ADOLESCENTS' SEXUAL RISK BEHAVIORS: WHAT ROLES DO PARENTAL WARMTH, PARENTAL PSYCHOLOGICAL CONTROL, ADOLESCENT PSYCHOLOGICAL WELL-BEING AND DEMOGRAPHICS PLAY?

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Bailey E. Lathem

Certificate of Approval:

_____	_____
Francesca Adler-Baeder Associate Professor Human Development & Family Studies	Jennifer L. Kerpelman, Chair Professor Human Development & Family Studies
_____	_____
Margaret Keiley Associate Professor Human Development & Family Studies	George T. Flowers Dean Graduate School

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Bailey E. Lathem

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Bailey E. Lathem

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Signature of Author

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Date of Graduation

THESIS ABSTRACT

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Bailey E. Lathem

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Although adolescents' relationships with their parents have been widely studied, how adolescents' relationships with their parents are associated with adolescents' sexuality is one area of research that is beginning to expand. The current study examined aspects of the parent-adolescent relationship as they relate to risky sexual behaviors of adolescents (having sex at an early age, having multiple partners, and less condom use). For the current study, parent-adolescent relationships were measured in terms of parental warmth/support and parental psychological control. This study also examined potential moderating influences on the association between parent-adolescent relationships and adolescent risky sexual behaviors such as adolescent demographics (age, race, gender,

and family structure) and adolescent psychological well-being indicators (depression, relationship anxiety, and self-esteem). Lastly, the relatively recently examined phenomenon in adolescent sexual activity, that of of sexual intercourse outside of dating relationships, also was explored. The current study utilized a secondary dataset containing a sample of 3,031 African American and European American adolescent males and females in grades 9-12 from two cohorts to examine associations among parental warmth/support, parental psychological control, adolescent psychological well-being, demographics, and adolescents' sexual risk behaviors. Multiple regression analysis was used to test the study hypotheses that high levels of warm and supportive parenting and low psychological control would be related to less risky sexual behavior.

Overall it was found that being male, African American, older, and not living with two biological or adoptive parents was positively related to risky sex. Parental warmth/support was found to be a significant and negative predictor of risky sexual behaviors in adolescence, whereas the association between parental psychological control and risky sexual behavior was moderated by gender. Lastly, for the comparison of sex in "hookup" and long term relationship groups, mean level differences were found between gender, family structure, age, relationship anxiety, and self esteem. The "hookup" group (i.e., adolescents having sex outside of a relationship) consisted of younger adolescents, and was comprised of a greater percentage of females and adolescents from family structures that were not headed by two biological or adoptive parents. Those "hooking up" also reported more relationship anxiety and lower self-esteem than adolescents in the long-term relationship group. Implications for future research are discussed.

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I'd like to thank Dr. Margaret Keiley and Dr. Francesca Adler-Baeder for serving on my committee and providing me with their knowledge and guidance throughout this process. Lastly, I would like to thank two of my very important mentors, Dr. Jennifer Kerpelman and Dr. Francesca Adler-Baeder, for encouraging my confidence and helping me to grow professionally throughout my time as a graduate student and colleague in training.

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TABLE OF CONTENTS

LIST OF TABLES

LIST OF FIGURES

I. INTRODUCTION

During adolescence, many aspects of the parent-adolescent relationship change as adolescents begin to rely more on peers for support (Furman, Simon, Shaffer, & Bouchey, 2002). With an increase in autonomy and time spent with peers, adolescents are more engaged in activities within their social networks and less engaged in activities with their parents. However, parents are still important (Schneider & Younger, 1996). During adolescence, research indicates an increase in interest in the opposite sex and involvement in romantic relationships.

Romantic relationships may or may not include the initiation of sexual intercourse, but most adolescents begin to explore their sexuality within these types of relationships (Connolly & Furman, 2000). Studying behaviors within adolescents' romantic relationships, especially risky sexual behaviors, and the individual and family level factors associated with these behaviors, is important because of the physical, emotional, and social consequences of sexual risk-taking.

Adolescents face many risks when they engage in sexual behavior such as increased likelihood of contracting sexually transmitted infections (STIs), as well as the possibility of unintended pregnancies and emotional costs (CDC, 2005). Recent data gathered from the Alan Guttmacher Institute (2006) indicated that, while overall rates of sexual activity among adolescents between the ages of 15 and 17 in the United States have declined by roughly 10% within the past 15 years, more than half of males and

females report having had sexual intercourse by the age of 18. Trends show that males report more sexual activity earlier than females do, but females are just as likely to engage in sexual activity as their male counterparts are by the time they reach the age of 18. The Alan Guttmacher Institute also reported that approximately nine million STIs occur among adolescents and young adults each year, and although pregnancy rates among 15-19 year olds have declined since the 1990's, adolescent pregnancy rates in the United States are still much higher than other developed countries such as Japan, as well as parts of Western Europe. Of all teen pregnancies each year, approximately 80% are unplanned and one fourth of these are terminated by abortion (Alan Guttmacher Institute, 2006). As societal norms change, it will be important to examine the complexity of adolescent romantic relationships as they relate to sexual behaviors within and outside of dating relationships. Sex outside of dating and marital relationships (sometimes referred to as "hooking up") has been examined, to a limited extent, in adult samples, but also should be examined during adolescence given that current research findings suggest an increase in this type of risky sexual behavior among youth (Manning, Giordano, & Longmore, 2006).

A number of factors, especially at the individual and family level, have been used to explain adolescents' risky sexual behaviors. One particularly important family factor is the quality of parent-adolescent relationships. Two distinct but related sub-constructs under the realm of parent-adolescent relationship quality (warmth/support and psychological control) are often used to describe the relationships between parents and adolescents (Barnes & Farrell, 1992). Psychological control refers to behaviors that

attempt to control another's thoughts or beliefs, such as manipulation or intimidation. Psychological control has been shown to be related to decreased levels of psychological adjustment in adolescents, more internalizing problems such as depression and anxiety, and in some studies, deviant or externalizing behavior problems (Barber, 1996; Steinberg, 1990). In contrast, parental warmth and support (i.e. affection, openness, psychological freedom), have been shown to be related to multiple positive adolescent outcomes, such as higher self-esteem, and lower levels of both externalizing and internalizing problem behaviors. Although parent-adolescent relationship quality includes other aspects such as behavior control and parental monitoring, past literature has examined dimensions of the parent-adolescent relationship (i.e., warmth and support, psychological control, behavior control, monitoring) separately, as well as together (Barber 1996; Barber, Olsen, & Shagle, 1994; Barnes & Farrell 1992). For the current study, the psychological qualities of the parent-adolescent relationship (i.e., the adolescent feeling supported and feeling psychologically controlled by the parent) are the most relevant to adolescents' sexual risk behaviors, as these behaviors typically occur when parents are not physically present.

The parent-adolescent relationship has been studied extensively in terms of relationship quality and communication (Aspy, Vesely, Oman, Rodine, Marshall, McLeroy, 2006; Barber, Maughan, & Olsen, 2005), however, research on adolescents' romantic relationships has just begun to grow (Collins, 2003). Contrary to previous ideas that dating relationships have no or little impact on later close relationships that adolescents experience as adults, these relationships have been shown to be significant for the development of relationship skills, a sense of support and companionship, and

overall psychological well-being (Shulman & Kipnis, 2001). Romantic relationships also contribute to romantic self-concept and identity development (Montgomery, 2005) and may contribute to overall self-worth and romantic competence. Finally, it is important to note that youth are engaging in sexual intercourse at younger ages (CDC, 2005), and many teens are becoming sexually active before the end of high school (Guttmacher Institute, 2006; Slicker, Patton, & Fuller, 2004).

The current literature further suggests that gender differences exist in the sexual behaviors in which adolescents engage within romantic relationships (e.g., use of protection from STIs, sex with multiple partners, and age at which first sexual intercourse occurs) (Giordano, Longmore & Manning, 2006; Rodgers, 1999; Steinberg, 2002). Although, females between the ages of 15 and 19 are equally likely, on average, to report currently engaging in sexual intercourse as males are (35% of females compared to 33% of males), females are far less likely to report using condoms for protection (55% of females compared to 70% of males). Adolescent males are more likely to report having more than four partners over their lifetime than females are (12% of females compared to 17% of males) and more males (9%) than females (4%) report having had sexual intercourse before the age of 13 (CDC, 2005).

Most research has sampled white middle-class adolescents, but there is a small and growing literature addressing the sexual behaviors of African American youth. The research is unclear as to whether adolescents' race moderates the associations between parental warmth/supportive behaviors or parental psychological control and risky sexual behaviors (Zimmer-Gembeck & Helfand, 2008). What has been shown in the limited

research is that African American adolescent males tend to have more sexual partners than African American females do, and African American adolescents as a whole report having more sex than their European American counterparts do (CDC, 2005). Whether the association between parent-adolescent relationship quality and sexual risk behavior is moderated by race/ethnicity needs further examination.

Little is known about the influence of age on the association between parental warmth and support or parental psychological control and adolescent sexual risk behaviors. Although some research examining parent-adolescent interactions as they relate to communication reveals that communicating about sexual issues with adolescents at an early age is associated with less risky sexual behavior (Somers & Paulsen, 2000), more research is needed to examine whether the adolescents' age moderates associations between parent-adolescent relationship quality (i.e., warmth/support and psychological control) and adolescent risky sexual behaviors. The literature suggests that warm and supportive parenting deters adolescents from having sex at earlier ages, but it is important to examine other risky sexual behaviors such as multiple partners and lack of condom use (Zimmer-Gembeck & Helfand, 2008). Past literature also suggests that adolescents from two-parent biological homes are less likely to engage in risky sexual behavior than are adolescents in other family structures, however, having a father figure present in the home is associated with less risky sex regardless of family structure (Pearson, Mueller, & Frisco, 2006). Also, adolescents who experience marital conflict associated with their parents' divorce are likely to engage in sexual behaviors at earlier ages while those with single parents are likely to model their parents' romantic relationships, including sexual

behaviors (Chase-Lansdale, Cherlin, & Kiernan, 1995; Newcomer & Udry, 1994). Although family structure and adolescent sexual behavior are linked, some researchers argue that other factors related to the context of the family environment (i.e., parenting styles, parental involvement) are more significant than just family form itself (Davis & Friel, 2001).

In addition to the associations of demographic factors and parent-adolescent relationship quality with adolescent risky behaviors, aspects of adolescent psychological well-being also have been found to play a role. Psychological well-being factors such as the adolescent's levels of depression, relationship anxiety, and self esteem are associated with both adolescent romantic relationships and the relationship quality between adolescents and their parents (Longmore, Manning, Giordano & Rudolph, 2004; Paul, Fitzjohn, Herbison, & Dickson, 2000; Slicker, Patton & Fuller; 2004).

Depression and depressive symptoms in adolescents usually include such internalized behaviors as intense feelings of sadness, extreme lack of self-worth, loss of interest in activities, and difficulty in completing tasks (Longmore, Manning, Giordano, & Rudolph, 2004). This definition is similar to that of the Center for Epidemiologic Studies Depression Scale (CES-D), which frequently is used to measure depression or depressive symptoms in non-clinical populations (Radloff, 1977). Research suggests that depression also may be linked to both the parent-adolescent relationship and the adolescent-romantic partner relationship, especially for females (Doyle et al., 2003; Williams, Connolly, & Segal, 2001). Although depression in adolescents has been related to breaking up with a romantic partner (Monroe & Rohde, 1999), little has been

examined regarding adolescents' depressive symptoms and adolescent risky sexual behavior. The limited research that has been conducted suggests that adolescent depression and risky sexual behaviors are linked, where depression is associated with an earlier age at sexual debut, and more sexual partners (Hallfors, Waller, & Ford, 2004; Waller, Hallfors, Halpern, Iritani, Ford, & Guo, 2006; Welsh, Grello, & Harper, 2003).

In the context of adolescent romantic relationships, relationship anxiety is frequently associated with feeling worried, concerned, or avoidant in close relationships (Reese-Weber & Marchand, 2002). Glickman and La Greca (2004) concluded that relationship anxiety consisted of social avoidance or distress when dealing with dating partners or members of the opposite sex, and fear of negative evaluation when faced with heterosocial situations or situations with dating partners. Parents play a vital role in helping socialize children to function in later close relationships, yet research has not addressed the links between parent-adolescent relationship quality and relationship anxiety in adolescent romantic relationships.

