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Associations Between Adolescent Perceptions of Parental Interactions and Adolescent Sexual Behaviors

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Walden University

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Shakesha Fairley

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Walden University

2016

Abstract

Associations Between Adolescent Perceptions of Parental Interactions and
Adolescent Sexual Behaviors

by

Shakesha Fairley

MA, Cameron University, 2006

BS, University of Colorado at Colorado Springs, 2004

Dissertation Submitted in Partial Fulfillment

Of the Requirements for the Degree of

Doctor of Philosophy

Health Psychology

Walden University

September 2016

Abstract

Sexual risk behaviors among U.S. adolescents is a major public health concern.

Adolescents are contracting sexually transmitted diseases at alarming rates. The purpose of this research was to identify factors related to parent-child interactions that influence adolescent sexual behaviors. A combination of attachment theory and family systems theory was used to help explain how adolescent sexual choices (age of sexual debut, use of birth control, use of condoms, multiple sex partners in a 12-month period) are affected by the perceived quality of parent-child interactions (maternal/parental closeness, monitoring, communication, and involvement). Archival data from the U.S. Bureau of Labor Statistics National Longitudinal Survey of Child and Young Adult cohort 1979 (NLSY79) was used for this research. A sample of 11,504 adolescents aged 12 to 19 years, and their biological mothers who participated in the longitudinal survey, was drawn. Nonparametric analyses revealed significant differences in adolescent perceptions of maternal and paternal closeness and maternal perceptions of maternal and paternal closeness. Logistic regression analyses revealed that adolescents' perceptions of parental engagement (maternal and paternal closeness, monitoring, communication, and involvement) significantly affected their sexual choices (age of sexual debut, use of birth control, condoms, and multiple partners). The results of this study can be used to initiate positive social change by informing parents, program developers, and researchers. Developing strategies to guide parents and adolescents to develop positive perceptions of the interactions, closing the gap between adolescent and parental perceptions of interactions, will help reduce adolescent risky sexual behaviors, thereby benefiting the individuals, families, and the community.

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Dedication

First and foremost, I give sincere thanks and gratitude to my Almighty God for His grace, mercy, and protection for seeing me through this process.

This dissertation is dedicated to the most important people in my life. I dedicate this study to my loving daughters, Destiny and Ashauntee Fairley. Destiny and Ashauntee, your strength, support, encouragement, and sacrifices kept me motivated. Thank you for your encouraging words, your smiles, and your hugs, especially when times were hard. I love you, and we did it—team of three!!

I also dedicate my dissertation to my wonderful mother, Daphne Hunter, who always—no matter what time of day or night—listened to my pains and frustrations, but kept me encouraged and cheered me on.

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Chapter 1: Introduction to the Study

For decades, the effect of early sexual activity, unprotected sex, and unprotected sex with multiple sexual partners have taken the lives of many adolescents or decreased their quality of life (Southern Nevada Health District, 2011). The emotional bonds between parents and adolescents have been shown to be a significant factor in adolescents' choosing to engage in these adverse behaviors (Ikramullah, Manlove, Cui, & Moore, 2009). Thus, the focus of my study was to examine links between parent-adolescent interactions and the emotional bonds between those parents and adolescents, and how these bonds affect adolescent sexual behavior. Factors studied include attachment in relationships and how attachments influence interactions in the family system; this involved delving into family systems theory and attachment theory for insight into how family members perceive their attachment to one another (Crittenden, Dallos, Landini, & Kozlowska, 2014; Karakurt & Silver, 2014).

Attachment theory is an empirically grounded conceptual framework in the field of socioemotional development in children (Jiang, Huebner, & Hills, 2013). The theory suggests that individuals are biologically predisposed to selecting proximate caring figures in their environment (Cassidy & Shaver, 2008). From early experiences between the infant and caregiver, the infant adopts the caregiver's behavioral patterns as his/her own (Jiang et al., 2013). The adoption of patterns translates into codes of conduct that become the infant's mental representation of what "love" looks like, what he looks like to self, and what he looks like to the world (Jiang et al., 2013). Bowlby (1988) referred to this adoption of patterns as internal working models. Thus, securely bonded or attached infants are more likely to develop positive internal working models (Bowlby, 1988).

As children enter into adolescence, the bond between parents and adolescents remains important (Karakurt & Silver, 2014) but parents need to adapt to their adolescents' growing and changing needs, especially as teens strive towards more independence (Schroeder, Higgins, & Mowen, 2014). Attachment theory suggests that adolescents continue to need care and support provided by caregivers, typically the parents, as they develop adaptive strategies of affect, cognitions, and behaviors (Jiang et al., 2013). Research has shown that parent-adolescent attachment affects adolescents' emotional adjustment and competence (Bannink, Broeren, van de Looij-Jansen, & Raat, 2013; Obsuth, Hennighausen, Brumariu, & Lyons-Ruth, 2014), influences how they formulate their ideals of self-worth and deservedness of love (Duchesne & Larose, 2007), and affects their academic performance (Carr, 2009; Ma & Huebner, 2008) and interpersonal functioning (Carr, 2009). Parent-child emotional bonds are significant (Karakurt & Silver, 2014) because emotional bonds with parents affect children's decision-making processes (Ritchwood, Howell, Traylor, Church, & Balland, 2014).

To enlighten parents of their responsibility to ensure positive interactions to their children, thus maintaining secure bonds, I incorporated family systems theory to examine interactions that stem from these bonds.

Marvin and Stewart (1990) suggested that understanding the family systems model is significant for understanding attachment theory. Similarly to Bowlby's attachment theory, Bowen's family systems theory (Bowen, 1978) posits that human emotional and physical patterns of interaction are the products of evolutionary attachments within the family system (van Ecke, Chope, and Emmelkamp, 2006). Bowen and Bowlby argued that many problems children face are rooted in how the child is

treated by the parent (van Ecke et al., 2006) In addition, both theories suggest that patterns of parental responsiveness are intergenerational (van Ecke et al., 2006) and that the children, as eventual parents themselves, reproduce the patterns of parental responsiveness they learned from their parents.

Family systems theory posits that each member of a family has an emotional role that is often defined or determined by relationship agreements (Bowen, 1978). These agreements are formed by interactions in the family unit (Bowen, 1978). As such, Bowen (1978) believed that family members are emotionally connected and often feel distant or disconnected from their families when there is a high level of anxiety in the family unit. This is comparable to Bowlby's (1988) concept of secure versus insecure attachment. Bowen (1976, 1978) suggested this disconnection is more feeling than fact. In addition, Bowen (1978) argued that family members' emotions affect each other's thoughts, feelings, and actions. This parallels Bowlby's (1988) concept of internal working models. The emotional interdependence in family systems evolves to promote the cohesiveness and cooperation in the family, which are requirements to protect, shelter, and feed the family members (Bowen, 1978). This family requirement is an extension of Bowlby's (1988) concept of a secure base where infants in distress seek out protection from their caregiver, typically a parent. Thus, family system theory focuses on interactions that occur among members of the system depending on the level of attachment (van Ecke et al., 2006).

A family unit creates a primary reality for children and adolescents as they absorb their family environment, encompassing the family's traditions and culture (Bell & Bell, 2009). Thought patterns, expectations, and meaning of life are absorbed in the family and

permeate throughout life by filtering perceptions of what is and what can be (Bell & Bell, 2009). Family systems theory, including its subsystems, particularly the parent-child system, normally contributes to the health and well-being of the child (Bell & Bell, 2009).

The influence of family has been studied in adolescent behaviors throughout the past (Belsky, Lerner, & Spanier, 1984; DiClemente et al., 2001; Grotevant, 1997; Robertson, Stein, & Baird-Thomas, 2006). Yet my research is significantly different because I examined the influence of family, paying particular attention to the interactions in parent-child dyad by simultaneously selecting and examining variables to reveal which variable significantly predicted adolescent sexual behaviors. Most studies, including those discussed earlier, measured variables individually; thereby, the variables might not show a significant effect when measured alone that they would when studied together with other variables (Slinker & Glantz, 2016). In addition, to gain a better understanding of the family systems from which adolescents come, studies need to examine the protective factors of living with biological parents (Mosack, Gore-Felton, Chartier & McGarvey, 2007), in which my study does. In addition, more research is needed that combines attachment and family systems theories to study adolescent behavior (Karakurt & Silver, 2014; Mosack et al., 2007), the way my study has done. Attachment theory describes detailed interactions of the attachment dyad, typically within the parent-child relationship (Bowlby, 1973). Family systems theory describes how these interactions are coded into behavioral patterns influenced by the attachment relationship (O’Gorman, 2012). Exploring attachment theory might promote a better understanding of how attachment initially and continuously influences interactions as the child enters

adolescence (Karakurt & Silver, 2014) because these interactions affect the adolescent's cognitive abilities and emotional insight and, in turn, affect their behaviors (O'Gorman, 2012).

Family systems theory can promote a better understanding of adolescents' behavioral choices. Family systems theory suggests that children behaviors are born out of a family's network of relationships, especially within the parent-child dyad (O'Gorman, 2012). Merging the two theories might help therapists and counselors to communicate to parents how important it is to continuously preserve their attachment with their adolescents. By parents preserving attachment, they continuously influence their adolescents' behaviors (Kozłowska & Hanney, 2002).

I sought to explore the sexual behavioral choices of adolescents who live with their biological mothers by examining attachment and family systems. Fathers were not included in this study because they were not included in the NLSY79 survey; however, I examined adolescents' perceptions of both parents, because a father's interactions differ from a mother's (Al-Yagon, 2011b; Lamb, 2010; Scharf, Mayseless, & Kivenson-Baron, 2012). This study is unique because I addressed the adolescents' perceptions of both parents, in addition to the mothers' perceptions, throughout the early and the latest years of adolescence. I focused on generational influence, integrating an understanding of the development of attachment.

For this study, the term *adolescent* refers to individuals 12 to 19 years. Ikramullah et al. (2009) found that adolescents 12 to 19 years reported that parents had the most influence on their sexual decisions. The participant variables are those of the same database that Ikramullah et al. used. That study has similarities to my research and

suggests that the 12 to 19-year age range is reasonable as a working definition of *adolescence*.

Sexual risk behaviors place adolescents at risk for unintended pregnancies, HIV infection, and other sexually transmitted diseases (STDs) (Centers for Disease Control and Prevention (CDC), 2015). In 2013, a total of 273,105 babies were born to women aged 15 to 19 years (CDC, 2015). This is a record low for U.S. adolescents in this age group, and a drop of 10% from 2012 (CDC, 2015). In addition, birth rates fell 13% for women aged 15 to 17 years, and 8% for women aged 18 to 19 years (CDC, 2015). Although adolescent pregnancy rates have declined steadily in the United States since 1990, the United States continues to have the highest adolescent birth rate among industrialized nations (Pazol et al., 2011). U.S. adolescent birth rates are nearly twice those of Canada, four times those of Germany and France, more than eight times those of Japan, and almost 10 times those of Switzerland (Kearney & Levine, 2012).

Adolescent pregnancies create a continued public concern because of the elevated health risks for adolescent mothers and their infants (Hamilton & Ventura, 2012). In addition, these births come at a significant cost to the public, with an estimated \$10.9 billion spent annually on public assistance programs such as food stamps, Temporary Assistance to Needy Families (TANF), housing, and Medicaid to support teen parents who do not have the financial means to properly raise children (Hoffman, & Maynard, 2008; Hamilton & Ventura, 2012).

In addition, teens are also contracting STDs at alarming rates (Hipwell, Keenan, Loeber, & Battista, 2010). The CDC (2015b) reported an estimated 10,000 young people (aged 13–24 years) were diagnosed with HIV infection in the United States in 2013. In

2013, an estimated 2,704 youth (aged 13–24 years) were diagnosed with AIDS, representing 10% of the 26,688 people diagnosed with AIDS that year. In the previous year, an estimated 156 youth with AIDS aged 13 to 24 years died, representing 1% of the 13,712 people with AIDS who died that year (CDC, 2015c).

In addition, nearly half of the 20 million new STDs each year, including chlamydia, gonorrhea, genital herpes, and genital warts, were among young people, between the ages 15 to 24 years (CDC, 2015b). These statistics make my study all the more powerful, compelling, and necessary.

The research literature in this area has focused on links between risky behavior and external factors, including poverty, crime (Eisman, Studdard, Bauermeister, Caldwell Zimmerman, & 2015), substance abuse (Bartlett, Holditch-Davis, & Belyea, 2007), peer pressure (Crockett, Raffaelli, & Shen, 2006), and low parental education (Kalmus, Davidson, Cohall, Laraque, & Cassell, 2003). External factors are elements outside of an adolescent's control. For example, a child cannot decide the educational level of his or her parents and he or she cannot prevent crime. The intense focus placed on external factors has left little room for consideration of internal factors such as perceptions of parent-child interactions in the home.

These interactions between parents and adolescents evolve from their levels of attachment. Attachment can be conceptualized as an umbrella that covers all elements in measuring the level of worth in the relationship between parent and child (Bowlby, 1982). For example, how parents communicate with their children is a byproduct of the degree of attachment a child has with his parent. As stated earlier, perceptions of attachments in adolescence are mental schemes the child develops out of his/her

interactions with parents in infancy that reflects on the child's personality and consequently his/her behavior (Morgan & Shaver, 1999; Uytun, Oztop, & Esel, 2013). These perceptions are internal to the child. Because internal factors consist of our own reactions to situations in our lives and these reactions happen within us, we have the power to control or change them.

For example, a child may grow up in poverty but perceive a closeness to his/her parents. The child may come to believe that his/her parents are doing the best they can; thus attachment does not directly have to be affected by poverty but can serve as a protective factor against the negative sides of poverty. As such, my study is important because it adds to existing research by offering another angle from which to analyze how the adolescent mind processes its perceptions of the world and how these adolescents adapt to these perceptions.

Although much research exists on analyzing attachment as a variable to measure the positive and negative dynamics in the relationship between child and parent, I investigated attachment and the family system as factors underlying adolescent sexual behaviors.

I used archival data to investigate how family members' perceptions are intergenerational relational factors. Thus, I approached attachment as an emotional bond that shapes relational factors that fuse emotional codes across generational lines (Kissil, 2011). Bowen (1978) described emotional fusion as automatic emotional reactions between the parent and child. Bowen also believed that if the caregiver overly attaches to the child out of selfishness, the child simply learns how to survive in a system in which he or she was born. This creates an inability for the child to separate from the parent, a

concept that Bowen initially called *differentiation*. This makes the child subject to the parents' burdens; thus, anxieties within the child develop into mental schemes (Bowen, 1978).

Bowen's (1978) concept of fusion or over-attachment is similar to Bowlby's (1982) idea that intrusive, abusive, or neglectful parenting promotes insecure, preoccupied attachment or unresolved attachment in the child (van Ecke et al., 2006). These conditions are emotionally based relational reaction patterns (Kissil, 2011) and cognitively misunderstood by the parent, leading the parent to believe that he or she is ineffective as a parent (van Ecke et al., 2006; Wise, 2003), yet the situation runs deeper than that. When looking at Bowen's (1978) and Bowlby's (1982) concepts, the parenting is ineffective, but these parents are modeling the behaviors of their own parents without realizing it; because the parents are oblivious to the cause of their ineffective parenting (van Ecke et al., 2006), they fail to break the cycle and the adolescents continue to be ineffectively parented (Bowen, 1978). This leaves the adolescent struggling to make confident or competent decisions (Bowen, 1978), especially when it comes to sexual choices (CDC, 2015).

For decades, the adolescent population has been disproportionately affected by the STD crisis (Sales & DiClemente, 2010). Sexually active adolescents might be disproportionately affected because, according to the CDC (2012), they are at a higher risk for acquiring STDs, including HIV/AIDS, than are adults due to biological, behavioral, and cultural factors. Though sexually active adolescents make up 25% of the sexually active population, they account for nearly half of the new STD cases (CDC, 2012).

The period of adolescence often brings with it an inability to make critical life-altering decisions because adolescents' brains are still undergoing significant maturation (Barkley-Levenson & Galván, 2014). The adolescent brain cannot process information the same as the adult brain, partly due to lack of life experiences compared to adults; therefore, the adolescent is not equipped to process information to make sound decisions all the time (Mincemoyer & Perkins, 2003). It is vital that parents stay involved during this crucial period of developmental maturity to ensure that they properly shape and guide the adolescent's decisions. If not, the adolescent may be prone to acting on impulse or poor judgment to engage in sexual behavior—without regard for risk (National Institute of Mental Health, 2011). As a consequence, without adequate parental guidance, the adolescent could acquire an STD or have an unintended pregnancy.

Some research suggests that adolescence consists of a chaotic transitional period (Cromer, 2011; Quas, 2014) requiring persistent mentoring and monitoring (Morretti & Peled, 2005). According to Moretti and Peled, this is simply not true. Other research suggests that neurological transformations in cognitive structure and function, including dopamine production and functional levels of other neurotransmitters, are partly responsible for the way adolescents think and act (Buitelaar, 2012; Sylwester, 2007). Moretti and Peled argued that changing from neurological to social-psychological thinking is the quintessential characteristic of the adolescent phase.

Significant transformations occur in the prefrontal cortex function of the adolescent brain, supporting an increase in the capacity for abstract thinking, problem-solving, and strategic response inhibition (Morretti & Peled, 2005). All the while, hormonal changes are a force that increases irritability, anhedonia, and risky behavior,

which have been documented to increase in adolescence (Morretti & Peled, 2005; Steinberg, Dahl, Keating, Kupfer, & Pine, 2006). During this period, significant change is taking place in cognitive development, which promotes abstract thinking and complex problem solving. Adolescents' metacognitive and representational capacity grows, which increases their ability to simultaneously represent and compare multiple perspectives.

Along with this growth, attributes are developed that promote a more differentiated world view, including how adolescents view themselves and others (Morretti & Peled, 2005). With all of these transformations, many adolescents become overwhelmed and often develop a black and white (all-or-nothing) conceptualization of the self and the world. Morretti and Peled suggested cognitive shifts in adolescents lead to egocentrism. Adolescents enter a stage where everything is all about them, in which they demand all the attention and believe that their experiences are unique. Adolescents carry this mindset into a new social-psychological phase of life in which they develop and participate in societal roles such as learning how to drive, finding a job, and interacting and forming intimate relationships with peers. This social-psychological phase of life is paramount to adolescents because they are striving for autonomy, but meanwhile parents are struggling to find new ways of supporting their teens in the context of a changing relationship (Morretti & Peled, 2005).

Many adolescents develop egocentric attitudes during this stage, which can lead to power struggles with their parents (Whitlock & Purington, 2013); however, adolescents' transitional period of learning and developing must be guided and directed productively through repetitious learning. Repetitious learning can be absorbed into the adolescent's mind with the possibility of becoming internalized as knowledge to direct

the developing decision-making matter of the brain (Lewis, Litt, Cronce, Blayney, & Gimore, 2014). Being able to internalize and apply parents' lessons or directives is important, as it influences adolescent black and white thinking, which, if not monitored and mentored productively, could be a factor in adolescent STD, HIV/AIDS, and unintended pregnancy rates.

HIV/AIDS and other STDs are easily spread and unintended adolescent pregnancies continue to occur when emotional neglect in the parent-adolescent relationship is present yet are also easily contained with proper sexual choices. The findings revealed in my study may reduce the spread of STDs and adolescent unintended pregnancies by making parents more aware of the problem of adolescent adverse sexual behavioral choices and the effect of perceived parental-adolescent interactions on these choices.

These findings may also facilitate social change by serving to identify possible strategies to enhance and maintain parents' positive interactions with their adolescents, in turn reducing public costs of treating adolescents' STDs and unplanned pregnancies. This enhancement strategy could result in potential reduction of STDs and pregnancies among adolescents by focusing on attachment as a critical factor in the family system. In the next section, I provide a more thorough analysis of the effect of parental-adolescent attachment, focusing on parent-adolescent interactions concerning adolescents' sexual behavioral choices. Later sections describe the problem statement, the research questions and hypotheses, the purpose and significance of my study, the theoretical framework, and the nature of my study.

Background of the Study

The U.S. government has implemented many directives for addressing adolescent STDs including HIV/AIDS, and it also addresses unintended pregnancy rates. According to Harper, Henderson, Schalet, Becker, Stratton, and Raine (2010), the U.S. government has poured millions of dollars into promoting abstinence-only sex education programs for adolescents and abstinence-only-until-marriage programs for teenagers; however, the rates of STDs and unintended pregnancies remain high compared with those of other industrialized countries (Hamilton & Ventura, 2012). In addition, as mentioned earlier, early engagement in sexual activity and a lack of awareness of HIV/AIDS are potentially high-risk factors for contracting the disease. These factors could be viewed as a social problem that results in an overwhelming number of unintended pregnancies among females 15 to 19 years (Eaton et al., 2010), with the United States having one of the highest teen birth rates among industrialized countries (Hamilton, Martin, & Ventura, 2011).

The government attempts to educate youth concerning their sexual behaviors and the consequences, but according to available data, it has so far failed to recognize the potential effect of establishing and maintaining positive parental attachment (Alford, 2007). Government programs that neglect to highlight the importance of early bonding enforce the myth that parents should distance themselves from their child to prevent spoiling the child (Kassow, 2006). This action by the parent can cause a child to confuse his or her own identity, making it difficult for the child to learn how to relate to others in later life. For example, as the child enters adolescence, he or she begins to explore independence and begins to develop a sense of self, especially a sexual identity

(Erickson, 1963). Qualities such as understanding, loving, and responding to others are first learned in infancy, which is important as adolescents begin exploring relationships outside their family units (Uytun, Oztop, & Esel, 2013).

Thus it is important that parents become aware of how critical their attachment to their child is, and that attachment should begin as early as possible, preferably in infancy, and be strengthened throughout adolescence. In other words, as the child grows, his/her needs change, but the parent must remain accessible, reliable, predictable, and sensitive (Han, 2005). Thus, in the context of the parent-child relationship, the parent must come to understand that their child's perceptions and behaviors are a reflection of how they adapt to their child's developing needs, and that these perceptions and behaviors will come to echo throughout the family system (Bowen, 1978).

Most government programs that involve promoting prescriptive abstinence-only and abstinence-only-until-marriage are ineffective, wasteful, and misleading to U.S. youth (Alford, 2007). Many abstinence-only curricula, as found in a 2004 investigation by the minority staff of the U.S. House of Representatives Committee on Oversight and Government Reform, distort science and religion, provide unproven claims, make subjective conclusions, and promote falsehoods when claiming that the promotion of contraceptives for adolescents is a mistake (Alford, 2007). Abstinence-only programs also fail to take into account the important roles parents play in their adolescents' sexual behavioral choices. For example, Planned Parenthood (2012) believes parents and guardians should be the primary sex educators for their children—a role many government abstinence programs neglect to consider. Research conducted by Afifi, Joseph, and Aldeis (2008) suggested that communication between parents and

adolescents significantly reduces the likelihood that adolescents will engage in high-risk behaviors, especially when topics include sex, birth control, and STDs. Sexual communication with parents may indeed prove beneficial in reducing adverse sexual behavioral choices among adolescents.

Closely related to the belief that parental involvement is paramount to *healthy adolescent behavior*—defined as conduct that promotes constructive outcomes to ensure a healthy and productive adult future (McNeely & Blanchard, 2009). Klein, Sabarantnam, Pazos, Auerbach, Havens, and Brach (2005) reported that programs that incorporate parents' involvement and enhance the quality of sexual communication may have some benefits in reducing high-risk sexual behaviors among teens. Klein et al. conducted a study that consisted of 27 workshops with 174 total participants at various sites in high-risk communities. Markers of high-risk communities are low-incomes, high unemployment rates, and low educational levels (Wickrama, Merten, & Wickerama, 2012). Klein et al. found increased parent-child communication about sexuality, health, and values may be a valuable support for children in making healthy decisions about sexual behaviors as adolescents; hence, exploring attachment and how attachment influences interactions, which affects perceptions in the parent-adolescent relationship, might lead to solutions on how to curb the number of STDs including HIV/AIDS, and unintended pregnancies.

Exploring attachment and family systems theory might promote a better understanding of how attachment initially and continuously influences interactions as the child enters adolescence (Karakurt & Silver, 2014); because these interactions affect the adolescent's cognitive abilities and emotional insight and, in turn, affect their behaviors

(O’Gorman, 2012), family systems theory can promote a better understanding of adolescents’ behavioral choices, especially sexual behaviors (CDC, 2015).

More research is needed combining attachment and family systems theories in relation to childhood behaviors (Karakurt & Silver, 2014; Mosack et al., 2007). When both theories are combined, they can help parents understand both the attachment dyad within a family context where parent-child interactions occur, and how adolescents’ behaviors develop from these interactions (Karakurt & Silver, 2014), especially sexual behaviors (Secor-Turner, Sieving, Eisenberg, & Skay, 2011).

Therefore, the purpose of my study was to explore and compare the gaps between the perceptions of parents and their adolescents, and how these differing perceptions influence parent-adolescent interactions and the sexual behavioral choices of adolescents. I focused on adolescents who live with their biological mothers to examine attachment within a family system. The study is needed because it focuses on generational influence that integrates the development of attachment and the continuous affect of attachment in family systems, especially between the parent and the adolescent (Karakurt & Silver, 2014).

Problem Statement

I examined the links between adolescent perceptions of their relationship quality with their parents and adolescents’ sexual behaviors (Ikramullah et al., 2009). There are significant findings in the existing research literature that suggest parents play an intricate part in adolescents’ sexual health (Boyas, Stauss, & Murphy-Erby, 2012; Hall, Moreau, & Trussell, 2012); however, it is the adolescents’ perceptions of their parents’ interactions with them, and how these perceptions differ from the parents’ perceptions

that are often overlooked in STD and unplanned pregnancy prevention strategies. This knowledge can have a ripple effect throughout households in the United States because parents may not yet appreciate the importance of their attachment to their children and that the way children perceive this attachment is a significant factor in their healthy sexual choices.

The CDC (2012) argued that parents are in a unique position to provide early and continuous STD prevention messages. Despite this, the agency does not discuss attachment and Bowen family systems theory, which leaves parents without a full understanding of the importance of bonding with their adolescents, which might affect interactions in the parent-child relationship. Although influence of family has been studied in adolescents (Belsky et al., 1984; DiClemente et al., 2001; Grotevant, 1997; Robertson et al., 2006; Secor-Turner et al., 2011), there has been little research combining attachment and family systems theories in relation to parent-adolescent perceptions and adolescent sexual behaviors.

