protecting subjects from harm as assessed by IRB committees (Sales et al., 2006). For this study, protection of human subjects should not be an issue. There is no potential harm to subjects in this study as all identifying information was removed prior to the investigator obtaining the data. In addition, prior IRB approval was obtained in the original study. Thus, secondary analysis has enabled this researcher to conduct

research on a vulnerable population of interest that would otherwise be difficult or even impossible to study.

### 3.2 The Original Study

#### *3.2.1 Youth Risk Behavior Survey*

In the original study, the 2007 Youth Risk Behavior Survey (YRBS) was used to collect information among high school students (Centers for Disease Control Prevention, 2007b). The YRBS is a national high school-based survey established by the Centers for Disease Control and Prevention (CDC). The survey was established in 1990 to observe risk behaviors that contribute to death, disability, and social problems (CDC, 2008). According to the CDC, the survey monitors six areas of risk behavior: tobacco use, unhealthy dietary behaviors, inadequate physical activity, alcohol and other drug use, sexual behaviors that contribute to unintended pregnancy and sexually transmitted disease, and unintentional injuries and violence. Demographics such as age, race, weight, height, and gender are also collected.

The YRBS was first administered in 1991 and since then it has been administered biannually on odd numbered years. The survey consists of 87 questions. Data from the 2007 YRBS was collected from January 2007 until February 2008. The purpose of the survey is to track risk behaviors and evaluate behavior changes over time. In addition, the survey provides comparable national, state, and local data, and comparable subpopulation data. The data collected from the YRBS can also allow agencies and communities to identify strengths and weakness of prevention and intervention programs and services. In addition, the data can serve as a basis for attaining grants that can assist with the implementation of prevention and intervention programs and services.

#### *3.2.2 Sampling Design*

The 2007 YRBS was conducted using a multistage cluster probability sampling design. First, the schools were randomly selected. All public, Catholic, and other private school

students in grades 9 through 12 were included in the sampling frame. At the second stage, classes at each school were randomly selected.

A total of 195 schools were included in the final sample and 157 of those schools participated in the investigation. An attempt was made to survey 16,662 students from the 157 participating schools. A total of 14,103 surveys were returned, and after data editing, a total of 14,041 surveys were processed. The overall response rate of the 2007 YRBS was 68%, making the sample representative of United States high school students according to CDC standards.

At anytime during the administration of the survey, students had the option to decline without penalty. Teachers were given instructions to read to students regarding privacy and anonymity as well as the importance of the survey. Each student was given an empty, unsealed envelope. Upon completion of the survey, students placed their surveys in the envelope and sealed them prior to turning them in. The envelopes remained sealed until the data was analyzed by the CDC.

Of the 14,041 students that participated in the project, 50.2% (n = 7036) were female and 49.8% (n = 6992) were male. Students ranged in age from 12 years old to 18 years old or older and the mean age was 16.13 (SD = 1.229). White students made up 58.6% (n = 6968) of the sample, Black students 26.3% (n = 3132), and Hispanic students 28%. (n = 3883).

### 3.3 Current Study

#### *3.3.1 Sample Selection/Demographics*

As stated in the introduction chapter of this dissertation, considerable research has been devoted to adolescent females; rather less attention has been devoted to adolescent males before, during, and after teen pregnancy. For this reason, this researcher was solely interested in adolescent males. In the current study, the first step was to select only male students. The next step was to select an age range for the sample. A thorough review of the literature revealed that 15 to 18 was the age range used in majority of the literature pertaining to teen pregnancy. However, those who answered 18 or older were not selected because their actual age was unclear. Respondents could have been 20 years old, which is not considered a teenager. Although the likelihood of several students being older than 19 was small, omitting these students made the data cleaner and more straightforward, as is customary in this area of research. In addition, 14-year-old students were also omitted. This researcher did not want this age groups' mean risk scores to alter overall mean scores in either direction. Thus, adolescent males between the ages of 15 and 17 were selected. The final step was to select adolescent males who were Black, White, or Hispanic. A subject was considered Hispanic if they answered "yes" to the question that asked if they were Hispanic and if they selected one or more responses to the race question. A subject was considered Black or White if they selected one of these choices on the race question. The previous stated criteria resulted in a sample of 4588 Black, White, and Hispanic male students between the ages of 15 and 17.

### 3.4 Variables

#### *3.4.1 Criterion Variable/Teen Fatherhood Risk*

The criterion variable is teen fatherhood risk. Seven questions, questions 58 to 64 from the original survey, were used to create a Teen Fatherhood Risk Scale, which is used as the teen fatherhood risk variable. The development of this scale consisted of a two-step process. In

the first step, each item was recoded. As illustrated in Table 3.1, numbers were assigned based on the severity of the behavior. For example, the younger the age of first sexual intercourse, the higher number assigned in question 59. Age 11 was assigned 7 points, the highest number assigned to this response. Those who never had sex were assigned zero points. In the second step, all seven items were summed to compute a risk score. Scores ranged between 0 and 27, with higher scores indicating higher risk of teen fatherhood.

Table 3.1 Items Selected for the Development of the Teen Fatherhood Risk Scale

Questions	Original Responses	Original Codes	Recodes
Have you ever had sexual intercourse? (58)	A. Yes B. No	Yes = 1 No = 2	Yes = 1 No = 0
How old were you when you had sexual intercourse for the first time? (Q59)	A. I have never had sexual intercourse B. 11 years old or younger C. 12 years old D. 13 years old E. 14 years old F. 15 years old G. 16 years old H. 17 years old or older	1 = I have never had sexual intercourse. 2 = 11 years old or younger 3 = 12 years old 4 = 13 years old 5 = 14 years old 6 = 15 years old 7 = 16 years old 8 = 17 years old or older	0 = I have never had sexual intercourse 1 = 17 years old or older 2 = 16 years old 3 = 15 years old 4 = 14 years old 5 = 13 years old 6 = 12 years old 7 = 11 years old or younger
During your life, with how many people have you had sexual intercourse? (Q60)	A. I have never had sexual intercourse B. 1 person C. 2 people D. 3 people E. 4 people F. 5 people G. 6 or more people	1 = I have never had sexual intercourse 2 = 1 person 3 = 2 people 4 = 3 people 5 = 4 people 6 = 5 people 7 = 6 or more people	0 = I have never had sexual intercourse 1 = 1 person 2 = 2 people 3 = 3 people 4 = 4 people 5 = 5 people 6 = 6 or more people

Table 3.1-Continued

During the past 3 months, with how many people did you have sexual intercourse with? (Q61)	A. I have never had sexual intercourse B. I have had sexual intercourse, but not during the past 3 months C. 1 person D. 2 people E. 3 people F. 4 people G. 5 people H. 6 or more people	1 = I have never had sexual intercourse 2 = I have had sexual intercourse, but not during the past 3 months 3 = 1 person 4 = 2 people 5 = 3 people 6 = 4 people 7 = 5 people 8 = 6 or more people	0 = I have never had sexual intercourse 1 = I have had sexual intercourse, but not during the past 3 months 2 = 1 person 3 = 2 people 4 = 3 people 5 = 4 people 6 = 5 people 7 = 6 or more people
Did you drink alcohol or use drugs before you had sexual intercourse the last time? (Q62)	A. I have never had sexual intercourse B. Yes C. No	1 = I have never had sexual intercourse 2 = Yes 3 = No	0 = I have never had sexual intercourse 1 = No 2 = Yes
The last time you had sexual intercourse; did you or your partner use a condom? (Q63)	A. I have never had sexual intercourse B. Yes C. No	1 = I have never had sexual intercourse 2 = Yes 3 = No	0 = I have never had sexual intercourse 1 = No 2 = Yes
The last time you had sexual intercourse, what one method did you or your partner use to prevent pregnancy? (Q64)	A. I have never had sexual intercourse B. No method was used to prevent pregnancy C. Birth control pills D. Condoms E. Depo-Provera (injectable birth control) F. Withdrawal G. Some other method H. Not sure	1 = I have never had sexual intercourse 2 = No method was used to prevent pregnancy 3 = Birth control pills 4 = Condoms 5 = Depo-Provera (injectable birth control) 6 = Withdrawal 7 = Some other method 8 = Not sure	0 = I have never had sexual intercourse 1 = Birth control pills, Condoms, Depo-Provera, some other method. 2 = Withdrawal, no method, not sure

### *3.4.2 Selected Predictor Variables*

Several predictor variables were analyzed in this study for their association to risk of teen fatherhood. The predictor variables that were selected are age, race, depression, lifetime substance use, current substance use, AIDS/HIV education, sports participation, and physical activity.

### *3.4.3 Individual Risk Factors*

#### *3.4.3.1 Race*

In the current study, two race variables were created. The first race variable included White, Hispanic, and Black males and was recoded where White was equal to zero, Hispanic was equal to one, and Black was equal to two. This race variable was used to run frequencies, to report other descriptive information, and to compare mean risk scores. This race variable was dummy coded to create the second race variable where zero equaled nonminority (White males) and one equaled minority (Hispanic and Black males). The second race variable was created to run regression analysis.

#### *3.4.3.2 Depression*

In the original study, one question was asked pertaining to feelings of despair. That one question was used to measure depression. Question 23 of the original study asks “During the past 12 months, did you ever feel so sad or hopeless almost every day for two weeks or more in a row that you stopped doing some usual activities?” This was a dichotomous response, “yes” or “no”. For the current study, if the subject answered “yes”, he was considered depressed. This variable was dummy coded where “no” response was equal to 0 and a “yes” response was equal to 1. The presence of sadness for two weeks and diminished interest in activities are both classic symptoms for a Major Depressive Disorder diagnosis. Thus, this research deemed this question appropriate to measure depression.

### 3.4.3.3 Lifetime Substance Use

In the original study, the substance data was collected categorically. In order to utilize rigorous analysis, such as regression, each variable was dummy coded where 0 equaled no substance use and 1 equaled substance use. This process was conducted for all three lifetime substance variables. Dummy coding allowed the researcher to investigate each substance as a predictor. In the current study, alcohol, marijuana, and tobacco were the substances under investigation. Table 3.3 displays the recodes for the three lifetime substance variables

Table 3.2 Items Selected to Measure Lifetime Substance Use

Questions	Original Responses	Original Codes	Recodes
<b>During your life, on how many days have you had a least one drink of alcohol? (Q39)</b>	A. 0 days B. 1 or 2 days C. 3 to 9 days D. 10 to 19 days E. 20 to 39 days F. 40 to 99 days G. 100 or more days	1 = 0 days 2 = 1 or 2 days 3 = 3 to 9 days 4 = 10 to 19 days 5 = 20 to 39 days 6 = 40 to 99 days 7 = 100 or more days	1 = 1 to 100 or more days. (Yes) 0 = 0 days (No)
<b>During your life, how many times have you used marijuana? (Q45)</b>	A. 0 times B. 1 or 2 times C. 3 to 9 times D. 10 to 19 times E. 20 to 39 times F. 40 to 99 times G. 100 or more times	1 = 0 times 2 = 1 or 2 times 3 = 3 to 9 times 4 = 10 to 19 times 5 = 20 to 39 times 6 = 40 to 99 times 7 = 100 or more times	1 = 1 to 100 more times (Yes) 0 = 0 times (No)
<b>Have you ever tried cigarette smoking even one or two puffs?(Q28)</b>	A. Yes B. No	1. Yes 2. No	1 = Yes 0 = No

### 3.4.3.4 Current Substance Use

The same dummy coding process implemented for the lifetime substance variables was also implemented to create current substance use variables. Table 3.4 shows the original codes and the recodes for the three current substance use variables. Current substance use referred to use in the past 30 days.

Table 3.3 Items Selected to Measure Current Substance Use

Questions	Original Responses	Original Codes	Recodes
During the last 30 days, on how many days did you have at least one drink of <b>alcohol</b> ? (Q 41)	A. 0 days B. 1 or 2 days C. 3 to 5 days D. 6 to 9 days E. 10 to 19 days F. 20 to 29 days G. All 30 days	1 = 0 days 2 = 1 or 2 days 3 = 3 to 5 days 4 = 6 to 9 days 5 = 10 to 19 days 6 = 20 to 29 days 7 = All 30 days	1= 1 to all 30 days (Yes) 0 = 0 days (No)
During the last 30 days, how many times did you use <b>marijuana</b> ? (Q 47).	A. 0 times B. 1 or 2 times C. 3 to 9 times D. 10 to 19 times E. 20 to 39 times F. 40 or more times	1 = 0 times 2 = 1 or 2 times 3 = 3 to 9 times 4 = 10 to 19 times 5 = 20 to 39 times 6 = 40 or more times	1= 1 to 40 or more times (Yes) 0 = 0 times (No)
During the past 30 days, on how many days did you smoke <b>cigarettes</b> ?	A. 0 times B. 1 or 2 days C. 3 to 5 days D. 6 to 9 days E. 10 to 19 days F. All 30 days	A. 0 times B. 1 or 2 days C. 3 to 5 days D. 6 to 9 days E. 10 to 19 days F. All 30 days	1= 1 to 30 days (Yes) 0 = 0 days (No)

#### 3.4.3.5 Suicidal Behavior

In the original study, four questions inquired about suicidal behavior. These four questions were used to create a suicide subscale. This researcher adopted the process implemented by Klonsky et al. (2010) to calculate this suicide subscale score. As illustrated in Table 3.2, more severe responses were assigned higher values. After recoding the four items, responses were summed to create a suicide subscale score. Scores ranged between 0 and 8 with higher scores indicating higher levels of suicidality.