Finally, self-esteem often has been included in the study of adolescent relationships. Self-esteem generally is measured with Rosenberg's (1965/1989) self-esteem scale. This scale asks questions related to social and self-acceptance and feelings of being proud, cared for, and appreciated by close companions and family members. Self-esteem has been associated positively with feeling confident in a relationship and also the initiation of sexual behaviors among male adolescents (Robinson, Holmbeck & Paikoff, 2007). Also, it is interesting to note that while some research argues that males tend to show lower self-confidence and lower self esteem related to basic areas of

romantic relationships such as communication, power, and intimacy (Giordano, Longmore & Manning, 2006), males tend show positive associations between self-esteem and engagement in sexual behaviors, especially the initiation of first sexual intercourse (Robinson, et al., 2007). Females, on the other hand, tend to have more positive self-esteem than males regarding the previously mentioned relational aspects of romantic relationships and less positive self-esteem regarding physical aspects, especially regarding sexual behaviors.

In summary, much has been learned from recent research addressing adolescent romantic relationships as they relate to parent-adolescent relationship quality (in terms of warmth/support and psychological control), adolescent psychological well-being and adolescent demographic factors. When parents are more psychologically controlling of their adolescents, adolescents are more likely to engage in riskier behaviors. When parents have warm and supportive relationships with their adolescents, adolescents tend to engage in less risky behaviors. Based on the literature, males and females appear to have somewhat different behavioral patterns regarding the age at which they first have sex, the number of partners they have sex with, and whether they use condoms for protection. Males tend to report having sex at younger ages but with more use of protection, while overall, females tend to start having sex at later ages but with not as much use of protection. A few studies have shown that that for males, having sex is associated with higher self esteem, yet being female generally is associated with lower self-esteem and higher rates of depression when having sex at earlier ages.

Current research is lacking in terms of racial and ethnic background differences regarding adolescent sexual behaviors. Although African American males report more sexual activity than African American females or European American youth between the ages of 15 and 18 do, more research is needed regarding African American adolescents and risky sexual behaviors and how parent-adolescent relationship quality is associated with risky sexual behavior for African American youth.

The main purpose of this study is to expand on research regarding adolescent romantic relationships and the relationships that adolescents have with their parents to further understand why some adolescents engage in risky sexual behaviors and how these behaviors may be related to parent-adolescent relationship quality while also considering the influence of demographic and psychological well-being factors. Thus, the primary question to be addressed is, "What impact does parental warmth/support and psychological control have on adolescents' risky sexual behaviors and how might demographic and psychological well-being factors directly affect risky sexual behaviors and/or moderate associations between parental warmth/support, parental psychological control, and adolescents' risky sexual activity?" Specific risky sexual behaviors to be addressed include having sex at a young age, not using condoms for protection, and having sex with multiple partners. Taking this area of literature one step further, the current study also seeks to address an additional sexual risk behavior of having sex outside of a dating relationship, "hooking up." Comparisons will be made between adolescents who are sexually active within a long-term (12 months or more) dating relationship, and adolescents who are sexually active outside of a dating relationship in

regard to parental warmth/support, parental psychological control, demographics, psychological well-being, and risky sexual behaviors.

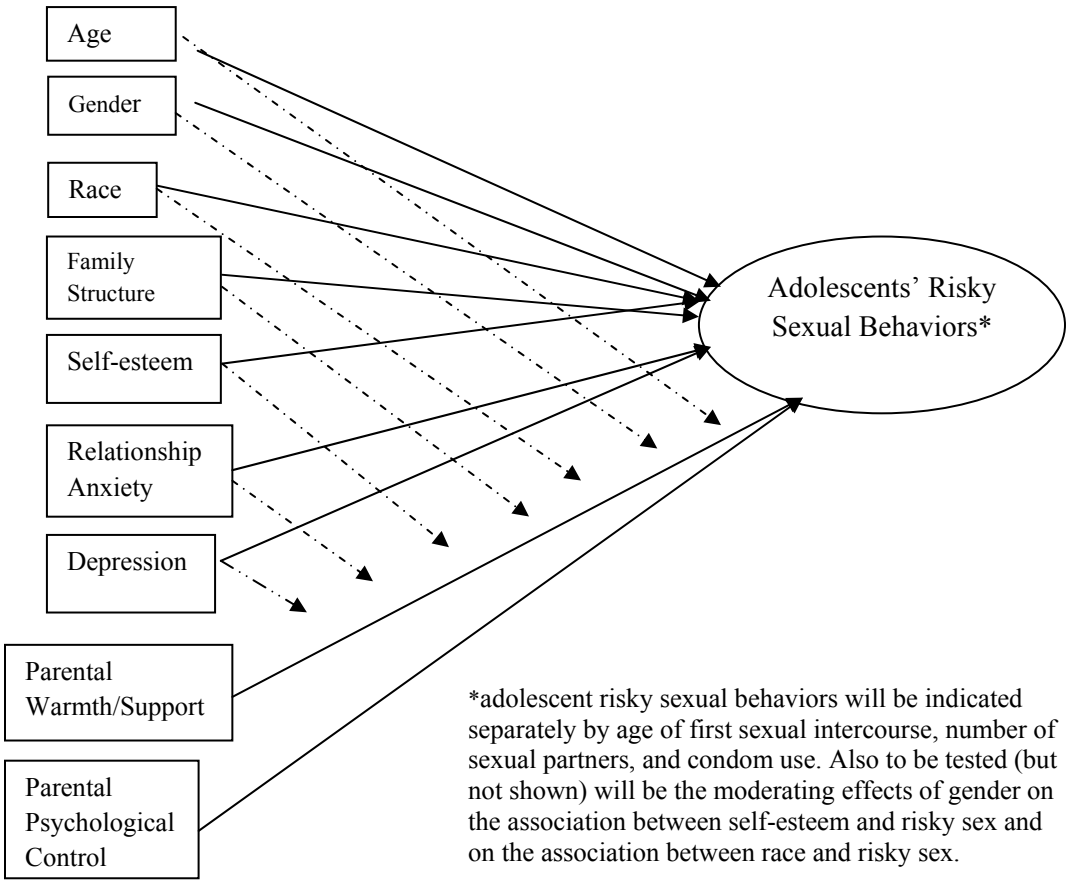
Figure 1 depicts the study hypotheses. In this conceptual model, it is expected that parental psychological control will be positively related to risky sexual behaviors and parental warmth/support will be negatively related to the risky sexual behaviors. Males, African Americans, and adolescents who do not live with both of their biological or adoptive parents will show greater engagement in risky behaviors than will females, European Americans, and adolescents living with both biological or adoptive parents. It also is predicted that older adolescents will engage in more risky sexual behaviors than will younger adolescents due to the positive association that has been found between age and engagement and sexual activity. Depression and relationship anxiety will show positive associations with risky sexual behaviors, whereas self-esteem will show a negative association with risky sexual behaviors for females, but a positive association for males.

Also shown in Figure 1 (dashed lines) are the anticipated moderated associations between parent-adolescent relationship quality and adolescent risky sexual behavior according to the demographic and psychological well-being factors. Specifically, it is expected that associations between parental warmth/support, parental psychological control, and risky sexual behavior will be stronger for female adolescents, younger adolescents, and adolescents not living with both of their biological or adoptive parents. Although specific hypotheses cannot be made for race, the potential for moderating the

association between parent-adolescent relationship quality and risky sexual behaviors will be explored.

It also is predicted that the association between the parent-adolescent relationship quality variables and the risky sexual behaviors will be moderated by the psychological well-being variables. It is not clear from the literature whether a compensatory or enhancement effect will be found. If a compensatory relationship exists, significant interaction effects will show that under the condition of low self-esteem, high depression, and/or high relationship anxiety, the association between parent-adolescent relationship quality and risky sexual behavior will be stronger (and negative) than under the condition of high self-esteem, low depression, and/or low relationship anxiety. In contrast, if an enhancement effect is supported, the significant interaction effect will show that under the condition of high self-esteem, low depression, and/or low relationship anxiety, the association between parent-adolescent relationship quality and risky sexual behavior will be stronger (and negative) than under the condition of low self-esteem, high depression, and/or high relationship anxiety.

Figure 1. Associations between Parental Warmth/Support, Parental Psychological Control, Adolescents' Psychological Well-being and Demographic variables, and Adolescents' Risky Sexual Behaviors



Finally, to examine "hook up" sex, separate analyses will be conducted to compare those who are in relationships that are at least twelve months long ("long-term relationship group") who had sex in the past month with those who had sex in the past month but were not in a relationship at the time ("hook up group"). The two groups will be compared in their demographic makeup, psychological well-being, parental warmth/support and parental psychological control, and risky sexual behaviors.

II. REVIEW OF THE LITERATURE

In adolescence, individuals increase their autonomy within the parent-adolescent relationship and start to forge more intimate relationships with other adolescents in their social networks. Many physical, emotional, and cognitive changes occur and parents and adolescents must adjust to these changes. During this time most adolescents increase their interest in the opposite sex, which often leads to an adolescent's first romantic relationship experiences. Adolescents often experience their first sexual encounters within these romantic relationships, and may engage in behaviors that help them to define their sexual boundaries. The quality of the parent-child relationship is important when considering adolescent romantic relationship development. Poor quality parent-adolescent relationships have been associated with adolescents' unhealthy close relationship patterns (Doyle, et al., 2003; Soenens, Vansteenkiste, Duriez, & Gossens, 2006). These patterns may be detrimental to adolescents, especially when they are associated with adolescents' engagement in risky sexual behaviors (Ream & Savin-Williams, 2005). Other factors that may directly affect risky adolescent sexual behavior, as well as moderate associations between parent-adolescent relationship quality and risky adolescent sexual behavior include the adolescent's level of psychological well-being and demographic factors.

The first section of the review of literature addresses adolescent sexual behavior with special attention paid to risky sexual behavior. The next section discusses two aspects of the construct of parent-adolescent relationship quality (psychological control and warm/supportive parenting) as they relate to adolescent romantic relationships. This section is followed by a review of the associations between parent-adolescent relationship quality and adolescent risky sexual behavior. Literature regarding adolescents' psychological well-being (relationship anxiety, depression, self-esteem) and demographic factors (age, race, gender, family structure) as they pertain to parental warmth/support, parental psychological control, and adolescent sexual behavior is reviewed within each of the sections.

Adolescent Romantic Relationships and Sexual Behavior

Research in the field of adolescent sexuality and dating has not been extensively examined by researchers. Previously, research on intimate relationships and sexual behaviors was considered from the standpoint of adult behavior, beginning in young adulthood, and ignored the idea that adolescents are also sexual beings and are capable of forming meaningful romantic relationships. Past researchers suggested that the adolescent romantic relationship was not significant in the sense that it did not directly contribute to premarital relationships later in life (Collins, 2003). As more scientists have discovered, these relationships can provide a training arena in which adolescents may learn valuable relationship behaviors (e.g. good communication skills, empathy, overall relationship competence), as well as less desirable behaviors (e.g. verbal and/or physical aggression, risky sexual behavior).

Sexual risk behaviors have become a primary focus for researchers in the field of adolescent development (The Alan Guttmacher Institute, 2006; Fergus, Zimmerman, & Caldwell, 2007). Research examining these behaviors includes early sexual onset (before the age of 12), persistent lack of contraceptive use (i.e., condoms, birth control pills), and number of sexual partners (CDC, 2005; Guttmacher Institute, 2006). Based on data compiled by the Centers for Disease Control and Prevention, and the Alan Guttmacher Institute, adolescents between the ages of 14 and 18 are engaging in slightly less sexual intercourse than in previous years, but use of protection in the form of condoms also has slightly decreased. Overall, African American males report higher levels of sexual intercourse compared to other adolescents, and African American adolescents report more sexual activity than their European American counterparts. Of particular concern for researchers and practitioners in the field is the prevalence and consequences of risky adolescent sexual activity.

Risky sexual behaviors in adolescence. Research addressing risky sexual behaviors such as sexual debut at an early age, having multiple partners, or not using protection (condoms) has gained much attention within the last decade. The occurrence of sexual activity among the adolescent population is associated with greater risk of contracting sexually transmitted infections (STIs) as well as unintended pregnancies. According to the Centers for Disease Control and Prevention's National Youth Risk Behavior Survey (NYRBS; 2005), almost half (47%) of all high school students ages 15-19 have had sex. Among African American males, 75% report having had sex by the time they reach 19 years of age. According to the NYRBS, 14% of adolescents also report

having had sex with four or more people in their lifetime, and 34% report being currently sexually active. As reported in the NYRBS, "currently active" teens were those who had sexual intercourse with at least one person within the last three months of when the survey was given.

The NYRBS also distinguishes between race and gender. For European American males, 42% report having ever had sex and 30% were currently sexually active at the time of the survey. Forty four percent of European American females reported ever having sex, while 33% reported being currently sexually active. Of these adolescents, more males (16%) reported having more than 4 partners than females (12%) did, and African American males also reported more partners than African American females did (39% and 19% respectively). Overall, these findings show that, on average, African American youth are engaging in more sexual activity and report having a greater number of partners compared to European American adolescents.