Purpose of the Study

The purposes of this quantitative study were to empirically examine whether (a) adolescents' perceptions of maternal and paternal closeness, monitoring, communication, and involvement were significantly associated with a lower risk of engagement in risky sexual behaviors among U.S. adolescents' aged 12 to 19 years, (b) adolescents' perceptions of maternal and paternal closeness, monitoring, communication, and involvement were predictors of engagement in early sexual debut, or having sex before or at 14 years of age, by U.S. adolescents' aged 12 to 19 years, (c) adolescents' perceptions of maternal and paternal closeness, monitoring, communication, and involvement by U.S.

adolescent males aged 12 to 19 years were predictors of engaging in unprotected sex without a condom, (d) adolescents' perceptions of maternal and paternal closeness, monitoring, communication, and involvement by U.S. adolescent females aged 12 to 19 years were predictors of having sex without using some form of birth control pill, and (e) adolescents' perceptions of maternal closeness, monitoring, communication, and involvement by U.S. adolescents aged 12 to 19 years were predictors of having multiple sex partners in a 12-month period.

Research Questions and Hypotheses

Sexual choices have been perceived as a private choice, yet STD and unintended pregnancy rates are disproportionately affecting the adolescent community, making this not only a personal problem but a social crisis. Notably, the rates of unplanned adolescent pregnancies and rates of STDs, including HIV/AIDS, have decreased in the United States for reasons that are unclear (CDC, 2013); however, prevention programs that address adolescents' perceptions and attitudes towards sex are proving beneficial (CDC, 2013). Nevertheless, this country continues to be the industrialized country with the highest rates of STDs and unintended adolescent pregnancies. This leads to the research question: How do adolescents' perceptions of their own parent-child interactions influence adolescent sexual behaviors?

I divided parent-child interactions into the following: maternal and paternal closeness, parental involvement, communication, and parental monitoring, and how they correlate with adolescents' decisions, such as early sexual debut, multiple sex partners, and males' unprotected sex, and females' sex without contraceptive. First, I presented descriptive statistics to examine mean differences between adolescent and maternal

perceptions. I then examined the study's hypotheses by conducting nonparametric tests. I conducted a Spearman correlation analysis for the first hypothesis and I conducted logistic analyses for the other hypotheses.

I addressed the following research questions:

Research Question 1: Is there a significant association between adolescent perception of the quality of interaction with both parents and maternal perception of the quality of interaction between adolescent and parent?

Research Question 2: Do adolescent-perceived parent-child interactions, which include adolescent perceptions of maternal and paternal closeness, monitoring, communication, and involvement, predict the risk of early sexual debut, or having sex before or at 14 years of age, among U.S. adolescents aged 12 to 19 years?

Research Question 3: Do adolescent-perceived parental-child interactions, which include adolescent perceptions of maternal and paternal closeness, monitoring, communication, and involvement, predict the risk of U.S. adolescent males aged 12 to 19 years having unprotected sex without a condom?

Research Question 4: Do adolescent-perceived parental-child interactions, which include adolescent perceptions of maternal and paternal closeness, monitoring, communication, and involvement, predict the risk of adolescent females aged 12 to 19 years having sex without some form of birth control pill?

Research Question 5: Do adolescent-perceived parental-child interactions, which include adolescent perceptions of maternal and paternal closeness, monitoring,

communication, and involvement, predict the risk of having multiple sex partners in a 12-month period among U.S. adolescents aged 12 to 19 years?

The following hypotheses were tested:

Hypothesis 1

Null Hypothesis 1: There will be no significant association between adolescent perceptions of the quality of parent-adolescent interactions and the maternal perceptions of the quality of adolescent-parent interactions.

Alternate Hypothesis 1: There will be a significant association between adolescent perceptions of the quality of parent-adolescent interactions and the maternal perceptions of the quality of adolescent-parent interactions.

Hypothesis 2

Null Hypothesis 2: Adolescent perceptions of maternal and paternal closeness, monitoring, communication, and involvement will not predict the likelihood of engagement in early sexual debut, or have sex before or at 14 years of age, by U.S. adolescents aged 12 to 19 years.

Alternative Hypothesis 2: Adolescent perceptions of maternal and paternal closeness, monitoring, communication, and involvement will predict the likelihood of engagement in early sexual debut, or have sex before or at 14 years of age, by U.S. adolescents aged 12 to 19 years.

Hypothesis 3

Null Hypothesis 3: Adolescent perceptions of maternal and paternal closeness, monitoring, communication, and involvement by U.S. adolescent males aged 12 to 19 years will not predict the likelihood of engaging in unprotected sex without a condom.

Alternative Hypothesis 3: Adolescent perceptions of maternal and paternal closeness, monitoring, communication, and involvement by U.S. adolescent males aged 12 to 19 years will predict the likelihood of engaging in unprotected sex without a condom.

Hypothesis 4

Null Hypothesis 4: Adolescent perceptions of maternal and paternal closeness, monitoring, communication, and involvement by U.S. adolescent females aged 12 to 19 years will not predict the likelihood of having sex without using some form of birth control pill.

Alternative Hypothesis 4: Adolescent perceptions of maternal and paternal closeness, monitoring, communication, and involvement by U.S. adolescent females aged 12 to 19 years will predict the likelihood of having sex without using some form of birth control pill.

Hypothesis 5

Null Hypothesis 5: Adolescent perceptions of maternal and paternal closeness, monitoring, communication, and involvement by U.S. adolescents aged 12 to 19 years will not predict the likelihood having multiple sex partners in a 12-month period.

Alternative Hypothesis 5: Adolescent perceptions of maternal and paternal closeness, monitoring, communication, and involvement by U.S. adolescent aged 12 to 19 years will predict the likelihood of having multiple sex partners in a 12-month period.

Theoretical Framework for the Study

The theoretical basis for this research was attachment and family systems theories. Because family systems theory is anchored in attachment theory, attachment

theory is used to explain and explore the importance of early bonding, and family systems theory is used to describe the importance of maintaining these bonds throughout childhood, adolescence, and adulthood.

The attachments developed in the first year of life pave the way for the interactions within family units that are of interest to systems theory. For my research, I did not seek to integrate these theories, but rather to highlight the importance of their connections—attachments and how attachment behaviors are circulated influencing family interactions within the family system.

Bowlby's (1973) attachment theory postulates that infants develop internal working models of attachment based on attachment experiences with their primary caregiver, typically the mother, that make up their cognitions and expectations (Doyle, Lawford, & Markiewicz, 2009). In addition, attachment theory holds that humans are biologically driven to attach to a secure base, typically a caregiver, when they perceive danger. Thus, an innate attachment system is activated when survival is threatened and leads to attachment behavior (Brisch, 2004). For example, a small child turns to his or her secure base—mother or father—when feelings of discomfort arise. The attachment figure's response sets the stage for the infant's feelings, expectations, and behavioral strategies (Brisch, 2004). Over time, the infant develops a critical need to sustain or preserve a relationship with the one who keeps him or her safe in times of discomfort, need, or perceived danger. This relationship is repeated throughout life within different relationships.

Categories of Attachment

Bowlby's former student and major contributor to his theory, Mary Ainsworth (1970), along with her colleagues, developed a protocol called the "Strange Situation" to objectively measure Bowlby's attachment theory. The Strange Situation was designed to measure the quality of attachment by comparing the reactions of infants when the parent leaves and returns and when a stranger leaves and returns.

Three categories of attachment were constructed for the Strange Situation protocol: *secure attachment* (the child protests at the mother's departure but quiets quickly upon her return), *avoidant attachment* (the child displays little to no signs of distress at the mother's departure, shows an eagerness to explore surroundings, and has little response upon the mother's return), and *ambivalent attachment* (the child is saddened when the mother departs, warms to strangers, and upon mother's return shows signs of anger, indecisiveness, and reluctance to warm to the mother, and may return to play (Lowenstein, 2010). After Ainsworth and colleagues identified the secure, avoidant, and ambivalent attachment classifications in the Strange Situation, typical peculiarities of behaviors were identified by Main (a former student of Ainsworth) and her colleague Solomon, described as *insecure-disorganized* (Main & Solomon, 1986). With these particular behaviors, the child exhibits stereotypical mannerisms, such as freezing or rocking, for several seconds upon the mother's return after separation. Lowenstein suggested this may be an indication of a lack of coherent coping skills.

Because infants form attachments based on their caregivers' levels of sensitivity, timeliness, and responsiveness to their demands, the attachment categories described previously developed as a result of parental responses to their infants. Assumedly, young

adults, in part, still turn to their childhood attachment figures for meeting their demands (including protection, psychological comfort, or financial support) while concurrently developing relationships with others, e.g., peers (Crittenden, 2009). Extending Ainsworth's Strange Situation protocol categories, George, Kaplan, and Main (1984) developed a clinical, semi-structured interview tool to access adult internal working models (i.e., adult representations of attachment) based on childhood attachment experiences with their parents and others called the Adult Attachment Interview (AAI) (van IJzendoorn & Kranenburg, 1996). The AAI has been modified to access attachment in adolescents as they grow from childhood.

According to van IJzendoorn and Kranenburg (1996), the AAI has four main categories of attachment: (a) autonomous, (b) dismissing, (c) preoccupied, and (d) unresolved. *Autonomous* individuals tend to value relationships, coherently describe their relationships with attachment figures as positive or negative, and consider the relationships important to their own personality. *Dismissing* individuals tend to minimize the importance of attachment in their own lives and idealize their childhood experiences without being able to provide concrete illustrations. *Preoccupied* individuals tend to maximize the importance of attachment; they remain engrossed in past experiences but are unable to describe them coherently and reflectively. *Unresolved* is used as an additional label when, during the interview, an individual shows signs of unresolved trauma, typically involving the loss of an attachment figure. AAI categories are intertwined with the Strange Situation categories. Both instruments assess children. The Strange Situation assesses infants and young children and the AAI modified versions assess older children to those in late adolescence. All of the categories can be divided into

secure and insecure attachments. Table 1 shows the categories and the type of attachment each represents.

Table 1

Categories and Types of Attachment

Category	Secure	Insecure
Secure	X	
Avoidant		X
Ambivalent		X
Autonomous	X	
Disorganized		X
Dismissing		X
Preoccupied		X

It is hypothesized that an insecure or secure attachment is initially largely influenced by the infant-caregiver system. For example, if a mother responds consistently, promptly, and appropriately to her infant's cues and demands, the infant will gain a sense of control over the environment; this facilitates a secure attachment to the mother and produces self-confidence (Cook, 2000). In contrast, insecure attachment reduces feelings of security and leads to low self-worth and limited efficacy (Cook, 2000). Rostosky, Dekhtyar, Cupp, and Anderman (2008) examined the associations between sexual self-concept (sexual esteem and sexual anxiety) and sexual self-efficacy (situation and resistive) in a sample of 388 high school students (59% Caucasian, 28% African American). Males reported lower sexual esteem and lower sexual self-efficacy than females. An essential tenet of attachment theory is that attachment styles are

developed in infancy and are influenced by the infant-caregiver relationship, which will influence future relationships (Hazan & Shaver, 1987). This was shown by Hazan and Shaver when they studied the infant-caregiver attachment based on Ainsworth's infant attachment categories and concluded that Ainsworth's categories of infant attachment have a direct correlation with the sexual behaviors of adolescents. This influence is said to be mediated by the individual's "internal working models" of the attachment relationship (Cook, 2000). Bowlby (1973) believed that by late adolescence, earlier interactions with attachment figures were organized into generalized interactional styles driven by the internal working model.

Internal Working Models

Internal working models of attachment are assumed to be the primary source of continuity between early attachment experiences and individuals' emotions, perceptions, thoughts, and expectations in later relationships (Ducharme, Doyle, & Markiewicz, 2002). These internal working models are driving forces that affect an individual's conceptualization of the self, others, and the world. According to attachment theory, parentally directed behaviors can, depending on the quality of their interactions, build the framework of internal working models (Bowlby, 1973).

The internal working models concept is central to attachment theory. This concept suggests that parental responses to their children lead to the children's developmental patterns of attachment. These patterns help develop a framework of children's emotions, perceptions, thoughts, and expectations in relationships. It is believed that these internal working models generate new relationships, which in turn influence and organize affect, cognitions, and interpersonal behaviors (Ducharme et al., 2002). Research suggests

parents are significant in the processes of their children's development (Robinson, Saisan, Smith, & Segal, 2016; Benoit, 2004; Bowen, 1978; Bowlby, 1973); thus, it can be suggested that the attachment of the child to his or her parents is critical for the child's overall functionality and development in life. Armed with more knowledge, parents will be open to suggestions to assist them in cultivating a productive and nurturing stance towards their children.

Attachment in Research

Attachment is a specific goal-directed feature of the relationship between child and parent, defined as a purposeful act to make a child feel safe, secure, and protected (Benoit, 2004). Parents play multiple roles in their children's lives, including playmate, mentor, disciplinarian, and attachment figure; however, the attachment is one the most critical roles in predicting children's later social and emotional outcomes (Benoit, 2004). Attachment provides a foundation of security, which might have critical implications during adolescence. Tracey, Shaver, Albino, and Cooper (2003) made behavioral predictions based on attachment theory and research using the attachment categories in infancy that include secure, avoidance, and anxious attachment categories. They found that anxious adolescents, out of fear of abandonment and rejection, had sex more frequently at an early age, but did not enjoy the sexual experiences out of these fears. Adolescents categorized as avoidant showed an inability or unwillingness to form close relationships with others (Tracey et al., 2003). These adolescents had sex just to have sex, out of a desire to lose their virginity rather than seeking emotional closeness with the other person (Tracey et al.). Adolescents categorized as secure coincide with those having a positive view of self and others, as is observed throughout attachment research (Dykas,

Ziv, & Cassidy, 2008; Moretti & Peled, 2004; Seiffge-Krenke & Beyers, 2005; Sim & Yow, 2011). These adolescents were more confident and comfortable in interpersonal intimacy, more likely to be involved in a relationship, and less likely to be sexually aggressive (Tracey et al.). They were also less likely to become victims of sexual aggression because they had more confidence in their own decision-making processes.

There is a good deal of research on security and its importance in forming healthy attachments, especially in families. Attachment between an individual and his or her family, and its effects on personality and well-being, has been a question of interest for developmental psychologists for decades (Nawaz & Gilani, 2011). The need to connect with others, to be with others, and to belong are considered important processes in development and socialization (Nawaz & Gilani, 2011). Psychologist Abraham Maslow expressed a similar concept in his work on development.

Maslow (1943) introduced his hierarchy of needs and listed security as a critical need for development toward having other social needs met, including belonging, love, self-esteem, and personal worth. Maslow believed parents were protectors, above all else. He observed that a child in an unfamiliar, strange, or unmanageable situation that elicits a danger or terror reaction will turn to a parent for protection and security as in Ainsworth's Strange Situation protocol. This added validity to attachment theory. Maslow's hierarchy of needs recognizes the importance of a child needing to feel secure and having enough comfort to explore the environment. Likewise, attachment theory suggests a child uses a primary attachment figure or caregiver as a secure base to explore and, when necessary, as a safe haven and a source of comfort (Benoit, 2004). This suggests a child with a sense of security will feel more attached to his parent and this will

make him feel comfortable enough to explore the environment. This exploration will foster healthy opportunities for the child to grow and learn in relation to others, thus cultivating the child's decision-making processes.

For these reasons, examining attachment concepts in adolescence enables exploration of ways to predict adolescents' sexual behavioral choices. Adolescents might spend less time with parents and more time with peers, but maintaining a secure parent-adolescent attachment is symbolic and holds particular importance (Benson, McWey, & Ross, 2006). There is, in fact, research suggesting that securely attached adolescents are less likely to engage in high-risk sexual behaviors (Moretti & Peled, 2004).

Bowlby's attachment theory relates to my study's approach and research questions by providing insight into the effect of perceived parent-child interactions on the risk of risky sexual behaviors among U.S. adolescents, the risk of engagement in early sexual debut among U.S. adolescents, the risk of U.S. adolescent males having unprotected sex without a condom, the risk of adolescent females having sex without some form of birth control pill, and the risk of having multiple sex partners in a 12-month period among U.S. adolescents.

Family Systems Theory

Family systems theory suggests that the functions of humans are emotionally based (Bowen, 1978). These emotions are automatic responses that occur in relationships between organisms (Gilbert, 2006). Thus, adolescents (organism) feeling secure (emotions) in their relationship with their parents (the other organisms in the relationship) are less likely to engage in high-risk behaviors (function). Emotions in the family system are transferred between and among other members in the family, affecting each

member's functionality in the family unit (Gilbert, 2006). Bowen believed that family is a multigenerational system; the functioning of each individual in the system affects the functioning of other members in predictable ways (van Ecke et al., 2006). Bowen's systems theory comprises eight concepts.

1. Differentiation of Self
2. Triangles
3. Nuclear Family Emotional Process
4. Family Projection Process
5. Cutoff
6. Multigenerational Transmission Process
7. Sibling Position
8. Societal Emotional Process

For my research, two of the eight concepts were addressed more thoroughly than the others: family projection and multigenerational transmission. Family projection and multigenerational transmission processes focus more on parent-child relationships than the remaining six. Because this study explored parent-child interactions and how these interactions are transmitted across generations, this was an appropriate approach for my study. Bowen family systems theory relates to my study approach and its research questions by providing an understanding that perceived parental-child interactions could possibly effect the likelihood of engagement in risky sexual behaviors among U.S. adolescents, the risk of engagement in early sexual debut among U.S. adolescents, the risk of U.S. adolescent males having unprotected sex without a condom, the risk of

adolescent females having sex without some form of birth control pill, and the risk of having multiple sex partners in a 12-month period among U.S. adolescents.

Nature of the Study

My research included a quantitative data analysis of the archival data set compiled by the U.S. Bureau of Labor Statistics (2012) from its National Longitudinal Survey of Youth 1979 (NLSY79), Child and Young Adult cohort. My study is a correlation quantitative research design. The principal reason for choosing this particular design was to simultaneously examine the effect of adolescent perceptions of maternal closeness, monitoring, communication, and involvement to show which perceptions significantly predicted adolescents' sexual behavioral choices. The independent variables include the perceptions of the adolescent toward his or her mother and father, and the mother's perceptions of how the adolescent views maternal and paternal closeness and parental monitoring. *Note that the father's perception will not be studied; however, the adolescents' perceptions of the father will be explored.* The dependent variables are the likelihood of engaging in risky sexual behaviors, such as early sexual debut, multiple sex partners, males' unprotected sex, and females' sex without contraceptive.

My study consisted of a nationally representative sample of approximately 11,504 youth. I extracted data for youth surveyed in (2010) for this study. The NLSY interviewers conducted these interviews through the use of a computer-assisted personal interview (CAPI) instrument administered on a laptop computer. The computer software automatically guides the interviewers through an electronic questionnaire and directs the questions based on the respondent's answers.

Note that the data I used do not involve interviewing fathers; however, the adolescents' perceptions of their relationships focused on both parents, so I examined the adolescents' perceptions of both parents, even though the fathers' perceptions of attachment to their adolescents were not analyzed. Because the data include the mother's perceptions, I used this information to compare the mothers' perceptions with their adolescents' views of how solid their relationship is perceived to be on either side. I also measured relationship factors and defined them using the following variables extracted from the NLSY79 data: maternal and paternal closeness, communication, parental involvement, and parental monitoring. The variables were extracted exactly as stated and measured by the NLSY79, as thoroughly explored in Chapter 3.

I conducted a logistic regression analysis to predict the effect of U.S. adolescents' perceptions of maternal and paternal closeness, monitoring, communication, and involvement on their sexual behavioral choices. These choices included when to become sexually active (sexual debut) and with whom (sexual partners), as well as gender differences in the use of contraceptives (unprotected sex). The variables were extracted exactly as stated and measured by the NLSY79, as thoroughly explored in Chapter 3.

Definition of Terms

Closeness. Consisted of the adolescents' and biological mothers' perceptions of how close they think they are (Guzman & Bosch, 2007).

Parental involvement. Consists of adolescents' perceptions of how often parents contact their teachers and counselors and how often they monitor and assist with homework (Guzman & Bosch, 2007).

Communication. Consisted of variables measuring adolescents' and parents' perspectives on discussions about troubling thoughts and sexual topics (Guzman & Bosch, 2007).

Parental monitoring. Described mothers' perceptions concerning their adolescent's friends and whereabouts (Guzman & Bosch, 2007).

Risky sexual behaviors. Include initiating early sexual debut, having unprotected sex, and having multiple sexual partners (Guzman & Bosch, 2007).

Early sexual debut. Defined as having had first sex before age 14 (Guzman & Bosch, 2007).

Sex unprotected. Described an act of sex without using a condom (Guzman & Bosch, 2007).

Sex without contraceptive. Described an act of sex without using birth control pills (Guzman & Bosch, 2007).

Multiple sex partners. Described an act of sex with more than one sexual partner in a 12-month period (Guzman & Bosch, 2007).

Adolescence. Described the transitional stage between childhood and adulthood. Within this stage, biological, cognitive, psychological, and social-emotional changes occur. These changes are often perceived as dramatic challenges among adolescents, requiring self, family, and peer group adjustments (Scherf, Behrmann, & Dahl, 2012).

Dismissing attachment. Involves setting aside the need for attachment (Hudson-Allez, 2009). The infant or child feels self-reliant, feels unloved by others, and views others as intrusive or rejecting, making it difficult for others to meet the child's needs for love (Hudson-Allez, 2009).

Disorganized attachment. Has characteristics similar to preoccupied attachment and dismissing attachment, and fluctuates between them. Like dismissing attachment, an infant or child feels unloved; like the preoccupied, the child experiences elevated arousal. The child perceives others as threatening, rejecting, or unpredictable; thus, strained and limited attachments are formed (Hudson-Allez, 2009).

Insecure attachment. A dysfunctional bond that forms in infancy when a caregiver, typically the parent, fails to respond to, or meet the infant's needs. This failure can lead to a damaged sense of self-worth, identity confusion, and an inability to relate to others in later life (Robinson, Saisan, Smith, & Segal, 2016). Insecure attachments in this paper are associated with insecure-ambivalent, insecure-avoidant, preoccupied, dismissing, and disorganized styles.

Insecure-ambivalent. Involves an infant or child showing distress when the parent or caregiver leaves, but upon the parent's return, shows no clear indication of wanting physical contact (Brisch, 2004). Research suggests this is a result of maternal deprivation or lack of maternal availability; for example, the mother cannot be relied on when the infant is in distress (James, 2013).

Insecure-avoidant. Involves an infant or child avoiding parents or caregivers and, when given a choice between a stranger and the parent, the infant or child shows no preference (Brisch, 2004). Research suggests childhood attachment experiences were most likely abusive and neglectful (James, 2013).

Parent-adolescent attachment. Described the emotional bonding between parent and child—beginning at birth—as the parent strives to meet the child's emotional needs.

Numerous studies indicate the effect of this attachment, especially in adolescence (Cook, 2000; Duchesne & Larose, 2007; Jiang et al., 2013).

Preoccupied attachment. Involves an infant or child who displays hyperactive, elevated arousal, and reassurance, and attention seeking behaviors (Hudson-Allez, 2009). The child perceives others as unreliable, insensitive, and neglectful, and views the self as worthless and undeserving, all while displaying dependent behaviors toward others (Hudson-Allez, 2009).

Secure attachment. A bond that forms in infancy from positive and healthy caregiving responses, typically from the parents to the infant. These positive responses and caregiving behaviors promote feelings of security in the infant, which enables healthy personality development and emotionality in the child (Robinson et al., 2016).

Family projection process. This process described how parents transmit their anxieties and problems to their children. Both parents equally affect the child in different ways. The mother-child relationship is usually the most emotionally intense; due to the fact that mother typically assume the role of primary caregiver. The father's position is usually outside of the mother-child dyad except during periods of heightened emotional tension (Bowen, 1976, 1978). Both parents are usually unsure about their relationship with the child, but one parent acts confident and the other parent goes along. The parents' fears and perceptions shape the child's development and behaviors; consequently, the child grows to embody his parents' fears and perceptions (Bowen, 1976).

Multigenerational transmission process. Described how interactions of parents toward their children are transmitted across generations. These interactions are transmitted relationally and genetically (Bowen, 1978). The parents' active shaping of

their child's perceptions, coupled with the child's responses to the parents' attitudes, result in the child's development and mimicking of the parents (Gilbert, 2006).

Reckless/risky behaviors. Impulsive, poorly cognitively cued behaviors that could be described as sensation-seeking behaviors (Husted & Shapira, 2004). Reckless behaviors put teens at risk for consequences that adversely affect their overall development and well-being. Sexual risk-taking behaviors are one form of such reckless/risky behaviors (Husted & Shapira, 2004).

Assumptions

Due to the design of my study, self-reported survey questionnaires were the best way to measure perceptions of maternal and paternal closeness, monitoring, communication, and involvement by U.S. adolescents and to measure their sexual behavioral choices. I assumed that the participants were truthful when filling out the survey instruments. I assumed that the participants were willing and not biased. I assumed that the participants possessed the education level to understand the questions asked in the survey instruments. Furthermore, I assumed that the instruments used in the study were appropriate to measure perceptions of maternal closeness, monitoring, communication, and involvement by U.S. adolescents and to measure their sexual behavioral choices. These assumptions were necessary in the context of the study because they helped in measuring perceptions of maternal closeness, monitoring, communication, and involvement by U.S. adolescents and measuring their sexual behavioral choices.

Although self-reported surveys are the best way to measure perceptions, social bias, and social desirability, bias may occur in studies that rely on self-reported sexual behavior data (Schroder, Carey, & Venable, 2003; Kelly, Soler-Hampejsek, Mensch, &

Hewett, 2013). Social bias and social desirability describe the tendency of survey participants to select answers or answer questions in a manner that they believe will be viewed as desirable by others (Kelly et al., 2013). For example, where societal norms create different expectations for gender acceptable behaviors, males and females may face different pressures in reporting certain sexual outcomes, which can distort assessments of risk for HIV/AIDS (Kelly et al., 2013). Social desirability can be problematic in studies involving sexual behaviors, as participants may deliberately answer questions inaccurately by underreporting or over reporting from a desire for social favor (Kelly et al., 2013). I addressed social bias and social desirability by using archival data from the NLSY79 survey, in which the NLSY interviewers conducted interviews using a computer-assisted personal interview (CAPI) instrument administered on a laptop computer. The CAPI method is effective in addressing social bias and social desirability (Myers, 2009).