Table 3.4 Items Selected to Create a Suicide Subscale Score

Questions	Original Responses	Original Codes	Recodes
<b>During the past 12 months, did you ever seriously consider attempting suicide? (Q24)</b>	A. Yes B. No	1 = Yes 2 = No	1 = Yes 0 = No
<b>During the past 12 months, did you make a plan about how you would attempt suicide? (Q25)</b>	A. Yes B. No	1 = Yes 2 = No	1 = Yes 0 = No
<b>During the past 12 months, how many times did you actually attempt suicide? (Q26)</b>	A. 0 times B. 1 time C. 2 or 3 times D. 4 or 5 times E. 6 or more times	1 = 0 times 2 = 1 time 3 = 2 or 3 times 4 = 4 or 5 times 5 = 6 or more times	0 = 0 times 1 = 1 times 2 = 2 or 3 times 3 = 4 or 5 times 4 = 6 or more times
<b>If you attempted suicide during the past 12 months, did any attempt result in an injury, poisoning, or overdose that had to be treated by a doctor or nurse? (Q27)</b>	A. I did not attempt suicide during the past 12 months B. Yes C. No	1 = I did not attempt suicide during the past 12 months 2 = Yes 3 = No	0 = I did not attempt suicide during the past 12 months 2 = Yes 1 = No

### 3.4.4 Selected Environmental Risk Factor

#### 3.4.4.1 Team Sport Participation

One question from the original survey was used to measure participation in sports, question 84, which asks, “During the past 12 months, on how many sports teams did you play?” Students could choose A, “0 teams”, B “1 team”, C “2 teams”, or D, “3 or more teams”. In the current study, sports participation was recoded as a interval/ratio variable where “0 Teams” = 0, “1 Team” = 1, “2 Teams” = 2, and “3 or more teams” = 3.

### *3.4.5 Protective Factors*

#### *3.4.5.1 AIDS/HIV Education*

One question from the original study was used to measure AIDS/HIV education. Question 85 asks respondents "Have you ever been taught about AIDS or HIV education?" This "yes" "no" question was dummy coded where "yes" was recoded as 1, and "no" was recoded as 0. "Not sure" responses were treated as missing.

#### *3.4.5.2 Physical Activity*

Question 80 of the original study asked, "During the past 7 days, on how many days were you physically active for a total of at least 60 minutes per day?" Responses ranged from "0 days" to "7 days". This variable was recoded as a continuous variable. Responses were recoded in chronological order from zero for "0 days" to seven for "7 days".

### *3.4.6 Reliability*

Although some measurement error is present in every research study, good reliability can significantly reduce measurement error (Waltz, Strickland, & Lenz, 2005). Thus, alpha coefficients were assessed for the investigator developed Teen Fatherhood Risk Scale and the Suicide Subscale to evaluate internal consistency and their appropriateness with males in the current study.

### *3.4.7 Data Analysis*

All statistical analysis was conducted with the use of Statistical Package for Social Sciences Software (SPSS), version 15.0. Descriptive statistics and frequencies were run on all predictor variables. Measures of central tendency were used to report over risk scores for the sample. In addition, ANOVA analysis was conducted to compare mean risk scores among age and racial subgroups. The level of significance was set at .05 ( $p = .05$ ). In order to evaluate each hypothesis, the following data analysis plan was implemented.

**Hypothesis 1:** Race is risk factor predictive of teen fatherhood. Minority males are at a greater risk of becoming a teen father.

To determine the outcome for this hypothesis, the dummy coded race variable was regressed on the Teen Fatherhood Risk Scale. In the second step, the dummy coded race variable and age were regressed on the TFRS.

**Hypothesis 2:** Depression is a risk factor predictive of teen fatherhood. Those males that are more depressed are at a greater risk of becoming teen fathers.

A two-step regression process was conducted. In the first step, depression was entered independently to assess whether it could be used to predict risk of teen fatherhood. In the second step of this analysis, depression and age were entered to see if depression continued to be a predictor in the face of age.

**Hypothesis 3:** Substance use is a risk factor predictive of teen fatherhood. Substance users are at greater risk of becoming teen fathers.

All lifetime and current substance use variables, alcohol, marijuana, and tobacco, were regressed independently onto the teen fatherhood risk scores (six regressions). In a second step, each substance variable was entered with age. To test further this hypothesis, a third step was added. All substance use variables found to be significant in the previous regressions were entered simultaneously into a final regression. This analysis revealed the best substance predictor in the face of all substance variables.

**Hypothesis 4:** Suicidal behavior is a risk factor predictive of teen fatherhood. Males who have higher suicide scores will be at a greater risk of becoming a teen father.

Linear regression was used for this part of the analysis as well. Suicide Subscale scores were regressed independently on to the teen fatherhood risk scores then entered simultaneously with age in a second step.

**Hypothesis 5:** Participation in a team sport is a risk factor predictive of teen fatherhood. Males who participate in a team sport will have a higher risk of becoming a teen father.

A two-step regression process was conducted. In the first step, sports participation was entered independently to assess whether it could be used to predict risk of teen fatherhood, and then entered again with age to evaluate whether team sport participation continued to be significant in the face of age.

**Hypothesis 6:** AIDS/HIV education is a protective factor predictive of teen fatherhood. Males who have had HIV/AIDS education will have lower risk of becoming a teen father.

Another two-step regression process was conducted to assess the effects of AIDS/HIV education on the risk of teen fatherhood. In the first step, AIDS/HIV education was entered independently to assess whether it could be used to predict risk of teen fatherhood, and then reentered with race and age.

**Hypothesis 7:** Physical activity is a protective factor predictive of teen fatherhood; males that are physically active will have a lower risk of becoming a teen father.

A two-step regression process was conducted. In the first step, physical activity was entered independently to assess whether it could be used to predict risk of teen fatherhood, and then entered simultaneously with age in a second step.

**Hypothesis 8:** Of all the risk factors, race is the best predictor of risk for teen fatherhood.

In this analysis all of the risk factors, which were found in the previous regressions to be predictors were entered simultaneously with age. Although R<sup>2</sup> results in the previous regressions provided some indication about how these factors predicted risk of teen fatherhood, using this type of multiple regression analysis helped determine which variable in the face all the other significant factors was the best predictor of risk of teen fatherhood. In addition, comparison of beta coefficients from this regression further clarified how the best predictor, compared to the other factors associated with teen fatherhood risk.

**Hypothesis 9:** of all the protective factors, AIDS/HIV education is the best protector against teen fatherhood.

In this analysis all of the protective factors, which were found in the previous regressions to be predictors of teen fatherhood risk, were entered simultaneously with age.

#### *3.4.8 Methodological Limitations*

There are methodological limitations associated with secondary analysis that must be considered. First, the researcher is limited to data that was collected; the researcher had to work with the variables that were included in the original data set. In the original study, no scales or measurement tools were used. Therefore, this researcher had to manipulate variables to create measurement tools, this compromises reliability and validity. The researcher opted to use one question to measure depression, rather than using a well-known, reliable depression scale. Another limitation associated with secondary data is missing data. Specific criteria were outlined prior to analyzing data regarding missing data. The TFRS was the dependent variable and the researcher wanted to obtain an accurate depiction of risk as possible. Thus, if a respondent did not answer five of the seven questions on the TFRS their data was excluded from analysis. Due to analyzing secondary data, triangulation could not be achieved. The use of multiple methods enhances reliability and validity, and decreases measurement error (Rubin & Babbie, 2008; Waltz et al., 2005).

Participants were asked sensitive information regarding sexual behaviors, substance use, and other risk behaviors, and the surveys were administered at school by their teachers. Although students were promised confidentiality, participants may have answered with socially desirable responses. Students may have tailored their responses in manner that made them look good and favorable to their teachers. This may have caused them to deny participation in certain behaviors or omit answering questions. Socially desirable responding could distort the validity of study results.

The risk of teen fatherhood was determined based on information collected at one point in time, rather than a longitudinal design, where associations and inferences can be observed overtime. There is no way to verify that those identified as at risk indeed became teen fathers. Therefore, results only provide a snap shot of the sample at the current time. The retrospective nature of the survey may be problematic and can create recall bias (Rubin & Babbie, 2008). Students were asked to recall experiences that had occurred over their lifetime, 12 months past, and 30 days past. Students may have a problem recalling such events. As a result, students may have guessed or skipped the question.

The CDC considers the original study representative because there was a 68% responsive rate. Although schools and classrooms were randomly selected, inclusion into the study was not ultimately random. First schools had to agree to participate in the study. Perhaps schools that participated were familiar with this type of research or they value the information obtained from the research. Perhaps the schools that refused were unfamiliar with the study or were restricted by district policies. In addition, students had a choice to opt out of the study. Perhaps there was a significant difference between students that chose to participate and those that did not. So technically, this is not a random sample. Therefore, these results are only representative of the students who agreed to participate in the study and cannot be generalized beyond this study. In addition, this survey only included in school adolescents. Adolescents who are more at-risk, those who have dropped out of school, were not included in the study.

#### *3.4.9 Protection of Human Subjects*

Data for this study was already collected; therefore, there were no potential risks to human subjects. Proper protection was taken when the survey was originally administered. Proper consent was obtained and students were told that they could stop participation in the survey without penalty of any kind. In addition, no identifying information was released with the

data. This researcher obtained approval to conduct this study by the Institutional Review Board (IRB) at the University of Texas at Arlington.

## CHAPTER 4

### DATA ANALYSIS AND RESULTS

This chapter presents results of the quantitative secondary analysis methods discussed in the previous chapter. The purpose of this study was to investigate and further understand key risk and protective factors associated with teen fatherhood. Statistical Program for Social Sciences version 15 (SPSS) was used to analyze data from the 2007 Youth Risk Behavior Survey.

In chapter 4, a description of sample is presented, followed by a description of risk and protective factors. Next hypothesis testing and summary of findings are presented. The chapter closes with a conclusion. The research questions that guided this study were as followed:

1. Is there a relationship between the risk of becoming a teen father and the following risk factors: minority status, substance use, depression, suicidal behavior, and team sport participation?

2. Do the following factors protect adolescents from the risk of becoming a teen father: physical activity and HIV/AIDS education?

#### 4.1 Description of the Sample

Adolescents from 157 high schools across the United States participated in the study. 14,041 subjects were included in the original study. Because the literature on teen pregnancy pertaining to females outweighs that of adolescent males, the primary point of interest in this investigation was adolescent males. The sample in the current study consisted of 4588 Black, White, and Hispanic male students between the ages of 15 and 17. Of the 4588 males, 46.2% (n = 2120) were White, 31.5% (n = 1446) were Hispanic, and 22.5% (n = 1022) were Black.

The mean age of the sample was 16.03 (SD = .809). A complete description of the sample selection process can be found in chapter three of this dissertation.

#### 4.2 Description of Outcome Variable

##### *4.2.1 Teen Fatherhood Risk Scale-TFRS*

The 2007 Youth Risk Behavior Scale consisted of seven questions that inquired about sexual behavior. These 7-items were selected to develop the Teen Fatherhood Risk Scale. Each response to the sexual behavior questions were assigned a number based on the severity of the behavior. These numbers were added to compute a risk score. The scores ranged from 0 to 26, with higher scores indicating a higher risk. The scale yielded a Cronbach's alpha score of 0.89, indicating high reliability with the current sample of adolescent males. The overall mean score for the sample was 7.6 (SD = 7.39). A score of 0 was at the 25<sup>th</sup> percentile, 9 at the 50<sup>th</sup> percentile, and 13 at the 75<sup>th</sup> percentile. The mode for the scale was 0 and the median was a score of 9.

##### 4.2.1.1 Age and TFRS Scores

A one-way analysis of variance was conducted to investigate whether there was a significance difference in mean scores on the TFRS among age groups. Table 4.1 displays the mean scores for each age group. ANOVA analysis revealed a statistically significant difference between age groups,  $F(2, 4240) = 45.290$ ,  $p = .000$ . Post hoc analysis revealed three heterogeneous groups. All three groups were significantly different from each other.

Table 4.1 Mean Teen Fatherhood Risk Scores by Age

	<b>N</b>	<b>Mean</b>	<b>SD</b>	<b>F</b>
<b>15 year-olds</b>	1310	<b>6.24</b>	7.37	45.290*
<b>16 year-olds</b>	1461	<b>7.58</b>	7.35	
<b>17 year-olds</b>	1472	<b>8.88</b>	7.24	

\*Denotes  $p < .05$

#### 4.2.1.2 Race and TFRS Scores

A one way analysis of variance was conducted to investigate a statistically significant difference in mean scores on the TFRS among racial groups. Table 4.2, displays mean scores on the TFRS by race. ANOVA analysis revealed a statistically significant difference among racial groups,  $F(2, 4240) = 199.272, p = .000$ . Post hoc analyses revealed three heterogeneous groups; all significantly different from each other. Black males had significantly higher mean risk scores on the TFRS, indicative of a higher risk of becoming a teen father.