Because of the changing nature of adolescent sexual behavior in today's society, it is important to understand the context of the romantic relationship in which such activity occurs. The meanings that adolescents attach to their relationships with dating partners has changed as societal norms have changed, leaving many questions as to why teens are engaging in risky sexual behaviors. Research that examines adolescent sexual behavior both within and outside of dating relationships could greatly benefit the field of research on adolescent risk behaviors, adolescent romantic relationships, and adolescent development more generally.

Recently, sexual intercourse outside of dating relationships has become increasingly common among adolescents (Manning et al., 2006). Although this type of relationship in the study of adolescent sexual behaviors, often referred to as "hook-up" sex, has rarely been examined in the literature, it was addressed in a current study conducted by Manning et al. (2006). In their study of 413 sexually active adolescents between the ages of 12-17, Manning, et al. concluded that many of the adolescents, both males and females, reported having non-dating sexual relationships (*n*=250). The population sampled for this study was gathered from the Toledo Adolescent Relationship Study (TARS) and was part of a larger study that included 1,316 adolescents. In the Manning et al. study, African American and Hispanic adolescents were oversampled; socioeconomic status was representative of the population.

Overall the investigators found that 61% of the sexually active teens in their sample, primarily males (68%) reported having sex outside of a dating relationship. The authors noted that, rather than having non-dating sexual relationships with strangers or people they did not know well, many teenagers reported having sex with close friends of the opposite sex, or an ex-girlfriend or boyfriend. In examining the length of the relationship prior to sexual activity, Manning et al. found that on average, teens reported knowing the person they had sex with for relatively the same length of time in both dating and non-dating relationships. Of the adolescents who reported engaging in sexual activity outside of a romantic relationship, 43% reported having sex with someone after knowing them a very short period of time (days to one month). Approximately 10% reported that they began having sex outside of a dating relationship with a partner they

knew for a time period of approximately one year, and about one third of respondents who reported that they began having sex outside of a romantic relationship knew their sexual partner for over a year. Females reported knowing their non-dating sexual partners for a longer time than males did before engaging in sexual activity. Females also reported a greater age difference between themselves and their non-dating (and dating) sexual partners; their partners tended to be older. Fifteen percent of all adolescents who reported having sex outside of a romantic relationship were four or more years apart in age from their partners. In this case, males rarely reported having sex with someone older than themselves in both the dating and non-dating sample. The authors noted that those teens who reported having sex with someone with whom they were not in a romantic relationship often reported wanting to begin dating that person afterwards. For both males and females, roughly a third of the teens who reported having sex with a non-dating partner felt closer to this person after sex (76% of girls and 57% of boys felt closer to their dating partner after having sex). This might be a problem for adolescent psychological health in terms of self-esteem and depression if one partner wants to pursue a romantic relationship with a sexual partner who does not want to be in a romantic relationship.

Both demographic factors and well-being factors appear to influence adolescent sexual activity. Past research indicates that males and females may interpret relationship meanings differently, and females are more likely to report psychological distress (e.g., depression, anxiety, and low self esteem) associated with the onset of sexual intercourse (Doyle, Brendgen, Markiewicz, & Kamkar, 2003; Manning et al., 2006). Research also

suggests that for females, failure to self disclose and form intimate bonds with close friends and romantic partners can set the female adolescent on a developmental trajectory towards depression (Williams, Connolly, & Segal 2001). For males, it has been suggested that sexual intercourse is related positively to self-esteem, especially for African American adolescents (Manning, et al. 2006; Robinson, Holmbeck, & Paikoff, 2007). Age is also important to consider. Early steady dating (beginning at the age of 13) has been related negatively to psychological well being, especially for female adolescents (Doyle, et al., 2003). Research also suggests that residing in a single-parent home can influence an earlier age at sexual debut (Blum, Beuhring, Shew, Bearinger, Sieving, & Resnick, 2000; Davis & Friel, 2001).

The link between adolescent sexual behavior and internalizing problems such as relationship anxiety, depression and low self-esteem is an area of research that is beginning to expand. As mentioned earlier, African American youth report having more sex than their European American counterparts and are increasingly becoming more susceptible to negative consequences such as STI's, HIV, and unplanned pregnancies (CDC, 2005). Robinson et al. (2007) followed a sample of low-income urban African American families over a period of approximately seven years to look at family and mental health as they relate to sexual risk behaviors leading to STI's or HIV during the onset of adolescence. The researchers assessed participants at three different time points; first when the adolescents were in 4^{th} or 5^{th} grades (average age was 11), again two years later when the adolescents were in 7^{th} or 8^{th} grade, and finally when the participants were between 16 and 19 years old. The sample consisted of 315 African American males and

females from urban, low-income, single parent households. This study used time three data only because it provided the most in-depth view of sexual behaviors. Risky sexual behavior was measured by age of sexual debut, consistency of condom use, and number of partners. Reasons for having sex were measured using a scale created for the study. Items included were self-esteem enhancement, to brag or prove something to others, revenge, love or intimacy, self-gratifying/pleasure seeking, financial gain, power/control between partners, and fear of loss.

Consistent with previous research, they found that African American females had fewer sexual partners than males did over the course of the study and began having sex at a later age, but reported using condoms less than African American males did. The researchers also found that self-esteem endorsing reasons for engaging in sexual intercourse significantly mediated the relationship between gender and number of sexual partners. Specifically, being male was related to greater self-esteem, which in turn was related to having more sexual partners. Robinson, et al. (2007) also found that males were more likely to report that having sexual intercourse enhanced their level of self-esteem. The association between self-esteem enhancing reasons for having sex and risky sexual behavior (more partners, less use of protection), was moderated by gender, showing positive associations for males and negative associations for females.

In another study that examined the effects of self-esteem and depression on the age at which adolescents first engage in sexual intercourse, Longmore, et al. (2004) looked at depressive symptoms and low self-esteem in order to answer questions about the relationship between such well-being factors and age of sexual onset, and whether the

effect depends on the age of the adolescent at his or her first experience with sexual intercourse. The researchers also looked at gender as a factor related to the onset of sexual intercourse and self-esteem and depression. In this study, the sample consisted of 7,965 sexually active adolescent males and females from grades 7-12 from waves 1 and 2 of the Add Health dataset.

Overall, it was found that self-esteem, a protective factor for females, had less of an impact on sexual onset for males and females than depressive symptoms did. Longmore, et al. also found that depressive symptoms did not interact with self-esteem, which indicates that the effect of depressive symptoms on sexual behavior is not different according to the adolescents' self-esteem levels. The researchers concluded that for older males, having a higher level of self esteem was positively related to when they first began to have sex. For females, depressive symptoms were linked negatively to age of sexual onset, especially for girls who had engaged in their first sexual intercourse at a young age. Depressive symptoms were found to be more predictive of European American females' than African American females' age at sexual debut.

In their examination of age differences related to adolescent sexual risk behaviors, Fergus, Zimmerman, and Caldwell (2007) explored trajectories of sexual risk behaviors in a sample of adolescents and young adults across eight time periods. The majority of these adolescents (80%) were African American. When the first wave of data was collected, the participants were 14 years of age. Data were collected through an intensive interview process every year for 4 years and then after a one-year break, four more waves of data were collected each year. After completion of the 8th wave of data, participants

were well into young adulthood (age 23). A sexual risk behavior composite variable was created using three previously studied behaviors: frequency of sexual intercourse, number of sexual partners within the last year, and frequency of condom use with reported sexual partners. Associations between gender, race, and age with sexual risk behaviors were examined at each time point.

Consistent with past research, Fergus, et al. found that sexual intercourse increased over time throughout adolescence. Adolescents engaged in less risky sexual intercourse as they moved into young adulthood, yet condom use and frequency of sexual intercourse increased. Age was found to be a major factor in the initiation of sexual behaviors and males compared to females were more likely to engage in risky sex in the early high school years, but females ultimately surpassed male risky sexual behavior at the end of high school. In terms of race, African Americans engaged in risky sex at earlier ages than European Americans did, but the rate of risky sex in the European American group grew at a faster rate and eventually overtook the African American group during early adulthood. The Fergus, et al. study revealed that sexual behavior during adolescence is not only more important than once believed by researchers, but also more complicated than previously thought.

In summary, research has examined adolescent risky sexual behaviors from many angles. Different behaviors such as frequency of condom use, number of partners, frequency of sexual intercourse, and age of sexual onset have been the main variables examined. Demographic and well-being factors also matter when explaining adolescent sexual activity, and these factors may interact with other factors, such as parent-

adolescent relationship quality, in the complex explanation of adolescent risky sexual behavior.

Parental Warmth/Support, Psychological Control, and Adolescent Romantic Relationships.

The relationships that adolescents have with their parents are some of the most crucial relationships they will form throughout their lives. Parents have the responsibility to nurture and socialize their children when they are young, and to appropriately adjust their parenting practices as their children mature. During adolescence, parent-child relationship quality has many important implications for development of romantic relationships, and interactions between parents and their adolescents may be either beneficial or harmful to the formation and maintenance of adolescents' romantic relationships. Parental psychological control and parental warmth/support are two ways of measuring parent-adolescent relationship quality (Barber, Maughan, & Olsen, 2005; Barnes & Farrell, 1992). Adolescents need both warmth and support from parents and the psychological freedom (i.e., low psychological control) to explore their own ideas (Steinberg, 2005).

In previous studies of parent-adolescent relationship quality, it has been established that many sub-constructs contribute to the overarching idea that the relationship between parents and their adolescents are important to examine. While some studies focus on the construct of parent-adolescent relationship quality as a whole, other researchers study certain aspects of the construct (Barber 1996; Barber, Olsen, & Shagle, 1994; Barnes & Farrell 1992). Parental psychological control, behavior control, and

warm/supportive behaviors are three main areas of the larger construct that have been studied extensively. Most research on parent-adolescent relationships has focused on relationship quality in terms of parental warmth and support (Barber, et al., 2005; Kan, McHale, & Crouter, 2007; Longmore, et al., 2001; Rodgers, 1999). Parental warmth and support in the context of parent-adolescent relationships includes any ongoing behavior carried out by a parent or parental figure that contributes to the well-being and nurturance of the adolescent. These behaviors include affection, companionship, nurturance, approval, openness, and the ability to let their adolescent know that they are there for them at all times (Adams & Laursen, 2007; Rodgers, 1999). In contrast to parental warmth and support, parental psychological control refers to a stifling of social and psychological maturation in the form of encouraging (or discouraging) independent thinking or self-discovery, or manipulation of adolescents to fulfill parental goals (Adams & Laursen, 2007; Barber, et al., 2005; Rodgers, 1999). Finally, behavioral control involves the setting of behavioral limits on adolescents' activities (e.g., curfews, permitted and non-permitted activities, etc.).

Barber, Maughan, and Olsen (2005), in their longitudinal study, examined relationship quality within the parent-adolescent relationship in terms of psychological control, behavior control, and warmth and supportive behaviors. They measured parental psychological control and parental warmth and support to examine whether either type of quality was stable across time within the parent-adolescent relationship. The sample consisted of 933 families with adolescents, half of which were male. Seventy-one percent were European American, and 16% were Hispanic. Almost half (46%) of the participants

were Mormon. There were two cohorts, beginning in fifth and eighth grades, and both were followed for a total of four years. Self-report surveys were administered in classrooms in the first year of the study and then mailed to students' homes in the following years. For parental support, the researchers measured acceptance through items related to parental involvement in leisure activities, active communication skills, and physical expression such as smiling, laughing, and hugging. For parental psychological control, they measured items related to psychological manipulation, rejection of ideas, and overall lack of acknowledgement of the adolescents' identity. Behavioral control was measured in terms of knowledge and monitoring of adolescent behaviors, as well as limit setting.

Barber, et al. (2005) concluded that over the period of adolescence, parental warmth and support remained stable across time. They also found that parental psychological control, as it was reported by both adolescents and their parents, tended to change over the course of adolescence. Perception of psychological control was low in the second year of the study (when adolescents were between 10 and 14 years old) followed by an increase in the third and fourth years, but generally returned to the initial level or slightly higher in the last year within the older cohort (at 18 years of age). For behavioral control, however, Barber, et al. found that knowledge/monitoring and limit settings significantly declined over the course of the study.

For the current study, the findings from Barber, et al. are useful in understanding psychological control and parental support within the parent-adolescent relationship. Although much less is known about parental psychological control than parental support,

findings from this study seem to suggest that psychological control tends to increase around middle adolescence and return to lower levels as adolescents move toward young adulthood.