Scope and Delimitations

The history threat may occur when events occur to participants during the study which influence results but are not related to perceptions of maternal and paternal closeness, monitoring, communication, and involvement (Buckholdt, Parra, & Jobe-Shields, 2013). For example, in an extended study examining the effect of perceptions of maternal and paternal closeness, monitoring, communication, and involvement on the adolescents' sexual behavioral choices, participants may change their sexual behavioral choices. A regression threat may be present when using a nonrandom sample of a population, but for my study, I had a random sample.

My study had five delimitations. The first delimitation involved collecting data from adolescents residing with their biological parents only. It is important to note that other attachment figures are critical to adolescents, including step parents and grandparents; however, for this study's purpose these attachment figures were not investigated because biological parents have the primary obligation to parent their children, including having physical custody of them (National Paralegal College, 2016) unless parental rights are waived. In addition, this study explored the influence of intergenerational attachment factors to examine the effect they have on present parent-adolescent interactions.

The second delimitation involved controlling for age by limiting the age range of the sample. The age limit for participants was 12 to 19 years. Although there is no age range for adolescents that is suitable for all purposes, many developmental specialists and researchers in the United States define early adolescence as beginning at 12 years (CDC, 2015) and late adolescence as continuing "up to 21 years" (American Academy of Pediatrics, 2015). For this study, I selected 12- to 19-year-olds because, more than likely, adolescents in this age group still live at home, and I wanted to capture the at-home experience. It could be assumed that the teen will be out of the home and possibly in college or just living as a responsible adult toward the end of adolescence.

The third delimitation is that I did not control for racial/ethnic backgrounds because attachment patterns do not vary significantly across racial groups (Schroder, Higgins, & Mowen, 2014). The results of a secure or insecure attachment have an effect on all children regardless of race, and these attachment behaviors will affect how the parent and child interact.

The fifth delimitation is that the research sample only accounted for the mothers' and adolescents' perceptions, because biological fathers did not participate in the NLSY79 survey; thus, their perceptions about their bonds with their children are not accounted for or viewed. It is important to note that adolescents' perceptions of their fathers are still accounted for. I did not generalize to other human beings the effect of perceptions of maternal closeness, monitoring, communication, and involvement on the adolescents' sexual behavioral choices.

Limitations

There were limitations in my study. First, additional confounding variables that might influence parental-adolescent interactions and their effect on adolescents' sexual behavioral choices were not investigated or controlled. These variables include temperament and intellect (IQ) (Braungart-Rieker, Hill-Soderlund, & Karrass, 2010); marital discord (Azam & Hanif, 2011); family readjustments or transitions including divorce, parental separation, remarriage, or death (Ruschena, Prior, Sanson, & Smart, 2005); and demographics such as family income, and parents' age, work hours, and education (Wong, Mangelsdorf, Neff, & Sullivan, 2009). The importance of these variables is not to be ignored, but exploring them was beyond the scope of this study. Securely attached children might be able to manage relationships with increased accuracy and understanding without distorted cognitions, self-blame, or negative self-images in times of major transitions (Ludy-Dobson, & Perry, 2010). They might come to develop resiliency due to being securely attached. As a result, tears in attachment can be repaired (Kissil, 2011). I focused on the outcome of the continued interactions in the parent-adolescent system.

A second limitation, similar to the first, was the lack of control and exploration for intervening variables. Variables that might create significant change in attachment over time, such as trauma or economic loss, were not investigated because I did not focus on major life events, but on how the parent and adolescent continue their interactions rooted in attachment. In addition, the child might experience household changes, such as going from a two-parent household to a single-parent household, or leaving the parents' household to live with an extended family member (e.g., grandparents). These variables might affect parental-adolescent interactions and affect adolescents' sexual behavioral choices. However, the primary focus for this study was exploring variables that relate to attachment by looking at interactions in the parent-adolescent unit, such as parental monitoring and closeness.

An additional limitation was that fathers' perceptions concerning their relationship with their teens were not included because they did not participate in the survey. Because research suggests that paternal involvement affects adolescent sexual choices (Davidson, Updegraff, & McHale, 2011; Scharf et al., 2012; Williams & Kelly, 2005), this study captured adolescents' perceptions concerning their relationship with their fathers to evaluate paternal influences on adolescent sexual choices.

Significance of the Study

My study revealed an association between adolescents' perceptions of their interactions in the parent-child relationship and adolescent sexual behavioral choices, which provides an opportunity for positive social change. This research can be used as an anchor to inform parents of how influential their parental roles are on their adolescent's sexual choices. These parents can then learn how to adopt a fresh perspective on how to

positively interact with their adolescent. Perhaps community and government-based programs can implement curriculums that promote positive parental bonding which influences interactions in the parent-child relationship. This process may result in fewer cases of STD transmission and fewer unintended pregnancies among adolescents.

Strengthening bonds between parents and their adolescents is a worthwhile contribution to the cause of reducing the risks associated with adolescent sexual behaviors. HIV/AIDS and other STDs are easily spread and adolescent unintended pregnancies occur more frequently when emotional neglect is involved, yet are also easily contained with proper choices. This makes this study critical. A possible way to eliminate this crisis is to make parents more aware of the problem of adolescent adverse sexual behavioral choices and the effect of perceived parental-adolescent interactions on these choices.

Social Change Implications

The rates of unintended pregnancies and STDs among adolescents remain higher in the United States than in other developed nations (Kaiser Family Foundation, 2014). Reducing unintended pregnancy and STD rates among adolescents is crucial for their health and quality of life (CDC, 2011). Parents play the most important role in their adolescents' sexual health, but need resources (CDC, 2014). That is especially so in light of the findings of this study, which indicated that fostering positive perceptions of parent-adolescent interactions, will have a favorable effect on adolescents' sexual behavioral choices.

For this reason, helping parents understand how influential their interactions are with their children is very important. Also, educating parents on how to adapt their

interactions to their adolescents' growing needs might help foster positive interactions. Placing an emphasis on parent-adolescent interactions and its importance to the adolescent's emotional and psychological development might bring awareness on how to positively influence their child's decision-making processes, especially their sexual choices (CDC, 2014).

The plan to develop a better connection between the parent and the adolescent should include a variety of methods that affect different audiences. It is a grass-roots effort to get the local community aware of my' published research through workshops, community events, and therapy sessions. From there, the interest in attachment and family systems will grow to reach a wider audience of mental health professionals, who in turn will teach from the findings of this research. The more people embrace my research and its significant findings, the more they will share this information with other colleagues. These conversations should include how to weave the results of this study into therapy plans. Weaving the results of this study into therapeutic plans can bring about a better understanding that continuous attachment affects s parent and child interactions, which in turn plays a significant role in the outcome of the adolescent's life.

Once attachment theory, coupled with family systems theory, is understood by parents, they may become more involved in their adolescents' lives. As a byproduct of awareness, behavioral change in parental-adolescent interactions at the family level will save lives of youth, improve the quality of life of youth, and affect their futures as adults. Parents might come to advocate for programs at local and at national levels designed to educate and promote strategies that facilitate the building of positive parent-adolescent interactions. This study emphasized parents as critical factors in this change and

emphasized how important parent-adolescent perceptions are concerning such change. One might promote more parent-adolescent bonding programs aimed at reducing adolescent risky sexual behavior.

Science-driven skill programs like Talking Parents, Healthy Teens (Martino, Elliot, Corona, Kanouse, & Schuster, 2008), Focus on Kids (FOK) and ImPACT (Advocates for Youth, 2008) and Safer Choices (Kirby et al., 2004) are already attempting to improve parent-child communication by focusing on the child's behaviors and perceptions. These programs set out to ensure that adolescents acquire the skills needed to protect themselves from unplanned pregnancies and STDs (Kitchen, 2011). Adolescents in these programs were more likely to delay initiation of sexual intercourse, and were less likely to engage in unprotected sex. While these programs are important, they alone are not sufficiently reducing the rates of STDs and unplanned pregnancies. A new departure is needed. Bonding programs can thus be developed to emphasize not only the adolescents' behaviors and perceptions, but also parents' behaviors and perceptions concerning their relationship, including their attitudes about sex. Researchers and program developers can use the findings of my study to aid in closing the gap between adolescents' and parental perceptions of interactions, and adolescent sexual choices, thus reducing risky adolescent sexual behaviors.

Summary and Transition

My study examined parent-adolescent interactions through the eyes of the adolescent living within the family system as a way to predict adolescent sexual behavioral choices.

In this study, the quality of the parent-adolescent relationship and its effect on adolescent sexual behavioral choices was measured using longitudinal archival data from the NLSY79. Variables associated with parent-child interactions, including adolescents' and their mothers' perceptions of maternal and paternal closeness, parental involvement, communication, and parental monitoring were compared with dependent variables including adolescent sexual behavioral choices such as early sexual debut, multiple sex partners, males' unprotected sex, and females' sex without a contraceptive.

I used Bowlby's attachment theory to describe the importance of bonding because he devoted extensive research to the concept of attachment, illustrating it as a psychological connection to human beings (Bowlby, 1959). Bowlby (1988) believed this predisposition makes for a strong emotional bond that is critical for human nature. This emotional bond results in attachment styles established in childhood through infant and caregiver relationships that continues on into adolescence and adulthood. This is important because it is the springboard into how adolescents interact with their caregivers, typically parents.

Family systems theory was used to understand the interactions that evolve from these attachments. Rabstejnek (2012) provides an extensive bibliography on family systems theory research. Bowen's family systems theory is a theory that uses system thinking and concepts to describe human behaviors as complex emotional interactions within a family unit (Kerr, 2015). The systems concept illustrates how families become interconnected emotionally (Kerr, 2015) and how the interactions influence others in the family unit. Bowen's systems theory has concepts that describe and explore parent-child interactions and how these interactions cross generations (Bowen, 1978). I collected the

study's independent variables for parent-adolescent interactions and the study's dependent variables associated with reckless and risky adolescent behaviors from the NLSY79 survey. These reckless sexual behaviors are impulsive and result from poor cognitive function (Husted & Shapira, 2004) that places adolescents at risk for adverse consequences that can affect their overall development and their well-being throughout their lives (Guzman & Bosch, 2007). Noteworthy, sexual engagement itself is considered a risky behavior, because it might adversely affect a teen. Reckless sexual behaviors, such as engaging in unprotected sex, put teens at risk for pregnancy. This is emphasized because teen pregnancy has been associated with higher school dropout rates (Guzman & Bosch, 2007). The goal of this study is to encourage parents to become more aware of how attachment influences parental-adolescent interactions, and how these interactions affect adolescent sexual choices.

Chapter 1 provided a brief overview of adolescence, the study's purpose and described its operational definitions and variables. Chapter 1 also briefly explored Bowlby's attachment theory and Bowen's family systems theory and how they relate to parent-adolescent interactions. Other theoretical frameworks and concepts in relation to the research questions are explored in Chapter 2. Also in Chapter 2, a brief discussion of parent-adolescent interactions, including a review of literature on attachment in adolescence was explored. In addition, insight into the adverse sexual outcomes affecting adolescents in disproportionate numbers was addressed in Chapter 2.

Chapter 2: Literature Review

Introduction

Researchers must shed light on factors that predict adverse sexual outcomes for adolescents. An estimated 20 million new STD cases occur each year among individuals aged 15 to 24 years (CDC, 2015b) and in 2013 an estimated 10,000 cases of HIV were among individuals aged 13 to 24 years (CDC, 2015b). In addition, the CDC (2015b) reported in 2013, a total of 273,105 babies were born to adolescents 15 to 19 years and more than 90% describe their pregnancies as unintended (Eaton et al., 2010). The purposes of this quantitative study were to explore perceptions of interactions between adolescent and parent, because adolescents report that their parents have the most influence on their sexual decisions (Albert, 2012).

The literature cited thus far in this study establishes the relevance of the problem by addressing the importance of attachment, how attachment affects parent-adolescent interactions, and how these interactions influence adolescents' sexual behavioral choices. In addition, the literature establishes the relevance of the problem by indicating that having a secure, healthy parental-adolescent attachment may function as a means of preventing adverse outcomes. In the following sections, I describe the literature search strategy, theoretical foundation, literature review related to key variables and concepts, methodology, and summary.

Search Strategies

Peer-reviewed articles were located from the Academic Search Complete database and other online resources and published reports to discover the findings. Key search terms used in the search were *parent-adolescent*, *teen*, *sexual behavioral choices*,

sexual choices, attachment, parent-adolescent attachment, attachment quality, secure attachment, insecure attachment, parent-child relationships, and parent-adolescent interactions. The combined keyword searches yielded 2,858,000 results, partly due to dated attachment theory and attachment concepts. Attachment theory and concepts are well researched, but such research as related to adolescents is more recent. When I coupled the keywords parent-adolescent and adolescent sexual practices, the results dropped significantly to approximately 5,720. With the combination of keywords such as *family systems theory* and *attachment theory*, the results dropped sharply (to 21 in this particular case), and after adding *adolescents* or *adolescent risky sexual behaviors* to the search, the results were zero.

Enough information exists to suggest a strong possibility that the level of attachment determines a child's vulnerability to external factors; however, more research is needed to explore the adolescent's and parent's perception of their relationship with respect to adolescent sexual behavioral choices. First, it is necessary to thoroughly discuss the vulnerabilities in adolescence and to describe the phases of adolescence and the critical developments that take place during this stage. This literature review involves explorations of theoretical frameworks and concepts, including Bowlby's (1988) attachment theory and family systems theory (1978) as means to explain adolescent sexual behaviors. The literature review provides insight into the effects of perceptions of maternal closeness, monitoring, communication, and involvement, on the adolescents' sexual behavioral choices. While researching, several theories emerged to explain adolescents' risky sexual behaviors. I discuss attachment and family systems theories used in this research.

Theoretical Background

Bowlby's Attachment Theory

The concepts of ethology have strongly influenced attachment theory (Bowlby, 1988). Human infants are similar to other mammals in that, to survive, the parents/caregivers must protect and care for them. Bowlby believed human attachment behaviors are innate and will be activated if any conditions appear to threaten successful proximity to the caregiver (i.e., the protector; McLeod, 2011). For example, an infant entering into an unfamiliar environment may signal by crying and reaching for his or her mother's protection and comfort.

These human attachment behaviors and emotions, according to Mercer, Misbach, Pennington, and Rosa (2006), are important to evolution and to human selection of social behaviors that make individuals more likely to survive. A mother's responses will greatly affect an infant's development and internal working model. If the mother's responses are quick, sensitive, warm, and consistent, the child will develop a secure attachment (Bowlby, 1973). A breakdown in the attachment or failure to attach could create an insecure attachment, which could cause extreme adverse consequences for the child's development (Bowlby, 1959; van IJzendoorn, Schuengel, & Bakermans-Kranenburg, 1999). These attachments in early relationships are woven from infancy into adolescence, thereby spinning the cloth of the child's perception of self and others and defining his or her security or insecurity (Pace & Zappulla, 2011). In relation to Bowlby's (1973) beliefs concerning attachment and how it shapes perceptions, a securely attached child may view him or herself as worthy of being loved and others as emotionally available and

trustworthy; conversely, an insecurely attached child might view the self and others negatively (Pace & Zappulla, 2011).

As highlighted by Bartholomew (1990), negative internal working models of self and others are similar to Ainsworth's attachment categories. Negative working models of self would be linked to an anxious-ambivalent style while a negative view of others would be linked to an avoidant style (Pace & Zappulla, 2011). Research highlights the importance and effect of the parent-child attachment on the maladaptive and adaptive course of development through adolescence (Bakermans-Kranenburg, van IJzendoorn, & Juffer, 2005; Jacobvitz & Hazan, 1999; Main, Kaplan, & Cassidy, 1985; van IJzendoorn et al., 1999). A good quality attachment may serve as a protective factor in general concerns during adolescence, such as setting curfews and choosing friends, whereas an insecure attachment might serve as a predictive measure for problem behaviors in adolescence (Madigan, Moran, Schuengel, Pederson, & Otten, 2007; Pace & Zappulla, 2011).

Bowlby's attachment theory (1988) places significant emphasis on describing a child's behaviors with reference to parent-child interactions (O'Gorman, 2012). Bowlby's tenets of attachment as an interactional system provide a foundation for the development of adaptive and maladaptive working models of self and others, as seen throughout the literature (Shaw & Dallos, 2005). The foundation that attachment theory creates can be viewed across countless domains of clinical research, including other theories (e.g., social learning theory) and clinical practice (Slade, 2008). Because the validity of this theory has thus been established in research and practice, it has been accepted as a theoretical basis for my study.

Bowlby's attachment theory (1982, 1988) suggests that early parent-child attachments influence the quality of later social interactions, including sexual relationships. Bowlby's clinical work with maladjusted children led him to understand the detrimental consequences of inadequate care, something prominent psychoanalytic theories at that time failed to do (Benson et al., 2006). To understand the emotions of the attachment phenomenon, Bowlby studied concepts and ideas from evolutionary biology, developmental psychology, and information processing theory (Benson et al., 2006). Bowlby received much criticism from psychoanalytic followers; however, he continued to develop his theory and formulated the concept that emotions bond a child to his or her caregiver and that this bond influences the child's affect and personality development. If the bond positively affects the child's development, the child may feel comfortable moving forward towards adolescence (Moretti & Peled, 2004).

In attachment theory, the effect of early parent-child attachments influences later developmental outcomes (Tong, 2013). Bowlby's concept of internal working model is important in understanding how attachment behavioral patterns extend beyond the infant and child relationship (Tong, 2013). Bowlby (1988) suggested that internal working models, initiated during infancy, promote the child's learning about self, relationships, and the world. Bowlby believed these internal working models evolve throughout life (Benson et al., 2006). Caregivers, typically the parents, continue to influence the child's internal working models, although their attachment in the parent-child relationship changes to complement the child's growing needs (Bartholomew, 1990; Moretti & Peled, 2004).

Internal working models evolve from attachment experiences with a primary attachment figure (typically a mother) as an instinctual evolutionary function that regulates safety and promotes survival (Brown & Wright, 2001). Bowlby's theory (1988) has been measured with countless infants and young children; however, as a child transitions into adolescence, the results are mixed and limited as they pertain to attachment to parents (Scott, Briskman, Woolgar, Humayn, & O'Connor, 2011).

One reason might be that adolescents are more complex. For example, the concept of a secure base is critical in attachment, and Bowlby (1988) believed parents or caregivers act as a secure base for their infants. When the infant feels safe and secure, he or she feels free to explore more of the environment; furthermore, when an infant is in distress, he or she returns to the parent for security and comfort. The parent acts as a safe haven. As the child ages, especially into adolescence, the secure base might become less important physically but more important figuratively. As the adolescent gains more freedom and more self-reliance, parents might be out of sight when the adolescent is distressed, thereby changing the dynamics of attachment (Scott et al., 2011).

Despite the differences between child and adolescent attachment formation and experiences, the amount of research on adolescents remains relatively insignificant compared to that devoted to the study of attachment from infancy to the threshold of adolescence (Shunmaker, Deutsch, & Brenninkmeyer, 2009). However, the existing research on adolescents shows that attachment continues to play a major role in the teenager's life. It has been shown, for example, that adolescents still look to parents as secure bases, especially if they encounter a challenging or dangerous situation (Kobak, Rosenthal, Zajac, & Madsen, 2007).

Moreover, as the adolescent's physical capacities increase, his or her cognitive abilities increase as well. This allows the adolescent to use his or her internal working models to reflect on and represent experiences, motivations, and relationships with others (Shunmaker et al., 2009). The adolescent relies on attachment quality experiences with parents. Thus, parents may not be present, but they remain in the teen's emotional and mental psyche, providing a secure base if they have a secure attachment with their teen. During adolescence, children continue to rely on their parents as a secure base from which to explore their world and forge new relationships (Shomaker & Furman, 2009). However, adolescents may also come to develop secure representations with their parents despite early adverse experiences in early childhood (Shomaker & Furman, 2009); hence it is important for parents to know the importance of establishing and maintaining attachments to their children.

Bowlby (1988) theorized that a parent must be available, loving, responsive, and helpful to the child's signals of distress early on in childhood (Canetti & Bachar, 1997). If the parent fails to meet the child's need for comfort and security, normal development is affected and the effect continues into adolescence (Benson et al., 2006). Attachment research findings suggest insecure parent-child attachment is a risk factor for poor adolescent adjustment, including low self-esteem (Benson et al., 2006; Fanti, Henrich, Brookmeyer, & Kuperminc, 2008; Sheeber, Davis, Leve, Hops, & Tildesley, 2007).

The basis of attachment is relationships, specifically how the individual's early relationship as a child with his or her caregiver, creates mental representations that are the raw material of attachment (Bowen, 1978). Bowen's family systems theory recognizes the importance of attachment and how patterns of interactions evolve from it.

Bowen believed that, through relationships with parents, children form healthy or unhealthy attachments, a concept similar to Bowlby's concepts of secure and insecure attachment. Bowlby (1973) described insecure attachments as inverted parent-child relationships within a family context. In addition, using this description, Bowlby considered three generational patterns, suggesting a link to insecure attachments in relationships. This is comparable to Bowen's (1978) family systems theory that places an emphasis on three generational family patterns generated in the parent-child relationship. Bowen suggested parent-child interactions influence the child's perceptions of self and his world, parallel to Bowlby's internal working models concept. Since Bowlby's attachment theory focuses on relationships, and Bowen's family systems theory explores the system of relationships in the family, these theories emphasized the importance of establishing and maintaining healthy interactions within the parent-child dyad.

Family Systems Theory

Bowen (1978) was initially trained in psychoanalytic theory, like Bowlby (1988). Later, Bowen began to appreciate the dynamics within a family as a system. Bowen began to focus largely on interactions within family units. He referred to these interactions as common patterns in a human emotional system.

Family systems theory emphasizes the nature of interdependence in a family that is unified through emotional connectivity (Bowen, 1978). Bowen believed that a family's interdependent functionality is based on the members reciprocating and reacting emotionally with each other. Emotional interdependence can unify and promote cohesion and cooperation within a family; however, problems can arise when tensions are heightened (Bowen, 1976, 1978). Bowen referred to tension as anxiety among family

members that can intensify and spread to others within the family. Often in response, one or more family members will accommodate the most to reduce tension in others. This can eventually lead those members to feel overwhelmed, isolated, and/or out of control, making them more susceptible to depression, affairs, alcoholism, or mental illness (King, Kerr, Passarelli, Foster, & Merchant, 2010). Bowen's theory helps illustrate the effect of family interactions within its system and demonstrates how these family interactions cross generations (Bowen, 1978).

Bowen's family systems theory focuses on family interactions generated within familial patterns (Bowen, 1976, 1978). The current levels of external stress and the sensitivity to specific themes or scripts measure the degree of emotional processes in families (Brown, 2012). If family members are unable to think responsively to relationship dilemmas, but react according to perceived emotions, then a state of disequilibrium will occur (Brown, 2012). This state of disequilibrium can possibly disrupt the family's system. To bring understanding to this disruption and attempt to re-stabilize, family systems theory presents eight interlocking concepts. Because this study focuses on parent-child interactions and how interactions are transmitted through generations, family projection and multi-generational transmission are the two concepts of the eight that are the main focus.

The family projection process describes how parents transmit their emotional problems to the child. When the parent interacts with the child in an anxiety-provoking manner, the interactions impair the child's functioning (Bowen, 1978; Buehler, Franck, & Cook, 2009). Through the relationship with the parent, the child can acquire many types of problems, such as difficulties dealing with expectations, inability to make own

choices, living for the approval of others rather than for self, blaming others for actions, and feeling he/she is responsible for the other's happiness (Buehler, Franck, & Cook, 2009). The child may come to react impulsively in attempting to decrease anxiety; in return, the parents may respond by labeling the child as a problem (Brown, 2012).

Bowen (1978) believed both parents participate in the family projection process, but in different ways. The mother is typically the primary caregiver and more prone to being emotionally involved with the child than the father. However, the father is usually brought into the mother-child system when anxieties are heightened (Bowen, 1976). The parents typically bond with each other due to the uncertainty of their relationship with the child, but they continue to emotionally overload him or her (Goldenberg & Goldenberg, 2013). This emotional overload of negative interactions in the parent-child relationship unconsciously begins to teach the child how to view self and others (Goldenberg & Goldenberg, 2013). The child begins to automatically and unconsciously program emotional responses, reactions, and behaviors that affect his/her future emotional relationships (Brown, 2012).

These emotional responses are passed from generation to generation through projection from parent to child (Brown, 2012). As the child enters into adolescence, these generationally transmitted emotional responses are applied to evolving emotional relationships with peers. Multi-generational process projection plays an important role in sexual behaviors because parents actively shape the child's cognitive and emotional development, which is critical when teens are contemplating sexual partners (Boszormenyi-Nagy & Spark, 1973; Kerr, 2015). Negative parent-child interactions within their emotional dyad can result in an adolescent feeling negatively about self

(Kerr, 2015). Consequently, the teen may make poor decisions, especially regarding sex. According to Hoskins (2014) adolescents who perceived their parents as uninvolved (perceived their parents as unconcerned or having little interest in their lives) scored low on self-esteem and were more likely to make poor decisions, including sexual choices.

Theoretical Synthesis

For this research, Bowlby's attachment theory and Bowen's family systems theory were used to answer the question: *How does perceived parent-adolescent interaction influence the sexual choices adolescents make?* The adolescent's degree of attachment to his/her parent directly contributes to interactions with his/her parent, thereby defining how much positive influence the parent has over the adolescent, thus proving that merging these two theories is essential to understanding adolescent choices (Karakurt & Silver, 2014).

Attachment is a core biological need that begins to form in infancy, typically with biological parents, that shapes the child's later relationships (Bowlby, 1973). Thus, attachment influences the parent-child interactions, and these interactions will affect the child's behaviors (Bowlby, 1973). For example, the child's behavior toward others is based on how he/she interacts with his/her parents. These interactions are emotional codes (formed in the attachment relationship) that develop within the parent-child dyad that translates into the child's behaviors (Bowen, 1978).