Table 4.2 Mean Teen Fatherhood Risk Scores by Race

	<b>N</b>	<b>Mean</b>	<b>SD</b>	<b>F</b>
<b>White</b>	1985	<b>5.5</b>	6.7	199.3*
<b>Hispanic</b>	1341	<b>8.4</b>	7.2	
<b>Black</b>	917	<b>11.0</b>	7.4	
<b>Overall</b>	4243	<b>7.62</b>	7.39	

\*Denotes  $p < .05$

#### 4.3 Description of Risk Factors

This section presents descriptive results of risk factor variables for the entire sample. In addition, this section presents descriptive comparisons for age and racial groups. Group means were compared on several variables to investigate differences as they relate to age and race. Tukey HSD was chosen for all post hoc analysis based on its rigor and widespread use.

##### *4.3.1 Sexual Behavior*

This section describes the sexual behaviors of the sample. In terms of sexual intercourse, 40.3% ( $n = 1847$ ) never had sexual intercourse and 52.4% ( $n = 2406$ ) reported that they had sexual intercourse. Only the 2406 males that reported that they had sexual intercourse were included in the following analysis and results. The mean age of first sexual intercourse was 13.92 ( $SD = 1.62$ ). The mean number of sexual intercourse partners was 3.15 ( $SD = 1.94$ ).

Although 28.8% (n = 693) of the sample reported only one sexual partner in their life, 23.8% (n = 573) reported that they had six or more partners in their life. In regards to sexual intercourse partners in the past three months, 41.1% (n = 988) reported that they had not had sexual intercourse in the past three months, 12.2% (n = 294) reported that they had 2 partners, and 4.8% (n = 115) reported that they had 6 or more partners in the past three months. The mean number of sexual intercourse partners in the past three months was 1.61 (SD = 1.27). When asked if alcohol or drugs were used at last sexual intercourse, 76.3% (n = 1836) reported “no” and 22.8% (n = 556) reported “yes”. When asked what type of birth of control used during their last sexual intercourse, 71.6% (n = 1722) reported condoms, birth control pills, the Depo Provera injection, or another form of birth control, and 24.6% (n = 592) reported that they used withdrawal, no method, or they were not sure.

#### 4.3.1.1 Age and Sexual Behaviors

In terms of age and sexual behaviors, 45.2% (n =593) of 15-year-olds, 56.4% (n = 826) of 16-year-olds, and 66.9% (n = 987) of 17-year olds reported “yes” when asked if they ever had sexual intercourse. Chi-square analysis revealed a significant difference ( $X^2 = 133.280$ ,  $p < .05$ ). A higher percentage of 17-year-olds had sexual intercourse. The mean number of sexual intercourse partners was 3.92 (SD = 1.91) for 15-year-olds, 4.12 (SD = 1.92) for 16-year-olds, and 4.32 (SD = 1.97) for 17-year-olds. ANOVA analysis revealed a statistically significant difference in sexual intercourse partners among age groups  $F(2,2379)$ ,  $p < .05$ . Post hoc analyses revealed two homogeneous subgroups, 15 and 16-year-olds were not significantly different from each other,  $p = .098$ . Likewise, 16 and 17-year-olds were not statistically different from each other  $p = .119$ . However, 17-year olds had a significantly higher mean number of sexual intercourse partners than 15-year-olds. The mean number of sexual intercourse partners in the past three months was 1.17 (SD = 1.54) for 15-year-olds, 1.27 (SD = 1.40) for 16-year-olds, and 1.39 (SD = 1.52) for 17-year-olds. ANOVA analysis revealed a statistically significant

difference in mean scores  $F(2,2378)$ ,  $p < .05$ . Post hoc analyses revealed two homogeneous subgroups, 15 and 16 year-olds were not significantly different from each other,  $p = .419$ . Likewise, 16 and 17-year-olds were not statistically different from each other,  $p = .221$ . However, 17-year-olds had a significantly higher number of sexual intercourse partners in the past 3 months.

When asked what type of birth control was used at last sexual intercourse, 27.1% ( $n = 154$ ) of 15-year-olds, 24.4% ( $n = 195$ ) of 16-year-olds, and 25.7% ( $n = 243$ ) of 17-year-olds reported none, withdrawal, or not sure. Chi-square analysis revealed no statistically significant difference among groups ( $X^2 = 1.278$ ,  $p > .05$ ). When asked if drugs or alcohol were used during last sexual intercourse, 20.8% ( $n = 121$ ) of 15-year-olds, 23% ( $n = 189$ ) of 16-year-olds, and 24.3% ( $n = 238$ ) of 17-year-olds reported "yes". Chi-square analysis revealed no statistically significant difference ( $X^2 = 2.575$ ,  $p > .05$ ).

#### 4.3.1.2 Race and Sexual Behaviors

In terms of race and sexual behavior, 44.4% ( $n = 882$ ) of White males, 62.2% (835) of Hispanic males, and 74.5% ( $n = 689$ ) of Black males reported that they had sexual intercourse. Chi-square analysis revealed a statistically significant difference between groups ( $X^2 = 257.040$ ,  $p < .05$ ). A significantly higher percentage of Black adolescent males reported ever having sexual intercourse. The mean age of first sexual intercourse for White males was 14.33 ( $SD = 1.55$ ), 14.02 ( $SD = 1.54$ ) for Hispanics, and 13.29 ( $SD = 1.60$ ) for Black males. ANOVA results revealed a statistically significant difference between the groups  $F(2, 2400)$ ,  $p < .05$ . Post hoc analyses revealed three heterogeneous groups. All were significantly different from each other. However, Hispanic males had their first sexual intercourse at a significantly younger age than White males and Black males had their first sexual intercourse at a significantly younger age than White and Hispanic males.

The mean number of sexual intercourse partners was 3.66 (SD = 1.80) for White males, 4.14 (SD = 1.93) for Hispanic males, and 4.81 (SD = 1.96) for Black males. ANOVA analysis revealed a statistically significant difference between the groups  $F(2, 2379)$ ,  $p < .05$ . Post hoc analyses revealed three heterogeneous groups, all statistically different from each other. Black males also had significantly more partners. The mean number of sexual intercourse partners in the last three months for White males was 1.14 (SD = 1.34), 1.31 (SD = 1.51) for Hispanic males, and 1.47 (SD = 1.60) for Black males. ANOVA analysis revealed a statistically significant difference between groups  $F(2, 4240)$ ,  $p < .05$ . Post hoc analyses revealed two homogeneous subgroups. White and Hispanic males were not significantly different,  $p = .065$ . Likewise, Hispanic and Black males were not significantly different,  $p = .093$ . However, Black males had a significantly higher number of sexual intercourse partners in the past three months than White males.

When asked what type of birth control method used at last sexual intercourse, 10% ( $n = 195$ ) of White males, 17.7% ( $n = 232$ ) of Hispanic males, and 19% ( $n = 171$ ) of Black males reported withdrawal, no birth control method, or they were not sure. Chi-square analysis revealed a statistically significant difference between the groups ( $X^2 = 261.536$ ,  $p < .05$ ). A higher percentage of Black males were unprotected during last sexual intercourse. When surveyed, 27.2% ( $n = 239$ ) of White males, 25.1% ( $n = 207$ ) of Hispanic males, and 15% ( $n = 102$ ) of Black males reported substance use during their last sexual intercourse. Chi-square analysis revealed a statistically significant difference between groups ( $X^2 = 35.629$ ,  $p < .05$ ). A significantly higher percentage of White males reported that they used a substance during their last sexual intercourse

#### *4.3.2 Depression*

One question from the original survey was selected to measure depression. The yes or no question asked whether the participant felt so sad or hopeless every day for two weeks that

they stopped participating in their normal activities. When surveyed, 22% (n= 1020) of the sample reported that they had been depressed in the past 12 months. An independent samples t-test was conducted to compare mean risk scores on the TFRS for those that were depressed and those that were not. The mean risk score for males who reported depression in the past 12 months was 9.67 (SD = 7.42) and 7.03 (SD = 7.28) for males who did not report depression. T-test analysis revealed a statistically significant difference in risk scores,  $t(4227) = -9.739$ ,  $p = .000$ . Males that were depressed had a significantly higher risk of becoming a teen father.

#### 4.3.2.1 Age and Depression

In terms of age, crosstab analysis was conducted to evaluate a difference in depression among age groups. When surveyed, 22.9% (n = 323) of 15-year-olds, (n = 332) of 16-year-olds, and 23.3% (n = 365) of 17-year-olds reported that they were depressed in the past 12 months. Chi-square analysis revealed no statistically significant difference between age groups ( $X^2 = 1.821$ ,  $p > .05$ ).

#### 4.3.2.2 Race and Depression

In terms of race and depression, crosstab analysis was conducted to investigate a significant difference in depression among racial groups. When surveyed, 18.6% (n = 391) of White males, 27.5% (n = 391) of Hispanic males, and 23.7% (n = 238) of Black males reported depression within the past 12 months. Chi-square analysis indicated a statistically significant difference in reported depression between racial groups ( $X^2 = 39.594$ ,  $p < .05$ ). A significantly higher percentage of Hispanic males reported depression within the last 12 months.

#### 4.3.3 *Substance Use*

This section describes substance use characteristics of the sample. There were two classifications of substance use under investigation in this study, lifetime substance use and current substance use. Within those two classifications, there were three substances under evaluation: alcohol use, marijuana use, and tobacco use (cigarette smoking).

#### 4.3.3.1 Lifetime and current substance use

In the original study, lifetime substance use referred to use of a substance ever in their life. When asked the age of their first drink of alcohol, 51% (n = 2316) report that they were 14-years old or younger. When asked the age they first used marijuana, 29% (n = 1328) reported that they were 14-years-old or younger. When asked the age they smoked their first cigarette, 28% (n = 1275) reported that they were 14-years-old or younger.

An independent samples t-test was conducted with each lifetime substance variable to investigate whether a difference in mean risk scores on the TFRS for males that were lifetime substance users and males that were not. As illustrated in Table 4.3, each t-test analysis revealed a significant difference,  $p < .05$ . Lifetime substance users had a higher risk of becoming a teen father than nonlifetime substance users, indicative of higher mean risk scores.

Current substance use referred to substance use in the past 30 days. Mean risk scores were compared for males who were current substance users and males who were not. As shown in Table 4.3, each t-test analysis revealed a statistically significant difference,  $p < .05$ . Males that were current substance users were at a higher risk of becoming a teen father.

Table 4.3 Mean Risk Scores on the TFRS According to Lifetime and Current Substance Use

	<i>N</i>	<i>Mean</i>	<i>SD</i>	<i>t</i>
<b>Lifetime Smoker</b>				-25.170*
Yes	2298	<b>9.96</b>	7.15	
No	1844	<b>4.56</b>	6.47	
<b>Lifetime Alcohol</b>				-17.839*
Yes	3032	<b>8.51</b>	7.28	
No	915	<b>3.77</b>	6.20	
<b>Lifetime Marijuana</b>				-30.84*
Yes	1890	<b>11.01</b>	7.04	
No	2272	<b>4.62</b>	6.30	
<b>Current Smoker</b>				-20.971*
Yes	868	<b>11.87</b>	6.90	
No	3181	<b>6.25</b>	7.02	
<b>Current Alcohol</b>				-23.102*
Yes	1825	<b>10.07</b>	7.19	
No	2019	<b>4.94</b>	6.60	
<b>Current Marijuana</b>				-25.549*
Yes	1009	<b>12.34</b>	6.99	
No	3165	<b>6.0</b>	6.81	

\*Denotes  $p < .05$

#### 4.3.3.2 Age and Substance Use

Crosstab analysis was conducted on each lifetime substance variable to investigate whether there was a difference in lifetime substance use among age groups. As shown in Table 4.4, each chi-square analysis revealed a statistically significant difference among age groups,  $p < .05$ . Older adolescents, 17-year-olds, reported significantly higher percentages of use on all lifetime substances.

In terms of current substance use, Crosstab analysis was conducted on each current substance variable to investigate whether there was a difference in current substance use among age groups. As shown in Table 4.4, each chi-square analysis revealed a statistically significant difference among age groups,  $p < .05$ ; 17-year-old males reported significantly higher percentages of current use on all substances.

Table 4.4 Chi-square Results of Lifetime and Current Substance Use Among Age Groups

	<i>15 year olds</i>	<i>16 year olds</i>	<i>17 year olds</i>	<i>X<sup>2</sup></i>
<b>Lifetime alcohol</b>				44.58*
<b>Yes</b>	69.8% (n = 894)	77% (n = 1103)	80.6% (n = 170)	
<b>No</b>	30.2% (n = 386)	23% (n = 329)	19.4% (n = 281)	
<b>Lifetime smokers</b>				54.78*
<b>Yes</b>	48.3% (n = 671)	54.5% (n = 835)	61.9% (n = 42)	
<b>No</b>	51.7% (n = 719)	45.5% (n = 697)	38.1% (n = 580)	
<b>Lifetime marijuana</b>				87.30*
<b>Yes</b>	35.2% (n = 482)	45.7% (n = 700)	52.4% (n = 797)	
<b>No</b>	64.8% (n = 888)	54.3% (n = 831)	47.6% (n = 724)	
<b>Current alcohol</b>				64.59*
<b>Yes</b>	37.9% (n = 473)	47.7% (n = 674)	53.4% (n = 753)	
<b>No</b>	62.1% (n = 774)	52.3% (n = 738)	46.6% (n = 657)	

Table 4.4 – Continued

	<i>15 year olds</i>	<i>16 year olds</i>	<i>17 year olds</i>	<i>X<sup>2</sup></i>
<b>Current Smokers</b>				50.66*
<b>Yes</b>	15.4% (n = 207)	20.7% (n = 307)	26.3% (n = 392)	
<b>No</b>	84.6% (n = 139)	79.3% (n = 178)	73.7% (n = 1101)	
<b>Current Marijuana</b>				30.65*
<b>Yes</b>	19.1% (n = 262)	24% (n = 369)	27.8% (n = 427)	
<b>No</b>	80.9% (n = 1111)	76% (n = 1166)	72.2% (n = 107)	

\*Denotes  $p < .05$

#### 4.3.3.3 Race and Substance Use

Crosstab analysis was conducted to investigate a significant difference in lifetime substance use among racial groups. Table 4.5 displays the results of the crosstab analysis. Chi-square analysis revealed a statistically significant difference on all lifetime substance variables,  $p < .05$ . Hispanic adolescent males reported significantly higher percentages of use on all three lifetime substances.