In their study of the changing perceptions of parental authority according to adolescents and parents in a sample of 95 African American families, Smetana, Crean, and Campione-Barr (2005) examined psychological control as a major aspect of parental authority. The authors defined parental psychological control based on previous literature in the area of parent-adolescent relationship quality, specifically using the work of Steinberg and Barber. According to Steinberg (1990) and Barber (1996), psychological control indicates that parents try to control their adolescents' thinking in ways that are detrimental to their development. These psychologically controlling behaviors displayed by parents may include intimidation tactics and discouragement of self-expression, autonomy, and/or individuality. Smetana, et al. found that African American adolescents and their parents were likely to agree that having sex was an issue where parents should have psychological control.

In summary, research suggests that the relationship between adolescents and their parents typically is an important relationship for laying the groundwork that can determine whether adolescents choose to make healthy or unhealthy decisions about their romantic relationships. Gender differences in parent-adolescent relationship quality have been noted in the literature. The dimensions of warmth/support and psychological control have been found to be particularly important, where psychological control often has been found to be detrimental to adolescent well-being, and parental warmth/support has been

associated with helping adolescents to make better decisions regarding their relationships with romantic partners. For males especially, parent-adolescent relationship quality in terms of psychological control has shown stronger associations with risky decision making in romantic relationships (Zimmer-Gembeck & Helfand, 2008).

Parental warmth/support, psychological control, and adolescents' risky sexual behaviors. The relationships adolescents have with their parents have been linked to adolescent sexual behaviors (Pearson, Muller, & Frisco, 2006; Ream & Savin-Williams, 2005; Rodgers, 1999). Factors such as interaction style, adolescent psychological well-being, and sexual debut have been associated with the quality of the relationship between adolescents and their parents or parental figures (Aspy, et al., 2007, Longmore et al., 2004; Pearson, et al., 2006; Ream & Savin-Williams, 2005; Rodgers, 1999). The quality of the parent-adolescent relationship might affect the onset of sexual activity in the dating relationship, as well as choices adolescents make once they have already begun to engage in sexual activities. The following studies address the developing area of research concerning associations between the choices adolescents make regarding their sexual behaviors and their relationships with their parents.

Rodgers (1999) examined several aspects of the parent-adolescent relationship as they relate to sexual behaviors of the adolescent. In this study, the sample consisted of 350 adolescents in grades 9-12. The participants were part of a larger study (N=2,257) and had indicated on a self-report survey that they had engaged in sexual intercourse and were living in a two-parent family. In this sample, roughly half (49%) were female, and

93% were European-American. Both parental support and parental psychological control related to parental use of guilt were measured. Specifically examined was adolescent psychological autonomy, as well as self-discovery. It was found that for female adolescents, having parents who attempt to control them through guilt was positively correlated with sexual risk behavior. Further, parental psychological control mattered most for female adolescents' engagement in risky sexual behavior.

When Aspy, et al. (2007) looked at adolescent sexual behavior and parent-adolescent interaction, they randomly selected inner-city households to take part in the Healthy, Empowered, and Responsible Teens of Oklahoma City (HEART of OKC) study. One adolescent and one parent were randomly selected to participate resulting in a sample of 1,083 parents and their adolescents ages 13-17 (average age of 15). About half (51%) of the adolescents were female, and about half (49%) were of European American decent; African American and Hispanic adolescents made up the remaining sample. Constructs measured in this study included general family communication, and family communication about sexual behavior and sexuality education. Included in the measures for family communication were talking about problems, being supportive, setting clear boundaries, having high expectations, and understanding the adolescent's point of view, all of which coincide with behaviors that exemplify a supportive parent. Youth risk behaviors were measured in terms of number of partners, current sexual activity, and use of protection when having sex.

From self-reports of both parents and adolescents, the investigators found that relationships in which parents lacked warmth and support for their adolescent (in terms of

talking about problems, understanding the adolescent's point of view, having high expectations, loving them and wanting good things for them, and setting clear rules) were related to the adolescent having sex during their high school years. They also found among the sexually active adolescents who reported warm and loving interactions with their parents, a lower number of sexual partners reported by these adolescents. It could be argued when adolescents perceive parents as caring and able to adequately provide for their adolescents emotional needs, adolescents delay engaging in sexual activity and engage in sex with fewer partners. Those who do not receive such warmth may be prone to initiating sexual behavior early and to have a higher number of sexual partners due to less closeness with family members and lower levels of parental monitoring.

Similarly, Ream and Savin-Williams (2005) found a reciprocal effect in terms of interactions between parents and their adolescents after the adolescent became sexually active. Using data from the National Longitudinal Survey of Adolescent Health, they measured sexual activity from the first two waves. For the purposes of their research, the sample consisted of 10,407 adolescents, roughly half (52%) of which were males. During wave 1, adolescents were between the ages of 12 and 18, and wave 2 was conducted one year later. The researchers measured overall parental closeness, perceived parental care, satisfaction with communication style with parents, and overall relationship satisfaction.

Strong associations were found between increased sexual activity (more partners and/or more frequent sexual intercourse) and negative interactions with parents (lack of shared activities, lack of discussion of personal problems, and arguing about the adolescent's behavior). As youth reported more negative interaction with parents they

also reported engaging in more sexual activities, and the increase in sexual activity was related to later increases in more negative, problem-focused interactions between parents and their adolescents. They also reported that for parent-adolescent relationships that were not as close (less shared activities and more problem-focused), adolescents were more likely to engage in sexual activity earlier, or continue engaging in sexual behaviors if they were already sexually active. Another study similar to this in sample size (n=10,873) and demographic composition also confirmed findings for parental support and adolescent sexual behavior (Ream, 2006). The adolescent's perception of a lack of parental support further aggravated the negativity within the parent-adolescent relationship and was hypothesized to partially explain associations between adolescent depression and sexual activity.

The previous two studies examined sexual onset and activity as they relate to interactions between parents and their adolescents, which raises questions about the links between parent-adolescent interaction, adolescent sexuality and adolescent psychological well-being. To examine how early steady dating was related to the parent-child context, Doyle et al. (2003) studied a small sample of 244 early adolescent males and females, ages 11 to 13 in terms of their adjustment in early dating relationships. Adolescent adjustment in early dating relationships was measured in terms of depressive symptoms, self-esteem, self-reported delinquency, drug use, school grades, and sexual activity. Predictors of adjustment in early dating relationships included involvement in romantic relationships, security of attachment to mother and father, and parenting style. The researchers found negative associations between adjustment and involvement in a

romantic relationship for females whose parents exhibited more authoritarian parenting styles, characterized by high levels of conflict and high levels of psychological control. Specifically, more females than males who were involved in a serious romantic relationship at a younger age reported more depressive symptoms when the parent-child relationship was more controlling.

Overall the literature addressing parent-adolescent relationships and adolescent sexuality suggests that adolescents' relationships with their parents play a crucial role in shaping adolescent decision-making and behavior. Adolescents who have parents who are psychologically controlling are more likely to engage in risky sexual behavior. Also, females with psychologically controlling parents tend to report lower levels of self-esteem, higher levels of depression, and earlier onset of sex. Adolescents who report having warm and supportive parental relationships, on the other hand, are more likely to report that they waited to have sex and practice safer sex behaviors such as fewer partners and more condom use than those who do not have supportive relationships with their parents.

Research has examined parent-adolescent relationship quality in terms of three areas: parental psychological control, parental warmth/support, and parental behavioral control. While some studies examine all three areas together (Barber, Maughan, & Olsen, 2005) some have looked at each separately, or have examined a combination of the three areas (Barber, 1996; Barber, 2002; Barber, Bean & Erickson, 2002; Stattin & Kerr; 2000). Based on previous work and the research questions in the current study, it could be argued that examining different aspects of the construct separately is useful in

understanding the nature of parent-adolescent relationships. Examining the more psychologically-driven aspects of this construct, namely parental psychological control and warmth/support, may be most relevant to adolescent behaviors with their dating partners that typically occur when parents are not present. Further, the psychological dimensions of the parent-adolescent relationship would be expected to have the strongest association with adolescent psychological well-being.

Goals of the Current Study

The primary goal of the current study is to understand how the parent-adolescent relationship is related to adolescents' romantic relationships. Specifically this study examines the links between two aspects of parent adolescent relationship quality (parental warmth/support, parental psychological control) and adolescents' sexual risk behaviors. The sample for the current study includes both African American and European American youth attending public high schools from diverse socioeconomic backgrounds (ranging from low income to upper middle class). This study will extend past research by examining how adolescents' risky sexual behaviors are associated with parent-adolescent relationship quality in conjunction with demographic and psychological well-being variables.

III. METHODS

Sample and Procedure

A secondary data set was used for the current study. The data were collected during Time 1 of the first two years of a prevention program conducted in 2006 and 2007 that targeted adolescents in grades 9-12 (N=3,787). The current sample consisted of participants from two combined cohorts, one completing the survey in 2006 and the other completing the survey in 2007. For both cohorts, the data used for the current study were collected prior to implementation of the intervention. Surveys were created by the project's Principal Investigators and administered by teachers in family and consumer science classrooms across the state of Alabama. Completed surveys (containing code numbers only) were placed in a self-addressed postage paid envelope and mailed to the researchers. A total of 3,787 students completed and returned the questionnaire. Seventy-five percent were female, the average age of participants was 16, and the racial/ethnic makeup of the sample consisted of 60% European American adolescents, 33% African American adolescents, and an additional 7% who reported their ethnicity as something other than African American or European American. In order to address our research questions, only European American and African American adolescents were included in the analysis sample, which reduced the sample size to n=3,409 participants.

In the reduced sample, 67% were European American and 33% were African American. In addition, females comprised 77% of the reduced sample while 23% were male. Participants who did not answer questions related to risky sexual behavior (n=174) were then removed which reduced the sample to 3,235. After removing participants who did not answer the risky sexual behavior questions, participants who did not answer one or more sets of questions for predictor variables (parental warmth/support, parental psychological control, depression, relationship anxiety, and self-esteem) and participants who were missing demographic data (gender, race, age and family structure) were also removed for these analyses (n=189).

Additionally, 18 participants were removed from analyses because they had inconsistent answers on items related to sexual behaviors (i.e., they either answered "yes" when asked whether they had ever had sex before, but then reported in subsequent sexual behavior questions that they had never had sex before, or they answered "no" when asked if they had ever had sex, but then reported something other than "never had sex" on the risky sex items). After removing all participants who were missing data for one or more variables or had questionable answers, a total of 3,031 participants (n=1,554 non-virgins; n=1,477 virgins) were used to complete analyses for the current study.

In the reduced sample the average age of participants was 16.2 years; 22% were male, and 78% were female. In terms of race, 31% were African American, and 69% were European American; for family structure, 59% reported living with both biological parents, and 41% reported living in a stepfamily, a single-parent family, or another family form not specified.

A chi square test comparing the analysis (n= 3,031) and non-analysis (n= 694 for whom some demographic data were available) samples was conducted to examine demographic differences between the two groups. For race, due to selection, the non-analysis sample contained participants who had ethnic backgrounds other than African American or European American. When the analysis and non-analysis samples were both reduced to African American and European American participants and compared using Chi Square, there was a significant difference, χ^2 (1, N=3,477) = 49.411, p<.001. The non-analysis sample was almost equally divided by race (European American=52%; African American=48%); the analysis sample had slightly more than twice as many European Americans =69% as African Americans=31%. For family structure, the analysis and non-analysis samples did not differ in the proportion of youth from two parent biological/adoptive family structures and those from other types of family structures, χ^2 (1, N=3,556) = .001, p=.974. The analysis and non-analysis samples did differ in terms of gender composition, χ^2 (1, N=3,684) = 7.175, p=.007; the non-analysis sample was 27% male and 73% female; the analysis sample was 22% male and 78% female. Lastly, the analysis and non-analysis samples did not differ by age (t=1.46, p=.14).

Measures

Demographic variables. Race/ethnicity (African American=0, European American=1), age, gender (male= 0, female =1), and family structure (1= biological two-parent family, 0=all other family structures) were used as predictor and moderator variables. For the family structure variable, the percentage of participants living in two-

parent biological or adoptive families was 41% for the full sample, and 31% for the non-virgin sample. The "all other family structures" category consisted of 25% and 27% of stepfamilies for the full and non-virgin samples respectively, and 26% and 32% of single parent families for the full and non-virgin samples respectively. (see Appendix A-1).