Attachment theory and family systems theory enables us to examine how attachment operates and influences throughout family systems, affecting family interactions, especially between parent and child (van Ecke et al., 2006). According to attachment theory, early parent-child interactions influence the child's ability to form

interpersonal bonds with individuals outside of the child's family of origin (Shomaker & Furman, 2009). According to family systems theory, examining emotional patterns of interaction in the family of origin, especially the parent/child dyad patterns, is necessary (Daire, Jacobson, & Carlson, 2012) to explore how the child's behaviors will repeat in future relationships (Gladding, 2007). As the child enters adolescence, how he or she forms relationships outside the family depends largely on his/her interactions with his/her parents (Uytun et al., 2013). In other words, adolescents' outside relationships often mirror their relationships with their parents.

Consequently, interactions in parent-adolescent relationships are linked to the adolescent decision-making processes (Ritchwood et al., 2014), including sexual choices (CDC, 2015). Synthesizing attachment theory and family systems theory will help soon-to-be parents better understand the influences of early attachment; for current parents, synthesizing the two theories will help them better understand the importance of positive interactions with their adolescents, which will determine how the adolescents will form intimate relationships outside of the family (Daire et al., 2012), especially sexual relationships.

Bowlby's research is used as a guide to better understand attachment as the root that generates responses in the form of parent-adolescent interactions, and Bowen's family systems theory is used to examine the interactions in the parent-child dyad. These interactions are then assessed in terms of their effect on adolescent sexual behaviors. The concept of merging these two theories to explore the effect of parent-adolescent interactions on adolescent sexual choices has not been done before.

Phases and Vulnerabilities of Adolescence

Adolescence is a transitional phase in which cognitive, biological, and social transformations occur. Previous research suggests that the magnitude of these transformations influences high-risk behaviors (Laible, Carlo, & Raffaelli, 2000); hence adolescents are more likely to experiment with drugs and sex. Today, adolescents are immersing themselves in social networking sites (Collins, Martino, & Elliot, 2011). Unlike earlier generations, children now live in the era of Twitter and Facebook, which offers them better connectivity to more things and more people. Although some networking sites, such as Facebook, have security tools and forbid public sexual nudity or explicit sexual content, they still offer a wide range of opportunities to connect with individuals worldwide. Research has shown that younger adolescents use these social networking sites as a virtual venue to meet and interact with others (Brown, 2002). In addition, younger adolescents are more likely to provide information about their identities, while older adolescents are more likely to share sexual material via instant messaging or e-mail (Hua, 2012).

During the neurological transformations that occur in the adolescent, these social networking connections may place ideas in the minds of adolescents about how relationships are formed. For example, there is research indicating that Internet-based social networking leads to an unhealthy retreat from real life interactions with peers (Brown, 2002). This would negatively affect adolescents' cognitive development, especially their forming of relationships, during this period of their neurological transformation.

Understanding the neurological changes occurring in adolescents is vital for parents. These transformations structure and rewire the brain (Sylwester, 2007). The neurons (nerve cells) transmit critical messages via electro-chemical impulses (Sylwester, 2007). These impulses travel throughout the brain and nervous system (National Institute of Mental Health (NIMH), 2011). Communication along a pathway of the nervous system requires passage of the messages from one neuron to the next. This communication across the synapses (contact points, small gaps between neurons) is accomplished by neurotransmitters, the chemical messengers of the nervous system (Sylwester, 2007).

There are several neurotransmitters, associated with different receptor sites (Sylwester, 2007). Three neurotransmitters dominate during puberty: dopamine, serotonin, and melatonin. Dopamine affects the brain processes that control movement, emotional response, and the ability to experience pleasure and pain (Sylwester, 2007). During adolescence, dopamine levels decrease, resulting in mood changes and difficulty with emotional control. Serotonin is vital for mood fluctuations, impulse control, arousal levels, and anxiety (Sylwester, 2007). Serotonin levels also decrease during adolescence, which has been linked to decreased impulse control. Melatonin regulates the sleep-wake cycle and circadian rhythms (Sylwester, 2007). Melatonin production levels in the body shift during adolescence, resulting in a greater need for sleep (Sylwester, 2007).

Parents might experience confusion or feelings of helplessness with respect to their adolescents during these changes. Many parents do not understand why their adolescent might suddenly act aggressively, impulsively, dangerously, or irrationally (American Academy of Child & Adolescent Psychiatry, 2012). Therefore, having a better understanding of these neurological transformations during adolescence might help

parents understand why at times their adolescents react impulsively. Many parents might feel their adolescents are detaching, thereby, making the parent-adolescent relationship more challenging (Sentse, Lindenberg, Omvlee, Ormel, & Veenstra, 2009). Educating parents on positive ways to interact with their adolescents might prove beneficial for the parent-adolescent relationship.

According to the American Academy of Child and Adolescent Psychiatry (2012), the frontal lobe region, or cortex, of the brain is responsible for reasoning and helps us think things through before reacting. In addition, this region involves language, impulse control, problem-solving, motor functioning, and social and sexual behavior. Unfortunately, this part of the brain is still developing and maturing well into adulthood (American Academy of Child & Adolescent Psychiatry, 2012), possibly leaving the adolescent vulnerable to risky behaviors as he or she begins forming relationships. Educating parents on the stages of adolescence and on the importance of maintaining a relationship with their teen might help the child navigate successfully through adolescence.

According to Guzman and Bosch (2007), during adolescence, neurological development affects decision making and future-oriented thinking. Neurological development that affects decision making and future-oriented thinking is not fully complete until the early 20s (Guzman & Bosch, 2007). This incomplete neurological development might leave adolescents fragile, making them more susceptible to engaging in risky sexual behaviors because of an inability to weigh the risks compared to fully matured adults (Guzman & Bosch, 2007).

From first love, to first kiss, to first drink, children in earlier generations were not expected to experience these moments until about 17 or 18 years (Guzman & Bosch, 2007); however, today's generation feels pressure to find a love, to kiss, and to take a drink as early as 13 years (Davis, 2013). These pressures are manifest through today's media and include sexually explicit music and literature. Brown (2002) suggested that underdressed entertainers, adult-themed cartoons, and bare-chested pictures of athletes might become role models to adolescents.

Youth may come to believe that these images are part of a rite of passage. The sexual media diet concept explores both the amount of sexual content of four specific media vehicles (music, TV, magazines, and movies) and the effect of the sexual content of these vehicles on adolescents' perceptions (Pardun, L'Engle, & Brown, 2005). Brown, Steele, and Walsh-Childers (2002) conducted a study among 3,261 seventh and eighth graders (12 to 15 years). They examined adolescents' sexual media diets and found that adolescents' consumption of sexual media played a major role in their developing a sense of self. According to Brown et al., sexual solicitations manifested by the media may come with a cost. Many adolescents may become depressed, suicidal, defiant, and prone to drug and alcohol abuse and risky sexual behaviors due to what they see and hear in the media (Brown et al., 2002).

Considering these factors, adolescence is a crucial period in which teens define and refine relational boundaries and conceptualize themselves within the home and society. Erik Erikson, a psychologist well-known for his psychosocial developmental research, states that while some adolescents navigate this period successfully, others experience difficulties when attempting to internalize the concept of maturity (Erikson,

1968). For example, adolescents might confuse the role of a responsible “child” in the home with a responsible “young adult” in society (Erikson, 1963). This period may create identity confusion, which could further deepen adolescents’ vulnerabilities when it comes to engaging in high-risk behaviors. This can happen in the process of attempting to find the self (Erikson, 1968).

Erikson developed this concept in his eight psychosocial development stages. Stage five refers to the adolescent identity formation process as just stated. He titled this stage Identity vs. Role Confusion. In this stage, adolescents begin to re-examine their identity—how they see the self, society, and others. They become more independent and begin looking toward the future. Erikson conceives that when this happens, two identities begin to form during stage five: sexual and occupational.

Confusion might occur when adolescents fail to integrate the self in multiple roles as they gain more liberties and seek more independence from parents (Lansford, 2016). Adolescents might view this confusion, as a threat to bonding with other peers. This transition is a period of critical decision making for adolescents as relationships with others evolve.

Maintaining relationships, especially with parents, is critical during adolescence (Ducharme et al., 2002) because the majority of children enter adolescence with an attachment bond to their parents that can be traced back to infancy (Mayseless & Scharf, 2007). During adolescence, most teens hope to find and develop relationships that are both rewarding and beneficial to their emotional and psychological needs and desires. Adolescents most often seek out relationships with peers based on their interactions with their attachment figures, typically the parents. Although adolescents want to form

attachments with their peers, parents remain important figures whom adolescents often regard as confidants (Ducharme et al., 2002). According to Ducharme et al., adolescents regarding their parents as confidants can have long-lasting implications during adolescence. For example, positive parent-adolescent interactions may promote comfort and confidence in the adolescent, leading the adolescent to make better choices, especially when negotiating social and interpersonal roles.

As adolescents transition through this stage, sex and sexuality become more prominent in their imaginations. Adolescents are increasingly likely to explore their sexuality and experiment sexually. If adolescents carelessly engage in risky sexual activities, negative consequences may result, such as acquiring STDs and unplanned pregnancies.

Family Systems Theory and Adolescent Sexual Research

With attachment research suggesting possible risk factors for children with insecure avoidant, ambivalent, and preoccupied parent-child attachment patterns, it is critical to explore the effect of attachment beginning at birth and continuing through adolescence. Childhood and pre-school attachment literature is extensive; adolescent attachment research is growing, but is still limited (Scott, et al., 2011; Sorokou & Weissbrod, 2005). Bowlby (1959) believed that parents, typically mothers, are the primary caregivers and the primary influences over their children's socio-emotional development, which is critical because it represents the first experiences of human intimacy (Brown & Wright, 2001). For example, the mother's interactions with her infant will influence how the infant will come to develop emotional relationships with others.

Proposed in Bowen's theory of the family projection process is the idea that parents transfer their emotional circumstances to their children based on their interactions (Bowen, 1978; Buehler et al., 2009). These children will begin to develop emotional symptoms based upon the previous generation's ups and downs in their relationships (Bowen, 1978). As these children continue to grow into adolescence, the influences of interactions, good and bad, between their parents are passed on by multi-generational transmission processes (Bowen, 1978); this suggests that the more positive the interactions, the more positive the adolescent.

Bowen describes the multi-generational process as patterns passed on from generation to generation through the interactions from parent to child. For example, research conducted by Miller, King, Shain, and Naylor (1992) using family systems theory found that adolescents with family generations of suicide were almost twice as likely to have mental health problems and attempted suicide. Families are dynamic reciprocal systems in which parents and children affect one another; hence, if parent interactions are negative, the child will develop and perpetuate similar negative responses towards his/her parents. Children might carry these destructive responses into their adolescent years, affecting their self-efficacy and decision-making processes (Larson, 1995). Szapocznik, Schwartz, Muir, and Brown (2012) reported success linking family systems approach to explore adolescent risky behaviors, such as drug use and unsafe behaviors. However, earlier research, such as Openlander and Searight (1983) did not report success using a family systems approach like Bowen's systems theory in helping adolescents with similar issues, so vital to decision-making processes.

Zingaro (1983) found that adolescents' indecisiveness is associated with high levels of anxiety and poor identity formation related to dysfunctional interactional generational family patterns. Thus, family conflict may interfere with a teen's ability to handle pressures.

Zingaro's finding is relevant here. During adolescence, when children forge their identities, including sexual identities and when sexual relations often begin (Potard, Courtois, & Rusch, 2008), responses to pressures in the sexual sphere might surely be among those affected by indecisiveness arising from family conflict.

Family systems theory emphasizes the importance of relational patterns passed down through generations. My research explores a possible association between parent-adolescent interactions and adolescents' sexual behavioral choices. Parental monitoring, parental involvement, communication, and closeness are four important factors in this research for assessing the correlation between parent-adolescent interactions and adolescents' sexual behavior choices. Before discussing these four factors in detail, I looked briefly at other factors that are key predictors of adolescent sexual behavior.

Predictors of Adolescent Sexual Behavior

Many variables, including gender, culture, and socioeconomic status, have been linked to adolescent pregnancy and STD rates. For example, previous research found that cultural traditions, such as devaluing a woman's worth and dividing gender roles, may increase their risk of acquiring STDs and unplanned pregnancies (Bralock & Koniak-Griffin, 2009). For example, in certain parts of rural India, marriages, including sexual relationships, involve underage girls often against their will (Kalra & Bhugra, 2013). Similarly, in certain parts of Africa, devaluing women leads to sexual violence that is

considered legitimate by men who believe that a man's mental health is negatively affected by lack of sex (Armstrong, 1994).

Research has also shown racial disparities with respect to adolescent pregnancy and STD rates (Lauritsen, 1994; Ramirez-Valles, Zimmerman, & Newcomb, 1998; Robertson et al., 2006). Lauritsen (1994) examined differences in adolescent sexual behaviors between African American adolescents and European American adolescents. African American adolescents are more likely to experience pregnancy and higher rates of STDs than are European American adolescents with identical risk behaviors.

Cubbin, Santelli, Brindis, and Braveman (2005) examined a difference in adolescent sexual behaviors between girls residing in neighborhoods where 50% or more of the population is African American and girls in neighborhoods with low concentrations of African Americans. They found that girls residing in neighborhoods where 50% or more of the population is African American reported earlier sexual initiation than what girls reported who lived in neighborhoods with low concentrations of African Americans.

In addition, Cubbin et al. (2005) found that in neighborhoods with such socioeconomic characteristics as low income, and low financial and educational opportunities, more boys than girls have earlier sexual debuts, which might suggest that boys in these neighborhoods are more sensitive to neighborhood conditions.

Miller (2002) reported that living with a single parent, in a lower socioeconomic status family; having older sexually active siblings or pregnant and parenting adolescent siblings; and being a victim of sexual abuse often place adolescents at a higher risk for sexual engagement.

Markowitz, Sternberg, Dunne, McQuillan, and Unger (2009) examined the effect of poverty and other socioeconomic factors on adolescent sexual behaviors. Their research suggests that poverty and other socioeconomic factors, such as lack of healthcare, are associated with adolescent sexual behaviors. According to Markowitz et al. (2009), youth living in poverty may not perceive the risk of STDs and have unprotected sex, if other risk factors such as homelessness or hunger appear more threatening or more imminent.

Nahom et al. (2001) explored the effect of poverty on adolescent sexual behaviors. They reported that poverty-stricken adolescents might be at higher risk for sexual neglect, defined as failing to properly take precautions while engaging in sexual activities (Hutchins, 2000).

For example, Cubbin et al. (2005) examined a difference in adolescent sexual behaviors between adolescents from low income homes and adolescents of the same age from higher income homes by using nationally represented sample data. They found that adolescents from low income homes are more likely to have ongoing sexual relationships than are adolescents of the same age from higher income homes, which again places these adolescents at a higher risk for unplanned pregnancies and STD transmission.

However, Browning, Burrington, Leventhal, and Brooks-Gunn (2008) explored the effect of poverty on adolescent sexual behaviors and found no significant effect of poverty on adolescent sexual behaviors.

Geisler, Chyu, and Kusunoki (2006) examined the effect of lack of healthcare coverage on youths' abilities to obtain professional medical assistance to prevent, avoid, and treat STDs. Lack of healthcare coverage directly affects youths' abilities to obtain

professional medical assistance to prevent, avoid, and treat STDs, which places these adolescents at a higher risk to acquire and transmit STDs to their sexual partners (Geisler et al., 2006).

Lin, Dimitrov, and Vazin (2008) explored the effect of individual characteristics, such as age, school performance, risk-taking, sexual knowledge, family factors, self-efficacy, religious beliefs, and perceptions of peers' sexual activity on adolescents' risky behaviors. They found that these individual characteristics predict adolescents' risky behaviors (Lin et al., 2008).

Khan, Berger, Wells, and Cleland (2012) examined the effect of risk-taking behaviors, such as alcohol and drug abuse, on risky adolescent sexual behaviors. According to Khan, et al., risk-taking behaviors, such as alcohol and drug abuse, are associated with risky adolescent sexual behaviors. Alcohol use has been shown to have an effect on risky sexual behaviors (Khan et al., 2012).

Kandel and Rosenbaum (1990) conducted a longitudinal study to examine the effect of drug abuse on risky adolescent sexual behaviors and found a correlation between adolescents' sexual behaviors and drug use.

Perkins, Luster, Villarruel, and Small (1998) examined the effect of risk-taking behaviors, such as alcohol and drug abuse, on risky adolescent sexual behaviors. They found that extreme alcohol consumption among diverse adolescents between the ages of 12 to 17 was not a critical factor in engaging in risky sexual behaviors.

Khan et al. (2012) explored race differences in alcohol and drug consumption. They found that substance abuse is more closely associated with STDs among Caucasian than African American youth; however, their study indicates that alcohol use is more

strongly linked to multiple sex partners among African American youth than Caucasian youth. Overall, African American youth are more sexually active than are other ethnic youth groups.

Perceived Parental-Child Interactions

Several variables and characteristics are used in research that attempts to explain the high rates of adolescent STDs and unplanned pregnancy. There is also considerable research on parent-child relationship quality and adolescent sexual behavior. There remains, however, a gap in the amount of research conducted in the generational-longitudinal parent-adolescent attachment influences in parent-adolescent interactions.

One possible reason for the late introduction of parent-adolescent attachment research is the myth of inevitable adolescent detachment. Detachment, the opposite of attachment, is not inevitable, and it is not natural (Lamborn & Steinberg, 1993). When negative interactions take center stage between parent and adolescent, the consequence is distance, or rather detachment, between the parent and adolescent. The failure to appreciate the importance of studying parent-adolescent attachment lies in the perception that detachment is a normal fact of life (Lieberman & Doyle, 1999). In other words, the study of attachment in the teen years is thought to be a waste of time. Not true. In fact, empirical evidence shows that the effects of positive attachment eclipse the effects of the negative attachment that produces detachment (Ryan & Lynch, 1989; Weinfeld, Whaley, & Egeland, 2004). More research on attachment in the teen years is needed to provide proof to parents that they need to spend more quality time with their adolescents. This is even more critical in Western society, because research indicates that in Western society, it is believed that adolescents become disinterested in their parents and this causes

rebellion (Moretti & Peled, 2004). This Western belief implies that rebellion is normal (Arnett, 1999; Chen & Farruggia, 2002). Rebellion, in fact, is not normal. Sadly, however, much literature exists to justify rebellion as a normal part of life (Chen & Farruggia, 2002). My study shatters the notion that rebellion is okay.

The misconception of natural rebellion leads parents to think their efforts to attach are futile. Parents fear pushing too much to interact, thinking they will lose what little influence they have on their adolescents (U.S. Department of Education, 2005), and this can result in the adolescents' rebellion morphing into risky sexual behaviors.

This view could not be more damaging, in light of the study by Ikramullah et al. (2009) that examined adolescents' attitudes about sex. Ikramullah et al. found that 47% of adolescents aged 12 to 19 years reported their parents as the most influential figures regarding their decisions about sex, as compared to only 34% of the adolescents' parents. They found that parents often think they have little or no influence on their adolescents, and they often mourn this perceived loss of influence, considering their teens' fate to be out of their hands (Moretti & Peled, 2004).

Parent-adolescent attachment plays an influential part in cognitive, social, and emotional adjustment in adolescence (U.S. Department of Education, 2005). Adolescence is a stage of life in which neurocognitive and social-emotional changes occur; therefore, parents continued efforts to be attuned and sensitive to their adolescent's needs are crucial during this time (Moretti & Peled, 2004). A common myth during adolescence is that the teen is going through hormonal changes that will eventually subside, thus causing some parents to deemphasize the importance of their involvement. According to Moretti and Peled (2004), changes in the adolescent brain around the time of puberty promote

affect, motivation, and emotion, which may manifest as mood swings; as a result, hormones alone are not the direct cause of adolescent behaviors. Furthermore, Moretti and Peled suggested it is crucial for parents to understand their adolescents because their continued interactions are essential during this stage.

Many factors, from gender to culture, have been examined in the research to address the high STD and unintended pregnancy rates among youth, but often leave out the critical factor of attachment as a continuing influence on parent-child relationships. Parents are typically the first attachments for an infant born into an uncertain world. Parenting techniques influence the infant's emotional and psychological development. This influence is thought to be carried on throughout the child's life (Bowlby, 1959). Although parents' roles change as the child grows into an adolescent, becoming more independent, they still remain influential figures in their child's life.

Parent-Adolescent Attachment and Sexual Behaviors

Parent-adolescent attachment can be viewed as a system of social interactions created between the caregiver and child (Shomaker & Furman, 2009). The behaviors in this system might be used to explore and explain the importance of forming and maintaining attachment in the parent-child relationship. Attachment theory can provide insight into understanding parent-child relationships (Shomaker & Furman, 2009). According to attachment theory, early parent-child interactions influence the child's capacity to form interpersonal bonds in extra-familial relationships (Shomaker & Furman, 2009). Consequently, interactions in parent-adolescent relationships are linked to the adolescent decision-making processes, including sexual choices.

Parents may play a pivotal part in the adolescent's decision-making processes, including sexual choices. There is mounting literature that suggests parents do play a critical part and that this part operates through the nature of their attachment with their child (Bannink, Broeren, van de Looij-Petra, & Raat, 2013; Herrenkohl, Lee, Kosterman, & Hawkins, 2012; Moretti & Peled, 2004). Kim-Spoon, Longo, and McCullough (2012) measured the effect of parent-adolescent attachment on sexual behaviors. Kim-Spoon et al. (2012) found that attachment experiences may be relevant to impaired self-regulation, impaired affect regulation, and the interpersonal and intrapersonal difficulties during adolescence that contribute to adverse sexual practices (Faisandier, Taylor, & Salisbury, 2012).

Kobak, Zajac, and Smith (2009) measured the effect of parent-adolescent attachment on adolescent sexual behaviors and found that adolescents who exhibited preoccupied/anxious attachment patterns were likely to engage in risky sexual behaviors. The study by Kobak et al., however, as opposed to my study, has a limited sample consisting of high-risk adolescents in poor socio-economic conditions. Although it explores high-risk sexual behaviors, the study examines these behaviors from an angle of personality processes consistent with the diagnostic criteria for Cluster B disorders such as antisocial and borderline personality disorders. Thus, findings based on the sample used in the Kobak study cannot be generalized to the adolescent population as the findings of my study can.

Attachment theory concepts, as discussed earlier in this paper, has been use to propose that early childhood attachment experiences influence sexual behaviors (Faisandier et al., 2012). As these attachments unfold, so does the child's brain and affect

development; hence, a child's initial attachment affects how the child learns how to think and feel about self, others, and the environment. Faisandier et al. measured the effect of childhood attachment on sexual behaviors. They found that the quality of attachment experiences significantly affected sexual behaviors. However, the study did not set out to recruit a representative sample. The sample largely consisted of heterosexual European males in the later years of adolescence, making it difficult to generalize the results to early and middle adolescents, including adolescent females. My present study, however, is far more diverse.

Ainsworth (1989) examined the effect of parent-adolescent attachment on sexual behaviors. Ainsworth proposed that during adolescence, connecting to others or making choices to engage in sexual activities become extremely important. Her research suggests that adolescents' interactions with their parents can drive their sexual decisions. She found that during adolescence, puberty reorganizes the parent-adolescent relationship because most teens during this time begin to seek a secure base within their peer relationships, thus minimizing the time they spend with their parents. This is in contrast to their infant years, the time when they look for security from their parents because they are exploring unfamiliar territory. Adolescents will, however, reactivate their attachment system with their parents in challenging and distressing situations, making it evident that parents continue to remain the primary attachment figures.

The studies presented earlier explore and examine adolescent risky sexual behaviors. However, the vast majority of the studies' samples are too narrow in scope to be effective. They lack diversity. These studies only sample either affluent teens, or high-risk adolescents in poor social conditions including poverty, limited health care, and

crime-infested neighborhoods. Also, some samples are too age restrictive, focusing only on early or late adolescents, but never both. Other studies narrow samples further by focusing mainly on clinical issues such as personality disorders, making it difficult to generalize to nonclinical adolescents.

The need for fresh research was also validated by the fact that other studies focus on adolescents' race and ethnicity as sole factors in predicting whether teens will engage in risky behaviors. This is a dangerous way to look at attachment because it opens the door to stereotyping a certain class as higher risk than another. For example, it could lead to the perception that African American teens are more prone to trouble than Caucasian teens, a notion that has been disproven.

Contrary to these other studies, my sample included all adolescents regardless of race, ethnicity, age, or clinical factors. Also, since attachment from an early age sets the scene for the family systems that develop throughout the adolescent period, my research also explored Bowlby's concept of attachment figures as a way to advance understanding of adolescent attachment relations. Moreover, my research further examined attachment as an influential factor in the interactions in the parent-adolescent relationship by exploring family systems theory.

The literature on attachment and family systems theory, including parent-adolescent attachment and parent-adolescent interactions, disclosed four well supported interactional factors in the parent-adolescent system: communication, closeness, parental monitoring, and parental involvement. I examined these factors through the eyes of the adolescent living within the family system as a way to predict adolescent sexual behavioral choices.

Aspects of the Parent-Adolescent Relationship

Maternal Closeness

The attachment between mother and adolescent is critical in the parent-child dyad because it shapes the interactions in their relationship. Much research suggests that mothers are typically the primary sex educators to their children and thus have influence on their sexual choices (Aronowitz & Morrison-Beedy, 2003; DiClemente, et al. 2001; Hutchinson & Cederbaum, 2011; Hutchinson & Montgomery, 2007; Lam, Russell, Tan, & Leong, 2008). For example, Sieving, McNeely and Blum (2000), Aronowitz, Rennells, and Todd (2005), including Dittus and Jaccard (2000), found that adolescents who experienced moderate or high levels of closeness with their mothers were more aware of their mothers' disapproval of poor sexual behaviors and were less likely to engage in risky sexual behaviors. Burchinal, Lowe, and Belsky (2014) found that adolescents who had close relationships with their mothers were less likely to initiate sexual activities or become pregnant when they perceived their mothers as disapproving of the behavior. This finding points to the need for further exploration of perceived maternal closeness.

In addition to Burchinal et al. (2014), Potard, Courtois, R., Réveillère, Bréchon, and Courtois, A. (2014) found that adolescents who experience moderate to high levels of maternal closeness are less likely to engage in risky sexual behaviors.

Although some studies suggest that maternal closeness is an important factor in adolescent sexual behaviors, adolescent boys' and girls' perceptions differ concerning maternal closeness, thus affecting their sexual behavioral choices differently (Davis & Friel, 2001; Somers & Paulson, 2000).