In regards to race and current substance use, crosstab analysis was also conducted to investigate a statistically significant difference in substance use among racial groups. As shown in Table 4.5, each chi-square analysis conducted revealed a statistically significant difference between racial groups,  $p < .05$ . Hispanic males had significantly higher percentages of current alcohol use, White males had significantly higher percentages of current smoking, and Black males had significantly higher percentages of current marijuana use.

Table 4.5 Chi-square Results for Lifetime and Current Substance Use Among Racial Groups

	<b>White</b>	<b>Hispanic</b>	<b>Black</b>	<b>X<sup>2</sup></b>
<b>Lifetime alcohol</b>				49.91*
<b>Yes</b>	77.2% (n =568)	80.4% (n = 998)	67.5% (n = 01)	
<b>No</b>	22.8% (n = 64)	19.6% (n = 243)	32.5% (n = 89)	
<b>Lifetime smokers</b>				12.75*
<b>Yes</b>	53% (n = 1101)	59% (n = 828)	53.9% (n =519)	
<b>No</b>	47% (n = 976)	41% (n = 576)	46.1% (n = 44)	
<b>Lifetime marijuana</b>				6.25*
<b>Yes</b>	42.8% (n =888)	46.7% (n = 644)	46.2% (n = 47)	
<b>No</b>	57.2% (n = 88)	53.3% (n = 735)	53.8% (n = 20)	
<b>Current alcohol</b>				79.79*
<b>Yes</b>	49.3% (n = 67)	51.8% (n =644)	33.4% (n = 89)	
<b>No</b>	50.7% (n =994)	48.2% (n = 599)	66.6% (n = 76)	
<b>Current smokers</b>				36.54*
<b>Yes</b>	23.9% (n =486)	21.3% (n = 284)	14.2% (n = 36)	
<b>No</b>	76.1% (n 1550)	78.7% (n = 049)	85.8% (n = 19)	
<b>Current marijuana</b>				6.74*
<b>Yes</b>	22.9% (n = 79)	23% (n = 317)	27% (n = 262)	
<b>No</b>	77.1% (n = 11)	77% (n = 1063)	73% (n = 710)	

\*Denotes  $p < .05$

#### 4.3.4 Suicidal Behavior

##### 4.3.4.1 Suicide Subscale

The Suicide Subscale is a 4-item scale developed from four questions on the 2007 YRBS. The questions inquired about suicide plans, attempts, and other behaviors associated with suicide. Scores on the scale ranged from 0 to 8, with higher scores indicating higher

suicidal behavior. Brausch (2010) used these same questions in her study to develop a suicide subscale and yielded a reliability score of 0.57. However, this study yielded a Cronbach's alpha score of 0.83, indicating good reliability with the current sample. The mean score for the entire sample was .34 (SD = 1.10). The mean was extremely low because 85% (n = 3898) of the sample had a score of 0, which would naturally pull the mean score down significantly. When surveyed, 10.3% (n = 473) considered suicide, 9.3% (n = 428) developed a suicide plan, 5.3% (n = 215) attempted suicide, and 1.5% (n = 67) were injured during a suicide attempt.

In addition, mean scores on the TFRS were evaluated to investigate a significant difference in mean scores between males who attempted suicide and males who did not. As shown in Table 4.6, the mean score for males who attempted suicide was 12.31 (SD = 7.9) and 7.14 (SD = 7.21) for males that had not. T-test analysis revealed a statistically significant difference in mean risk scores,  $t(3838) = -9.342$ ,  $p < .05$ . Mean scores on the TFRS were significantly higher for adolescent males who attempted suicide than for males who had not. Adolescent males who attempted suicide were at a greater risk of becoming a teen father.

Table 4.6 Mean Risk Scores for Males Who Attempted Suicide and Those Who Did Not

	<b>N</b>	<b>Mean</b>	<b>SD</b>	<b>t</b>
<b>Suicide attempt</b>				-9.342*
<b>Yes</b>	180	12.31	7.90	
<b>No</b>	3660	7.41	7.21	

\*Denotes  $p < .05$

#### 4.3.4.2 Age and suicidal behavior

A one-way analysis of variance was conducted to investigate whether there was difference in suicide mean scores among age groups. The mean score for 15-year-olds was .37 (SD = 1.17), .30 (SD = .98) for 16-year-olds, and .35 for 17-yearolds (SD = 1.14). ANOVA

analysis revealed no statistically significant difference in mean scores among age groups,  $F(2, 4528) = 1.921$ ,  $p > .05$ . To further test the relationship between suicidal behavior and age, crosstab analysis was conducted to investigate whether there was difference in suicide attempt among age groups. When surveyed, 6.1% ( $n = 77$ ) of 15-year-olds, 4.6% ( $n = 64$ ) of 16-year-olds, and 5.2% of 17-year-olds reported that they had attempted suicide in the past 12 months. Chi-square analysis revealed no statistically significant difference in suicide attempt among age groups ( $X^2 = 3.36$ ,  $p > .05$ ).

#### 4.3.4.3 Race and Suicidal Behavior

In regards to suicide behaviors and race, a one-way analysis of variance was conducted to evaluate a difference in mean risk scores on the Suicide Subscale among racial groups. The mean suicide score was .31 ( $SD = 1.03$ ) for White males, .41 ( $SD = 1.22$ ) for Hispanic males and .30 ( $SD = 1.08$ ) for Black males. ANOVA analysis revealed a statistically significant difference in mean risk scores between racial groups,  $F(2, 4528) = 4.293$   $p < .05$ . Post hoc analysis revealed two homogeneous subsets. Black and White adolescent males were not significantly different from each other,  $p = .930$ . Likewise, White and Hispanic males were not significantly different from each other,  $p = .052$ . However, Hispanic males had significantly higher mean suicide scores than Black males.

To investigate further the relationship between suicidal behavior and race, crosstab analysis was conducted to investigate whether there was a difference in suicide attempt among racial groups. When surveyed, 3.9% ( $n = 77$ ) of White males, 7.2% ( $n = 89$ ) of Hispanic males, and 5.3% ( $n = 49$ ) of Black males reported that they had attempted suicide in the past 12 months. Chi-square analysis revealed a statistically significant difference ( $X^2 = 17.82$ ,  $p = < .05$ ). A significantly higher percentage of Hispanic males had attempted suicide.

#### 4.3.5 Team Sport Participation

When surveyed, 59% (n = 2717) reported that they participated on a sports team, 37.5% (n = 1676) reported that they did not, and 16% (n = 719) reported participation on three or more sports teams in the past 12 months. The mean number of sports teams was 1.14 (SD = 1.10). An independent samples t-test was conducted to investigate a statistically significant difference in mean risk scores on the TFRS for males who participated on a sports team and males who did not. Males who participated on a sports team had higher risk scores (M = 8.02, SD = 7.39) than males who did not (M = 6.84, SD = 7.30). T-test analysis revealed a statistically significant difference in mean scores between groups,  $t(4112) = -5.010$ ,  $p < .05$ . Males who participated on a sports team were at a greater risk of becoming a teen father.

##### 4.3.5.1 Age and Team Sport Participation

In regards to age and team sport participation, a one way analysis of variance was conducted to investigate a difference in mean sports teams among age groups. The mean number of sports teams for 15-year-olds was 1.22 (SD = 1.10), 1.11 (SD = 1.10) for 16-year-olds, and 1.09 (SD = 1.09) for 17-year-olds. ANOVA analysis revealed a statistically significant difference,  $F(2, 4390) = 5.866$ ,  $p < .05$ . Post hoc analysis revealed two homogeneous subgroups, 16 and 17-year-olds were not significantly different from each other ( $p = .889$ ), but participated on few teams than 15-year-olds.

##### 4.3.5.2 Race and Team Sport Participation

In terms of race and team sport participation, the mean number of teams was 1.19 (SD = 1.13) for White males, 1.02 (SD = 1.06) for Hispanic males, and 1.19 (SD = 1.07) for Black males. ANOVA analysis revealed a statistically significant difference in team sport participation  $F(2, 4390) = 11.137$ ,  $p < .05$ ). Post hoc analysis revealed two homogeneous subgroups, Black and White males were not significantly different from each other ( $p = .984$ ), but they were significantly different from Hispanic males. To further evaluate the relationship between race

and team sport participation, three independent samples t-test were conducted to compare mean risk scores between athletes and nonathletes for each racial group. As illustrated in Table 4.7, Black male athletes had the highest risk scores. There was no significant difference between White male athletes and nonathletes.

Table 4.7 Mean Risk Scores for Team Sport by Race

	<b>N</b>	<b>Mean</b>	<b>SD</b>	<b>t</b>
<b>White</b>				-1.44
No Sports	722	<b>5.22</b>	6.62	
Sport Participation	482	<b>5.68</b>	6.82	
<b>Hispanic</b>				-3.22*
No Sports	555	<b>7.55</b>	7.46	
Sport Participation	743	<b>8.86</b>	7.05	
<b>Black</b>				-4.84*
No Sports	303	<b>9.38</b>	7.62	
Sports participation	574	<b>11.90</b>	7.13	

\*Denotes  $p < .05$

#### 4.4 Description of Protective Factors

##### 4.4.1 Physical Activity

One question on the survey inquired about physical activity. The yes-no question asked subjects how many days a week they were physically active for 60 minutes. Response choices ranged from 0 to 7 days. When surveyed, 80% (n = 3663) reported that they were physically active, 18% (n = 832) reported they were not, and 23% (n = 1046) reported that they were

active 7 days a week. The mean number of days of physical activity was 3.66 (SD = 2.58). An independent samples t-test was conducted to compare differences in mean scores on the TFRS for males who participated in physical activity and males who did not. The mean risk score for those that did not participate in physical activity was 7.63 (SD = 7.32) and 7.33 (SD = 7.63). T-test analysis revealed no statistically significant difference,  $t(4184) = -1.033$ ,  $p = .302$ . Males who were not physically active were not at a greater risk of becoming a teen father than males who were physically active.

#### 4.4.1.1 Age and Physical Activity

In regards to age and physical activity, a one-way analysis of variance was conducted to investigate whether there was a statistically significant difference in the mean number of days of physical activity among age groups. The mean number of days of physical activity was 3.73 (SD = 2.53) for 15-year-olds, 3.75 (SD = 2.59) for 16-year-olds, and 3.5 (SD = 2.61) for 17-year olds. ANOVA analysis indicated a statistically significant difference between age groups,  $F(2, 4492) = 4.603$ ,  $p < .05$ . Post hoc analysis revealed two homogeneous subgroups; 15 and 16-year olds were not significantly different from each other ( $p = .979$ ), but were significantly different from 17-year-olds. Seventeen-year-olds reported significantly less physical activity.

#### 4.4.1.2 Race and Physical Activity

In regards to race and physical activity, a one-way analysis of variance was conducted to investigate a statistically significant difference in the mean number of days of physical activity among racial groups. The mean number of days of physical activity was 3.83 (SD = 2.58) for White males, 3.56 (SD = 2.54) for Hispanic males, and 3.42 (SD = 2.61) for Black males. ANOVA analysis revealed a statistically significant difference between racial groups,  $F(2, 4492) = 10.102$ ,  $p < .05$ . Post hoc analysis revealed two homogeneous subgroups, Black and Hispanic males were not significantly different from each other ( $p = .351$ ), but they were

statistically significant from White males. White males had a significantly higher mean number of days of physical activity than Black and Hispanic males.

#### *4.4.2 HIV/AIDS Education*

In regards to HIV/AIDS education, 83.5% (n = 3829) reported that they had been taught about HIV/AIDS and 8.2% (n = 832) had not been taught. An independent samples t-test was conducted to investigate a difference in mean risk scores for males who had HIV/AIDS education and those who did not. The mean score for males who had HIV/AIDS education was 7.40 (SD = 7.25) and 9.48 (SD = 8.25) for those who did not. T-test analysis revealed a statistically significant difference between groups,  $t(3955) = 5.010$ ,  $p < .05$ . Males who did not have HIV/AIDS education were at a higher risk of becoming a teen father than males who did have HIV/AIDS education.