Adolescents' risky sexual behaviors. The dependent variables for this study were individual risky sexual behaviors, as well as a composite risky sex variable that is the sum of three risky sex variables: age of sexual debut (9 years old or younger to 18 years old or older), number of partners (1 to 6 or more), and frequency of condom use (never, less than half the time, about half the time, more than half the time, always). Age of sexual debut was recoded to reflect "years since exposure to sexual intercourse by subtracting age at sexual debut from current age. Controlling for age, a higher score indicates greater risk. For number of partners, having a higher number of sexual partners indicates more risk. Frequency of condom use was reverse scored for the creation of the risky sexual behavior composite variable where less condom use indicates greater risk. Therefore, the risky sex sum was equal to frequency of condom use (reverse scored), years since exposure to sexual intercourse, and number of sexual partners. Reliability analysis revealed that as a composite variable, these items retain high internal consistency ($\alpha = .89$) (see Appendix A-2).

In order to determine whether sex occurred outside of a dating relationship, adolescents who reported having sex in the last thirty days but did not report being in a dating relationship before or after that period were selected to comprise the "hookup" sex

group. The dating group was comprised of sexually active youth who report being in the same dating relationship for 12 months or more.

Parental warmth and support. Parental warmth and support served as one indicator of parent-adolescent relationship quality (see Appendix A-3). Adolescents' perceptions of parental support were measured using five items for each subscale from the Quality of Relationship Inventory (Pierce, Sarason, & Sarason, 1991; α=.83-.91). Examples of warmth and support include being able to count on a parent's (or parent figure's) honesty, help, and advice. Items were responded to on a 4 point scale ranging from 1= "Not at all" to 4= "Very Much." Reliability in the current sample for parental warmth and support was high (α=.89).

Parental psychological control. Parental psychological control served as a second indicator of parent-adolescent relationship quality (see Appendix A-4). Adolescents' perceptions of parental psychological control were measured using five items for each subscale from the Quality of Relationship Inventory (Pierce, Sarason, & Sarason, 1991; α=.83-.91). Examples of psychological control include parents or parent figures interrupting the adolescent, trying to change the adolescents' personal views, or constantly telling the adolescent how to feel. Items are responded to on a 3-point scale ranging from 1(not like them) to 3 (a lot like them). Reliability in the current sample for parental psychological control (α=.80) was high.

Relationship Anxiety. The anxiety dimension of the Experiences in Close Relationships scale (Brennan, Clark, & Shaver, 1998) was used to assess dating relationship anxiety (see Appendix A-5). Each of the nine questions was scored on a 5-

point Likert-type scale ranging from 1 (strongly disagree) to 5 (strongly agree). Brennan et al. found good reliability for the anxiety dimension (α = .91). Example items include: "I worry that romantic partners won't care about me as much as I care about them," and "I worry a fair amount about losing my partner." Good reliability was found for the relationship anxiety scale in the current sample (α=.80).

Depression. Depression was measured using seven items from the Center for Epidemiological Studies scale for depression (CES-D; see Appendix A-6) Sample items include "I did not feel like eating," "I felt lonely," and "My sleep was restless," and assess feelings/symptoms within the past seven days of the participant answering the questionnaire. Answers were measured on a 4-point scale [(1="rarely or none (less than a day)," 2= "some or a little (1-2 days)," 3= "occasionally or moderately," 4= "most of the time (5-7 days)"]. Good reliability was found for the current sample on the depression scale (α=.77).

Self-Esteem. Self-Esteem was measured using five items from the Rosenberg Self-Esteem Scale (Rosenberg, 1965; Silber & Tippett 1965; α=.86; see Appendix A-7) with sample items such as, "I feel that I have a number of good qualities," "I take a positive attitude towards myself." Answers were measured using a 5-point likert scale (1= "strongly disagree" to 5= "strongly agree"). Reliability for the self-esteem scale in the current sample was high (α=.89).

IV. RESULTS

Preliminary Analyses

Preliminary analyses were conducted to examine the central tendencies and distributions of the continuous variables in this study for the full sample and the virgin and non-virgin subsamples. Independent samples t-tests were employed to compare the means of the virgin and non-virgin subsamples. Chi square tests were used to compare the two subsamples for the dichotomous variables of race, gender, and family structure. Examination of the variable distributions indicated minor skewness for the continuous predictor variables, with skewness values ranging from -.94 to .80 (SE ranging from .044 to .064). The dependent variables of condom use (skewness = 1.37), number of partners (skewness = 1.71), age at sexual debut/years of exposure (skewness = 1.67), and overall risky sex (skewness = 3.34) were found to be moderately skewed for the subsample of non-virgins, with a SE of .062 for each risky sex behavior. The risky sex variables were transformed using a square root transformation. The skewness was reduced; skewness for the transformed distributions ranged from -.99 to .11.

Means and standard deviations were examined for parental warmth/support, parental psychological control, relationship anxiety, depression, self-esteem, condom use, number of sexual partners, years since exposure to sexual intercourse, and the risky sex composite variable (see Table 1).

Table 1. Means and standard deviations (SD) for all continuous variables for the overall sample and both subsamples of adolescents who have been sexually active in their lifetime (non-virgins) and those who have not been sexually active (virgins) in their lifetime.

	Full Sample (n = 3,031)		Non-Virgins (n = 1,554)		Virgins (n=1,477)	
	M	*SD*	*M*	*SD*	*M*	SD
Age	16.2	1.26	16.5	1.19	15.8**	1.22
PWS_1	3.06	0.83	2.98	0.85	3.15**	0.85
PPC_2	1.75	0.57	1.82	0.58	1.67**	0.56
Relationship Anxiety	2.75	0.82	2.76	0.86	2.74	0.77
Depression	2.00	0.66	2.06	0.67	1.93**	0.64
Self Esteem	4.03	0.87	4.04	0.90	4.03	0.84
Risky Sex	3.67	4.31	7.16	3.34	--	--
# of Partners	--	--	2.67	1.71	--	--
Condom Use	--	--	3.76	1.37	--	--
Years since exposure to sexual intercourse	--	--	2.25	1.67	--	--

[1] PWS denotes parental warmth and support
[2] PPC denotes parental psychological control
** $p < .01$, virgins significantly different than non-virgins

For the subsample of participants who reported they were virgins (n=1,477), the average age was 15.8 years old. The sample was 20% male and 80% female; 25% were African American and 75% were European American. About half (51%) reported living with both biological parents, while all others (49%) reported living in a stepfamily, a single parent family, or some other family structure not specified. The subsample of non-virgin participants (n=1,554), had an average age of 16.5 years, was 23% male and 77% female; 37% of the sample was African American and 63% was European American; 31% of participants reported living with both of their biological parents, whereas 69% reported living in a stepfamily, single-parent family or some other family structure not specified.

The average scores for the parental warmth variable indicated considerable warmth in the parent-adolescent relationship, and on average, a low amount of parental psychological control. For relationship anxiety, average scores were moderate, whereas average scores for depression were low and for self-esteem were high.

T-test results that compared equality of means for the virgin and non-virgin subsamples on all continuous variables showed mean score differences for adolescent age, parental warmth, parental psychological control, and depression; the non-virgin subsample was older, reported less parental warmth and more parental psychological control, and scored higher on depression than did the virgin sample. For the dichotomous demographic variables, chi square tests showed that race ($\chi^2(1, N= 3{,}031)= 49.04$, $p<.000$) and family structure ($\chi^2(1, N=3{,}031)=1.19$, $p<.000$) were significantly different for virgins versus non-virgins. The non-virgin sample had a higher percentage of African Americans and adolescents from family structures that were not headed by both of their biological or adoptive parents. Gender was not significantly different between the virgin and non-virgin groups ($\chi^2(1, N= 3{,}031)=3.45$, $p=.065$).

After comparing the means for the virgin and non-virgin subsamples, a direct logistic regression analysis was performed with virgin/non-virgin status as the outcome, and a set of nine predictors that included the demographic, adolescent well-being, and parent-adolescent relationship variables. This analysis was performed in order to determine whether the set of predictor variables would reliably distinguish between the adolescents of virgin and non-virgin status. All predictor variables were entered into the equation at the same time. Overall, the set of predictors showed a modest capacity to

correctly predict a respondent's group classification. The model explained 18% of the variance; however the Hosmer and Lemeshow test for goodness of fit did not indicate a good fitting model (χ^2 (8, N=3031) =24.790, p=.002). It should be noted that chi square is sensitive to sample size and likely to be significant in larger samples. It was found that 63% were correctly classified in the virgin group, and 68% were correctly classified in the non-virgin group (the overall percent correct was 65.5%). Therefore, the model accurately classified approximately the same percentage of individuals in the virgin and non-virgin groups. Table 2 shows the regression coefficients, standard error, Wald statistics, odds ratios and 95% confidence intervals. According to the Wald criterion, all demographic variables (except gender, p=.06), parental psychological control, and adolescent depression predict virgin/non-virgin status.

Examination of the bivariate associations between virgin/non-virgin status and the significant predictors found in the logistic regression revealed only modest associations (correlations ranged from .10 to .27) indicating that non-virgins were more likely to be African American, older, and from family structures other than biological or adoptive two-parent homes. Being non-virgin also was associated with more parental psychological control and higher depression.

Table 2. Logistic Regression determining whether the set of predictor variables would reliably distinguish between the adolescents of virgin and non-virgin status.

					95.0% C.I.for EXP(B)	
	B	S.E.	Wald Test (z-ratio)	Exp(B) (Odds Ratio)	Lower	Upper
Gender [a]	.181	.096	3.547	1.199	.993	1.447
Race [a]	.406*	.087	21.647	1.500	1.265	1.780
Age	.475*	.033	203.980	1.609	1.507	1.717
Family Structure [a]	.725*	.082	78.076	2.064	1.758	2.424
PWS[1]	-.048	.056	.738	.953	.853	1.064
PPC[2]	.315*	.082	14.632	1.370	1.166	1.609
Relationship Anxiety	-.044	.052	.717	.957	.863	1.060
Depression	.248*	.068	13.311	1.281	1.121	1.463
Self-esteem	.021	.049	.187	1.021	.929	1.123
Constant	-9.081	.654	192.935	.000		

[1] PWS denotes parental warmth and support
[2] PPC denotes parental psychological control
[a] Because gender, race, and family structure are all dichotomous variables, a positive correlation indicates female for gender; European American for race; or a two-parent biological or adoptive family structure.
* $p < .05$, ** $p < .01$

Prior to conducting the multiple regression analyses used to test the hypotheses for the current study, the zero order correlations were examined in order to assess whether the hypothesized associations existed at the bivariate level. Correlations were calculated for the full sample and, for the non-virgin and virgin samples.

For the full sample (n=3,031; see Table 3), gender and age were negatively related indicating that being female was associated with being younger. Parental psychological control and parental warmth were negatively correlated. Both relationship anxiety and depression correlated negatively with parental warmth, and positively with

parental psychological control. Self-esteem correlated positively with parental warmth/support and negatively with parental psychological control.

Table 3. Zero-Order Pearson Correlations for Full sample (n=3,031).

Variables	1	2	3	4	5	6	7	8	9	10
1. Gender$_a$	1.000									
2. Race$_a$	-.013	1.000								
3. Age	-.059**	-.038*	1.000							
4. Family Structure$_a$	-.018	.204**	-.018	1.000						
5. PWS$_1$	.008	.008	-.009	.160**	1.000					
6. PPC$_2$	.031	-.027	.003	-.116**	-.511**	1.000				
7. Rel. Anxiety	.022	.052**	-.038*	-.005	-.148**	.235**	1.000			
8. Depression	.108**	.043*	.001	-.080**	-.233**	.328**	.375**	1.000		
9. Self-esteem	.055**	-.172**	.056**	-.009	.271**	-.178**	-.210**	-.241**	1.000	
10. Risky Sex	-.117**	-.151**	.332**	-.194**	-.125**	.134**	.017	.101**	-.016	1.000

$_1$ PWS denotes parental warmth and support
$_2$ PPC denotes parental psychological control
$_a$ Because gender, race, and family structure are all dichotomous variables, a positive correlation indicates female for gender; European American for race; or a two-parent biological or adoptive family structure.
* $p < .05$, ** $p < .01$

Self esteem was negatively correlated with both relationship anxiety and depression. Depression and relationship anxiety were positively related to each other, and depression was positively related to both gender and race, therefore being female and European American was associated with higher levels of depression. Age was negatively related to relationship anxiety therefore, on average, being older was associated with less relationship anxiety. Gender was positively related to both depression and self-esteem, meaning that on average, being female was related to more self esteem and more depression. Race was positively related to both relationship anxiety and depression but negatively related to self-esteem. Therefore, on average, being African American was

related to lower self-esteem, higher levels of depression and higher levels of relationship anxiety, whereas being European American was related to higher self-esteem, less depression and less anxiety.