Paternal Closeness

In most cases, research on adolescents' perceptions of parental attachment examines only mother-child relationships, leaving father-child relationships unexplored (Scharf et al., 2012). The few studies in adolescent research concerning paternal attachment suggest fathers' influences on adolescent development differ from maternal influences, possibly because mothers and fathers may react differently to the same behaviors displayed by the adolescent. The different parental responses to the adolescent affect how he responds to each parent. The adolescent might come to perceive his relationship differently with each parent in a way that reflects their different responses to him.

The developmental literature does suggest that fathers play an important role in the adolescent's functioning in forming relationships outside of the home (Scharf et al., 2012). For example, Doyle et al. (2009) found that adolescents relied on the guidance of their fathers when negotiating roles with peers. Adolescents, however, reported feeling closer to their mothers and trusting their mothers more than their fathers in times of need (Hazen, McFarland, Jacobvitz, & Boyd-Soisson, 2010). Some studies suggest the role of "play mate" that fathers tend to adopt with their children might provide a reason for adolescents preferring their mothers in times of distress (Grossmann, K., Grossmann, K. E., Kindler, & Zimmermann, 2008; Freeman, Newland, & Coyl, 2008). For example, research has found that fathers interact with their children in more playful ways, often teasing and mock-fighting, compared to mothers, who tend to interact in a more sensitive, nurturing, caregiving manner (Al-Yagon, 2011a; Lamb, 2004). The adolescent

internalizes these interactions and when in distress seeks responses exemplified in his parents' interactions that are most fitting for his or her need at that time.

The adolescent, however, might seek out the father's support when in need of social and peer-related guidance (Doyle et al., 2009). That is consistent with the suggestion that the role of "play mate" promotes developmental growth, including social competencies and problem-solving capabilities, essential for adolescents as they begin striving towards more autonomy (Steinberg & Morris, 2001).

The importance of the father's role is also seen in the research indicating that adolescents are often brought up to explore and share emotions with mothers (Collins & Laursen, 2004), but they explore solutions to problems with fathers (Williams & Kelly, 2005).

The different approaches mothers and fathers use to interact with their adolescents influences the adolescents' perceptions of their relationships in distinctive ways (Doherty & Beaton, 2004), which implies that adolescent attachment with fathers is important and should not be overlooked.

For example, secure attachment with fathers might promote better peer relationships and confidence in decision making, whereas secure attachment to mothers might promote better expression of emotions (Verschueren & Marcoen, 2005). Williams and Kelly (2005) also suggested that fathers are significant attachment figures because the father-adolescent attachment affects adolescents' behaviors such as substance abuse and criminal activity (Ohannessian et al., 2005). Stein, Milburn, Zane, and Rotheram-Borus (2009), for example, conducted a study of homeless adolescents to examine differences between father and mother attachments and found positive relationships with

fathers were significantly more protective than relationships with the mothers against externalizing behaviors, like becoming physically aggressive or abusing drugs. Potard et al. (2014), however, conducted research on father-adolescent attachment effect on adolescent behaviors and found that fathers influence sexual decision-making behaviors, especially for girls.

Understanding the importance of the adolescent's attachment to his or her father and how attachment influences the parent-adolescent relationship is just as critical as understanding maternal attachment, especially since adolescent research suggests that paternal attachment influences teens' behaviors, social skills, and decision-making processes.

Parental Involvement

Research suggest links between adolescents' perceptions of parental involvement, and risky behaviors, early sexual debut, and unprotected sex (Meschke, Bartholomae, & Zentall, 2002; Pearson, Muller, & Frisco, 2006; Ritchwood et al., 2014).

Ritchwood et al. (2014), for example, found that adolescents who reported higher levels of parental involvement were less likely to engage in risky sexual behaviors. Their findings might indicate that adolescents view parental involvement as their parents caring for them; thus, parental involvement might serve as a protective factor against adolescent risky sexual behaviors.

Communication

As adolescents learn to navigate their world and exercise their autonomy within that world, secure attachment and emotional connectedness with their parents facilitate a healthy transition (Moretti & Peled, 2004). Adolescents with secure attachments feel

safer and more comfortable talking with their parents about life events, especially sexual practices (Leland & Barth, 1993; Sneed, 2008). Feeney, Peterson, Gallois, and Terry (2000), however, looked for the effect of perceptions of communication on risky behaviors, early sexual debut, unprotected sex, and the likelihood of having multiple sex partners, and found no effect.

Sneed (2008) examined the difference in risky behaviors, early sexual debut, unprotected sex, and the likelihood of having multiple sex partners, between adolescents who were told to avoid sexual engagement until marriage and adolescents without any parental instruction. Sneed found that adolescents who were told to avoid sexual engagement until marriage were more likely to delay their sexual debut compared to adolescents without any parental instruction.

Furthering the research on the perceptions of communication, Harris, Sutherland, and Hutchinson (2013) measured the effect of communication on the sexual behavior of adolescent males. Their research suggested that adolescents who talk about sex with their parents are less likely to engage in risky behaviors, early sexual debut, and unprotected sex, and to have multiple sex partners, than adolescents who do not talk about sex with their parents, thus affirming the importance of communication with parents.

Parental Monitoring

Research suggests a link between perceived parental monitoring and adolescent sexual behaviors (Capaldi, Crosby, and Stoolmiller, 1996; Longmore, Manning, & Giordano, 2001; Bersamin et al., 2008; Guilamo-Ramos, Jaccard, & Dittus, 2010). For example, Huang, Murphy, and Hser (2011) examined the effect of perceptions of parental monitoring on risky behaviors, early sexual debut, unprotected sex, and the likelihood of

having multiple sex partners. They reported that adolescents' perceptions of a high level of parental monitoring were associated with low involvement in risky sexual behaviors.

In addition, Hadley et al. (2011) examined the effect of perceptions of parental monitoring on risky behaviors, early sexual debut, unprotected sex, and the likelihood of having multiple sex partners. They found that perceived parental monitoring plays an important part in mitigating adolescents' risky behaviors, early sexual debut, contraceptive use, and the likelihood of having multiple sex partners.

Teenagers engage in sexual activity for a variety of reasons, including peer pressure, curiosity, and desire for intimacy, and the threshold for sex can be lowered by substance and alcohol abuse (Capaldi et al., 1996). For these reasons, parental guidance and monitoring should not be ignored and should possibly be viewed as critical necessities in adolescence (Capaldi et al., 1996), especially during times when adolescents may find themselves in vulnerable situations that increase the likelihood of engaging in risky behaviors (Foltz, 2011).

The previous studies all give evidence that perceived maternal/paternal closeness, communication, parental involvement, and parental monitoring effect the parent-adolescent relationship. However, the vast majority of the studies' samples are too narrow in scope to be effective. They lack diversity. These studies sample adolescents from certain racial or ethnic groups, such as African Americans, making it difficult to generalize to adolescents from other racial and ethnic backgrounds. These studies only sample adolescents in certain programs, such as after school programs, making it difficult to generalize to adolescents who do not take part in after school programs, or are not undergraduate students, making it difficult to generalize to adolescents who do not attend

college, or to sample high-risk adolescents living in impoverished neighborhoods. Also, these studies fail to take into account that perceptions differ between the parent and the adolescent, including the adolescent's perceptions of both parents. What the adolescent perceives as a negative interaction, the parent might perceive as positive. This divide can result in risky adolescent behaviors because the parent won't control a situation she feels doesn't need controlling. Also, these studies failed to explore parental-involvement outside the home and failed to extend parent-communication to other sensitive topics, like when a child is troubled by something other than sex.

In addition, these studies fail to explore the importance of continual monitoring of parental attachment to the adolescent as the adolescent grows older, thus failing to respond to the fact that attachment perceptions can change over time, and thereby affecting adolescent sexual behaviors.

Methodology

The role parents play in their teens' decisions is often underestimated (Clark, 2013). Parents are the providers, protectors, mentors, educators, and advocates for their teens. Nearly 80% of teens report what their parents have told them about sex as a possible influence towards their sexual decisions and partners (Clark, 2013). The intention of my research is to explore parent-adolescent perceptions, and how these perceptions over time influence parent-adolescent interactions and thereby affect adolescents' sexual behaviors. My research is quantitative and longitudinal. I used archival data to explore a large amount of information on a diverse group of individuals over time. Using archival information allows researchers to explore and examine large amounts of data about large groups of people while saving time and cost (Rabinowitz,

2014). Longitudinal studies allow the researcher to infer and consider possible influences for their long-term effects (Rabinowitz, 2014). The data for this study came from U.S. government records. The U.S. government sets high quality standards for data collection and data analysis, making its archival data a credible resource (Rabinowitz, 2014) for my research. The design for this study is correlational. Correlational research allows testing between and among variables for associations or relationships and allows the prediction of future everyday life events (Lomax & Li, 2013). My research empirically and simultaneously examined perceived parent-adolescent interactions to predict adolescent sexual outcomes, making a correlational design best suited for my study. Examining variables simultaneously allows the researcher more insight to more accurately predict what independent variable significantly affected which behavior or outcome (Slinker & Glantz, 2016).

Summary

This chapter has reviewed the literature on parent-child interaction factors and adolescent sexual behaviors, identifying research on parent-child reciprocal behaviors such as closeness, communication, parental monitoring, and parental involvement, and their effect on adolescent sexual behaviors. The theoretical foundation for this study is provided by attachment theory as a basis for understanding the importance of attachment, and by family systems theory to predict developmental outcomes of adjustment in adolescence, especially as it relates to the sexual decision-making processes. Poor sexual decisions can be devastating to an adolescent's quality of life. It is important that parents recognize and acknowledge the continued importance of their relationships with their adolescents (Doyle, Moretti, Voss, & Margolese, 2006). A secure attachment to a parent

might be conducive to an adolescent's higher quality of life, especially in sexual behavioral choices. Securely attached adolescents are less likely to engage in risky sexual behaviors, thereby reducing their chances of falling victim to adverse sexual outcomes (Doyle et al., 2006).

The intention of my study has been to examine the correlation between risky adolescent sexual behaviors and the level of perceived interactions these adolescents have with their parents, hence, explaining the connection between internal forces and adolescent sexual decisions. Byng-Hall (2002) suggests more research is needed to explore the influence of attachment in the parent-child relationship by examining transgenerational patterns. My research focused on biological parents only. By using the mother's perception of her interaction with her children, this research, in turn examined how the mother possibly viewed her interactions with her parents when she was an adolescent (Zaman & Fivush, 2013). Secondary data were used to retrieve variables associated with parent-adolescent interactions including mothers' and adolescents' reports of maternal and paternal closeness, parental-monitoring, communication, and parental involvement from the NLSY79 (U.S. Bureau of Labor Statistics, 2012). Variables associated with adolescents' adverse sexual outcomes, such as early sexual debut, multiple sex partners, and unprotected sex from the same survey, were the dependent variables for my study.

The design of my study was based on a thorough and careful review of existing literature in the areas of attachment, adolescence, parent-adolescent relationships, parent-child interactions, and adolescent adverse sexual outcomes. In Chapter 3, the research

design for this study is described, including analyses, ethical data use, and integrity measures.

Chapter 3: Research Method

The purposes of this study were to empirically and simultaneously explore the perceptions of parent-adolescent interactions—using data from the NLSY79 (U.S. Bureau of Labor Statistics, 2012)—and their effect on adolescents’ sexual behavioral choices. I used attachment and family systems theories to contribute a better understanding of attachment and relational processes in the parent-adolescent relationship, paying particular attention to the positive aspects of healthy child-rearing. Educating and encouraging parents about their attachments to their children is a matter of critical interest for adolescent sexual research. HIV/AIDS and other STDs are easily spread and unintended pregnancies occur more frequently when neglect is involved, yet they can be easily contained with proper choices such as delaying sexual debut, deciding against multiple sexual partners, and using contraceptives properly and frequently (Office of Women’s Health, 2011). This makes my study critical. A possible way to eliminate this crisis is to make parents aware of the problem of adolescent adverse sexual behavioral choices and the effect of their attachments on their adolescents’ choices.

In this chapter, I describe the materials and methods that I used for this study, including the study participants, measures, scientific hypotheses, study variables, and the study’s design. The variables of choice have been selected from a longitudinal study of a nationally representative sample of approximately 11,504 youth. I extracted youths’ answers in 2010 concerning their perceptions of their relationship to their mothers and fathers. In addition, I extracted the mothers’ responses in the same year, using the same data set. The adolescent age range was 12 to 19 years. My research included a

quantitative correlational data analysis from data sets compiled by the U.S. Bureau of Labor Statistics (2012).

Research Design and Approach

I designed the study to explore a possible association between perceived parent-adolescent interactions and adolescent sexual behavior. Due to the purpose of this study, the quantitative method was the most appropriate design. Creswell (2007) considered that a quantitative research method is an appropriate means for testing the relationship between variables. Testing for and finding relationships between variables in research might only be viewed as significant if the researcher has guided all inquiries of research in an objective fashion. Researchers are required to be as precise, unbiased, honest, and receptive to criticism as possible (Phillips, 1990). Thus, researchers must be aware of how their own values, beliefs, and biases affect the research process (Lather, 2001). Consequently, for a study to remain objective, a quantitative approach might be more appropriate because, in the words of Swanson and Holton (2005), the researcher sees the world objectively because emotions do not influence the study. Instead, the investigation is based on observable phenomena under a quantitative approach. I considered the study free from personal prejudice.

Given that the objective of this study was to establish the association, if any, between parent-adolescent interactions and behavioral choices, a correlational study answers the research question by indicating an association between independent and dependent variables or the lack thereof (Creswell, 2007). The independent variables were perceptions of maternal and paternal closeness, communication, parental involvement, and parental monitoring, whereas the dependent variables were engagement in risky

sexual behaviors, early sexual debut, the likelihood of engaging in unprotected sex, and the likelihood of having multiple sex partners in a 12-month period. I performed a logistic regression analysis to examine whether there is an association between adolescent-perceived parent-adolescent interactions and adolescent sexual choices. A logistic regression analysis enables researchers to see the effect of one or more independent variables on dichotomous dependent variables, thus giving an indication of how one or more variables predict an outcome (Ratner, 2009), making the logistic regression analysis a suitable approach for my research.

Although a major part of my analysis was based on recorded human communications, I do not employ a qualitative approach. Some of the drawbacks of a qualitative approach are that the data could be subjective or biased, and there is a lack of transparency with regard to the data selection. Furthermore, the qualitative strategy is unable to test the relationships between variables. My study, in contrast, assessed a statistical association between variables using quantitative data extracted from a large sample. According to Myers (2009), a quantitative approach is used when results have to be quantified and there is a large sample size or population.

Population and Sample

I used archival data from the NLSY79 Child and Young Adult cohort survey, a longitudinal project that follows the biological children of the women in the NLSY79 survey (U.S. Bureau of Labor Statistics, 2012). To date, researchers have interviewed a total of 11,504 children who were born to the mothers included in the NLSY79 survey (U.S. Bureau of Labor Statistics, 2012). Researchers from many disciplines, including sociology, child development, family studies, epidemiology, and economics, use data

from this survey (Wu & Allen, 2005), most likely because it offers rich longitudinal data from mothers, children, and young adults. These data cover a wide range of ages from early childhood and adolescence through young adulthood (Wu & Allen, 2005). The adolescent age range is 12 to 19. Beginning in 1986, mothers have interviewed and assessed their children every 2 years to follow their cognitive, physical, and socio-emotional development. Beginning in 1994, mothers no longer assessed children who had reached 15 years of age by the end of the survey year. Instead, the children completed personal interviews, similar to those given to their mothers, during late adolescence and into adulthood. My study explored parent-child interactions and how these interactions are transmitted across generations. The NLSY79 survey allows data from the main NLSY79 mothers and their offspring—as younger children and as young adults—to be linked, enabling researchers to carry out research not only within, but also across generations (U.S. Bureau of Labor Statistics, 2012).

Sample Size Analysis

When conducting research about people and their behaviors, it is usually impossible to collect data from all the people (Nayak, 2010). Instead researchers take a sample of the population of interest. It is critical that researchers determine an appropriate sample size for their design of a study (Nayak, 2010). An appropriate sample size can produce more conclusive results. In other words, the researcher can infer or detect with more certainty any differences in subjects' behaviors based on the tested variables (De Silva, 2015). I used Tabachnick and Fidell's formula to determine an effective sample size. Based on the Tabachnick and Fidell (1996, p. 132) formula, the sample for this study should include a minimum of 105 participants. I go beyond the minimum and used

the sample size of $N = 11,504$, collected from the NLSY79 survey. Increasing the sample size can give the researcher greater power to detect differences within the sample (Select Statistics, 2016). Also, a medium effect size of $\alpha = .05$ and power = .80 was applied to my research.

Instrumentation and Materials

My study assessed parent-adolescent interactions and the sexual choices adolescents make, using data from the NLSY79 survey (U.S. Bureau of Labor Statistics, 2012). The NLSY79 survey is a multiple-choice instrument developed through the U.S. Bureau of Labor Statistics survey participants' interviews. A 2011 study by Hanushek, Machin, and Woessmann, which used the NLSY79 findings, confirmed the internal reliability, and the construct and concurrent validity of the survey. Cronbach's alpha was .72 (Hanushek et al., 2011). The alpha coefficient was satisfactory by Nunnally's (1978) criterion of .70. Therefore, I accepted this measure for use as a trait-measure of parent-adolescent interaction quality and the sexual choices adolescents make in this study. Construct validity is expressed as reliability. I also demonstrated construct validity through the consistent results that the reliability indices and dimensionality studies yielded. Thus, these measures have high construct validity.

The NLSY interviewers carefully considered the variables and selected them for their integrity. They conducted the interviews using a computer-assisted personal interview (CAPI) instrument administered on a laptop computer. The computer software automatically guides the interviewer through an electronic questionnaire and directs the choice of questions based on the respondent's preceding answers. The program attempts to prevent invalid values and alerts the interviewer to improbable answers. The program

also reduces the probability of inconsistent data during the initial and subsequent interviews. For added security, the NLSY interviewers use another section of the CAPI, the audio computer-assisted personal interview (ACAPI), when a respondent's literacy is in question or when a respondent's hearing is impaired.

External Validity

I addressed generalizability by using a large sample of the archival data and according to Lee and Baskerville (2003), the larger the sample, the more confidence in the sample's representation of generalizability. In this study, I was interested in the statistical association between parent-adolescent interaction quality and the sexual choices adolescents make. Since the developmental processes of the age range studied—12 to 19 years—are unique to that age range, the results of my study cannot be generalized to other age ranges. Similarly, my study is limited to U.S. culture and its major subcultures, and the results cannot be expected to apply to other cultures.

Parent-Adolescent Factors

The rich longitudinal data from the NLSY79 Child and Young Adult cohort survey cover a broad range of ages from childhood through young adulthood (Wu, & Allen, 2005). These data were used to explore the research question: How does adolescent-perceived parent-adolescent interaction influence the sexual choices that adolescents make? Exploring this question can advance knowledge in family studies and adolescent sexual health in the hope of reducing adolescent risky sexual behavior and the various outcomes, including unplanned pregnancies and STDs. I explored and acquired parent-adolescent relationship factors that are associated with high-risk teen sexual behaviors from the NLSY79 survey. Variables measuring adolescents' responses

concerning their views toward their parents (mother and father) and mothers' views toward their adolescents were investigated in a correlation logistic regression design to predict adolescent sexual behavioral choices. These choices included when to give up virginity, how many sexual partners are desired, and males' use of condoms and females' use of birth control pills.

The choice of relationship independent variables extracted for this study was based on perceptions of mothers and their adolescents, which might provide insight into factors possibly affecting interaction quality. The dependent factors are adolescent sexual behaviors. Exploring attachment and its influence on the parent-child relationship interaction factors may help predict adolescent sexual behavioral choices, which is a goal for my study. The data extracted for this study were anonymous, leaving no clues to the identity of each NLSY79 participant. The data extracted are numerically coded. Informed consent and confidentiality are critical components to ensure the research is properly conducted. The National Longitudinal Surveys (NLS) program employed many avenues to ensure confidentiality.

Independent Factors

I divided parent-adolescent relationship quality into closeness and parental monitoring. I used parental involvement and communication as parenting indicators for this study. These categories served as independent variables (IVs) and as measures for positive versus negative relationship. The responses are based on the level of agreement with the statement in each question. In addition, the adolescents give two answers—one for each parent.

I used descriptive statistics to examine the mean differences in perceptions between adolescents and mothers. Then I conducted a Spearman correlational analysis to explore an association between adolescent perceptions of the quality of parent–adolescent interactions and the maternal perceptions of the quality of adolescent-parent interactions. Lastly, I used the adolescent’s responses as way to predict the adolescent’s sexual behaviors by conducting a logistic analysis. The data used were extracted directly from the study the researchers illustrated in the NLSY79 study. No manipulation of the data was performed. These data were used to predict adolescents’ sexual behavior choices.

I extracted all data exactly as given in the NLYS79 for survey year 2010, and used the data in the logistic regression design to predict adolescent sexual behavioral choices.

Closeness

This category consisted of the adolescents’ and biological mothers’ perceptions of how close they think they are. It is measured by the following items:

How close do you feel to your mother/father? How close does your child feel towards you (the mother)? How close does your child feel to his/her biological father?

Levels of agreement:

1 – Extremely close

2 – Quite close

3 – Fairly close

4 – Not very close

5 – Does not have this parent (when asking the mother only)

Parental Involvement

Parental involvement consisted of adolescents' perceptions of how often parents contact their teachers and counselors and how often they monitor and assist with homework. It is measured by the following items:

How many times do parents speak to teacher/counselor? (Adolescents)

0 – Never/almost never

1 – Once a term/less than once a month

2 – Once a month

3 – 1-2 times a month

4 – Once a week or more

How often do(es) parent(s) help with homework? (Adolescents)

0 – Never

1 – Less than once a month

2 – 1-2 times a month

3 – 1-2 times a week

4 – Almost every day

5 – Every day

6 – Teacher/school does not give homework at this age

How often do your parents check on whether you have done your homework?
(Adolescents)

0 – Never

1 – Less than once a month

2 – 1-2 times a month

3 – 1-2 times a week

4 – Almost every day

5 – Every day

6 – Teacher/school does not give homework at this age

Communication

The category of communication consisted of variables measuring adolescents' perspectives on discussions about troubling thoughts and sexual topics. It is measured by the following item:

How often do you discuss with parents when things are troubling you?

(Adolescents)

0 – Never

1 – Rarely

2 – Sometimes

3 – Often

The variables measuring sexual communication were slightly different. Although they are based on adolescents' perceptions, the answers have a different structure. Instead of a categorical response, adolescents answered with a dichotomous selection. The

adolescent selected whether he or she talks with mother or father about sex. The adolescent answered separately for each parent.

Who, if anyone, in your family do you usually talk to about sex? (Adolescent)
 Response choice: Mother. Adolescents select (1) if they talk to their mothers or (0) if they do not talk to their mothers.

1 – Selected

2 – Not selected

Who, if anyone, in your family do you usually talk to about sex? (Adolescents)
 Response choice: Father. Adolescents select (1) if they talk to their fathers and select (0) if they do not talk to their fathers.

1 – Selected

2 – Not selected

Parental Monitoring

Mothers' perceptions concerning their adolescent's friends and whereabouts are extracted from survey year 2010. In addition, adolescents' perceptions concerning rules for letting parents know their whereabouts are extracted, including how often parents know where they are, and with whom.

Variables selected to measure mothers' perceptions of parental monitoring are the following:

How many of your child's close friends do you know by sight and by first and last name? (Mothers)

-
- 1 – All of them
 - 2 – Most of them
 - 3 – About half
 - 4 – Only a few
 - 5 – None of them
 - 6 – Child has no close friends
-

About how often do you know who your child is with when he/she is not at home? (Mothers)

-
- 1 – All of the time
 - 2 – Most of the time
 - 3 – Some of the time
 - 4 – Only rarely
-

Variables selected to measure adolescents' perceptions of parental monitoring are the following:

In your home, are there any rules about keeping your parent(s) informed about where you are? (Adolescents)

-
- Yes
 - No
-

How much do you tell your parents about whom you are with when you are not at home? (Adolescents)

0 – Nothing at all

1 – Just a little

2 – Some

3 – A lot

Dependent Variables: Adolescents' Sexual Behaviors

I measured adolescents' sexual behavior choices (dependent variables, DV) using the following variables: first age of sexual debut, number of sexual partners in last 12 months, and use of birth control including condoms. These variables are exactly as the researchers described them in the NLSY79 survey in 2010.

Sexual Intercourse

Have you ever had sexual intercourse? Responses:

Yes (have had sexual intercourse)

No (have not had sexual intercourse)

How old were you when you first had sexual intercourse? Adolescents aged 14 or younger at the time of the survey were asked to write their age in a box. For adolescents older than 14, their ages were placed in categorical boxes matching the age stated by them.

Multiple Sex Partners

With how many people have you had sexual intercourse in a 12-month period?

The choices were:

1 – None to one

2 – Two or more

Contraceptives

The most recent time you had sexual intercourse did you and your partner use any birth control methods? Response choices: Yes or no. For my study, condoms and birth control pills are explored as the birth control methods. The last two variables are extracted from the survey to investigate these two methods.

Which birth control method(s) did you or your partner use? Condom: Response choice:

1 – Selected (use condoms)

0 – Not selected (do not use condoms)

Which birth control method(s) did you or your partner use? Birth control pills: Response choice:

1 – Selected (do use birth control pills)

0 – Not selected (do not use birth control pills)

The IVs extracted for my study are based on perceptions of mothers and their adolescents, which might provide insight into factors possibly affecting parent-adolescent interactions extending across generations. The DVs are adolescent sexual behaviors. Exploring interaction factors may help predict adolescent sexual behavioral choices,

which is a goal for my study. The data for this study include no clues to the identity of each participant. Informed consent and confidentiality are critical components of properly conducted research, and had been employed by the National Longitudinal Study (NLS) when these data were obtained.

Data Analysis

I presented the means and standard deviations for the parent-adolescent relationship factors: closeness, monitoring, communication, and involvement. Trochim (2006) suggested using descriptive statistics when presenting quantitative data, to describe the data in a manageable and relatively simple form. I employed descriptive statistics to examine mean differences between adolescents' (for both parents) and mothers' perceptions of their relationship. I conducted a Spearman correlational analysis to explore an association between adolescent perceptions of the quality of parent-adolescent interactions and the maternal perceptions of the quality of adolescent-parent interactions. The Spearman correlational analysis is often used to determine an association between two quantitative variables when concerned that one or both variables is ordinal and not normally distributed (McDonald, 2015). I used logistic regression statistics to determine whether adolescent-perceived parent-adolescent interactions predicted adolescent sexual behavioral choices.