##### *4.4.2.1 Age and HIV/AIDS Education*

In regards to age and HIV/AIDS education, crosstab analysis was conducted to investigate whether there was a difference in HIV/AIDS education among age groups. When surveyed, 91.8% (n = 1190) of 15-year-olds, 90.7% (n = 1303) of 16-year-olds, and 90.8% (n = 1336) of 17-year-olds reported that they had been taught about HIV/AIDS education. Chi-square analysis revealed no statistically significant difference in HIV/AIDS education among age groups ( $X^2 = 1.77$ ,  $p > .05$ ).

##### *4.4.2.2 Race and HIV/AIDS Education*

Crosstab analysis was conducted to investigate whether there was a difference in HIV/AIDS education among racial groups. In regards to HIV/AIDS education, 93.4% (n = 1853) of White males, 88% (n = 1149) of Hispanic males, and 90.3% (n = 827) of Black males reported that they had been taught about HIV/AIDS. Chi-square analysis revealed a statistically significant difference in HIV/AIDS education between the racial groups ( $X^2 = 27.96$ ,  $p < .05$ ).

White males had a significantly higher percentage of HIV/AIDS and Hispanic males had a significantly lower percentage of HIV/AIDS education.

#### 4.5 Summary

So just who are these adolescent males? This was a sample of Black, White, and Hispanic adolescent males between the ages of 15 and 17. For the most part, these males had several risk factors. Almost half of them had sexual intercourse and reported multiple sexual intercourse partners. In fact, 24% (n = 573) reported that they had six or more sexual intercourse partners. Small percentages of them reported depression and suicide attempt. Although it was a small percentage, their risk scores on the TFRS were significantly higher than males who did not report depression or suicide attempt. In regards to substance use, this sample experimented with drugs and alcohol at a relatively young age, many reporting 13 and 14-years-old for their first substance encounter. Several males reported that a substance was used during their last sexual intercourse. On a positive note, majority of the sample reported that they used some form of birth control during their last sexual intercourse and majority of the males were taught about HIV/AIDS education. Males with HIV/AIDS education reported significantly lower risk scores than males without HIV/AIDS education. Majority of the sample was physically active and participated on a sports team.

In regards to age, older males had significantly higher percentages of sexual intercourse, more sexual intercourse partners, higher risk scores, and higher rates of substance use. It would be predicted that older adolescents would exhibit more risky behaviors. As adolescents age, they spend less time with parents and more time with their peers. Unsupervised activities provide adolescents with opportunities to experiment with risky health behaviors. However, it is important to note that younger adolescents participated in these behaviors, just at significantly lower rates. However, experience of these risk behaviors among

younger adolescents warrant concern. No significant differences were found among age groups in regards to depression, suicide scores, or suicide attempt.

Results of the previous analyses demonstrate significant differences among racial groups on sexual behaviors and other risk factors. White males had significantly higher percentages of HIV/AIDS education, the lowest percent of sexual intercourse, fewer sexual intercourse partners, and the lowest risk scores, the highest percentage of current smoking. Hispanic males had the lowest percent of HIV/AIDS education, highest suicide scores, highest percentage of depression and suicide attempt, and the highest percentage of substance use on all substance variables except for current marijuana use. Black males reported the youngest age of first sexual intercourse, the most lifetime and 3-month sexual intercourse partners, the highest percentage of current marijuana use, the highest percentage of unprotected sexual intercourse, and the highest risk scores. These racial differences in sexual behaviors and other health risk factors are devastating and must be addressed.

#### 4.6 Hypothesis Testing

This section presents specific steps implemented for hypothesis testing and the results of the hypothesis testing. In general, a two-step linear regression process was implemented to assess if the selected variables were predictors of teen fatherhood. Multiple regressions were implemented to assess the best risk and protective factor predictive of becoming a teen father.

**Hypothesis 1:** Race is a risk factor predictive of teen fatherhood. Minority males are at a greater risk of becoming a teen father.

Linear regression analysis was conducted to evaluate this hypothesis. Approximately 7% ( $R^2 = .069$ ) of the variation in risk scores was accounted for by race. This association was significant, ( $\beta = .263$ ,  $p = .000$ ). A unit increase in race resulted in a 4 point increase in risk scores ( $B = 3.905$ ).

In a second step, age was entered with race. Approximately 9% ( $R^2 = .092$ ) of the variation in risk scores was accounted for by age. A unit increase in race resulted in a 4.0 ( $B = 3.952$ ) increase in risk scores. This association was significant, ( $\beta = .267, p = .000$ ). A unit increase in age resulted in a 1.3 ( $B = 1.374$ ) increase in risk scores. This association was also significant ( $\beta = .150, p = .000$ ).

**Hypothesis 2:** Depression is a risk factor predictive of teen fatherhood. Those males that are more depressed are at a greater risk of becoming teen fathers.

Linear regression analysis was conducted to evaluate this hypothesis. Approximately 2.2% ( $R^2 = .022$ ) of the variation in risk scores was accounted for by depression. This association was significant, ( $\beta = .148, p = .000$ ). A unit increase in depression resulted in a 2 point increase in risk scores ( $B = 2.64$ ). In the next step, depression was entered with age. Depression and age accounted for approximately 4% ( $R^2 = .043$ ) of the variation in risk scores. Depression remained significant ( $\beta = .147, p = .000$ ). As hypothesized, depressed males had higher risk scores.

**Hypothesis 3:** Substance use is a risk factor predictive of teen fatherhood. Substance users are at greater risk of becoming teen fathers.

To test this hypothesis, linear regression was conducted. In the first step, each substance variable was entered independently. The first substance variable under evaluation was lifetime smoking. Approximately 13% ( $R^2 = .133$ ) of the variation in risk scores was accounted for by lifetime smoking. This association was significant, ( $\beta = .364, p = .000$ ). A unit increase in lifetime smoking resulted in a 5-point increase in risk scores. In the next step, lifetime smoke was entered with age ( $B = 5.400$ ). Together these variables accounted for approximately 14% ( $R^2 = .144$ ) of the variation in risk scores. Lifetime smoking remained significant ( $\beta = .352, p = .000$ ).

The second substance variable was Lifetime alcohol use. Approximately 8% ( $R^2 = .075$ ) of the variation in risk scores was accounted for by lifetime alcohol use. This association was significant, ( $\beta = .273$ ,  $p = .000$ ). A unit increase in lifetime alcohol use resulted in a 5 point increase in risk scores, ( $B = 4.742$ ). In the next step, lifetime alcohol use was entered with age. Lifetime alcohol use and age accounted for approximately 9% ( $R^2 = .089$ ) of the variation in risk scores. Lifetime alcohol use remained significant ( $\beta = .261$ ,  $p = .000$ ).

The third substance variable was lifetime marijuana use. Approximately 19% ( $R^2 = .186$ ) of the variation in risk scores was accounted for by lifetime marijuana use. This association was statistically significant ( $\beta = -.431$ ,  $p = .000$ ). A unit increase in lifetime marijuana use resulted in a 6 point increase in risk scores ( $B = 6.387$ ). When lifetime marijuana use was entered with age, both variables accounted for approximately 19% ( $R^2 = .193$ ) of the variation in risk scores. Lifetime marijuana use remained significant ( $\beta = .419$ ,  $p = .000$ ).

The fourth substance variable evaluated was current smoking. Approximately 10% ( $R^2 = .098$ ) of the variation in risk scores was accounted for by current smoking. This association was statistically significant ( $\beta = .313$ ,  $p = .000$ ). A unit increase in current smoking resulted in a 6 point increase in risk scores, ( $B = 5.620$ ). In the second step, current smoking was entered with age. Current smoking and age accounted for approximately 11% ( $R^2 = .112$ ) of the variation in risk scores. Current smoking remained significant ( $\beta = .301$ ,  $p = .000$ ).

The fifth substance variable evaluated was current alcohol use. Approximately 12% ( $R^2 = .122$ ) of the variation in risk scores was accounted for by current alcohol use. This association was statistically significant ( $\beta = .349$ ,  $p = .000$ ). A unit increase in current alcohol use resulted in a 5 point increase in risk scores ( $B = 5.139$ ). In the second step, current alcohol use was entered with age. Current alcohol and age accounted for approximately 13% ( $R^2 = .134$ ) of the variation in risk scores. Current alcohol use remained significant ( $\beta = .335$ ,  $p = .000$ ).

The sixth and final substance variable evaluated was current marijuana use. Approximately 14% ( $R^2 = .135$ ) of the variation in risk scores was accounted for by current marijuana use. This association was statistically significant ( $\beta = .368$ ,  $p = .000$ ). A unit increase in current marijuana use resulted in a 6 point increase in risk scores ( $B = 6.333$ ). In the next step, current marijuana use was entered with age. Current marijuana use and age accounted for approximately 15% ( $R^2 = .149$ ) of the variation in risk scores. Current marijuana remained significant ( $\beta = .358$ ,  $p = .000$ ).

To further test this hypothesis, a multiple regression analysis was conducted evaluate how well the significant substance variables predicted risk scores. Approximately 26% ( $R^2 = .259$ ) of the variation in risk scores was accounted for by the combination of substance variables. As shown in Table 4.9, lifetime marijuana use was the best substance predictor ( $B = 3.008$ ).

Table 4.8 Multiple Regression Model of Substance Predictors

	<b>B</b>	<b>Std Error</b>	<b>Beta (<math>\beta</math>)</b>	<b>t</b>
<b>Constant</b>	<b>-9.149</b>	2.141		-4.27*
<b>Lifetime smoke</b>	<b>1.855</b>	.282	.127	6.57*
<b>Lifetime alcohol</b>	<b>.695</b>	.305	.041	2.27*
<b>Lifetime marijuana</b>	<b>3.008</b>	.320	.205	9.40*
<b>Current smoke</b>	<b>.906</b>	.331	.051	2.73*
<b>Current alcohol</b>	<b>1.361</b>	.284	.093	4.79*
<b>Current marijuana</b>	<b>2.001</b>	.344	.117	5.82*
<b>Age (control)</b>	<b>.757</b>	.134	.084	5.63*

\*Denotes  $p < .05$

**Hypothesis 4:** Suicidal behavior is a risk factor predictive of teen fatherhood. Males who have higher levels of suicidal behavior will be at a greater risk of becoming a teen father.

Linear regression was conducted to evaluate this hypothesis. Approximately 2.3% ( $R^2 = .023$ ) of the variation in risk scores was accounted for by suicide scores. This association was statistically significant ( $\beta = .150$ ,  $p = .000$ ). A 1 point increase in suicide scores resulted in a 1 point increase in risk scores ( $B = 1.03$ ). In a second step, suicide scores and age were entered. Suicide scores and age accounted for approximately 4.4% ( $R^2 = .044$ ) of the variation in risk scores. Suicide scores remained significant ( $\beta = .151$ ,  $p = .000$ ) in the face of age.

**Hypothesis 5:** Participation in a team sport is a risk factor predictive of teen fatherhood. Males who participate in a team sport will have a higher risk of becoming a teen father.

In the first step, team sport participation was entered independently. Less than 1% ( $R^2 = .006$ ) of the variation in risk scores was accounted for by team sport participation. This association was statistically significant ( $\beta = .007$ ,  $p = .000$ ). A unit increase in team sport participation resulted in a .5 increase in risk scores ( $B = .516$ ). In the second step, team sport participation and age were entered. Approximately 3% ( $R^2 = .029$ ) of the variation in risk scores was accounted for by team sport participation and age. This association was significant ( $\beta = .084$ ,  $p = .000$ ). Team sport participation remained significant.

**Hypothesis 6:** HIV/AIDS education is a protective factor predictive of teen fatherhood. Males who have had HIV/AIDS education will have lower risk of becoming a teen father.

Linear regression was conducted to evaluate this hypothesis. In the first analysis, HIV/AIDS education was entered independently. Less than 1% ( $R^2 = .006$ ) of the variation in risk scores was accounted for by HIV/AIDS education. This association was statistically significant ( $\beta = -.079$ ,  $p = .000$ ). A unit increase in HIV/AIDS education resulted in a 2 point decrease in risk scores ( $B = -2.07$ ). In a second step, HIV/AIDS education was entered simultaneously with age. HIV/AIDS education and age accounted for approximately 3% ( $R^2 =$

.026) of the variation in risk scores. Even in the face of age, HIV/AIDS education remained significant ( $\beta = -.079$ ,  $p = .000$ ).

**Hypothesis 7:** Physical activity is a protective factor predictive of teen fatherhood; physically active males will have a lower risk of becoming a teen father.

This hypothesis was not evaluated. Previous analysis countered this hypothesis. Independent samples t-test revealed no significant difference in risk scores among males that were physically active and those who were not.

**Hypothesis 8:** Of all the risk factors, race is the best predictor of risk for teen fatherhood.

A multiple regression analysis was conducted to evaluate how well all significant risk factors predicted risk scores. Approximately 33% ( $R^2 = .330$ ) of the variation in risk scores was accounted for by the combination of predicted risk factors. As shown in Table 4.10, race remained significant and was the best predictor of teen fatherhood ( $B = 3.640$ ). Lifetime marijuana use was the second best predictor ( $B = 2.776$ ).