The sum of the risky sexual behaviors was positively related to age, parental psychological control, and depression, therefore older adolescents as well as those reporting high levels of parental psychological control and higher levels of depression reported having more risky sex. Risky sex was negatively related to gender, race, and family structure; therefore African Americans, males, and adolescents not living in a two-parent biological or adoptive family report higher levels of risky sex. Risky sex was also negatively correlated with parental warmth/support.

In the sample of virgins (see Table 4), gender was negatively related to race, age, and family structure (male participants were more likely to be European American, older, and come from family structures headed by both biological or adoptive parents, whereas females were more likely to be African American, younger, and come from families that were not headed by both biological or adoptive parents), and family structure was positively related to race (adolescents from families headed by both biological or adoptive parents were more likely to be European American). Parental warmth/support and parental psychological control were negatively related to each other. Family structure was positively associated with parental warmth/support and negatively associated with parental psychological control. Adolescents from families headed by both biological or adoptive parents experienced, on average, more parental warmth/support and less parental psychological control. Relationship anxiety was

negatively related to parental warmth and support, and positively related to parental psychological control. Relationship anxiety was not significantly related to any of the four demographic variables. Depression was positively related to gender and negatively related to family structure; depression also was negatively related to parental warmth/support, but positively related to both parental psychological control and relationship anxiety. Self-esteem was positively related to parental warmth/support, but negatively related to parental psychological control, depression, relationship anxiety, and race.

Table 4. Zero-order Pearson Correlations for virgin group (n=1,477).

Variable	1	2	3	4	5	6	7	8	9
1. Gender$_a$	1.000								
2. Race$_a$	-.063*	1.000							
3. Age	-.062*	-.002	1.000						
4. Family Structure$_a$	-.057*	.209**	.019	1.000					
5. PWS$_1$	.018	.013	-.011	.182**	1.000				
6. PPC$_2$	.035	-.042	.019	-.111**	-.525**	1.000			
7. Relationship Anxiety	-.047	.035	-.003	-.005	-.138**	.217**	1.000		
8. Depression	.076**	.008	.043	-.098**	-.257**	.346**	.357**	1.000	
9. Self-esteem	.038	-.143**	.005	.047	.296**	-.178**	-.221**	-.281**	1.000

1 PWS denotes parental warmth and support
2 PPC denotes parental psychological control
a Because gender, race, and family structure are all dichotomous variables, a positive correlation indicates female for gender; European American for race; or a two-parent biological or adoptive family structure.
* $p < .05$, ** $p < .01$

Finally for the non-virgin subsample (n=1,554; see Table 5), the bivariate associations indicated that the two parent-adolescent relationship variables were

correlated negatively with each other. Age and parental psychological control were negatively correlated indicating that, on average, parental psychological control was higher for younger adolescents. Both relationship anxiety and depression were negatively correlated with parental warmth and positively related to parental psychological control. Self-esteem was positively correlated with parental warmth and negatively correlated with parental psychological control. Relationship anxiety was positively correlated with depression and negatively correlated with self-esteem, and depression and self-esteem were negatively correlated.

Table 5. Zero-order Pearson correlations for all predictor variables and individual risky sexual behaviors, non-virgin sample (n=1,554)

Variables	1	2	3	4	5	6	7	8	9	10	11	12	13
1. Gender[a]	1.000												
2. Race[a]	.020	1.000											
3. Age	-.042	-.006	1.000										
4. Family Structure[a]	.007	.161**	.058*	1.000									
5. PWS[1]	-.006	-.019	.045	.107**	1.000								
6. PPC[2]	.035	.014	-.082**	-.076**	-.487**	1.000							
7. Rel. Anxiety	.079**	.069**	-.081**	.001	-.155**	.249**	1.000						
8. Depression	.143**	.095**	-.092**	-.027	-.198**	.297**	.390**	1.000					
9. Self-esteem	.070**	-.196**	.104**	-.062*	.253**	-.182**	-.201**	-.210**	1.000				
10. Exposure	-.291**	-.181**	.344**	-.082**	-.077**	.026	-.060*	-.031	-.010	1.000			
11. # partners	-.193**	-.119**	.186**	-.070**	-.108**	.074**	.024	.041	-.030	.500**	1.000		
12. Condom use	-.060*	-.105**	-.039	.005	.030	-.049	-.061*	-.099**	.067**	-.074**	-.079**	1.000	
13. Risky Sex	-.220**	-.109**	.283**	-.079**	-.106**	.071**	.007	.046	-.048	.794**	-.488**	.787**	1.000

[1] PWS denotes parental warmth and support
[2] PPC denotes parental psychological control
[a] Because gender, race, and family structure are all dichotomous variables, a positive correlation indicates female for gender; European American for race; or a two-parent biological or adoptive family structure.
* $p < .05$, ** $p < .01$

Gender was positively correlated with relationship anxiety, depression and self-esteem indicating that on average, higher levels of relationship anxiety and self-esteem were associated with being female. Race was positively correlated with relationship anxiety and depression, indicating that being European American was associated with higher levels of relationship anxiety and depression. Race was negatively correlated with self-esteem, indicating that being African American was associated with lower self-esteem. Age was negatively associated with relationship anxiety and depression, but positively related to self-esteem.

The risky sexual behavior composite variable was negatively correlated with gender and race, and family structure; therefore males, African Americans and adolescents not living in biological two parent homes were more likely to engage in risky sex. Age was positively correlated with risky sex; older adolescents report more risky sexual activity. For the two parenting variables, parental warmth/support was significant and negatively related to risky sex and parental psychological control was significant and positively related to risky sex.

Finally the specific risky sex variables also were examined. For percent of condom use, gender and race were both negatively correlated, indicating that males and African Americans reported more condom use. All three adolescent psychological well-being variables were significantly correlated with condom use; relationship anxiety and depression showed a negative association, whereas, self esteem was positively correlated with condom use. Both of the remaining risky sexual behavior variables (years since

exposure to sexual intercourse and number of sexual partners) were negative and significantly correlated with condom use.

For number of sexual partners, all demographic and parenting variables showed significant correlations. Gender, family structure, and race were each negatively correlated with number of sexual partners, therefore males, African Americans, and adolescents not living in a two-parent biological or adoptive family reported having more sexual partners. Age was positively correlated with number of partners, meaning that older adolescents reported having more sexual partners. Parental warmth/support was negatively correlated with number of sex partners, whereas parental psychological control showed a positive correlation.

The years since first exposure to sexual intercourse variable was correlated significantly with all demographic variables. Males, African Americans, older adolescents and adolescents from non-two parent homes were significantly associated with more years since exposure to sexual intercourse. Parental warmth and years since exposure were negatively related, but parental psychological control was not associated with exposure. Relationship anxiety showed a significant negative correlation with years since exposure to sexual intercourse.

Testing the Hypothesized Direct Effects Model

The primary sample of interest for testing the direct effects and moderation models was the subsample of sexually active youth (i.e., the non-virgin sample). Both risky sex as a composite variable, and the individual risky sex variables of condom use, years since first exposure to sexual intercourse, and number of sexual partners served as

the dependent variables (The individual risky behaviors were examined given past gender differences that have been found). The parent-adolescent relationship variables, adolescent well-being variables, and adolescent demographic variables served as predictors in all of the models tested. For comparison purposes, the model was tested in the full sample and the non-virgin sample when predicting the risky sex composite outcome variable (for full sample results, see Appendix C). Appendix B contains tables showing regression analyses for the non-virgin sample using the transformed dependent variables.

In the non-virgin subsample, all of the demographic variables and the parental warmth/support variable were significant predictors of risky sexual behavior. Being male, African American, older, and from a family structure not headed by both biological or adoptive parents was associated with more risky sex behaviors. More parental warmth was associated with less risky sexual behaviors. For the psychological well being variables, both depression and self esteem were significant predictors of risky sexual behavior; risky sex was predicted by higher depression and lower self-esteem. With all predictors in the model, approximately 16% of the variance was explained (see Table 6).

When years since exposure to sexual intercourse was the outcome, all demographic variables as well as parental warmth/support were significant predictors, but parental psychological control and all adolescent psychological well being variables were not significant. With all predictors in the model, approximately 24% of the variance was explained. When number of sexual partners was the outcome variable, gender, race, age, parental warmth/support, and depression were all significant predictors, and explained

10% of the variance. When frequency of condom use was the outcome variable, race, age, and depression were significant predictors and explained 2% of the variance (see Table 6).

When considering each of the individual risky sex behaviors separately, the set of predictors is most effective in explaining variability in years since exposure to sexual intercourse, indicating that males, African Americans, older adolescents, and adolescents from family structures not headed by both biological or adoptive parents have more years since exposure to sexual intercourse. Furthermore, a higher level of parental warmth and support was associated with fewer years since exposure to sexual intercourse. A similar pattern was seen among the predictor variables but they explained less variance in number of partners. Fewer variables were significant predictors of the percent of condom use and little variance was explained; males, younger adolescents, and adolescents experiencing less depression reported greater frequency of condom use.

Table 6. Regression analysis predicting overall risky sexual behavior and individual risky sexual behaviors in the non-virgin group.

Variable	Risky Sex Composite Variable			Number of Partners			Years since Exposure to Sexual Intercourse			Frequency of Condom Use		
	B	*SE B*	β	*B*	*SE B*	β	*B*	*SE B*	β	*B*	*SE B*	β
Gender	-1.69	.19	-.21***	-.78	.10	-.19***	-1.08	.09	-.27***	-.17	.08	-.05
Race	-.76	.17	-.11***	-.42	.09	-.12***	-.60	.08	-.18***	-.26	.07	-.09***
Age	.83	.07	.30***	.28	.04	.20***	.48	.03	.35***	-.07	.03	-.06*[a]
Family Structure	-.49	.17	-.07**	-.18	.09	-.05[b]	-.23	.08	-.07***[a]	.07	.08	.02
PWS_1	-.28	.11	-.07**	-.16	.06	-.08***	-.14	.05	-.07***	-.01	.05	-.01
PPC_2	.19	.16	.03	.09	.08	.03	.05	.08	.02	-.05	.07	-.02
Relationship Anxiety	-.02	.10	.00	.03	.05	.02	-.08	.05	-.04	-.03	.04	-.02
Depression	.40	.13	.08**	.16	.07	.06***	.10	.06	.04	-.14	.06	-.07*
Self-Esteem	-.18	.09	-.05*	-.04	.05	-.02	-.08	.05	-.04	.06	.04	-.04
R^2	.164***			.105***			.242***[c]			.026***		
Adjusted R^2	.159			.100			.238			.021		
F (9, 1553)	33.671***			20.230***			54.908***			4.633***		

[1] PWS denotes parental warmth and support
[2] PPC denotes parental psychological control
[a] not significant when transformed dependent variable used
[b] significant when transformed dependent variable used
[c] reduced to .21 when transformed dependent variable used
* $p < .05$, ** $p < .01$, *** $p < .001$

When the multiple regression analyses were conducted using the transformed dependent variables, similar results were found (see Appendix B). At the main effect level, there were no differences when predicting overall risky sexual behaviors. A few minor changes occurred when the transformed individual risky sex variables were included as the dependent variables. When years since exposure to sexual intercourse was transformed and included as the outcome variable, parental warmth was no longer a significant predictor (β = -.04 (transformed); compared with β = -.07* (not transformed)). When number of sexual partners was transformed and included as the outcome variable, family structure became significant (β = -.06* (transformed); compare with β = -.05 (not transformed). Finally, when condom use was transformed and included as the outcome variable, age was no longer a predictor (β = -.04 (transformed); compared with β = -.06* (not transformed)). Taken together, differences that emerged when using transformed compared to nontransformed risky sex behaviors were minimal. Although a few of the predictors changed from significant to nonsignificant or vice versa, the actual differences in the Beta weights appeared small and were not likely to be significantly different from each other. The amount of variance explained using the transformed and nontransformed dependent variables remained consistent. For the transformed risky sex composite variable and the variables of condom use and number of sexual partners, the amount of variance explained was the same; for years since exposure to sexual intercourse, the variance explained by the predictors was slightly reduced using the transformed outcome variable (i.e., decreased from 24% to 21%).

Taken together, the main effects models showed that gender, race, and age were consistent predictors of risky sexual behavior. Family structure, parental warmth/support and depression also were significant in several of the models tested. Years since exposure to sexual intercourse appeared to have the most variance explained and condom use appeared to have the least variance explained by the set of predictors. Using the transformed compared to the nontransformed dependent variables resulted in few differences in the set of significant predictors and variance explained in the dependent variables.