Assumptions

I converted missing data into values of zero and ran an outlier analysis (e.g., a run-sequence plot) to check the assumption for regression (i.e., no outliers; Barnett & Lewis, 1984). Second, I used skewness and kurtosis to check the assumption for regression (i.e., a normal distribution). For kurtosis and skewness, values between minus

one and plus one are “acceptable,” indicating a normal distribution. I transformed non-normal data into normal data using rank transformation. Third, I conducted correlations among the independent variables to check the assumption for regression (i.e., absence of multicollinearity). Any correlation over 0.80 presents a concern for multicollinearity. The significance level α is 0.05. I used SPSS version 21.

Research Questions and Hypotheses

The purpose of my research was to answer the following question: How do perceived parent-child interactions influence the sexual choices adolescents make? I divided parent-child interaction data into the following: maternal and parental closeness, parental involvement, communication, and parental monitoring. I measured adolescent sexual choices with the following data: early sexual debut, unprotected sex, sex without contraceptives (condoms and birth control pills), and having multiple sexual partners. I analyzed the data based on the following research questions and hypotheses:

Research Question 1: Is there a significant association between adolescent perception of the quality of interaction with both parents and maternal perception of the quality of interaction between adolescent and parent?

Null Hypothesis 1: There will be no significant association between adolescent perceptions of the quality of parent–adolescent interactions and the maternal perceptions of the quality of adolescent-parent interactions.

Alternate Hypothesis 1: There will be a significant association between adolescent perceptions of the quality of parent –adolescent interactions and the maternal perceptions of the quality of adolescent-parent interactions.

Research Question 2: Do adolescent-perceived parent-child interactions, which include adolescent perceptions of maternal and paternal closeness, monitoring, communication, and involvement, predict the risk of early sexual debut, or having sex before, or at 14 years of age, among U.S. adolescents' aged 12 to 19 years?

Null Hypothesis 2: Adolescent perceptions of maternal and paternal closeness, monitoring, communication, and involvement will not predict the likelihood of engagement in early sexual debut, or have sex before or at 14 years of age, by U.S. adolescents aged 12 to 19 years.

Alternative Hypothesis 2: Adolescent perceptions of maternal and paternal closeness, monitoring, communication, and involvement will predict the likelihood of engagement in early sexual debut, or have sex before or at 14 years of age, by U.S. adolescents aged 12 to 19 years.

Research Question 3: Do adolescent-perceived parental-child interactions, which include adolescent perceptions of maternal and paternal closeness, monitoring, communication, and involvement, predict the risk of U.S. adolescent males aged 12 to 19 years having unprotected sex without a condom?

Null Hypothesis 3: Adolescent perceptions of maternal and paternal closeness, monitoring, communication, and involvement by U.S. adolescent males aged 12 to 19 years will not predict the likelihood of engaging in unprotected sex without a condom.

Alternative Hypothesis 3: Adolescent perceptions of maternal and paternal closeness, monitoring, communication, and involvement by U.S. adolescent males aged 12 to 19 years will predict the likelihood of engaging in unprotected sex without a condom.

Research Question 4: Do adolescent-perceived parental-child interactions, which include adolescent perceptions of maternal and paternal closeness, monitoring, communication, and involvement, predict the risk of adolescent females aged 12 to 19 years having sex without some form of birth control pill?

Null Hypothesis 4: Adolescent perceptions of maternal and paternal closeness, monitoring, communication, and involvement by U.S. adolescent females aged 12 to 19 years will not predict the likelihood of having sex without using some form of birth control pill.

Alternative Hypothesis 4: Adolescent perceptions of maternal and paternal closeness, monitoring, communication, and involvement by U.S. adolescent females aged 12 to 19 years will predict the likelihood of having sex without using some form of birth control pill.

Research Question 5: Do adolescent-perceived parental-child interactions, which include adolescent perceptions of maternal and paternal closeness, monitoring, communication, and involvement, predict the risk of having multiple sex partners in a 12-month period among U.S. adolescents aged 12 to 19 years?

Null Hypothesis 5: Adolescent perceptions of maternal and paternal closeness, monitoring, communication, and involvement by U.S. adolescents aged 12 to 19 years will not predict the likelihood having multiple sex partners in a 12-month period.

Alternative Hypothesis 5: Adolescent perceptions of maternal and paternal closeness, monitoring, communication, and involvement by U.S. adolescents aged 12 to 19 years will predict the likelihood of having multiple sex partners in a 12-month period.

Confidentiality

The NLS has established procedures for participant confidentiality and for obtaining informed consent. These procedures comply with federal law, the guidelines of the U.S. Bureau of Labor Statistics, and the U.S. Office of Management and Budget (OMB), the reviewing body for all data collection procedures, including setting a limit on financial compensation for participation. In addition to the OMB review, Ohio State University and the National Opinion Research Center (NORC) at the University of Chicago, under contract with the U.S. Bureau of Labor Statistics, manage and conduct the NLSY79 surveys and their institutional review boards (IRBs) approve survey data collection prior to the start of each round of data gathering. Also, the Privacy Act of 1974 and the Confidentiality Information Protection and Statistical Efficiency Act (CIPSEA) of 2002 govern the process and procedures of confidentiality, informed consent authorization, and accurate representation of statistical data. The CIPSEA ensures that information provided by the participants to the U.S. Bureau of Labor Statistics will be used for statistical purposes and that only authorized and approved individuals will have access to data. In addition, the CIPSEA has the authority to fine and penalize any employee, officer, or U.S. Bureau of Labor Statistics agent for knowingly and willingly disclosing any specific information to unauthorized persons.

Confidentiality and informed consent are critical to the NLS program. The program uses several avenues from different agencies to ensure that guidelines and procedures are followed properly and ethically. To ensure that my study did not violate confidentiality, I contacted the NLS program administrative office and spoke with a software developer. The software developer explained how to extract the data and

ensured that the data are identified by specific terms and case numbers only. No further action was needed concerning informed consent and confidentiality because my study does not involve any personally identifiable information of participants.

The data extracted for my study was stored online for research and informative purposes. All data were presented by case ID numbers and by measured variables. If I had wished to gather personally identifiable data about participants, a written request explaining my identity and purpose would have been required; however, for this study no such information was needed, so this action was not necessary. The data were extracted from the NLS Investigator website (<https://www.nlsinfo.org/investigator/pages/login.jsp>).

The data collected was stored on a computer requiring a 10-digit code to access that is known only to me. The data files have no personally identifiable information of participants. The data are only identified by case numbers and measurable variables. The research was conducted in my office, to which no other person had access. The office contains locked file boxes. I will keep the data up to five years after completion of the dissertation, and will then erase all computer files and shred all paper documents privately. No other ethical issues were anticipated.

Summary

Chapter 3 provided descriptions of the study, the research and its design, the sample, and informed consent and confidentiality. The chapter also stated the hypotheses, provided a breakdown of the variables as stated in the NLSY79, and confirmed the integrity of the variables. Chapter 4 examined statistically whether an association exists between adolescent sexual behavioral choices and perceptions of the interactions in the

parent-adolescent relationship on the part of the adolescent and the parent. More specifically, my study examined these interactions generationally by examining these interactions between the biological parent and child. Lastly, chapter 4 summarized the results of all variable analyses.

Chapter 4: Data Analysis

Introduction

The purposes of this quantitative study were to empirically examine whether (a) adolescents' perceptions of maternal and paternal closeness, monitoring, communication, and involvement were significantly associated with a lower risk of engagement in risky sexual behaviors among U.S. adolescents aged 12 to 19 years; (b) adolescents' perceptions of maternal and paternal closeness, monitoring, communication, and involvement were predictors of engagement in early sexual debut, or having sex before or at 14 years of age, by these adolescents; (c) adolescents' perceptions of maternal and paternal closeness, monitoring, communication, and involvement by U.S. adolescent males aged 12 to 19 years are predictors of engaging in unprotected sex without a condom; (d) adolescents' perceptions of maternal and paternal closeness, monitoring, communication, and involvement by U.S. adolescent females aged 12 to 19 years were predictors of having sex without using some form of birth control pill; and (e) adolescents' perceptions of maternal closeness, monitoring, communication, and involvement by U.S. adolescents of both sexes aged 12 to 19 years were predictors of having multiple sex partners in a 12-month period. I addressed the following research questions:

Research Question 1: Is there a significant association between adolescent perception of the quality of interaction with both parents, and maternal perception of the quality of interaction between adolescent and parent?

Null Hypothesis 1: There will be no significant association between adolescent perceptions of the quality of parent-adolescent interactions and the maternal perceptions of the quality of adolescent-parent interactions.

Alternate Hypothesis 1: There will be a significant association between adolescent perceptions of the quality of parent-adolescent interactions and the maternal perceptions of the quality of adolescent-parent interactions.

Research Question 2: Do adolescent-perceived parent-child interactions, which include adolescent perceptions of maternal and paternal closeness, monitoring, communication, and involvement, predict the risk of early sexual debut, or having sex before or at 14 years of age, among U.S. adolescents aged 12 and 19 years?

Null Hypothesis 2: Adolescent perceptions of maternal and paternal closeness, monitoring, communication, and involvement will not predict the likelihood of engagement in early sexual debut, or have sex before or at 14 years of age, by U.S. adolescents aged 12 to 19 years.

Alternative Hypothesis 2: Adolescent perceptions of maternal and paternal closeness, monitoring, communication, and involvement will predict the likelihood of engagement in early sexual debut, or have sex before or at 14 years of age, by U.S. adolescents aged 12 to 19 years.

Research Question 3: Do adolescent-perceived parent-child interactions, which include adolescent perceptions of maternal and paternal closeness, monitoring, communication, and involvement, predict the risk of U.S. adolescent males aged 12 to 19 years having unprotected sex without a condom?

Null Hypothesis 3: Adolescent perceptions of maternal and paternal closeness, monitoring, communication, and involvement by U.S. adolescent males aged 12 to 19 years will not predict the likelihood of engaging in unprotected sex without a condom.

Alternative Hypothesis 3: Adolescent perceptions of maternal and paternal closeness, monitoring, communication, and involvement by U.S. adolescent males aged 12 to 19 years will predict the likelihood of engaging in unprotected sex without a condom.

Research Question 4: Do adolescent-perceived parent-child interactions, which include adolescent perceptions of maternal and paternal closeness, monitoring, communication, and involvement, predict the risk of adolescent females aged 12 to 19 years having sex without some form of birth control pill?

Null Hypothesis 4: Adolescent perceptions of maternal and paternal closeness, monitoring, communication, and involvement by U.S. adolescent females aged 12 to 19 years will not predict the likelihood of having sex without using some form of birth control pill.

Alternative Hypothesis 4: Adolescent perceptions of maternal and paternal closeness, monitoring, communication, and involvement by U.S. adolescent females aged 12 to 19 years will predict the likelihood of having sex without using some form of birth control pill.

Research Question 5: Do adolescent-perceived parent-child interactions, which include adolescent perceptions of maternal and paternal closeness, monitoring, communication, and involvement, predict the risk of having multiple sex partners in a 12-month period among U.S. adolescents aged 12 to 19 years?

Null Hypothesis 5: Adolescent perceptions of maternal and paternal closeness, monitoring, communication, and involvement by U.S. adolescents aged 12 to 19 years will not predict the likelihood having multiple sex partners in a 12-month period.

Alternative Hypothesis 5: Adolescent perceptions of maternal and paternal closeness, monitoring, communication, and involvement by U.S. adolescents aged 12 to 19 years will predict the likelihood of having multiple sex partners in a 12-month period.

In this chapter, I present the setting, demographics, data collection, data analysis, and results of the analysis, of the research that was based on these questions and sets of hypothesis.

Sample

I used archival data for this study's sample from the NLSY79 Child and Young Adult cohort project, a longitudinal project that follows the biological children of the women in the NLSY79 survey (Bureau of Labor Statistics, 2012). The NLSY79 researchers interviewed a total of 11,504 children born to the mothers included in the NLSY79 survey (Bureau of Labor Statistics, 2012). I presented the demographics of the sample. Table 2 provides their demographics with respect to race, gender, and age.

By the design of the NLSY79 survey, beginning in 2000, researchers placed all surveyed participants who identified themselves as Hispanic or Black in the Hispanic or Black category (Bureau of Labor Statistics, 2012). Researchers placed all other surveyed participants, who identified themselves as White, American Indian or Alaska Native, Asian, or Native Hawaiian in the non-Black and non-Hispanic category (Bureau of Labor

Statistics, 2012). The race and ethnicity categories of the NLSY79 survey are similar to those of the U.S. Census Bureau.

According to the U.S. Census Bureau (2016), the latest projections—based on the 2010 U.S. Census and the official estimates through 2015—indicate that the majority of the U.S. population self-identifies as non-Hispanic and non-Black (87.6%). This percentage of self-identified non-Hispanic/non-Black is similar to that of the participants (53%) in the NLSY79 survey in 2010 (U.S. Bureau of Labor Statistics, 2012). In addition, according to the U.S. Census Bureau, Hispanics constituted 17.6% and Blacks 13.3% of the total U.S. population. My sample included 19.2% Hispanic and 27.7% Black. The difference in percentages might be explained by looking at how researchers collected the data per household. My sample consisted of a longitudinal project that followed the biological children of the women in the NLSY79 survey (Bureau of Labor Statistics, 2012), whereas the U.S. Census Bureau collected racial/ethnicity data on all U.S. households regardless of blood relation.

For gender and age, my sample consisted of 51.1% male participants and 48.9% female participants. The majority of the subjects are 15 years or older (94.8%). This percentage might be due to the NLSY79 survey design. In the context of a “child interview” researchers obtained child-specific information for children under 15 years from either the mother or the child, whereas, beginning in 1994, researchers no longer used mothers to assess children when they turned 15; instead, these children completed their own personal interviews similar to those given to their mothers (Bureau of Labor Statistics, 2012b). Hence, at age 15, the NLSY79 children become part of the young adult sample, which separates their responses from their mothers and the child interview

sample (Bureau of Labor Statistics, 2012b). For my study, the participants' age criterion was 12 to 19 years; thus I selected the NLSY79 Child and Young Adult cohort project to capture this age range. I computed the descriptive statistics using IBM SPSS 21.0.

Table 2

Frequency Distribution: Gender, Age, and Race

	Frequency	Percent
Gender		
Male	5,873	51.1
Female	5,630	48.9
Age		
12 to 14 years of age	595	5.2
15 to 19 years of age	10,907	94.8
Race		
Hispanic	2,213	19.2
Black	3,188	27.7
Non-Black, non-Hispanic	6,103	53.1

Note. $N = 11,504$.

Data Collection

I used archival data from the NLSY79 Child and Young Adult survey (U.S. Bureau of Labor Statistics, 2012). Researchers of the NLSY79 survey identified and interviewed a total of 11,504 children who were born to the mothers included in the NLSY79 survey (U.S. Bureau of Labor Statistics, 2012.) There were no discrepancies in the data collection as planned. I reached the planned sample size of $N = 11,504$, collected from the NLSY79 survey archival data. These data cover a wide range of ages from birth to adolescence and into young adulthood (Wu & Allen 2005). However, I selected

participants aged 12 to 19 years for this study. The sample represents the general population of interest, being the biological children, aged 12 to 19 years, of the women in the NLSY group. I tested whether associations between the variables of interest exist. My study consists of a representative national sample of 11,504 youth. I extracted data for youth surveyed in 2010 for this study. I encountered and addressed missing values by conducting a power analysis to ensure an adequate sample size. The minimum sample size needed for a logistic regression was 582.

Missing Data

An important way to address missing values is to determine the reasons for the phenomenon (Gelman & Hill, 2012). I found that missing data, as stated in the NLSY79 survey, occurs when a valid response is not recorded for a survey question because subjects either chose not to participate, or they refused to answer sensitive questions (Bureau of Labor Statistics, 2016c). Another reason for missing data is the interviewers' failure to record the participants' answers correctly (Bureau of Labor Statistics, 2016b). To reduce the number of non-responses and interviewer errors, the NLSY79 interviewers conducted interviews using a computer-assisted personal interview (CAPI) administered on a laptop computer designed for privacy and designed to reduce human error (Myers, 2009). However, this method does not solve the problem of retention. Retention of participants in this longitudinal study proved challenging for many reasons. Participants moved and were hard to locate. Participants refused to interview for certain survey years. Participants fell ill (Breakwell, Hammond, Fife-Schaw, & Smith, 2006). Participants died before completing surveys (Bureau of Labor Statistics, 2016c). To compensate for the impossibility of retaining all subjects throughout the studies' lifespan, researchers asked

detailed retrospective questions at each interview about the participants' lives, including sexual behaviors they predict will occur in the future (Bureau of Labor Statistics, 2016c). These retrospective questions capture data that could potentially be lost due to missed interviews; hence, a perfect response is not needed for researchers to measure how the participant's life changed over time, unless the participant exits the survey forever (Bureau of Labor Statistics, 2016c; Miller, 2001).

To keep continuity between my research and the NLSY79 survey, I used a parallel approach to analyzing the missing data. In other words, I used the same methods of analysis as the NLSY79 used to analyze the data.

For example, Table 3 summarizes the number of missing data points in relevant variables that are used in my study. All missing data are clearly flagged in the NLSY79 data set. Four negative numbers are used to indicate the variable does not contain useful information. The four values are (-1) refusal, (-2) don't know, (-3) invalid skip, and (-7) valid skip and non-interview. Using computer-assisted personal interviews has significantly reduced the incidence of invalid skips. Researchers collapsed valid skips and non-interviews into a negative seven (-7), which indicates that a participant was understood to be ineligible for a question, or that a participant did not interview for that given survey year, or that the participant's data was missing from the county and city data book, making it difficult to locate him or her (Bureau of Labor Statistics, 2016). Once the data were flagged, both I and the researchers of the NLSY79 survey omitted the information because the design of the survey significantly reduced non-response bias, making this loss of data minimal. Omitting data is not very harmful if the effect of the missing data is minor (Williams, 2015). However, according to the NLSY79 researchers

(U.S. Bureau of Labor Statistics, 2016), the majority of the missing data is mainly due to issues related to attrition, such as non-interview, not non-response bias. As defined in the NLSY79 survey (Bureau of Labor Statistics, 2016), non-interview means participants were not interviewed in the given survey year, mostly due to refusing the interview or because the participants had data missing from the county and city data book, making it difficult to locate them.

For this reason, the NLSY79 researchers used retrospective question variables from previous survey years to plug in the missing variables in current survey years to address non-interview issues (Bureau of Labor Statistics, 2016c). Due to the longitudinal design of the survey, missing data from to this type of attrition can often be captured from retrospective questions in subsequent interviews, which might lead to effective sample sizes larger than the response rate would imply (Pierret, 2005). By using the same approach to analyzing the missing data as did the researchers of the NLSY79, I have been able to present a valid study.

Table 3

Explanation for Missing Data in the 2010 NLYS79 Sample

Variable title	Refusal	Do not know	Non-interview
Engagement in early sexual debt	7	4	11
The likelihood of having sex without a condom	9	15	8,423
The likelihood of having sex without using form of birth control contraceptive	9	117	8,321
The likelihood of having multiple sexual partners over the last 12 months	29	11	8,407

Table 4 presents descriptive statistics, with the data missing related to the dependent variables of engagement in early sexual debut or having sex before or at 14

years of age, the likelihood of engaging in unprotected sex (without a condom), the likelihood of having sex without using some form of birth control pill and the likelihood of having multiple sexual partners over the last 12 months. The majority of the adolescents first had sex after 14 years of age (99.9%). However, these results must be interpreted with care because only 0.1% ($n = 4$) of this 12-14 years age group ($n = 595$) reported engaging in sex. This report of sexual activity might be biased. As stated in the sample section, children under 15 were assessed in the presence of their mothers.

Whereas, children 15 and over were no longer assessed with their mothers and were interviewed separately. These separate interviews most likely allowed these children to answer more honestly. The likelihood of engaging in unprotected sex (without a condom) was 11.6%. The likelihood of having sex without using some form of birth control pill was 6%. The likelihood of having multiple sexual partners over the last 12 months was 24.9%.

Table 4

Descriptive Statistics: Risky Sexual Behaviors With Data Missing

	Frequency	%
Engagement in early sexual debut		
Have sex after 14 years of age	11,489	99.9
Have sex before or at 14 years of age	4	0.0
Total	11,493	99.9
Missing	11	0.0
Total	11,504	100.0
The likelihood of having sex without a condom		
No	1,723	15.0
Yes	1,334	11.6
Total	3,057	26.6
Missing	8,447	73.4
Total	11,504	100.0
The likelihood of having sex without using form of birth control pill		
No	2,372	20.6

Yes	685	6.0
Total	3,057	26.6
Missing	8,447	73.4
Total	11,504	100.0
The likelihood of having multiple sexual partners over the last 12 months		
No	273	2.4
Yes	2,867	24.9
Total	3,057	26.6
Missing	8,447	73.4
Total	11,504	100.0

Analysis of Missing Data

Researchers often use data imputation to fill in missing data to produce a complete data set, to compensate for non-response missing data (Durrant, 2005). In addition, for comparison over time, imputation has the advantage of filling in missed values by matching those variables with variables from previous survey years (National Centre for Research Methods, 2009). The NLYS79 survey is designed to significantly reduce non-response data. It also uses retrospective questions to address attrition through the capture of data previously unavailable because of missed interviews. Because I used the NLSY79 survey, my sample had very low numbers of “don’t know” and “refused” responses in the sexual behaviors questionnaires, similar to the NLSY79 survey, as seen in Table 3, and I had no need to further address attrition.

I used mode/median imputation to substitute missing data. The imputation of missing values of a variable using the mode or median can convert incomplete data sets into complete data sets (Kenett & Salini, 2012). Mode/median imputation is useful when non-response missing data is low and when the data is categorical or ordinal (McDermeit, Funk, Dennis, 1999).

As a step-by-step process of the imputation of the missing responses, I first identified missing values as categorical. I then observed the values that appeared most often in the data set. When data is categorical, a researcher can replace missing values by the most frequent observation, the mode (Ord & Fildes, 2013; Stockburger, 1998).

Next, I created an indicator for the missing values of a zero (0) or a one (1). This is known as dummy or indicator variables (Garavaglia & Sharma, 2003; Oluwapelumi, 2014). Indicator or dummy variables take the value of zero or one to indicate the absence or presence of an occurrence expected to have some categorical effect that may shift an outcome (Oluwapelumi, 2014). In addition, indicator variables are used to sort data into mutually exclusive categories (Oluwapelumi, 2014), such as having sex before or after age 14, as seen in my variables. A dummy or indicator variable can be viewed as representing a true value as 0 or 1, which makes the function of a study easy to interpret and implement (Garavaglia & Sharma, 2003). Therefore, I find using mode/ imputation as indicator variables to substitute for the missing data appropriate.

The mode values for the dependent variables are as follows: For the variable, “likelihood of engagement in early sexual debut or having sex before or at 14 years of age,” 0 represented the mode for the category “have sex after 14 years of age.” For the variable, “likelihood of engaging in unprotected sex without a condom,” the response of 0 = “No” represented the mode for the category. For the variable, “likelihood of sex without using some form of birth control pill” the response of 0 = “No” represented the mode for the category. For the variable, “likelihood of having multiple sex partners in a 12-month period,” the response of 1 = “partners” represented the mode for the category. I calculated the modal value over the complete dataset and substituted this for the missing

values. Once all missing values have been compensated for, or imputed, the data were then analyzed using logistic regression analysis involving the complete data. Table 5 provides descriptive statistics with the missing data related to the four dependent variables. The results indicate that the majority of the adolescents had sex after 14 years of age (100.0%). The results also indicated that the likelihood of adolescent males engaging in unprotected sex without a condom was 11.6%, the likelihood of adolescent females having sex without using some form of birth control pill was 6%, and the likelihood of adolescents having multiple sexual partners over the last 12 months was 97.6%.

Table 5

Descriptive Statistics: Risky Sexual Behaviors with Missing Data Imputed

	Frequency	%
Engagement in early sexual debut		
Having first sex after 14 years of age	11,500	100.0
Having sex before or at 14 years of age	4	0.0
Total	11,504	100.0
The likelihood of having sex without a condom		
No	10,170	88.4
Yes	1,334	11.6
Total	11,504	100.0
The likelihood of having sex without using some form of birth control pill		
No	10,819	94.0
Yes	685	6.0
Total	11,504	100.0
The likelihood of having multiple sexual partners over the last 12 months		
No	273	2.4
Yes	11,231	97.6
Total	11,504	100.0

The majority of the adolescents with missing data was (99.9) and with missing data imputed was (100.0%) first had sex after age fourteen. The likelihood of engaging in unprotected sex without a condom by the adolescent males with missing data was 11.6% and with missing data imputed was 11.6%. The likelihood of having sex without using some form of birth control pill by adolescent females was 6.0% with missing data and with missing data imputed was 6.0%. The likelihood of having multiple sexual partners over the last 12 months was (24.9%) with missing data and with missing data imputed (97.6%). Only one out of the four dependent variables significantly changed after I used imputation to address the missing data. The minor differences between these percentages might be due to the survey design of retrospective questions to capture data lost because of missed interviews, which allows researchers to measure how the participants' lives changed over time without having perfect responses for each survey year (U.S. Bureau of Labor Statistics, 2016c). Conducting imputation to address missing data, as I have done in this study, strengthens the results (Schafer & Graham, 2002).

Results

Descriptive Statistics

I conducted descriptive statistics to compute the mean and standard deviation for the following six variables: maternal perceptions of maternal and paternal closeness, adolescent perceptions of maternal and paternal closeness, adolescent perceptions of monitoring, maternal perceptions of monitoring, adolescent perceptions of communication, and adolescent perceptions of involvement, and for the dependent variables of engagement in early sexual debut or having sex before or at 14 years of age, the likelihood of engaging in unprotected sex without a condom, and likelihood of having

sex without using some form of birth control pill, and the likelihood of having multiple sex partners in a 12-month period. The mean is one measure of the central tendency of a probability distribution. A low standard deviation shows that the data points are near the average, whereas a high standard deviation shows that much variation exists from the average (Creswell, 2009).

Table 6 presents descriptive statistics of the six independent variables just mentioned.