Table 4.9 Multiple Regression Model of Risk Factors

	<b>B</b>	<b>Std. Error</b>	<b>Beta (<math>\beta</math>)</b>	<b>t</b>
<b>Age (Control)</b>	<b>.887</b>	.129	.098	6.89*
<b>Race</b>	<b>3.718</b>	.206	.255	18.03*
<b>Depression</b>	<b>.721</b>	.273	.040	2.64*
<b>Life Smoke</b>	<b>1.611</b>	.270	.110	5.96*
<b>Life Alcohol</b>	<b>.794</b>	.292	.047	2.72*
<b>Life Marijuana</b>	<b>2.675</b>	.306	.182	8.75*
<b>Current Smoke</b>	<b>1.304</b>	.319	.074	4.09*
<b>Current Alcohol</b>	<b>1.531</b>	.273	.105	5.61*
<b>Current Marijuana</b>	<b>1.702</b>	.329	.099	5.17*
<b>Suicide Scale</b>	<b>.460</b>	.106	.065	4.33*

<b>Sports</b>	<b>.617</b>	.093	.094	6.60*
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\*Denotes  $p < .05$

To evaluate further this hypothesis race and lifetime marijuana use were regressed onto the TFRS. Together, these factors accounted for approximately 26% ( $R^2 = .264$ ) of the variance in risk scores.

**Hypothesis 9:** of all the protective factors, AIDS/HIV education is the best protector against teen fatherhood.

The only factor found to protect against teen fatherhood was HIV/AIDS education. No further analysis was conducted. Therefore, HIV/AIDS education is the best protector from teen fatherhood.

#### 4.7 Summary of Hypothesis Findings and Research Questions

Two research questions and nine hypotheses guided this study. To evaluate the research questions and hypotheses, rigorous data analysis, such as independent t-test, linear regression, and analysis of variance (ANOVA) was conducted.

In regards to Question 1, is there a relationship between the risk of becoming a teen father and the following risk factors: minority status, substance use, depression, suicidal behavior, and team sport participation? It was determined that all factors listed were indeed factors that contribute to risk of becoming a teen father.

Hypothesis 1 was supported in that minority adolescent males had higher scores on the TFHS. Furthermore, Black males had the highest risk score of all the racial groups. This difference was statistically significant.

Hypothesis 2 was supported in that as depression increased the risk of becoming a teen father also increase. This association was statistically significant.

Hypothesis 3 was supported in that as substance use increased, the risk of becoming a teen father also increased. Regression analysis revealed that all six substance variables were

significant. In fact, when each substance variable was entered with the control variable, the substance variable remained significant and was a better predictor than age.

Hypothesis 4 was supported in that as scores on the suicide score increased, the risk of becoming a teen father increased. This association was statistically significant.

Hypothesis 5 was supported in that as team sport participation increased, the risk of becoming a teen father also increased. This association was statistically significant.

In regards to research question 2, do the following factors protect adolescents from the risk of becoming a teen father: physical activity and HIV/AIDS education? It was determined that only HIV/AIDS education was a protective factor. Data analysis revealed that physical activity was not a protective factor.

Hypothesis 6 was supported. As HIV/AIDS education increased, the risk of becoming a teen father decreased. This association was statistically significant.

Hypothesis 7 was not supported. Independent samples t-test analysis revealed no statistically significant difference among males who participated in 60 minutes of physical activity a week and males who did not. Therefore, this hypothesis was not evaluated.

Hypothesis 8 was supported in that of all the predictors, multiple regression analysis revealed that race was the best predictor of risk of becoming a teen father. Lifetime marijuana was a close second for the best predictor. These associations were statistically significant.

Hypothesis 9 was supported. Of all of the protective factors, HIV/AIDS was the best protector from risk of becoming a teen father.

#### 4.8 Conclusion

In this chapter, a thorough description of the sample in regards to sexual behaviors and other health behaviors were presented. Results revealed significant age and racial differences, with minority and older adolescents presenting the greatest risk of teen fatherhood. In addition, results of hypothesis testing were presented. Of the nine hypotheses tested, eight were

supported and one was rejected. Discussion of major findings and implications for practice, policy, and research are presented in the succeeding chapter.

## CHAPTER 5

### FINDINGS, DISCUSSION, AND CONCLUSIONS.

In the previous chapter, hypothesis findings and results were presented. The final chapter of this dissertation opens with a brief overview of study findings. However, the majority of this chapter is devoted to discussion of major research findings and to implications for practice, policy, and research for teen pregnancy prevention.

After 14 years of steady decline, teen pregnancy rates in the United States rose significantly from 2005 to 2007. This increase is concerning due to the adverse consequences associated with teen pregnancy. The overall purpose of this study was to identify and further understand key risk and protective factors associated with teen fatherhood. This study also sought to fill the gap in teen pregnancy research, which has typically focused on adolescent females. Guided by the Risk and Resilience Perspective, a group of risk and protective factors were identified

among a sample of 4588 males between the ages of 15 and 17 from the 2007 Youth Risk Behavior Survey. After rigorous analysis and evaluation, the best predictor of teen fatherhood among adolescent males was race, followed by lifetime marijuana use. Minority males had the highest risk scores on the TFRS. Black males had the highest risk scores, followed by Hispanic males. Discussions of these findings are presented in a subsequent section of this chapter.

### 5.1 Discussion of Findings

This section discusses the overall findings of the study. Significant age and racial differences were found and are discussed in this section.

#### *5.1.1 Overall Findings*

Overall, the sample had a relatively low risk of teen fatherhood. When surveyed, 40% (n = 1847) of the sample reported that they ever had sexual intercourse and 52% (n = 2406) reported that they had not. Scores on the Teen Father Risk Scale ranged from 0 to 26 and the mean score for the sample was 7.6 (SD = 7.39). The overall mean age for first sexual intercourse was 13.9 (SD = 1.62). This age is significantly lower than the mean age reported in previous research. Lohman and Billings (2008) reported an age of 15 years old, and the Kaiser Family Foundation (2008) reported an age of 16.9. These results suggest that adolescent males in general are engaging in sexual intercourse at an earlier age. Therefore, age appropriate pregnancy prevention programs must be presented to younger adolescents. In addition, programs must continue to stress the importance of condom use and delaying sexual intercourse. Not surprising, scores on the TFRS were higher for 17-year-old males than for 15-year-old males. As adolescents get older, they spend more time with peers and less time with parents and other adults. Unsupervised time allows for opportunities for experimentation with risky behaviors

### *5.1.2 Depression and Suicidal Behavior*

Even in the face of all significant risk factors, depression remained significant. Literature focusing on depression as a risk factor associated with teen pregnancy has been inconsistent for both males and females. Burns et al. (2004) and Thornberry et al. (1997) found depression to be a risk factor among a diverse sample of adolescent males. However, Crosby et al. (2003) and Davies et al. (2003) did not find depression as a risk factor. Dawson et al. (2004) found 12% of depressed males and females to report that they had sexual intercourse in the past week to manage or elevate their mood. Adolescents are using sexual intercourse as a form of self-medication. This could also be a plausible explanation for higher risk scores for not only depressed males, but also for suicidal males.

Suicidal behavior as a risk factor for teen pregnancy is a fairly unexplored factor. Overall, a small, but significant percentage of males ever attempted suicide, 4.75% (n = 188). However, this should not be regarded lightly. There were significant results that deserve attention. First, scores on the suicide scale were predictors of teen fatherhood. Further analysis revealed that adolescent males that attempted suicide had significantly higher risk scores than males who had not attempted suicide. Of the males that attempted suicide, 64.5% (n = 71) reported that they had sex, 38% (n = 27) reported that they did not use a condom at their last sexual intercourse encounter, and 9% (n = 6) reported that they had 6 or more partners in the last 3 months. Results demonstrate a link between suicidal behavior and risky sexual behavior.

Substance use among suicidal adolescents could also explain risky sexual behaviors (Goldsmith et al., 2002). Of the males that had attempted suicide, 40.5 (n = 87) were current marijuana users, 51.2% (n = 110) were current alcohol drinkers, and 40.9% (n = 88) were current smokers. Males who attempted suicide had significantly higher use of all lifetime and substance variables. Higher TFRS among this group could then be a result of using substance

use as coping mechanism that perhaps impairs judgment and decision-making skills. As a result, their risk of teen fatherhood increases.

### *5.1.3 Team Sport Participation*

Team sport participation was found to be a risk factor as well. Athletes had higher risk score than nonathletes. In the institution of sports, sexual behaviors validate masculinity and manhood and risky sexual behaviors are accepted. Promiscuity among male athletes does not fall prey to the same age-old scrutiny that females encounter. Many athletes gain popularity status and other social benefits that they can then use as bargaining power to exchange for sexual gain. High school “jocs” have sexual intercourse at an earlier age and more sexual intercourse partners (Miller et al., 2005). Some adolescent males may view the group norms and expectations associated with sports as an avenue to participate in risky sexual behavior.

In addition, Black athletes had the highest risk scores. Other studies have found that Black athletes had higher sexual risk behaviors (Miller et al., 2002; Miller et al., 2005; Pate, Trost, Levin, & Dowda, 2000). Hispanics athletes had the second highest risk scores. This result was interesting because studies that have included Hispanics have not found an association between team sport participation and sexual behaviors (Miller et al., 2002; Pate et al., 2000). Hispanic athletes reported significantly higher risk scores than Hispanic nonathletes.

The context in which team sport participation occurs and the cultural meaning attached to it must be considered. For many minority athletes, sport participation may be viewed as way to gain financial status. White athletes may have a different outlook on sports participating, viewing it more as healthy exercise and another activity to put on their resume or portfolio (Guest & Schnelder, 2003). Athletes with career goals and opportunities may view having a child in high school detrimental to achieving future goals. However, impoverished adolescents may view going to the “pros” as an imaginary avenue to escape poverty (Smith, 2009). Thus, engaging in risky sexual behavior that could potentially lead to a pregnancy, in their minds,

would not jeopardize their goals. They may even fantasize about having plenty of money to provide for a child if they should have one in high school. Minority adolescents may idolize professional athletes because they lack role models and the exposure of professional occupations in their communities. Some Black males are socialized to become athletes, especially in communities lacking positive youth development. Often times their only option is to play football or basketball. After all, these sports only require a ball and space. They do not require special lessons or expensive equipment.

## 5.2 Major Hypothesis Findings

### *5.2.1 Race*

Linear regression analysis revealed that race was the best predictor of risk of teen fatherhood. Minority males in the sample had significantly higher risk scores than White males. Black males had the highest risk scores. While this is well documented in teen pregnancy literature pertaining to adolescent females, it is not as well documented in literature regarding adolescent males. However, similar results have been found (Berry et al. 2000; Blum et al., 2000; Lohman & Billings, 2008; O' Donnell, O'Donnell, & Stueve, 2001; Thornberry et al., 1997; Upchurch, Aneshensel, Sucoff, & Levy-Storms, 2001; Xie et al., 2001). In general, minorities are more likely to be poor, which makes them susceptible to a host of negative experiences. Thus, minority adolescents are born with a prominent risk factor that increases their risk of becoming a teen father prior to engaging in behaviors that are directly linked to teen pregnancy.

Several explanations for racial difference in adolescent sexual behavior have been presented in the literature. The majority of the research has focused on socioeconomic disadvantage, family structure, and socialization (sexual norms). Please note that family and economic conditions were not collected or evaluated in this study. The following discussions

are possible explanations for the racial differences in sexual behaviors presented in the literature.

Explanations for early sexual intercourse and other risky sexual behaviors among minorities are low parental education (Santelli, Lowry, Brener, & Robin, 2000), being raised in a single family (Blum et al., 2000; Upchurch, Aneshensel, Sucoff & Levy-Storms, 1999; Upchurch, Levy-Storms, Sucoff, & Aneshensel, 1998), negative sexual behavior norms (Kirby, 2001; Santelli et al., 2004). Sexual norms have been identified not only as an explanation for early sexual intercourse, but for the development of sexual behavior in general. Sexual norms are acquired through socialization.

Socialization plays a prevalent role in sexual behaviors among adolescents. Socialization refers to the attitudes, beliefs, behavior norms, symbols, and values held by an entity that are transferred and acquired by another entity (Sceewind, 2001; Shtarkshall, Santelli, & Hirsch, 2007). Parents and other pertinent family members are the primary socializing agents. Since sexual behaviors are learned behaviors, it seems plausible that much of what children and adolescents learn about sexual behavior is acquired through their parents. Parents express both overt and covert messages about sexual behaviors through their own behaviors. When parents model negative sexual behaviors such as promiscuity, cohabitating, giving birth as a teenager, the likelihood that their children will exhibit similar behaviors is great (Shtarkshall et al., 2007; Kirby 2001).

While the family is the primary socializing agents, they are not the only socializing agents. The community in which adolescents live also provides a great deal of socialization regarding sexual norms and behaviors. Historically, in many Black communities having a child out of wedlock was not seen as abnormal (Moore, Sims, & Betsey, 1987; Hale, 2007). While this is not the case for all Black communities, there are still Black communities where having a

baby out of wedlock, even as a teenager is not stigmatizing. Thus, for minority adolescent males who reside in such communities, it may be

Economic conditions are central to understanding culture within a community and must be considered. Affluent communities flourished with opportunity and access to contraception, generally have clear norms against risky sexual behavior. Thus, adolescents in those communities have the necessary tools and support to take responsibility for their sexual behaviors. On the other hand, impoverished communities are often times marked by high unemployment rates, fewer resources, fewer opportunities, and lacking of youth development programs. These communities also have less access to health clinics, which decreases availability of contraception. This partially explains why minority males have high rates of HIV/AIDS cases. In addition, minority households are more likely to be headed by females rather than two parent families. Adolescent males who grow up without fathers in their homes may mimic males in their communities who may not model appropriate sexual behavior. It is important to note that not all adolescents in poverty experience risky sexual behaviors, their likelihood just significantly increases.