Tests for Moderation

To determine whether demographic and adolescent psychological well-being factors moderated the relationship between parental warmth/support and parental psychological control and adolescent risky sexual behaviors, hierarchical regression analysis was used. All continuous variables were centered prior to running the regression analysis to address multicollinearity. Moderators were tested in both the sample of non-virgins and in the full sample when predicting variance in the risky sex composite (See Appendix C for full sample results); moderators also were tested using the non-virgin sample when predicting variance in the individual risky sex behaviors. To construct the product terms to be tested, the centered parental warmth/support and parental psychological control were multiplied by all demographic variables (only age was centered) and the three centered well-being variables. These variables were constructed twice, once within the full sample and a second time within the non-virgin subsample.

Results for non-virgin subsample. In step 1 of the regression analysis, the centered continuous predictors (age, parental warmth/support, parental psychological control, depression, self-esteem, and relationship anxiety) and the dichotomous predictors (gender, race, and family structure) were entered. As suggested by Jaccard, Turrisi, and Wan (1990), the interaction terms were entered in the second step and each interaction term was tested separately (see Tables 7 through 10).

Table 7. Significant Interactions with the Risky Sex Composite as the outcome variable[3]

Variables	Gender X PPC[2]			Self Esteem X PPC[2]			Gender X Race		
	B	*SE B*	β	*B*	*SE B*	β	*B*	*SE B*	β
Gender	-1.71	.19	-.22***	-1.71	.19	-.22***	-2.80	.30	-.35***
Race	-.76	.16	-.11***	-.76	.17	-.11***	-2.11	.33	-.31***
Age	.83	.07	.30***	.83	.07	.30***	.85	.07	.30***
Family Structure	-.49	.17	-.07**	-.50	.17	-.07**	-.50	.17	-.07**
PWS[1]	-.30	.11	-.08**	-.30	.11	-.08**	-.28	.11	-.07**
PPC[2]	.72	.29	.13*	.72	.29	.13*	.19	.16	.03
Relationship Anxiety	-.03	.10	-.01	-.03	.10	-.01	.01	.10	.10
Depression	.40	.13	.08**	.40	.13	.08**	.39	.13	.13**
Self-Esteem	-.19	.09	-.05*	-.07	.05	-.04	-.15	.09	.09
Interaction Term	-.71	.32	-.11**[a]	.26	.14	.04[b]	1.78	.38	.27***

[1] PWS denotes parental warmth and support
[2] PPC denotes parental psychological control
[3] The specific interaction term tested in each analysis is labeled at the top of the model
[a] not significant when transformed dependent variable used
[b] significant when transformed dependent variable used
* $p < .05$, ** $p < .01$, *** $p < .001$

Table 8. Significant Interactions with Number of Sexual Partners as the outcome variable[3]

Variables	Self Esteem X PPC[2]			Gender X Race		
	B	*SE B*	β	*B*	*SE B*	β
Gender	-.76	.10	-.19***	-1.32	.16	-.33***
Race	-.41	.09	-.12***	-1.08	.18	-.31***
Age	.28	.04	.20***	.29	.04	.20***
Family Structure	-.19	.09	-.05*	-.19	.09	-.05*
PWS[1]	-.16	.06	-.08**	-.16	.06	-.08**
PPC[2]	.09	.08	.03	.09	.08	.03
Relationship Anxiety	.02	.05	.01	.04	.05	.02
Depression	.17	.07	.07*	.15	.07	.06*
Self-Esteem	-.07	.05	-.04	-.03	.05	-.01
Interaction Term	.24	.07	.08***	.87	.20	.26***

[1] PWS denotes parental warmth and support
[2] PPC denotes parental psychological control
[3] The specific interaction term tested in each analysis is labeled at the top of the model
* $p < .05$, ** $p < .01$, *** $p < .001$

Table 9. Significant Interactions with Years Since Exposure to Sexual Intercourse as the outcome variable[3]

Variables	Gender X PPC[2]			Rel. Anxiety X PWS[1]			Gender X Race		
	B	*SE B*	β	*B*	*SE B*	β	*B*	*SE B*	β
Gender	-1.09	.09	-.28***	-1.08	.09	-.27***	-1.58	.14	-.34***
Race	-.60	.08	-.18***	-.60	.08	-.17***	-1.21	.16	-.35***
Age	.48	.03	.34***	.49	.03	.35***	.49	.03	.35***
Family Structure	-.24	.08	-.07**	-.24	.08	-.07**	-.24	.08	-.07**
PWS[1]	-.14	.05	-.07**	-.14	.05	-.07**	-.14	.05	-.07
PPC[2]	.29	.14	.10*	.05	.08	.02	.05	.08	.02
Relationship Anxiety	-.08	.05	-.04	-.08	.05	-.04	-.06	.05	-.03
Depression	.10	.06	.04	.10	.06	.04	.10	.06	.04
Self-Esteem	-.08	.05	-.05	-.08	.05	-.04	-.06	.05	-.03
Interaction Term	-.32	.15	-.10*[a]	.11	.05	.05*	.81	.18	.24***

[1] PWS denotes parental warmth and support
[2] PPC denotes parental psychological control
[3] The specific interaction term tested in each analysis is labeled at the top of the model
[a] not significant when transformed dependent variable used
* $p < .05$, ** $p < .01$, *** $p < .001$

Table 10. Significant Interactions with Frequency of Condom Use as the outcome variable[3]

Variables	Gender X PPC_2			Family Structure X PWS_1			Race X PPC_2			Gender X Self Esteem		
	B	*SE B*	β	*B*	*SE B*	β	*B*	*SE B*	β	*B*	*SE B*	β
Gender	-.16	.08	-.05	-.18	.08	-.06*	-.17	.08	-.05*	-.16	.08	-.05
Race	-.26	.07	-.09***	-.27	.07	-.09***	-.26	.07	-.09***	-.24	.07	-.09**
Age	-.06	.03	-.06*	-.07	.03	-.06*	-.07	.03	-.06*	-.07	.03	-.06*
Family Structure	.07	.08	.03	.05	.08	.02	.06	.08	.02	.07	.08	.02
PWS_1	-.01	.05	-.01	-.08	.05	-.05	-.03	.05	-.02	-.02	.05	-.01
PPC_2	-.27	.13	-.12*	-.05	.07	-.02	.14	.11	.06	-.04	.07	-.02
Relationship Anxiety	-.02	.04	-.02	-.03	.04	-.02	-.03	.04	-.02	-.02	.04	-.01
Depression	-.14	.06	-.07*	-.14	.06	-.07*	-.14	.06	-.07*	-.13	.09	.13**
Self-Esteem	.07	.04	.04	.07	.04	.04	.06	.04	.04	-.10	.07	-.07
Interaction term	.29	.14	.11*	.23	.09	.08*[a]	-.30	.13	-.22*	.23	.09	.13*

[1] PWS denotes parental warmth and support
[2] PPC denotes parental psychological control
[3] The specific interaction term tested in each analysis is labeled at the top of the model
[a] not significant when transformed dependent variable used
* $p < .05$, ** $p < .01$, *** $p < .001$

A post hoc test as described by Jaccard, Turrisi, and Wan (1990) was used to compare t-values for the standard error of the slope at high and low levels of the moderator variable. Few moderated relationships were found, and some of the interactions that were significant in the regression analysis were not significant when subjected to post hoc testing. Results from the regression analyses indicated that only gender and self-esteem moderated associations between the parent-adolescent relationship variables and risky sexual behavior.

For the risky sexual behavior composite variable, one interaction was significant. Post hoc testing indicated for males that parental psychological control was associated significantly and positively with risky sexual behavior (t= 2.493). The association between parental psychological control and risky sex was not significant for females (t=.079).The moderating effect of gender was also evident for years since exposure to sexual intercourse, where males who experienced higher levels of parental psychological control were more likely to begin having sexual intercourse at earlier ages (t=2.130). The relationship was not significant for females (t=-.327). For both overall risky sex and years since exposure to sexual intercourse, the variance explained by the interaction was one percent. A second interaction predicting variance in years since exposure to sexual intercourse, relationship anxiety by parental warmth/support, although significant in the regression analysis, was not significant at either high (t= 1.513) or low (t= .801) levels of relationship anxiety.

When condom use was the sexual risk behavior outcome, three interactions were significant in the regression analysis. Post hoc testing indicated for males that parental

psychological control was associated with less condom use (t= -2.12), but this relationship was not significant for females (t= .275). The variance explained by the interaction term was less than one percent. The other two interactions that were significant in the regression analysis (i.e., race x parental psychological control and family structure x parental warmth/support) were not significant when subjected to post hoc testing. Specifically, the t-values for the significance of the slope were not significant for either European American (t= -1.871) or African American (t= 1.316) participants. The association between parental warmth/support and condom use was not significant from adolescents from 2-parent biological/adoptive family structures (t= 1.894) or for adolescents from family structures that were not headed by two biological/adoptive parents (t= -1.481)

Finally, when the number of sexual partners was the risky sex outcome, one interaction term was significant in the regression analysis; self-esteem was found to moderate the relationship between parental psychological control and number of partners. However, post hoc testing revealed that at both high and low levels of self-esteem, more parental psychological control was related to adolescents having more sexual partners. For this relationship, the slopes for high (t=3.347) and low (t=3.356) levels of self-esteem appeared similar.

When the dependent variables were transformed and the interactions tested a few changes occurred. When gender was the moderator of the association between parental psychological control and overall risky sex, condom use, or years since first exposure to sexual intercourse, the moderated relation was not significant (compare β = -.11, .11, and

-.10 and β = -.09, .10, and -.08 for the nontransformed and transformed variables of risky sex sum, condom use, and years since exposure to sexual intercourse, respectively). Self-esteem as a moderator of the relation between parental psychological control and overall risky sex was significant only when the outcome variable was transformed (compare β =.04 with .05*, for the nontransformed and transformed risky sex composite, respectively). When number of partners was the outcome variable, the significant interaction stayed the same for both transformed and non-transformed variables. Thus, using the transformed outcome variables changed the results minimally and in some instances small changes resulted in significant associations becoming nonsignificant.

Overall, the interaction tests revealed few moderated relationships. The most compelling finding is for gender moderating the association between parental psychological control and risky sex behaviors. However, these interaction terms only were significant when the nontransformed dependent variables were used.

Based on the literature which indicates that gender also should moderate associations between race and risky sexual behaviors and between self-esteem and risky sexual behaviors, interaction terms of gender x race and gender x self-esteem also were tested in the prediction of risky sex behaviors. Results of the hierarchical regression analyses indicated that three of the four interaction terms testing race x gender were significant, and one of the interaction terms testing gender by self-esteem was significant (see Tables 7 & 8). Post-hoc testing revealed that for males (t=-6.373) the relationship between race and risky sex was significant, however, it was not significant for females (t=-1.759). Being male and African American was related to more risky sex behavior.

Two percent of the variance in risky sexual behavior was explained by the interaction term. Results for post-hoc testing were similar for the full sample regarding gender, race, and risky sexual behaviors (see Appendix C for full sample results).

For the individual risky sex behaviors, significant gender x race interactions were found for years since exposure to sexual intercourse and number of partners. Post hoc testing revealed that the association between race and years since exposure to sexual intercourse was significant for both males and females, but the slope for males ($t = -7.687$) was steeper than the slope for females ($t = -4.531$). Being African American was related to more years since exposure to sexual intercourse, especially for males. With number of partners as the outcome variable, post hoc testing showed that the relationship between race and number of sex partners was significant for males and females, but the slope for males ($t = -6.176$) was steeper than for females ($t= -2.087$); being African American was related to having more sexual partners, especially for males. One percent of the variance in both years since exposed to sexual intercourse and number of partners was explained by the interaction terms.

According to the literature, self-esteem should be positively related to risky sex for males, but negatively related to risky sex for females. No interactions were significant when tested in the non-virgin or full samples for the risky sex composite, but for condom use in the non-virgin sample, there was a significant interaction. Post hoc testing revealed that the moderated relationship between self-esteem and condom use was significant for females ($t= 4.423$) but not for males ($t= -.198$). For females only, there

was a positive relationship between self-esteem and condom use. Less than one percent of the variance in condom use was explained by the interaction term.

Taken together, limited evidence of moderation of the associations of the parent-adolescent relationship variables and risky sex behavior was found. Most of the interactions that did emerge moderated the association between parental psychological control and risky sex behaviors (and gender most often was the moderator); however, these interactions explained very little of the variance in the risky sex outcomes. Gender also was found to moderate associations between race and risky sex and self-esteem and risky sex; these interactions also added little to the explained variance in risky sex behaviors.