Table 6

Descriptive Statistics: Closeness, Monitoring, Communication, and Involvement

	Mean	Std. deviation
Maternal perceptions of maternal and paternal closeness	13.11	3.74
Adolescent perceptions of maternal and paternal closeness	18.15	8.87
Adolescent perceptions of monitoring	12.46	3.64
Maternal perceptions of monitoring	12.73	4.49
Adolescent perceptions of communication	31.45	8.09
Adolescent perceptions of involvement	25.52	7.09

Note. $N = 11,504$.

Table 7 presents descriptive statistics for the first four: maternal perceptions of maternal and paternal closeness, adolescent perceptions of maternal and paternal closeness, adolescent perceptions of monitoring, and maternal perceptions of monitoring. I used adolescent and maternal perceptions of closeness and monitoring to define quality of parent-adolescent interactions. I employed the descriptive statistics in Table 7 to examine the mean differences between adolescent and maternal perceptions. In Table 7, it can be seen that the adolescents have a larger difference ($M = 18.15$, $SD = 8.87$) in the perceptions of maternal and paternal closeness as compared to the perceptions of the mothers ($M = 13.11$, $SD = 3.74$). Additionally, it can be seen that the adolescents have a

smaller difference ($M = 12.46$, $SD = 3.64$) in the perceptions of parental-monitoring as compared to the mothers ($M = 12.73$, $SD = 4.49$).

Table 7

Descriptive Statistics: Perceptions of Closeness and Monitoring

	Mean	Std. deviation
Maternal Perceptions of Maternal and Paternal Closeness	13.11	3.74
Adolescent Perceptions of Maternal and Paternal Closeness	18.15	8.87
Adolescent Perceptions of Monitoring	12.46	3.64
Maternal Perceptions of Monitoring	12.73	4.49

Note. $N = 11,504$.

Assumptions

Normality Testing

Before each research question was analyzed, basic parametric assumptions were assessed. To ensure the data met assumptions of normality, an investigation of the skewness and kurtosis statistics was conducted (Kline, 2005). The normal testing was only conducted for the six continuous, measured independent variables. The values for asymmetry and kurtosis should be between minus two and plus two to prove normal distribution (George & Mallery, 2010). The skewness and kurtosis for two independent variables (maternal perceptions of maternal and paternal closeness, and adolescent perceptions of involvement) are not within the minus two and plus two range, proving that these two variables are not normally distributed. Non-parametric tests are conducted instead of parametric tests. These tests include Spearman correlation analysis and logistic regression analysis. The results of the examination of the normal probability plot, shown in Table 8, indicate that some variables are not normally distributed.

Table 8

Skewness and Kurtosis Statistics of Study Variables

	N	Skewness		Kurtosis	
		Statistic	Std. error	Statistic	Std. error
Maternal Perceptions of Maternal and Paternal Closeness	11,504	4.08	0.02	14.88	0.05
Adolescent Perceptions of Maternal and Paternal Closeness	11,504	-0.08	0.02	-1.83	0.05
Adolescent Perceptions of Monitoring	11,504	1.98	0.02	2.00	0.05
Maternal Perceptions of Monitoring	11,504	2.80	0.02	7.55	0.05
Adolescent Perceptions of Communication	11,504	1.98	0.02	2.17	0.05
Adolescent Perceptions of Involvement	11,504	3.19	0.02	9.32	0.05

Statistical Analysis: Findings

Research Question 1. Is there a significant association between adolescent perception of the quality of interaction with both parents and maternal perception of the quality of interaction between adolescent and parent?

Hypothesis 1

Null Hypothesis 1: There will be no significant association between adolescent perceptions of the quality of parent-adolescent interactions and the maternal perceptions of the quality of adolescent-parent interactions.

Alternate Hypothesis 1: There will be a significant association between adolescent perceptions of the quality of parent-adolescent interactions and the maternal perceptions of the quality of adolescent-parent interactions.

Hypothesis 1 Findings

The Spearman correlation analysis was conducted to determine the association between adolescent perceptions of the quality of parent-adolescent interactions and the maternal perceptions of the quality of adolescent-parent interactions. Specifically, the correlation analysis determined the association between adolescent perceptions of maternal and paternal closeness, adolescent perceptions of monitoring, adolescent perceptions of communication, and adolescent perceptions of involvement with maternal perceptions of maternal and paternal closeness, maternal perceptions of monitoring, mothers' perceptions of closeness to mother, and mothers' perceptions of closeness to father. Table 9 summarizes the results of this correlation test.

The results of the Spearman correlation analysis showed that the adolescent perceptions of maternal and paternal closeness, adolescent perceptions of monitoring, adolescent perceptions of communication, and adolescent perceptions of involvement were all significantly and positively related with the maternal perceptions of maternal and paternal closeness, maternal perceptions of monitoring, mothers' perceptions of closeness to mother, and mothers' perceptions of closeness to father. This was because the *p*-values were all less than the level of significance value of 0.01.

Thus, the null hypothesis that "There will be no significant association between adolescent perceptions of the quality of parent-adolescent interactions and the maternal perceptions of the quality of adolescent-parent interactions" was ruled out. It can be concluded that there was a significant association between adolescent perceptions of the quality of parent-adolescent interactions and the maternal perceptions of the quality of adolescent-parent interactions. A positive association was determined based on the correlation coefficient of the Spearman correlation analysis. This means that as the level

of adolescent perceptions of the quality of parent-adolescent interactions became higher or better, the level of maternal perceptions of the quality of adolescent-parent interactions also became higher or better, and vice versa.

Table 9

Rank Correlation: Perceptions of Monitoring and Closeness

			Maternal Perceptions of Maternal and Paternal Closeness	Maternal Perceptions of Monitoring	Mother's Perceptions of Closeness to Mother	Mother's Perceptions of Closeness to Father
Spearman's rho	Adolescent Perceptions of Maternal and Paternal Closeness	Correlation Coefficient	0.21**	0.10**	0.21**	0.22**
		Sig. (2-tailed)	0.00	0.00	0.00	0.00
		N	11,504	11,504	11,504	11,504
	Adolescent Perceptions of Monitoring	Correlation Coefficient	0.43**	0.27**	0.43**	0.42**
		Sig. (2-tailed)	0.00	0.00	0.00	0.00
		N	11,504	11,504	11,504	11,504
	Adolescent Perceptions of Communication	Correlation Coefficient	0.45**	0.35**	0.45**	0.44**
		Sig. (2-tailed)	0.00	0.00	0.00	0.00
		N	11,504	11,504	11,504	11,504
	Adolescent Perceptions of Involvement	Correlation Coefficient	0.54**	0.43**	0.54**	0.52**
		Sig. (2-tailed)	0.00	0.00	0.00	0.00
		N	11,504	11,504	11,504	11,504

**Correlation is significant at $p < .01$ level (2-tailed).

Research Question 2: Do adolescent-perceived parent-child interactions, which include adolescent perceptions of maternal and paternal closeness, monitoring, communication, and involvement, predict the risk of early sexual debut, or having sex before or at 14 years of age, among U.S. adolescents, aged 12 and 19 years?

Hypothesis 2

Null Hypothesis 2: Adolescent perceptions of maternal and paternal closeness, monitoring, communication, and involvement will not predict the likelihood of engagement in early sexual debut, or have sex before or at 14 years of age, by U.S. adolescents aged 12 to 19 years.

Alternative Hypothesis 2: Adolescent perceptions of maternal and paternal closeness, monitoring, communication, and involvement will predict the likelihood of engagement in early sexual debut, or have sex before or at 14 years of age, by U.S. adolescents aged 12 to 19 years.

Hypothesis 2 Findings

I used a logistic regression analysis to test the hypothesis. Table 10 gives the parameter estimates for the logistic regression model. A binary dependent variable that is categorical (having first sex after 14 years of age vs. having sex before or at 14 years of age) predicts the likelihood of engagement in early sexual debut, or having sex before or at 14 years of age, by U.S. adolescents aged 12 to 19 years. The independent variables that are continuous are adolescent perceptions of maternal and paternal closeness, monitoring, communication, and involvement. The resulting logistic regression analysis showed that only the independent variable of adolescent perceptions of maternal and paternal closeness (Wald (1) = 4.63, $p = 0.03$) significantly predicts the dependent

variable of likelihood of early sexual debut. The number of adolescents that reported early debut was only 4 (0.0%) which is very low. This was the only p-value less than the level of significance of 0.05. However, these results must be interpreted with care because only .1% ($n = 4$) of this 12-14 years age group ($n = 595$) reported engaging in sex. This report of sexual activity might be biased. As stated in the sample section, children under 15 were assessed in the presence of their mothers. Whereas, children 15 and over were no longer assessed with their mothers and were interviewed separately. These separate interviews most likely allowed these children to answer more honestly.

The coefficient of the odd ratio statistics of $\text{Exp}(B)$ of the significance of independent variables was investigated to determine change in the log odds of the dependent variable of the probability of likelihood of early sexual debut. This determined the odds of early sexual debut. The logistic regression model shows that the log odds of adolescent perceptions of maternal and paternal closeness were 2.07. Having higher adolescent perceptions of maternal and paternal closeness by a score of 1 increased the odds or likelihood of not engaging in early sexual debut by 2.07%.

Thus, the null hypothesis that “Adolescent perceptions of maternal and paternal closeness, monitoring, communication, and involvement will not predict the likelihood of early sexual debut” was ruled out. It can be concluded that adolescent perceptions of maternal and paternal closeness will predict the likelihood of early sexual debut, or have sex before or at 14 years of age, by U.S. adolescents aged 12 to 19 years.

Table 10

Logistic Regression of Likelihood of Engagement in Early Sexual Debut, or Having Sex Before or at 14 Years of Age

	B	S.E.	Wald	df	Sig.	Exp(B)
Step 1 ^a						
Adolescent Perceptions of Maternal and Paternal Closeness	0.73	0.34	4.63	1	0.03*	2.07
Adolescent Perceptions for Parental Monitoring	0.08	0.26	0.09	1	0.77	1.08
Adolescent Perceptions of Communication	0.08	0.14	0.35	1	0.56	1.08
Adolescent Perceptions of Involvement	-0.15	0.12	1.49	1	0.22	0.86
Constant	-1.49	3.12	0.23	1	0.63	0.23

Note. Dependent variable was likelihood of engagement in early sexual debut, or having sex before or at 14 years of age.

* $p < .05$

Research Question 3: Do adolescent perceptions of parent-child interactions, which include adolescent perceptions of maternal and paternal closeness, monitoring, communication, and involvement, predict the risk of U.S. adolescent males aged 12 to 19 years having unprotected sex without a condom?

Hypothesis 3

Null Hypothesis 3: Adolescent perceptions of maternal and paternal closeness, monitoring, communication, and involvement by U.S. adolescent males aged 12 to 19 years will not predict the likelihood of engaging in unprotected sex without a condom.

Alternative Hypothesis 3: Adolescent perceptions of maternal and paternal closeness, monitoring, communication, and involvement by U.S. adolescent males aged 12 to 19 years will predict the likelihood of engaging in unprotected sex without a condom.

Hypothesis 3 Findings

I used a logistic regression analysis to answer the research question. Table 11 gives the parameter estimates for the logistic regression model. The binary dependent variable that is categorical (No vs. Yes) is the likelihood of engaging in unprotected sex without a condom. The independent variables that are continuous are adolescent perceptions of maternal and paternal closeness, monitoring, communication, and involvement. The resulting logistic regression analysis showed that each of the four independent variables of adolescent perceptions of maternal and paternal closeness (Wald (1) = 776.63, $p < 0.001$), adolescent perceptions for parental monitoring (Wald (1) = 4.00, $p = 0.05$), adolescent perceptions of communication (Wald (1) = 4.66, $p = 0.03$), and adolescent perceptions of involvement (Wald (1) = 60.25, $p < 0.001$) significantly predicts the dependent variable of likelihood of engaging in unprotected sex without a condom by U.S. adolescent males aged 12 to 19 years. All the p -values were less than the level of significance of 0.05.

The coefficient of the odd ratio statistics of $\text{Exp}(B)$ of the significance of independent variables was investigated to determine change in the log odds of the dependent variable of the probability of engaging in unprotected sex without a condom. This determined the odds that there will be a likelihood of engaging in unprotected sex without a condom by U.S. adolescent males aged 12 to 19 years. The logistic regression model shows that the log odds of adolescent perceptions of maternal and paternal closeness were 1.16. Having higher adolescent perceptions of maternal and paternal closeness by a score of 1 increased the odds of not engaging in unprotected sex without a condom by U.S. adolescents aged 12 to 19 years by 1.16%. The logistic regression model

shows that the log odds of adolescent perceptions for parental monitoring were 0.95. Having higher adolescent perceptions for parental monitoring by a score of 1 increased the odds of not engaging in unprotected sex without a condom by these adolescents by 0.95%. The logistic regression model shows that the log odds of adolescent perceptions of communication were 1.04. Having higher adolescent perceptions of communication by a score of 1 increased the odds of not engaging in unprotected sex without a condom by these adolescents by 1.04%. The logistic regression model shows that the log odds of adolescent perceptions of involvement were 0.86. Having higher adolescent perceptions of involvement by a score of 1 increased the odds of not engaging in unprotected sex without a condom by these adolescents by 0.86%.

Thus, the null hypothesis that “Adolescent perceptions of maternal and paternal closeness, monitoring, communication, and involvement by U.S. adolescent males aged 12 to 19 years will not predict the likelihood of engaging in unprotected sex without a condom” was ruled out. It can be concluded that adolescent perceptions of maternal and paternal closeness, parental monitoring, communication, and parental involvement by these adolescent males significantly predicted the likelihood of engaging in unprotected sex without a condom.

Table 11

Logistic Regression of Likelihood of Engaging in Unprotected Sex Without a Condom

	B	S.E.	Wald	df	Sig.	Exp(B)
Adolescent Perceptions of Maternal and Paternal Closeness	0.15	0.01	776.73	1	0.00**	1.16
Adolescent Perceptions for Parental Monitoring	-0.06	0.03	4.00	1	0.05*	0.95
Adolescent Perceptions of Communication	0.03	0.02	4.66	1	0.03*	1.04
Adolescent Perceptions of Involvement	-0.15	0.02	60.25	1	0.00**	0.86
Constant	-3.52	0.35	101.08	1	0.00**	0.03

Note. Dependent variable was likelihood of engaging in unprotected sex without a condom.

* $p < .05$

Research Question 4: Do adolescent-perceived parent-child interactions, which include adolescent perceptions of maternal and paternal closeness, monitoring, communication, and involvement, predict the risk of adolescent females aged 12 to 19 years having sex without some form of birth control pill?

Hypothesis 4

Null Hypothesis 4: Adolescent perceptions of maternal and paternal closeness, monitoring, communication, and involvement by U.S adolescent females aged 12 to 19 years will not predict the likelihood of having sex without using some form of birth control pill.

Alternative Hypothesis 4: Adolescent perceptions of maternal and paternal closeness, monitoring, communication, and involvement by U.S. adolescent females aged

12 to 19 years will predict the likelihood of having sex without using some form of birth control pill.

Hypothesis 4 Findings

I used a logistic regression analysis to test the hypothesis. Table 12 provides the parameter estimates for the logistic regression model. The binary dependent variable that is categorical (No vs. Yes) is the likelihood of having sex without using some form of birth control pill. The independent variables that are continuous are adolescent perceptions of maternal and paternal closeness, monitoring, communication, and involvement. The resulting logistic regression analysis showed that the independent variables of adolescent perceptions of maternal and paternal closeness (Wald (1) = 393.76, $p < 0.01$), adolescent perceptions of communication (Wald (1) = 3.71, $p = 0.05$), and adolescent perceptions of involvement (Wald (1) = 37.30, $p < 0.01$) significantly predict the dependent variable of likelihood of having sex without using some form of birth control pill by these adolescent females.

The coefficient of the odd ratio statistics of $\text{Exp}(B)$ of the significance independent variables was investigated to determine change in the log odds of the dependent variable of the probability of having sex without using some form of birth control pill. The logistic regression model shows that the log odds of adolescent perceptions of maternal and paternal closeness was 1.18, adolescent perceptions of communication was 1.05, and adolescent perceptions of involvement was 0.78. Having higher adolescent perceptions of maternal and paternal closeness by a score of 1 increased the odds of not having sex without using some form of birth control pill by these adolescent females by 1.18%. Having higher adolescent perceptions of

communication by a score of 1 increased the odds of not having sex without using some form of birth control pill by these adolescent females by 1.05%. Having higher adolescent perceptions of involvement by a score of 1 increased the odds of not having sex without using some form of birth control pill by these adolescent females by 0.78%.

Thus, the null hypothesis that “Adolescent perceptions of maternal and paternal closeness, monitoring, communication, and involvement by U.S. adolescent females aged 12 to 19 years will not predict the likelihood of having sex without using some form of birth control pill.” was ruled out. It can be concluded that adolescent perceptions of maternal and paternal closeness, communication, and involvement by these adolescent females significantly predict the likelihood of having sex without using some form of birth control pill.

Table 12

Logistic Regression of Likelihood of Sex Without Using Some Form of Birth Control Pill

	B	S.E.	Wald	df	Sig.	Exp(B)
Adolescent Perceptions of Maternal and Paternal Closeness	0.16	0.01	393.76	1	0.00**	1.18
Adolescent Perceptions for Parental Monitoring	-0.05	0.04	1.83	1	0.18	0.95
Adolescent Perceptions of Communication	0.05	0.03	3.71	1	0.05*	1.05
Adolescent Perceptions of Involvement	-0.25	0.04	37.30	1	0.00**	0.78
Constant	-6.43	0.79	65.66	1	0.00**	0.00

Dependent Variable: likelihood of sex without using some form of birth control pill

* $p < .05$, ** $p < .01$.

Research Question 5: Do adolescent-perceived parent-child interactions, which include adolescent perceptions of maternal and paternal closeness, monitoring,

communication, and involvement, predict the risk of having multiple sex partners in a 12-month period among U.S. adolescents aged 12 and 19 years?

Hypothesis 5

Null Hypothesis 5: Adolescent perceptions of maternal and paternal closeness, monitoring, communication, and involvement by U.S. adolescents aged 12 to 19 years will not predict the likelihood of having multiple sex partners in a 12-month period.

Alternative Hypothesis 5: Adolescent perceptions of maternal and paternal closeness, monitoring, communication, and involvement by U.S. adolescents aged 12 to 19 years will predict the likelihood of having multiple sex partners in a 12-month period.

Hypothesis 5 Findings

I used a multinomial logistic regression analysis to test the hypothesis. Table 13 gives the parameter estimates for the logistic regression model. The binary dependent variable that is categorical (No vs. Yes) is the likelihood of having multiple sex partners in a 12-month period. The independent variables that are continuous are adolescent perceptions of maternal and paternal closeness, monitoring, communication, and involvement. The resulting logistic regression analysis showed that the independent variables of adolescent perceptions of maternal and paternal closeness (Wald (1) = 145.43, $p < 0.01$) and adolescent perceptions of involvement (Wald (1) = 11.22, $p < 0.01$) significantly predict the dependent variable of likelihood of having multiple sex partners in a 12-month period by U.S. adolescents aged 12 to 19 years.

The coefficient of the odd ratio statistics of $\text{Exp}(B)$ of the significance of independent variables was investigated to determine change in the log odds of the dependent variable of the likelihood of having multiple sex partners in a 12-month

period. This determined the odds that there will be a likelihood of having multiple sex partners in a 12-month period by U.S. adolescents aged 12 to 19 years. The logistic regression model shows that the log odds of adolescent perceptions of maternal and paternal closeness were 0.87 and of adolescent perceptions of involvement were 1.12. Having higher adolescent perceptions of maternal and paternal closeness by a score of 1 increased the odds of not having multiple sex partners in a 12-month period by these adolescents by 0.87%. Having higher adolescent perceptions of involvement by a score of 1 increased the odds of not having multiple sex partners in a 12-month period by these adolescents by 1.12%.

Thus, the null hypothesis that “Adolescent perceptions of maternal and paternal closeness, monitoring, communication, and involvement by U.S. adolescents aged 12 to 19 years will not predict the likelihood having multiple sex partners in a 12-month period” was ruled out. It can be concluded that adolescent perceptions of maternal and paternal closeness and parental involvement by these adolescents significantly predicted the likelihood of having multiple sex partners in a 12-month period.

Table 13
Logistic Regression of Likelihood Having Multiple Sex Partners in a 12-Month Period

	B	S.E.	Wald	df	Sig.	Exp(B)
Adolescent Perceptions of Maternal and Paternal Closeness	-0.14	0.01	145.43	1	0.00**	0.87
Adolescent Perceptions for Parental Monitoring	0.09	0.05	3.44	1	0.06	1.10
Adolescent Perceptions of Communication	-0.04	0.03	2.16	1	0.14	0.96
Adolescent Perceptions of Involvement	0.11	0.03	11.22	1	0.00**	1.12
Constant	4.56	0.58	60.92	1	0.00**	95.53

Dependent Variable: likelihood having multiple sex partners in a 12-month period

Note. * $p < .05$, ** $p < .01$.

Summary

Results of this study indicated that there was a significant difference between adolescent perceptions of the quality of parent-adolescent interactions and the maternal perceptions of the quality of adolescent-parent interactions. Results of the Spearman correlation analysis indicated that there was a significant association between adolescent perceptions of the quality of parent-adolescent interactions and the maternal perceptions of the quality of adolescent-parent interactions.

The results of the different logistic regression analyses showed that adolescent perceptions of maternal and paternal closeness predicted the likelihood of early sexual debut, or having sex before or at 14 years of age, by U.S. adolescents aged 12 to 19 years. Adolescent perceptions of maternal and paternal closeness, parental monitoring, communication, and parental involvement by U.S. adolescent males aged 12 to 19 years predicted the likelihood of engaging in unprotected sex without a condom. Adolescent perceptions of maternal and paternal closeness, communication, and involvement by U.S. adolescent females aged 12 to 19 years predicted the likelihood of having sex without using some form of birth control pill. Finally, adolescent perceptions of maternal and paternal closeness and parental involvement by U.S. adolescents aged 12 to 19 years predicted the likelihood of having multiple sex partners in a 12-month period.

Chapter 5 presents a summary of the research, including conclusions drawn from the data analyzed in the study. Also discussed in Chapter 5 are the limitations of the study, recommendations for continued research, and the implications of social change for strengthening the bonds in American homes between parents and adolescents to curb adolescent risky sexual behaviors.

Chapter 5: Discussion, Conclusions, and Recommendations

Study Overview

The purposes of this quantitative study were to empirically and simultaneously investigate the perceptions of parent-adolescent interactions, using data from the NLSY79 (Bureau of Labor Statistics, 2012) and their effect on adolescents' sexual behavioral choices. Such an investigation addresses the gap in the research related to parent and adolescent perceptions of their relationship quality and how these perceptions affect adolescent risky sexual behaviors (Farris, Akers, Downs, & Forbes, 2013; Stanton, Li, Cottrell, Harris, & Burns, 2002). Results revealed significant differences in adolescent perceptions of maternal and paternal closeness, and maternal perceptions of maternal and paternal closeness. In addition, adolescents' perceptions of parental engagement (maternal and paternal closeness, monitoring, communication, and involvement) significantly affected their sexual choices (age of sexual debut, use of birth control pills, use of condoms, and having multiple partners).

This research is crucial because for decades, the effect of early sexual activity, unprotected sex and unprotected sex with multiple sexual partners, have either taken the lives of many adolescents or decreased their quality of life (Southern Nevada Health District, 2011).

Theoretical Support

Bowlby's (1988) attachment theory and Bowen's (1978) family system theory were useful in addressing and explaining the gaps between the adolescents' and mothers' perceptions of maternal and paternal closeness and parental monitoring. My study also revealed that adolescents' and mothers' perceptions of the quality of parent-adolescent

interactions were significantly different, confirming the tenets of Bowlby's attachment theory.

Bowlby (1978) believed that internal working models are the agents of change and these internal working models develop according to the nature of parent-child interactions, thus ruling out the notion that attachment is only established during infancy and young childhood (Weinfield, Whaley, & England, 2003). Rather, according to Bowlby, the status of the attachment is driven by the changing interactions in the parent-child relationship, which can lead to the deterioration of the relationship, or to its improvement (Weinfield et al., 2004). Thus, how parents adapt their interactions to their children's growing and changing needs during adolescence affects parent-adolescent perceptions (Moretti & Peled, 2004), thereby proving a connection between perceptions and attachment.

I used Bowen's family systems theory to describe and explore perceptions of parent-adolescent interactions and how these perceptions affect adolescent sexual choices. My study revealed that adolescents' perceptions of interactions in the parent-child relationship significantly predicted adolescent risky sexual behaviors.

Family systems theory supported these findings as well. Bowen (1978) believed that adolescents mirror relationships with peers, including sexual relationships (Daire et al., 2012), through the interactions with their parents. In other words, adolescents' outside relationships often mirror their relationships with their parents.

Hence, parents play a major role in their adolescents' sexual choices (Kim-Spoon et al., 2012). Therefore, a connection exists between parent-adolescent interactions in the family system and adolescent sexual behaviors.

Interpretation of Study

Summary of Key Findings

Research Question 1: Is there a significant association between adolescent perception of the quality of interaction with both parents and maternal perception of the quality of interaction between adolescent and parent?

Results of this study indicated a significant mirrored association between adolescent perceptions of the quality of parent-adolescent interactions and the maternal perceptions of the quality of adolescent-parent interactions. This means that if adolescents report higher or lower levels of the quality of parent-adolescent interactions, their parents will also report higher or lower levels of the quality of interactions in the parent-child relationship. In other words, the parent-adolescent relationship is a reciprocal system, in which parent and child influence and shape each other's interactions (Saxbe, Ramos, Timmons, Rodriquez, & Margolin, 2014).

Also, the results of my study indicated that there is a significant difference between adolescent perceptions of the quality of parent-adolescent interactions and the maternal perceptions of the quality of adolescent-parent interactions. For example, adolescents perceive less maternal and paternal closeness compared to their mothers' perceptions of maternal and paternal closeness.