In regards to Hispanics, research demonstrates that Hispanic parents have difficulty speaking to their adolescents about sexual behavior, especially parents with less education (Raffaelli & Green, 2003; Raffaelli, & Ontai, 2001). Parents assume that communicating with their adolescents about sexual behavior encourages them to become sexually active (Guilamo-Ramos et al., 2006). However, when Hispanic parents do talk with their adolescents, they are more likely to communicate with their daughters rather than their sons (Guilamo-Ramos, Jaccard, Dittus, Bouris, & Harrington, 2007; Raffaelli & Green, 2003). This partially explains why Hispanic males are more likely to have sexual intercourse than adolescent females. Another possible explanation for racial differences is acculturation. Adolescents who are most acculturated have higher levels of sexual intercourse (Adrados, 2010; Upchurch et al., 2001).

During the acculturation process some Hispanic adolescents struggle with maintaining traditional values while finding their place in the dominant culture (Flores, Eyre, & Millstein, 1998).

Adolescent sexual behavior is multifaceted and several factors influence sexual behaviors among minority adolescents. Although the family is a primary agent, the community, provides significant socialization in regards to sexual norms. In addition, family factors such as family structure, parental education, social economic status etc., must be considered. Again, the previous discussions were presented to illustrate intervening variables that account for racial differences in sexual behaviors among adolescents that have been presented in the literature.

#### *5.2.2 Substance Use*

Multiple regression analysis revealed that lifetime marijuana use was the second best predictor of risk of teen fatherhood. Although lifetime marijuana use was the best predictor, all current and lifetime substances were statistically significant risk factors. Several studies have found an association between substance use and risky sexual behavior (Averett et al., 2004; Berry et al., 2000; Broman, 2007; East & Rubin, 1999; Fagot et al, 1998; Miller-Johnson, et al., 2004; Pears et al., 2005; Rashad & Kaestner, 2004; Rees et al., 2001; Thornberry et al., 1997, Zapata et al., 2008). Substance use increases the risk of becoming a teen father by 40% (Pears et al., 2005; Thornberry et al., 1997). Bachanas et al. (2002) found substance use to be the best predictor of teen pregnancy among females. Substance use may cause adolescent males to exhibit aggressive sexual behavior that ultimately leads to sexual intercourse. In addition, substance use restricts ability to evaluate risk and significantly impairs judgment. In the current study, 23% (548) of males used a substance at their last sexual intercourse encounter. Twenty-two percent (n = 440) of lifetime marijuana users did not use a condom during their last sexual intercourse. In addition, 21% (n = 423) of lifetime marijuana users reported that they had six or more sexual intercourse partners. Both percentages are higher for

current marijuana use. In terms of lifetime alcohol use, 18% (n = 555) reported that they did not use a condom during their last sexual intercourse encounter and 14% (445) reported six or more sexual intercourse partners. These results support previous research.

Majority of the literature focuses on alcohol and marijuana use as risk factors associated with teen pregnancy. Tobacco use is a less explored factor for teen pregnancy. The current study validates these results, but adds value. Analysis revealed that both lifetime and current smoking as predictors of teen fatherhood. Rashad and Kaestner (2004) found tobacco use to increase sexual behavior and intercourse without contraception. In the current study, 20% (n = 498) of lifetime smokers and 30% (n = 251) of current smokers reported that they did not use a condom during their last sexual intercourse encounter. A possible explanation for the association between cigarette smoking and risky sexual behavior is that tobacco is addictive and may encourage adolescents to experiment with more severe addictive substances that also place adolescents at risk for teen parenting.

There were also interesting observations pertaining to race and substance use. Higher percentages of Black males were current marijuana users and higher percentages of White males were current smokers. Hispanic males reported a higher percentage of current alcohol use and higher percentage on all current substances. Averett et al. (2004) found marijuana use to be more prevalent among Black males and alcohol use to be prevalent among White adolescent males. These results are slightly different from the current study. Minority males reported higher percentages of substance use on all substance variables except for cigarette smoking. The harder and more addictive substances were more prevalent among minority males. While race was the best predictor for risk of teen fatherhood, results demonstrate race as a risk factor for substance use. One risk factor may cause other risk factors to coexist. Minority males reported significantly higher percentages of depression, with Hispanic males having the highest percent. Hispanic males also had the highest mean suicide score. It is

possible that minority males use substances to self medicate. Therefore, in the process self-medicating, minority males are at an even greater risk of becoming a teen father. Overall, minority males reported risky behaviors and thus explains their high percentages of substance use and higher risk scores.

Research demonstrates that substance use is associated with increased sexual behavior and sexual intercourse without contraceptives (Averett et al., 2004; Rashad & Kaestner, 2004; Rees et al., 2001). Results from the current study validate these results. Higher percentages of substance users reported sexual intercourse than nonsubstance users. Race and Lifetime substance use were the best predictors of substance use. Risk scores and overall substance use was more prevalent among minority males. These results demonstrate that being a minority exposes adolescent males to other risk factors that significantly increase risk of becoming a teen father. These results are devastating and must be addressed in prevention programs.

### 5.3 Limitations

Methodological limitations should be considered when interpreting the results of this study. Secondary analysis presents limitations in its own right. In the current study, critical variables of interest were omitted from data collection. For example, no family or socioeconomic information was collected from participants. These are variables that have been found to significantly impact an adolescent's risk of teen pregnancy. Although race was the best predictor of risk of teen fatherhood, results may have been significantly different if income, family structure, and other psychosocial variables were collected. These variable omissions limit data analysis and explanations of associations.

A problematic issue that must be mentioned is the fact that the original survey inquired about sexual behaviors, but did not inquire about the gender of the sexual partner. Therefore, there is a possibility that some of the subjects were homosexual and/or bisexual.

Another limitation to consider is the length of the survey. The survey consisted of 87 questions. The CDC reports that it takes approximately 35 minutes to complete the survey. Although the researcher did not collect the data and did not have a chance to inquire about the survey, one can assume that attention spans and lethargy could have affected adolescents' responses. The adolescents could have gotten bored or tired and just randomly chose answers without reading y or they may have skipped some questions.

Although dummy coding variables was chosen in order to conduct rigorous statistical analysis, this process does present a major limitation. In regards to substance use, those who only used a substance one time were ranked the same as those who were heavy users. In addition, this study only investigated three types of substances; marijuana, alcohol, and cigarette smoking. Other substances may also have a strong influence on risky sexual behavior.

#### 5.4 Risk and Prevention

Historically, risk has been associated with prevention in public health. Prevention primarily focused on risk factors associated with disorders and health problems (Coie et al., 1993). A major goal of the risk and resilience perspective is to prevent and reduce risk factors and promote protective factors (Fraser, Randolph, & Bennett, 2000). However, prevention requires knowledge of the social problem, its causes, and the magnitude of consequences associated with it. Being cognizant of these factors enables intensive, effective services to be implemented for at risk adolescents (Burt, Resnick, Novick, 1998; Kirby, 2002). Thus, risk and protective factors are the building blocks of prevention; they provide structure for the development of prevention programs.

##### *5.4.1 Primary Prevention*

Primary prevention is the most cost-effective prevention. When effective, primary prevention helps circumvent the cost, consequences, and burdens associated with teen

pregnancy and parenting or other social problems. Gordon (1983) classifies three levels of primary prevention: universal, selective, and indicated. Universal primary prevention programs are administered to the entire group or population. For example, every middle school attends a pregnancy prevention program. This level of prevention does not single out individuals or identify those that have higher levels of risk than others do. Smith (1994) considers this method ideal because most people have some level of risk even if minimal and they can benefit from the program or service. In addition, these programs are widespread, less stigmatizing, which could increase participation, and they can significantly decrease current or future risk. Prevention at this level would be beneficial to all adolescent males in the current study.

Unlike universal prevention, in selected prevention individuals are selected based on their identification to a subpopulation such as, age, race, or sex that places them at increased risk. Minority males in the current study had higher risk scores than nonminorities. In this case, minority males would be selected to participate in a prevention program to address their unique needs. More intense services and attention are provided at this level of prevention because the risk is based on a known factor or characteristic (Smith, 1994). Indicated primary prevention encompasses individuals who have a high degree of risk. The target population for indicated primary prevention is teen fathers. The goal of this level of prevention is to prevent subsequent pregnancies and promote contraceptive use. Regardless of the level of prevention administered, the most effective are those that are evidenced-based and comprehensive. The current study utilized the Risk and Resiliency Perspective to identify key factors associated with teen parenting among adolescent males. Based on these results, implications for practice, policy, and research are provided.

#### 5.5 Implications for the Profession of Social Work

### *5.5.1 Practice*

The results of this study indicate the need for evidenced-based comprehensive, universal and selected prevention programs. The current study identified several risk factors associated with teen pregnancy. It takes more than one agency or school to provide the pertinent services needed to implement effective comprehensive prevention programs. Therefore, the key is to provide multiple interventions in multiple settings. Churches, schools, community centers, social and governmental agencies, adolescents, teachers, physicians, social workers, and other pertinent organizations have a role to play, it takes collaborative efforts to implement effective comprehensive pregnancy prevention. The key elements this researcher wishes to emphasize for implications are consistent collaboration and the involvement of adolescent males.

Generally, the main goals of prevention programs are to delay sexual intercourse and increase condom use among adolescents (Robin et al., 2004). While these are pertinent and necessary goals, programs must expand and include delaying substance use and other risk factors that interact to place adolescents at risk. Teen pregnancy prevention programs must go beyond basic or traditional forms of prevention and use more contemporary methods that address the multi facets of teen pregnancy. Teen pregnancy prevention programs must equip adolescents with the necessary tools and information that will empower them to make responsible decisions regarding their sexual behavior that promotes a healthy, positive lifestyle that will transfer into adulthood.

To accomplish this, programs must explore creative strategies that include and engage adolescent males in pregnancy prevention. Research shows that programs that serve adolescent males have obvious gaps. Of the 17 prevention programs reviewed by Robin et al. (2004), only two programs included all male participants. Female facilitators were used in most programs, even programs that served both males and females. In addition, females significantly

outnumbered males in the few programs that included both genders. Ndong, Becker, Haws, & Wegner (1999) also reported that facilities and programs have difficulty recruiting and engaging adolescent males. Possible explanations are that staff members often lack adequate male sexual reproductive training. In addition, program material, facility decorum, and staff members' attitudes have not been male friendly. These factors discourage male participation, which deprives them of valuable information and services.

To address some of these gaps, programs must utilize male facilitators and ensure that program material and services are male friendly. Conducting focus groups with adolescent males to inquire about their interests in pregnancy prevention programs and their unique needs can provide useful information for the implementation of prevention programs. Providing participants with incentives for attending, such as, iTunes download gift cards, Wal-mart gift cards, McDonald's gift cards, IPOD, XBOX games, etc. encourages participation. Collaborations with retail stores, restaurants, and other businesses can provide the resources for this to occur. Advertising prevention programs on Facebook, Twitter, and other social networks frequented by adolescents is a great technique to capture their attention. This type of advertising also demonstrates that the agency and facilitators are computer savvy and adolescent friendly.

Analysis revealed that race was the best predictor of risk of teen fatherhood. Pregnancy prevention program must be culturally appropriate. Hispanic males in the current study had the second highest risk scores. Awareness of Hispanic culture and values should be evident in pregnancy prevention. Russell and Lee (2004) reported that pregnancy prevention with Hispanics focuses more on acculturating clients to U.S cultural values, rather than tailoring prevention to encompass Hispanic beliefs and values. These values conflict with Hispanic values and cause resistance to services. The goal of prevention is to promote healthy lifestyles. If programs are not culturally appropriate, the clients most in need of prevention services will not

participate. Hispanic subgroup values and beliefs must be considered during the development and implementation of pregnancy prevention programs. In addition, facilitators should be culturally trained, from diverse backgrounds, and able to speak the language of the target population (Adrados, 2010; Russell & Lee, 2004). Participants are more apt to respond positively to facilitators who are nonjudgmental, sensitive, and competent (Russell & Lee, 2004; Van Campen & Russell, 2009).

Another culturally relevant aspect to consider is that a significant number of Black male adolescents grow up without fathers. Black males face difficulties on a daily basis; many of them end up in jail or dead before they reach adulthood. Without adequate leadership, it is difficult for them to overcome negative stereotypes and influences of their environments. Minority male facilitators and mentors are essential to prevention programs involving adolescent males. Consistent mentorship will expose adolescent males to companionship, healthy life alternatives, hope, future aspirations, etc. Culturally relevant prevention will increase the effectiveness of pregnancy prevention programs for adolescent males.

Lifetime marijuana use was the second best predictor of risk of becoming a teen father. Smoking and alcohol use were also associated with higher risk scores. Substance use prevention programs must focus on delaying substance use and increase the awareness of consequences associated with substance use among adolescents. The utilization of chemical dependency social workers is a unique approach to provide firsthand-specialized knowledge and information. Nurses and teachers teaching from a developed curriculum may not have adequate professional experience. In addition, chemical dependency social workers have greater access of individuals who have overcome dependency issues who can provide testimonial stories as a means to deter substance use. This approach also provides students the opportunity to ask questions and receive valuable information and feedback from professionals who specialize in substance use.

Team sport participation was significant predictor of teen fatherhood. Risk scores in the current study were higher for athletes. This issue must be addressed in pregnancy prevention programs. Preventing adolescent males from participating in sports is not an option. Rather, creative ways to send overt messages regarding sports, risky sexual behavior, and consequences must be incorporated. Consistent collaboration with local college and professional athletes is one strategy to incorporate. College and professional athletes can speak to males in pregnancy prevention programs about the consequences of inappropriate sexual behavior, poor choices, and keys to success. In the DFW metropolis, there are several colleges (Baylor, UNT, TCU, UTA, etc.) and professional sports teams (Mavericks, Cowboys, and Rangers) to collaborate with. Allowing the adolescent athletes an opportunity to interact and play a game with college and professional athletes also provides a source of mentorship. Many of the adolescent athletes desire to be like these males anyway. Although they would play ball, they would also leave with valuable information. The college and professional athletes can be the carrots to get adolescent males in prevention programs.

On going youth, development is also an important element that must be increased. Johns, Moncloa, and Gong (2000) identified youth development as a best practice for pregnancy prevention programs. Providing at risk adolescents with skills that will provide them opportunity to better themselves will also decrease their chances of becoming teen parents. Programs that provide goal setting, decision-making skills, college visits, motivational speakers, exposure to life outside of their current environment, career exploration, tutoring, study skills, etc, help expand life options and provide hope. These services are most beneficial for disadvantaged participants and those that cannot imagine life outside of their current environment.

In light of the suicidal behavior and depression findings in the current study, programs must increase supportive services. These services should provide routine depression and

suicide screening, suicide awareness, and coping skills. Students should be provided with crisis hotline numbers and other local information for assistance when they feel down and hopeless. In addition, services should include consistent support groups that address ongoing pressing issues that adolescents experience. These services are proactive and have the potential to promote positive mental health and decrease the overall suicide rate among adolescents.

Although family information was not collected in the current study, family plays a critical role in adolescent development and behavior. Thus, a family component is essential to pregnancy prevention. Family life education can provide parents with the necessary communication tools to address not only issues regarding sexual behaviors, but other important topics and issues. Educating parents can also provide awareness and insight into adolescent biological, psychological, mental, and social development. Parents must understand that sexuality is a component of adolescent development. Parents must be equipped with effective quality information to disseminate to their adolescents that will be effective in the face of peer and media messages. In addition, programs should focus on the importance of adequate supervision, supportive relationships, expectations, and delaying childbearing. This information can also assist with the development of family strengths, family connectedness, and parenting skills.

This researcher is aware that these practice recommendations are tall orders and require a substantial amount of additional funding. It is important to emphasize that if adequate money is not spent on effective prevention, significantly more funds will be spent on adverse consequences associated with teen pregnancy. This researcher is also aware that some of these implications have already been implemented in a few programs. However, as a result of the recent increase in teen pregnancy rates, programs must be drastically revamped.

### *5.5.2 Research Recommendations*

Despite the limitations mentioned, this study contributes to emerging literature regarding males and the complex factors that contribute to teen fatherhood. Results from this research demonstrate that research on sexual behavior pertaining to not just minority males, but adolescent males in general needs further investigation. Further research would add to the body of knowledge and create a stronger research base for adolescent males. A comprehensive view of adolescent males' sexual behavior must be provided. What is currently known about the sexual behaviors of minority adolescent males is pathologizing, deviant, and demonizing. Research focuses on family structure, SES, and community characteristics as intervening variables that facilitate risky behaviors among minority adolescents. While these explanations are pertinent, they only represent a segment of the issue. It is equally important to gain a full understand of adolescent males' feelings and norms associated with their sexual behaviors, their reflection and decision making process, and their feelings and understanding of relationships and intimacy. Little is known about these topics. This shift in research will provide a comprehensive view of adolescent males' sexual behaviors (Hunter, Guerrero, & Cohen, 2010). Gathering information of this caliber will require a combination of qualitative and quantitative research methods, which are also needed in this particular area of research. More qualitative studies will provide clarification on quantitative results. Information gained through this research shift will also provide information for the development of new policies and programs to further facilitate healthy behavior and combat against teen pregnancy.

Research is needed to further investigate the relationship between team sport participation and risky sexual behavior, particularly among minority male athletes. Assumptions can be made, such as adolescent males are promiscuous because of their exchange and bargaining power (popularity) gained through participation in a team sport. Further research must investigate the context of sports participation and the cultural meaning associated with it

among minority adolescent males. However, these explanations should be obtained from the adolescent males themselves. Research pertaining to the additional pressures faced by adolescent male athletes and their influences on sexual decision-making process will provide rich insight and understanding. This pertinent information will move the literature away from assumptions, stereotypes, and labeling minority sexual behaviors as pathological.

Future research should also focus on changes in adolescent sexual behavior overtime. The 2009 Youth Risk Behavior Survey data is available and can be compared with the 2007 data to monitor changes in target risky sexual behavior. These observations will provide accurate information on sexual behavior trends and information for the development of prevention programs to address these behaviors.

In regards to behavior influences, the current study did not have enough variables to assess hierarchical influences of risky sexual behavior. Future research should focus on the nature of hierarchal relationships between individual, family, and environmental factors. For example, what factors have the most influences, which factors come first, and so on. In addition, more attention has been devoted towards risk factors. Researchers must shift their focus to protective factors. The current study only investigated two protective factors. In chapter 2, academic achievement, religiosity, and parental monitoring were presented as protective factors. Future research should investigate these and other protective factors with adolescent males. An increased focus in this area of research will allow for the promotion of protective factors and a decrease in the teen pregnancy rate.

Several studies report an association between substance use and sexual behaviors, but results do not demonstrate intervening environmental factors that influence substance use. In addition, research does not report why racial differences exist. Are these differences related to cultural reasons or social norms in the communities in which they live? One could assume a combination of both. However, far less research focuses on racial differences.

After 14 straight years of steady decline, the teenage pregnancy rate increased for two years straight. This recent increase has caught the attention of practitioner, researchers, and policy makers. The Obama administration allotted a historic investment of funds for the replication of effective evidenced-based prevention programs. It is imperative that social workers evaluate teen pregnancy programs; especially those tailored for adolescent males, and publish these findings to the larger body of research. Dissemination of this information will lead to program awareness and ultimately the replication of these programs. Replication of evidenced-based prevention programs will not only decrease teen pregnancy, but also increase overall positive youth development.

### *5.5.3 Policy Implications*

Analysis revealed that HIV/AIDS education was a protective factor in the current sample. More policies that expand the duration and services of prevention programs are needed. Often times, students are presented with some form of HIV/AIDS education once or twice during the school year. This is simply not enough. Students need ongoing services spread out over a longer period. Intense, consistent services are the most effective (Basen-Engquist et al., 2001; Klein, 2005). Robin et al. (2004) found programs with intense services that were spread out over a longer time produced the best results. Duration and intensity should be equivalent to adolescent risk and needs. Adolescents most at risk should be provided with intense consistent services. Minority males in the current study were most at risk, thus HIV/AIDS education must be increased for these adolescents.

Much of what is known before, during, and after teen pregnancy refers to adolescent females. In order to address a social problem, several aspects of the issue must be considered. It is impossible to make meaningful progress while only focusing on one side of teen pregnancy. Research shows that adolescent males influence adolescent girls' decision about sexual intercourse. In order to effectively combat against teen pregnancy from both angles, policies

should outline clear guidelines and funds specific to prevention for adolescent males. Providing increased services and education for adolescent males gives them the opportunity to make better decisions that could potentially decrease teen pregnancy rates.

In addition, policies that require more social workers in schools and community centers are needed. More social workers are needed in high schools, middle schools (regardless of the SES of the school), and community centers. Schools and community centers that cannot afford social workers should be provided with grants for assistance. The grant should have stipulations that require social workers to provide prevention services (substance and teen pregnancy prevention). If more social workers are on staff to provide ongoing supportive services (individual and group counseling, etc.), adolescents have the opportunity to develop working relationships. When a problem arises, students may be more apt to talk with their social worker, than the school counselor whom they do not have a relationship with. School counselors cannot provide all the services that adolescents need. Not to say that school counselors are not and cannot be effective, they just have limited time to allot towards the implementation of programs and psychosocial services that address issues and circumstances prevalent during adolescence.

In the current study, substance use had a major influence on risky sexual behavior. Policy requiring all schools to provide substance use prevention would be helpful in providing awareness and a decrease in substance use among adolescents. In addition, stronger anti-substance use policies are paramount. Policies that limit substance use advertisement during peak viewing hours and an increase in anti-substance use programs and advertisement must be implemented to further combat against adolescent substance use. Lifetime marijuana use was the best substance predictor of risk of becoming a teen father. Ironically, attention and support for the legalization of marijuana has drastically increased. Thus, strong policies that regulate marijuana use among adolescents must be implemented. Otherwise, both marijuana

use and the teen pregnancy rate will continue to increase and create adverse consequences for adolescents, their families, and society as a whole.

#### 5.6 Conclusion

After several years of decline, the teenage pregnancy rate increased for two years straight. This increase is disturbing due to the adverse consequences associated with teen pregnancy. Teen pregnancy negatively effects teen parents, their children, and society as a whole. The focus of teen pregnancy and prevention has been devoted to adolescent girls. In order to address a social problem, all aspects of the problem must be addressed. Therefore, the purpose of this study was to identify and further understand key risk and protective factors that contribute to teen fatherhood. The sample consisted of a Black, White, and Hispanic males between the ages of 15 and 17. Guided by the Risk and Resilience Perspective and rigorous statistical analysis, this dissertation identified race as the best predictor of risk of becoming a teen father, followed by lifetime marijuana use. Based on study results, this researcher recommends multiple interventions in multiple settings that focus on creative strategies that involve adolescent males. Pregnancy prevention programs must be culturally relevant and provide positive youth development. Social workers have made tremendous contributions in the area of teen pregnancy and it is evident that social workers' keen clinical, political, and research skills are in demand.



APPENDIX A  
IRB APPROVAL LETTER



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**Protocol Title:** *Risk and Protective Factors Associated with Teen Fatherhood Among A Sample of Black, White, and Hispanic Adolescents*

**RE:** Exempt Approval Letter

**IRB No.:** 2010-0434e

The UT Arlington Institutional Review Board (UTA IRB) Chair (or designee) has reviewed the above-referenced study and found that it qualified as exempt from coverage under the federal guidelines for the protection of human subjects as referenced at Title 45 Part 46.101(b)(4). You are therefore authorized to begin the research as of June 01, 2010.

Please be advised that as the principal investigator, you are required to report local adverse (unanticipated) events to this office within 24 hours. In addition, pursuant to Title 45 CFR 46.103(b)(4)(iii), investigators are required to, "promptly report to the IRB any proposed changes in the research activity, and to ensure that such changes in approved research, during the period for which IRB approval has already been given, are **not initiated without IRB review and approval** except when necessary to eliminate apparent immediate hazards to the subject."

All investigators and key personnel identified in the protocol must have documented *CITI Training* on file with this office. The UT Arlington Office of Research Administration Regulatory Services appreciates your continuing commitment to the protection of human research subjects. Should you have questions or require further assistance, please contact Robin Dickey by calling (817) 272-9329.

Sincerely,

A handwritten signature in cursive script that reads "Patricia G. Turpin, PhD, RN, NEA-BC".

Patricia G. Turpin, PhD, RN, NEA-BC  
Clinical Associate Professor  
UT Arlington IRB Chair

BoA126010.01

APPENDIX B  
2007 YOUTH RISK BEHAVIOR SURVEY DIXCLOSURE AND INSTRUCTIONS

2007 State and Local  
Youth Risk Behavior Survey

This survey is about health behavior. It has been developed so you can tell us what you do that may affect your health. The information you give will be used to develop better health education for young people like yourself.

DO NOT write your name on this survey. The answers you give will be kept private. No one will know what you write. Answer the questions based on what you really do.

Completing the survey is voluntary. Whether or not you answer the questions will not affect your grade in this class. If you are not comfortable answering a question, just leave it blank.

The questions that ask about your background will be used only to describe the types of students completing this survey. The information will not be used to find out your name. No names will ever be reported.

Make sure to read every question. Fill in the ovals completely. When you are finished, follow the instructions of the person giving you the survey.

***Thank you very much for your help.***

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Dr. Nila Ricks is a native of Tulsa, Oklahoma. She is a proud wife and mother of three. Dr. Ricks received her Bachelor's degree in Family Relations and child Development from Oklahoma State University in 2003, her Master's Degree in Social Work from the University of Oklahoma in 2005, and her PhD from the University of Texas at Arlington in 2010. While pursuing her doctorate degree, Dr. Ricks' publications included work in family policy, clinical practice with children and adolescents, and adolescent development and behavior.

As a former teen parent, Dr. Ricks overcame adverse obstacles. She serves as a role model for teen parents, completing the highest level of education received at any university. She has worked with adolescents for several years and has always had a keen passion for this population. She has also made tremendous impact as a clinical therapist for teen parents and other at-risk populations. Her research interests include teen pregnancy (intervention and prevention), infant mortality, adolescent suicide, and cyber bullying.