Bowlby's attachment theory (1988) was a theoretical consideration for this study. My research was consistent with the main tenets of attachment theory. From this theoretical perspective, the nature of the relationship with the primary attachment figure, typically the parent becomes the basis for an internal working model of relationships (Bowlby, 1988). These internal working models come to represent the child's perceptions

of self, expectations, emotions and behaviors, and will drive future interpersonal relationships (Bowlby, 1982). Bowlby believed that internal working models change and develop according to the nature of parent-child interactions (Weinfield et al., 2004). Researchers found that attachment between parent and child influences the child's later development during adolescence (Benoit, 2004; Ducharme et al., 2002; Weinfield et al., 2004). The status of attachment is driven by the changing interactions in the parent-child relationship (Weinfield et al., 2004). The results of this study indicate that adolescents' and mothers' perceptions of the quality of parent-adolescent interactions were significantly different. Thus, how parents shape their interactions to meet their children's growing and changing needs during adolescence affects parent-adolescent perceptions (Moretti & Peled, 2004), thereby indicating a connection between perceptions and attachment.

While the results of this study are consistent with prior research that found differences between parent and adolescent perceptions of their relationship quality, my study goes further by providing far more substantive subject data and by assessing parent-adolescent relationship quality differently. For example, Stanik, Riina, and McHale (2013) examined parent-adolescent-perceived relationship quality and found that parents and adolescent perceived their relationship quality differently. However, the study conducted by Stanik et al. consisted of a small sample that focused on African American families, making it difficult to generalize to adolescents from other racial and ethnic backgrounds. My study broadens that of Stanik et al. by using archival data to expand the sample to adolescents living in the United States from all racial and ethnic backgrounds. Moreover, Stanik et al. defined parent-adolescent relationship quality in

terms of parental-adolescent warmth and the degree to which youth spent leisure or recreational time with parents, as opposed to my study, which defined parent-adolescent relationship quality in terms of how close the adolescent and parent feel towards each other, how often parents know where their child is when not at home, whether parents know their child's closest friends' first and last names, whether their child informs the parents of his or her whereabouts, and whether there are rules for keeping parents informed of their adolescent's whereabouts. In addition, van Eijck, Branje, Hale, and Meeus (2012) found from their study of Dutch adolescents suffering with general anxiety disorder, differences in how parents and adolescents perceive their relationship. My study enhances the research of van Eijck et al. by expanding the sample to adolescents living in the United States from all racial and ethnic backgrounds, and not restricting the participants to adolescents with a clinical condition to assess their perceptions of the parent-adolescent relationship.

Research Question 2: Do adolescent-perceived parent-child interactions, which include adolescent perceptions of maternal and paternal closeness, monitoring, communication, and involvement, predict the risk of early sexual debut, or having sex before or at 14 years of age, among U.S. adolescents aged 12 and 19 years?

I simultaneously examined adolescent perceptions of maternal and paternal closeness, monitoring, communication, and involvement. The results indicated that adolescents' perceptions of maternal/paternal closeness were significant predictors of early sexual debut. This means that adolescents who perceived a higher level of closeness to their mothers and fathers were less likely to initiate having sex before the age of 14. These results might suggest that of all the variables examined here that the adolescent's

perceptions of maternal/paternal closeness were the most significant in predicting early adolescent sexual debut. However, these results must be interpreted with care because only .1% ($n = 4$) of this 12-14 years age group ($n = 595$) reported engaging in sex. This report of sexual activity might be biased. As stated in the sample section, children under 15 were assessed in the presence of their mothers. Whereas, children 15 and over were no longer assessed with their mothers and were interviewed separately. These separate interviews most likely allowed these children to answer more honestly.

The results of this study were consistent with Bowlby's attachment theory and Bowen's family systems theory. For example, Johnson (2005) suggested that attachment theory integrates sexual choices and caretaking with parental attachment responses. For instance, securely attached adolescents are more likely to delay sexual debut (Farris et al., 2013). In addition, from the systems theory approach, Bowen (1978) believed that adolescents mirror relationships with peers, including sexual relationships (Daire et al., 2012), through the interactions with their parents, thereby indicating a connection between perceptions and attachment. In addition, this indicates that a link exists between parent-adolescent interactions in the family system and adolescent sexual behaviors.

While the results of this study are consistent with prior research on the association between early sexual debut and adolescent-perceived relationship quality with parents, my research is different because it goes further by providing a larger and more diverse sample. For example, research conducted by Potard et al. (2014) found that adolescents who experience moderate to high levels of maternal and paternal closeness are less likely to engage in risky sexual behaviors including early sexual debut. However, the study conducted by Potard et al. consisted of seventh- and- ninth grade children in the early

years of adolescence living in France, making it difficult to generalize the results to middle and late adolescents living in the United States. In addition, Wadley (2014) reported a recent study conducted by the University of Michigan that found adolescents who reported higher levels of parental closeness or family cohesiveness were less likely to engage in early sexual debut. With similar limitations, the University of Michigan study focused on eighth-grade Hispanic adolescents, which limited the study not only to Hispanic children, but to the early years of adolescence.

Compared with both studies, my research extends their findings by expanding the adolescent age range from early to late adolescence and by extending the study to adolescents living in the United States from all racial and ethnic backgrounds.

Research Question 3: Do adolescent-perceived parent-child interactions, which include adolescent perceptions of maternal and paternal closeness, monitoring, communication, and involvement, predict the risk of U.S. adolescent males aged 12 to 19 years having unprotected sex without a condom?

I simultaneously examined adolescent perceptions of maternal and paternal closeness, monitoring, communication, and involvement. The results indicated that adolescents' perceptions of maternal and paternal closeness, parental monitoring, communication, and involvement by U.S. adolescent males were significant predictors of condom use. This means that adolescent males, who perceived a higher level of closeness to their mothers and fathers, and higher levels of parental monitoring, communication, and involvement, were more likely to use condoms when engaged in sexual activity. The results of my study were consistent with Bowen's family systems theory. Bowen (1988) believed parents' interactions with their children influence their children's behaviors,

including sexual behaviors (Daire et al., 2012). These results further indicate that a connection exists between parent-adolescent interactions in the family system and adolescent sexual behaviors.

While these results are consistent with prior research on condom use and adolescent males' perceived relationship quality with their parents, my study is different because it goes further by providing far more substantive subject data and by assessing parent-adolescent quality differently. For example, research has shown a link between adolescents' perceptions of maternal and parental closeness (Potard et al., 2014), parental monitoring (Wang et al. 2015), parental communication (Harris et al., 2013), and parental involvement (Ritchwood et al., 2014) and adolescent males' condom use. However, these studies were not diverse like my sample. In addition, the cited studies assessed communication by analyzing it through a sexual lens, exploring only topics related to sex, such as how often the adolescent talks to his or her parents about sex. In contrast, I extended the lens of parent-adolescent communication to include how often the adolescent discusses with parents "when things are troubling you."

In addition, the cited studies measured parental monitoring by assessing parents' knowledge about their adolescents' whereabouts (Wang et al., 2013), while my study extended its grasp of parents' knowledge by asking, "How many of your child's close friends do you know by sight and by first and last name?" Lastly, my study defined parental involvement differently. For example, Purvis et al. (2014) found an association between parental involvement and adolescent males' sexual behaviors, including a positive association between parental involvement and frequency of condom use, yet this study did not set out to recruit a representative sample the way my study has done. The

sample in the prior research was a convenience sample limited to adolescents enrolled in a southeastern university, thereby making it difficult to generalize the results to adolescents outside of this population. My research improves on the findings of Purvis et al. by using archival data and a more representative sample of adolescents aged 12- to 19-years from the United States to examine adolescents' perceptions over time, regardless of whether they are in college. Purvis et al. also defined parental involvement as a multidimensional concept that included parental practices and parental communication. My research assessed parental involvement more specifically, asking, for example, how often parents contacted their adolescent's counselor or teacher and how often they monitored and assisted their teen with homework. Thus, my research assessed parental involvement in the school system unlike that of Purvis et al.

Research Question 4: Do adolescent-perceived parental-child interactions, which include adolescent perceptions of maternal and paternal closeness, monitoring, communication, and involvement, predict the risk of adolescent females aged 12 to 19 years having sex without some form of birth control pill?

I simultaneously examined adolescent perceptions of maternal and paternal closeness, monitoring, communication, and involvement. The results indicated that perceptions of maternal and paternal closeness, communication and involvement by U.S. adolescent females in this age range were significant predictors of having sex without using some form of birth control pill. This means that adolescent females who perceived a higher level of closeness to their mothers and fathers and perceived higher levels of communication and parental monitoring were more likely to use birth control. These results might suggest that adolescent females' perceptions of maternal and paternal

closeness, communication, and parental involvement were more significant for predicting adolescent females' sexual behavior of using birth control than parental monitoring.

My results are consistent with Bowen's family systems theory. Bowen (1978) believed that parents profoundly affect their children's thoughts, emotions, and behaviors. For example, changes in parental interactions with their adolescent are predictably followed by changes in the adolescent's cognitive and emotional functioning (Whittle et al., 2014). This in turn greatly influences adolescent sexual behavioral choices (Secor-Turner et al., 2011).

These results are consistent with prior research on birth control and adolescent females perceived relationship quality with their parents. For example, Potard et al. (2014) found that adolescents who experience moderate to high levels of maternal and paternal closeness were less likely to engage in risky sexual behaviors. In addition, DiClemente et al. (2001), Aspy (2006), and Guilamo-Ramos (2010) found that increased parental-adolescent sexual communication was positively associated with adolescent female use of birth control. However, these studies were narrow in using only selected ethnic groups, unlike my study that was more far reaching by using archival data and a more representative sample of adolescents aged 12- to 19-years from the United States to examine adolescents' perceptions over time, regardless of race. These studies also assessed communication by analyzing it through a sexual lens, exploring only topics related to sex, such as how often the adolescent talks to his or her parents about sex. In contrast, I extended the lens of parent-adolescent communication to include how often the adolescent discusses with parents "when things are troubling you." Research reported by Van Campen and Romero (2012) found that parental involvement predicted greater

birth control use among adolescent females. However, this study was limited to certain ethnic groups such as Mexican adolescents, making it difficult to generalize to adolescents from different racial and ethnic backgrounds. The Van Campen and Romero study also assessed parental involvement differently than in the present study. Thus, my research is much more detailed and improved because it not only extended the earlier research findings by using a more diverse sample, but also included another way to assess parental involvement and added another item for analyzing parent-adolescent communication.

Research Question 5: Do adolescent-perceived parent-child interactions, which include adolescent perceptions of maternal and paternal closeness, monitoring, communication, and involvement, predict the risk of having multiple sex partners in a 12-month period among U.S. adolescents aged 12 to 19 years?

I simultaneously examined adolescent perceptions of maternal and paternal closeness, monitoring, communication, and involvement. The results indicated that adolescent perceptions of maternal and paternal closeness and adolescent perceptions of parental involvement were significant predictors for having had multiple sex partners in the last 12 months. This means that adolescents, who perceived a higher level of closeness to their mothers and fathers, and higher levels of parental monitoring, were less likely to have had multiple sex partners in the preceding 12-month period. These results might suggest that from all the variables examined here, the adolescent perceptions of maternal and paternal closeness, and of parental involvement, more significantly predicted adolescents having had multiple sex partners in the preceding 12 months than the other independent variables examined for the same risky sexual behavior. Family

systems theory and attachment theory can explain these findings. Family systems theory posits that interactions, particularly in the parent-child dyad, create a primary reality for adolescents, which evolves into their perceptions of self, others, and the world (Bell & Bell, 2009). These perceptions, as stated in Bowlby's attachment theory, become an internal working model (Bowlby, 1973) that unconsciously influences adolescent sexual behaviors (Secor-Turner et al., 2011).

While these results are consistent with prior research on multiple sexual partners and adolescents' perceived relationship quality with their parents, my research goes further by providing a more substantive and diverse sample. For example, Potard et al.(2014) found that adolescents who experience moderate to high levels of maternal and paternal closeness were less likely to engage in risky sexual behaviors. Kao and Martyn (2014) found that adolescents who reported higher levels of parental closeness had fewer sexual partners than adolescents who reported lower levels of parental closeness. However, these studies used only selected ethnic groups and narrow age categories such as middle school adolescents living in France or White and Asian Americans, aged 17 to 19 years, living in the United States.

In comparison with these two studies, my research extends their findings by expanding the adolescent age range from the early to the later years of adolescence and by extending the study to adolescents living in the United States from all racial and ethnic backgrounds.

Unlike this prior research, I also defined parental involvement differently. Previous research suggests links between adolescents' perceptions of parental involvement and the likelihood of engaging in early sexual debut, but unlike my study, it

does not link parental involvement with having multiple sex partners (Deptula, Schoeny, & Henry, 2010; Mescke, Bartholomac, & Zentall, 2002; Pearson et al., 2006). The cited prior research also assessed parental involvement as, for example, sharing dinner, shopping, and watching movies with adolescents. My research expands upon, and gives a fresh perspective on the cited research by assessing parental involvement by analyzing how often parents contacted their adolescent's counselor or teacher and how often they monitored or assisted their teen with homework. Thus, my research assessed parental involvement in the school system instead of outside the school environment. These differences in how parental involvement was assessed might explain the discrepancy between the cited research results and the findings of this study. My research findings might indicate that adolescents who are aware of parental involvement in their progress at school may interpret this as their parents caring for them. Thus, parental involvement in the adolescent's school effort might serve as a protective factor against adolescent risky sexual behaviors.

Summary of Results

Parents influence their adolescents' choices with respect to risky sexual behaviors through many facets (CDC, 2013; Ikramullah et al., 2006; Wang et al., 2014; Weinfield et al., 2004). These include maternal and paternal closeness (Hutchinson & Cederbaum, 2010; Scharf et al., 2012), parental monitoring (Guilamo-Ramos et al. 2010), parent-adolescent communication (Harris et al. 2013), and parental involvement (Church & Balland, 2014). Studies have found that maternal and paternal closeness affects adolescents' sexual behaviors differently depending on the gender of the adolescent (Guilamo-Ramos et al., 2012). For example, when adolescent females report feeling close

to their mothers, sexual debut is delayed (Purvis et al., 2014), whereas when adolescent males report feeling close to their fathers, sexual debut is delayed (Ramirez-Valles et al., 2002).

Overall, adolescent females and males who reported feeling close to their parents—no matter which parent—were less likely to engage in risky sexual behaviors. Studies have also shown that parent-adolescent communication about sexual behaviors (Deptula, Henry, & Schoeny, 2010), parental involvement (Deptula et al., 2010), and parental monitoring promote healthy adolescent sexual behaviors and decrease adolescents' involvement in risky sexual behaviors (Wang et al., 2014).

Although the results from my study support some previous research, they differ from other research in many ways. Past findings suggest that the adolescent's perceptions of maternal and paternal closeness, parent-adolescent communication, parental monitoring, and parental involvement were significantly associated with adolescent risky sexual behaviors. My study adds to past findings by using data that defined parent-adolescent relationship quality and parental involvement differently as already mentioned. I also extended the parent communication variable to include not only communication about sexual topics, but also talking about things that are troubling for the adolescent. Furthermore, I extended the parental monitoring variable to include not only the parents' knowledge of their adolescent's whereabouts, but also knowing by sight and being able to identify their adolescent's closest friends by first and last name.

This study also differs in simultaneously examining the independent variables of adolescents' perceptions of maternal/paternal closeness, parent-adolescent communication, parental monitoring, and parental involvement, and the dependent

variables of adolescent sexual risky behaviors including early sexual debut, unprotected sex—sex without contraceptives (condoms or birth control pills), and having multiple sexual partners, to specifically reveal the adolescent perceptions which significantly predict adolescent sexual behavior.

Most studies measured variables individually, which often provides little insight concerning how significant the predictor variables really are (Slinker & Glantz, 2016), thereby not providing a comprehensive view of the factors associated with risky sexual behaviors among adolescents.

For example, conducting a series of simple regression analyses might lead to erroneous conclusions about the contributions of each independent variable because this approach does not account for any simultaneous contributions (Slinker & Glantz, 2016) the way my research does. As a result, an independent variable might appear as a significant predictor when it is not, or conversely, an independent variable might appear unrelated to the response when examined alone but show a significant effect when considered simultaneously with other predictors (Slinker & Glantz, 2016), thereby showing that my research might be more accurate. By examining multiple adolescent perceptions and multiple adolescent risky sexual behaviors simultaneously, a more significant predictor can be revealed; this approach makes my research unique.

The results of my study indicated not only a significant association between adolescents' perceptions and maternal perceptions of the quality of parent-adolescent interactions, but that there is a significant difference between adolescent and maternal perceptions of the quality of interaction in the parent-child relationship. Adolescents

reported lower levels of maternal and paternal closeness relative to what their mothers reported about maternal and paternal closeness.

These findings suggest that parents may be overconfident about relationship quality, and thereby fail to put enough effort into the relationship, which would in turn negatively affect the adolescent's sexual choices. I used attachment theory and family systems theory to further address these phenomena, thus providing another way to address perceived parent-adolescent quality of relationship and adolescent sexual behaviors; this makes my research unique in the literature.

In addition, because I used archival longitudinal data to examine the effect of adolescent perceptions on adolescent sexual choices, the findings for this study were able to capture adolescent-perceived relationship quality with their parents throughout the early and later years of adolescence in a way prior research could not. Most of the prior research cited here was too restricted in age range, focusing only on early or late adolescents, but never both, as in my research.

Furthermore, other studies mentioned in this paper lacked diversity due to using convenience sampling or focusing on adolescents' race and ethnicity as sole factors in predicting whether teens will engage in risky sexual behaviors. My sample size, unlike the rest, was diverse, including all adolescents regardless of race, ethnicity, or age. This diversity added to the existing research by providing results more generalized to adolescents living in the United States.

Limitations of the Study

I used archival data from the NLSY79 Youth and Young Adults survey, a longitudinal project that follows the biological children of the women in the original

NLSY79 survey. I acknowledged the limitations for using archival data. For example, my study did not include fathers' perceptions because the NLSY79 survey did not include fathers. However, my study did capture adolescents' perceptions of paternal closeness to evaluate paternal influences on adolescent sexual choices. I also acknowledged that the archival data may have an inherent self-report bias since this is a topic which evokes sensitivity. For example, the results for research question two must be interpreted with care because only .1% ($n = 4$) of this 12-14 years age group ($n = 595$) reported engaging in sex. This report of sexual activity might be biased. As stated in the sample section, children under 15 were assessed in the presence of their mothers. Whereas, children 15 and over were no longer assessed with their mothers and were interviewed separately. These separate interviews most likely allowed these children to answer more honestly. I addressed any further self-report bias from affecting the results by using archival data from the NLSY79 survey (Myers, 2009). Another limitation of my study is that it did not examine confounding variables and there was the lack of control and exploration for intervening variables such as family income, parents' work hours, and education. I focused on the outcome of the continued interactions in the parent-adolescent system.

I addressed the question of generalizability by using a large sample of the archival data. According to Lee and Baskerville (2003), the larger the sample, the more confidence there will be in the sample's generalizability, that is, its representation of the whole—in this case, all U.S. adolescents 12 to 19 years. For this study, I was interested in the statistical association between parent-adolescent interaction quality and the sexual choices adolescents make. Because I studied adolescents 12 to 19 years, residing with their biological parents, the results of this study cannot be generalized to other age

ranges. Similarly, the study is limited to U.S. culture and its major subcultures, and the results cannot be expected to apply to other cultures.

I encountered an issue with missing data. Missing data occurs in almost all research, even if a study is well-designed (Enders, 2010; Gelman & Hill, 2012; Kang, 2013). The issue of missing data was addressed by conducting imputation for the missing values. The mode values were substituted for the missing data. Once all missing values had been filled in with imputed values, the data set was analyzed using the logistic regression analysis for the completed data set.

Recommendations for Practice

The results of this study indicated that there is a significant difference between adolescent perceptions of the quality of parent-adolescent interactions and maternal perceptions of the quality of these interactions. For the benefit of parents, these results can help establish programs that educate them on the importance of understanding how discrepancies between perceptions of closeness develop between parent and adolescent and how these discrepancies in turn affect adolescent risky sexual behaviors. My research can also be used to educate parents on parenting strategies that evolve as the child grows, thus teaching parents how to adapt their interactions as the child undergoes cognitive and psychosocial emotional transitions. This is critical for parent-child bonding because my research indicates that parent-child closeness is important in enabling adolescents to make healthier sexual choices.

Also, for public officials developing public prevention and intervention programs parent-adolescent perceptions of closeness need to be considered to address adolescent risky sexual behaviors. By doing this, parents and adolescents can join together in an

attempt to reduce adolescent risky sexual behaviors. The adolescents' and parents' perceptions concerning their relationship quality can be addressed, including any differences they may have about their relationships, dating, and having sex.

Adolescents' perceptions of maternal and paternal closeness were significant predictors of early sexual debut. This result can be applied in advocating for programs supporting parents in maintaining close bonds with their children.

Perceptions of maternal and paternal closeness, communication, parental monitoring, and parental involvement by U.S. adolescent males were significant predictors of engaging in sex without a condom. This result can help in developing skill-building programs that place parents and adolescent males in the same learning environment to better promote bonding in the home.

The results of this study can encourage parents to express a deeper interest in their adolescent's friends. This study includes a result indicating that when parents know their adolescent's close friends by sight, it has a favorable effect on adolescent sexual behaviors.

The results of this study can encourage parents to become sex educators and confidants of their adolescents, because it is evident that if parent-adolescent communication includes "talks" when things are troubling, it affects adolescent males' risky behaviors.

The results can also help in developing skill-building programs that promote parents involvement in their adolescent males' academic lives because it is evident from the results that parental involvement in the school system in general is significant.

Female adolescent perceptions of maternal and paternal closeness, female adolescent perceptions of communication, and female adolescent perceptions of parental involvement were significant predictors of having sex without using some form of birth control pill. These results can help develop skill-building programs that place parents and adolescent females in the same learning environment to better promote bonding in the home and promote parental involvement in their adolescents' academic lives. These programs can also encourage parents to become sex educators and confidants of their children, because it is evident from my study's results that adolescent sexual behaviors are favorably influenced by greater parent-adolescent closeness, parent-adolescent communication that includes "talks" when adolescents feel troubled, and parent involvement in the schools.

Adolescents' perceptions of maternal and paternal closeness, and parental involvement were strong predictors of the likelihood of having multiple sexual partners in the preceding 12 months. These results can also help in developing skill-building programs that focus on increasing bonding in the home and parent-adolescent involvement in the schools.

The results obtained in this analysis indicate that programs designed to delay adolescent sexual activity and deter other risky sexual behaviors may benefit from including parents themselves in the effort to foster more general parental engagement in their adolescent lives (Ikramullah et al., 2009), especially in the schools. This is evident in the results of my study, which found that parental engagement affects adolescent risky sexual behaviors.

Implications for Social Change

The rates of unintended pregnancies and STDs among adolescents remain higher in the United States than in other developed nations (Kaiser Family Foundation, 2014). Reducing unintended pregnancy and STD rates among adolescents is crucial for their health and quality of life (CDC, 2011). Parents play the most important role in their adolescents' sexual health, but need resources (CDC, 2014). That is especially so in light of the findings of my study, which indicate that fostering positive parent-adolescent interactions will have a favorable effect on adolescents' sexual behavioral choices.

For this reason, helping parents understand how influential their interactions are with their children is very important. Educating parents on how to adapt their interactions to their adolescents' growing needs might also help foster positive interactions. Placing an emphasis on parent-adolescent interactions and their importance in the adolescent's emotional and psychological development might bring awareness of how to positively influence their child's decision-making processes, especially their sexual choices (CDC, 2014). The plan to develop a better connection between the parent and the adolescent should include a variety of methods for different audiences. A grass-roots effort is needed to make the local community aware of my research through workshops, community events, and therapy sessions. From there, the interest in attachment and family systems will grow to reach a wider audience of mental health professionals who in turn will teach from the findings of this research. The more people embrace this research and its significant findings, the more they will share this information with other colleagues. These conversations should include how to weave the results of my study into therapy plans. Incorporating these results into therapeutic plans can bring about a better

understanding of the effect of parent-child interactions, which play a significant role in the outcome of the adolescent's life.

The results of this study are consistent with attachment theory and family systems theory. The results indicate a connection between perceptions and attachment and indicate that a link exists between parent-adolescent interactions in the family and adolescent sexual behaviors. Once parents understand the implications of closeness and the dimensions of attachment, they may become more involved in their adolescents' lives. As a byproduct of awareness, behavioral change in parental-adolescent interactions at the family level will save the lives of youth, improve their quality of life, and affect their futures. Parents might come to advocate for programs at the local and national levels designed to educate and promote strategies that facilitate the building of positive parent-adolescent interactions. One might promote parent-adolescent bonding programs aimed at reducing risky adolescent sexual behavior, programs that emphasize not only the adolescents' behaviors and perceptions, but also parents' behaviors and perceptions concerning their relationship, including their attitudes about sex. This will have a multiplier effect with respect to my study, because researchers and program developers can use these findings to close the gap between adolescents' and parents' perceptions of interactions—improvement in adolescent sexual choices will follow.

Recommendations for Future Research

The findings of this study suggest that there is a significant need to include fathers' perceptions in addition to mothers' perceptions in future research in analyzing adolescent risky sexual behaviors.

I also recommend a qualitative study to explore and describe the perceptions leading to adolescent risky sexual behaviors. It would be valuable to know the thoughts of both adolescents and parents concerning prevention methods (condoms, birth control pills), and whether these thoughts between adolescent and parent would influence adolescents to abstain from having sex or to practice safer sex. Further research should also explore the similarities and differences in paternal and maternal interactions with adolescent females and males concerning adolescent risky sexual behaviors. Further research should also explore the similarities and differences in paternal and maternal interactions with younger and older adolescents concerning their risky sexual behavior. This will help determine the difference between the younger and older adolescents in terms of the factors most related to risky behaviors. As a result, prevention programs could be tailored to make parents maximally influential in reducing adolescents' risky sexual behaviors.

Conclusion

As demonstrated in my research, adolescent perceptions of their quality of relationship with parents have the most effect on adolescent risky sexual behaviors. This contradicts notions in adolescent research that suggest parents lose their influence due to the adolescent's desires to detach (Lamborn & Steinberg, 1993; Moretti & Peled, 2003). Therefore, establishing programs aimed at empowering parents and adolescents will be useful. These programs can be aimed at helping both parents and adolescents achieve and maintain healthy bonds, which in turn will positively influence interactions and perceptions. With these research results, the goal of reducing adolescent risky sexual behaviors can be achieved by the research community, program developers, and clinical

teams working with families. Reducing adolescent risky sexual behaviors will benefit individuals, families, and the community.

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