Risky Sexual Behavior within "Hookup" Versus Long-term Relationships

The final aim of this study was to compare sexually active adolescents who were engaging in sexual activity outside of a dating relationship (hook up group) with those who were engaged in sexual activity within a long term relationship of at least 12 months (long-term relationship group). Means and standard deviations on all continuous variables were calculated (Table 9) Three multivariate analyses of variance (MANOVA) were used to compare the groups for the parent-adolescent relationship variables, for the adolescent well-being variables, and for the risky sex variables, respectively. An independent samples t-test was used to compare the groups on age; and chi-square tests were used to compare the gender, race, and family structure make up of the two groups.

Table 11. Means and standard deviations for all continuous variables of adolescents who engage in sexual activity within long term relationships versus those who engage in sexual behavior outside of relationships.

	"Hookup" group			Long Term Relationship group		
	n	*M*	*SD*	n	*M*	*SD*
Age	125	16.4	1.22	253	16.7*	1.18
PWS_1	121	2.92	.80	255	3.06	.89
PPC_2	121	1.81	.54	255	1.81	.62
Relationship Anxiety	118	2.96	.81	253	2.61***	.92
Depression	124	2.07	.71	252	2.02	.69
Self Esteem	119	3.81	.92	249	4.16**	.87
Risky Sex	117	1.94	1.59	250	2.32*	1.06
# partners	253	2.37	1.63	119	2.34	2.15
Years since exposed	253	2.31	1.59	118	1.90*	1.90
Condom use	252	3.72	1.32	118	2.96***	2.03

[1] PWS denotes parental warmth and support
[2] PPC denotes parental psychological control
* $p < .10$, ** $p < .01$, *** $p < .001$

To examine whether there were differences in the dichotomous demographic variables (race, gender and family structure) for this research question, a chi-square test was used. The two groups did not differ in terms of race ($\chi^2 = 1.58$, $p = .238$). Gender was found to be significantly different between the two groups ($\chi^2 = 25.1$, $p = .000$), as was family structure ($\chi^2 = 11.7$, $p = .001$) An independent t-test showed there was a significant difference between groups for age, ($t=2.5$; $p = .013$). The "hookup" group consisted of more females than males, adolescents who were slightly younger, and more adolescents from non-biological or adoptive two-parent homes than the group of those having sex in a long-term relationship.

Comparison of the mean scores indicated that adolescents in the "hookup" group were not significantly different than those in a long-term relationship with regard to either of the parenting variables; F (2,373) = 1.297, p=.275, Wilkes Lamda = .99 (for parental warmth/support, F (1, 374) = 2.03, p= .155; for parental psychological control, F (1,374) = .000, p= .991). In terms of adolescent psychological well-being variables, there was a statistically significant difference at the multivariate level between the "hookup" group and those having sex in long-term relationships, F (3,359) = 6.59, p = .000; Wilks' Lambda = .95, for the set of psychological well-being variables. At the univariate level, the two groups differed on relationship anxiety, F (1, 361) = 12.53, p = .000, with the hookup group having higher relationship anxiety than the long-term relationship group. There also was a significant difference between the groups for self-esteem, F (1, 361) = 9.74, p = .002. The long-term relationship group reported higher self-esteem than the hookup group. At the univariate level, the two groups did not differ on depression (F (1, 361) = .522, p= .471).

An independent samples t-test showed there was a significant difference for overall risky sexual behaviors between the two groups, (t= -2.76, p= .006), where the group of individuals in the long-term relationship category reported having more overall risky sex. In terms of the individual risky sex behaviors (F (3,363) =8.90, p<.001; Wilkes Lambda = .93), both condom use, F (1, 365) = 19.84; p < .000, and years since exposed to having sex, F (1,365) = 5.12, p=.024, were significantly different between the two groups, but number of partners was not significant (F (1,365) = .021, p= .885).

Adolescents in the “hookup” group reported having sex at younger ages, and also using condoms more often.

V. DISCUSSION

The main goal of the current study was to understand how the parent-adolescent relationship is related to adolescents' risky sexual behaviors in romantic relationships. Specifically this study examined the links between two aspects of parent adolescent relationship quality (parental warmth/support, parental psychological control) and adolescents' sexual risk behaviors. Demographic factors and adolescent psychological well-being factors also were examined. Overall, it was found that demographic factors along with depression, self-esteem, and parental warmth/support predicted risky sexual behavior. When the demographic and adolescent psychological well-being variables were tested as moderators of the relationship between the two parenting variables and risky sexual behavior outcomes, it was found that the association between risky sex behaviors and parental psychological control was moderated by gender. The exploratory question regarding sex outside of relationships (often referred to as "hooking up") revealed that adolescents who report "hooking up" with a sex partner were more likely to be younger, female, and from family structures that are not headed by two biological or adoptive parents. Those "hooking up" also reported higher levels of relationship anxiety and lower self-esteem than those who were in long term relationships of one year or more.

The first hypothesis examined whether a set of variables comprised of parent-adolescent relationship quality, adolescent psychological well-being, and adolescent demographic variables would predict adolescents' engagement in risky sex behaviors.

Consistent with literature addressing parent-adolescent relationship quality (Aspy et al., 2007; Ream & Savin-Williams, 2005) and as predicted, a higher level of parental warmth/support was significantly related to less risky sexual behavior. Also, males, African Americans, older adolescents, and adolescents living in homes that were not headed by two biological or adoptive parents were more likely to engage in risky sex than were females, European Americans, young adolescents, and those living in two-parent biological or adoptive families. This is consistent with the literature regarding demographics and risky sexual behaviors (Blum et al., 2000; Davis & Friel, 2001; Doyle et al., 2003; Fergus et al., 2007; Pearson et al., 2006) and also supported the hypotheses of the current study. In terms of adolescent psychological well-being, both depression and self-esteem predicted risky sexual behaviors; a higher level of depression was related to more risky sex whereas a higher level of self-esteem was related to less risky sex. This was also consistent with past research (Doyle, et al. 2003; Longmore et al., 2004) and supported hypotheses. For the individual sexual risk behaviors, years since exposed to sexual intercourse was found to have the most explained variance by the set of predictors, where all demographic variables and parental warmth/support were significant predictors. This also is consistent with literature and further suggests that gender, race, family structure, and age all are important for explaining adolescent risky sexual behaviors.

Counter to expectation, parental psychological control was not a significant predictor of risky sexual behavior. It was predicted that high levels of parental psychological control would be related to more risky sexual behavior. Although literature suggests that parental psychological control is an important predictor of adolescent risky

sexual behavior, and parental psychological control had a significant association with risky sex at the bivariate level, when considered in conjunction with parental warmth/support it was not a unique predictor of risky sexual behaviors.

Compared to what has been discussed in the literature, the main effect for parental warmth/support found in the current study is supported by Aspy et al.'s (2007) findings that a lack of warmth and support from parents is associated with more risky sexual behaviors. Ream and Savin-Williams (2005) found similar patterns. Possibly the impact of parental psychological control is reduced in the presence of parental warmth and support when examining how both parenting aspects are associated with adolescent risky sexual behaviors. In fact, African American youth have endorsed the appropriateness of parental psychological control in the area of adolescent sexuality (Smetana, Crean, & Campione-Barr, 2005). It also is possible that parental psychological control was not significant due to the high correlation with parental warmth/support. On the other hand, Rogers (1999) found that psychological control may be related to adolescent risky sexual behaviors differently than parental warmth/support, and that gender differences exist.

Also counter to prediction was the lack of association between relationship anxiety and risky sex. Relationship anxiety was not significant for any of the risky sex outcome variables and showed little association with the risky sex variables at the bivariate level. Possibly relationship anxiety affects risky sex behaviors differentially across adolescents. For some adolescents, relationship anxiety may increase the likelihood that they will engage in sexual activity as a way to "pretend" they have intimacy, whereas relationship anxiety for other adolescents may inhibit their sexual

activity altogether. Also, the literature addressing adolescent well-being emphasizes depression and self-esteem as the dominant predictors of sexual behaviors in adolescents (Doyle et al., 2003).

The second set of hypotheses predicted that adolescent demographic and well-being variables would moderate associations between the two parenting variables and risky sexual behaviors. The adolescent psychological well-being variables were not moderators of associations between the parent-adolescent relationship quality variables and risky sexual behaviors. The literature did not give a clear indication of whether adolescent well-being would moderate the association between parent-adolescent relationship quality and risky sexual behavior or whether the moderated associations, if found, would indicate a compensatory or an enhancement effect. The results of the current study suggest that adolescent well-being variables operate as separate direct predictors of risky sex, but do not condition associations between parental warmth/support or parental psychological control and risky sexual behaviors. Although the majority of the interactions were not significant, the association between parental psychological control and risky sexual behavior was found to be moderated by gender. Although parental psychological control showed no significance at the main effect level, it was found to be significant when moderated by gender for overall risky sex, condom use, and years since exposure to sexual intercourse. For males, higher levels of parental psychological control was related to higher levels of risky sex, less condom use, and beginning to have sex at younger ages. Although it was predicted that associations between the two parenting variables would be stronger for females, higher levels of

parental psychological control were found to be more detrimental to males in the current study. Although other studies have suggested that parental psychological control is better predictive of risky behaviors for females (Rodgers, 1999), others have found that parental psychological control has a stronger associations with risky decision making in romantic relationships for males (Zimmer-Gembeck & Helfand, 2008). Our findings also suggest that males who have psychologically controlling parents are engaging in more risky sex.

Based on what has been examined in previous literature regarding risky sexual behaviors and gender (Doyle et al., 2003; Robinson, 2007), gender as a moderator of the relationship between race and risky sex was also examined. Gender was found to moderate the relationship between race and overall risky sex, where being African American and was predictive of more risky sex, especially for males. This was consistent with our hypothesis and consistent with the current literature (Robinson, et al. 2007). Gender was also a moderator of the relationship between race and years since being exposed to sexual intercourse, where being African American was related to more years since exposure to sexual intercourse, especially for males. This supports our hypothesis and also with the literature (Fergus et al., 2007; Robinson et al., 2007). One interesting finding was that females with higher self-esteem were more likely to report using condoms. This finding will need to be replicated in future research, but suggests that, for females, self-esteem does affect their sexual decision making.

Our final question was based on the work of Manning et al. (2006), and asked whether there were differences between two groups of sexually active adolescents in the

sample: those who reported being sexually active within a long-term relationship (one year or more) and those who reported being sexually active but not in a relationship ("hooking up"). Although no specific hypotheses were made for this sample, differences were found between the two groups when looking at demographics, psychological well-being, and risky sexual behaviors. The two samples differed in terms of gender, family structure, and age, where more adolescents in the "hookup" group were female, younger, and not residing in a two-parent biological or adoptive family. No significant differences were found between the two groups regarding either of the parenting variables. For the psychological well-being variables, the group of adolescents who reported engaging in "hookup" sex reported more relationship anxiety and lower self-esteem than those adolescents who reported having sex within a long term relationship. Adolescents in the "hookup" group also reported more years since exposure to sexual intercourse, as well as more condom use, and reported engaging in less risky sex overall than the long-term relationship group.

The findings of the exploratory analysis of having sex for the "hookup" versus long-term relationship groups raises a few interesting possibilities. First, the demographic differences between the two groups could suggest that adolescents who are hooking up are less mature, and it is also possible that younger females may be coerced into having sex by older males, although not in a committed dating relationship with these males. Manning et al. (2006) found that in their sample females who reported hooking up with a sexual partner tended to be younger than their partners. For the psychological well-being variables, adolescents having hookup sex may tend to have more anxiety about being in

romantic relationships, and therefore may be engaging in the sexual behaviors without wishing to pursue a relationship or may be feeling uncomfortable or unprepared to pursue a relationship. Alternately, they may be so desperate for a relationship that they confuse sexual intercourse with intimacy. Self-esteem may be lower in the hookup group due to other outside factors as well as to the risky sexual behavior itself. It is possible that adolescents who have low self esteem engage in sex outside of relationships to feel better about themselves, or to feel more accepted by peer groups. Finally, it is possible that adolescents who are hooking up use condoms more because they are not in a monogamous relationship, whereas those who are only having sex with one person (i.e. the long-term relationship group) may not use condoms as much or may choose to use another form of contraceptive such as birth control pills. While the findings from this exploratory question need further research, what was found is similar to and builds on Manning et al.'s findings regarding adolescents who are hooking up with sexual partners.

There were several limitations to the current study that should be taken into consideration and used to guide further research in the area of parent-adolescent relationships and adolescent risky sexual behavior. The sample included more females than males, and more European American than African American adolescents. Because we were using secondary data, we were limited in asking our questions and in the selection of variables. We were not able to examine the peer context in which adolescents are so closely immersed, or the sibling context where adolescents also may find role models for sexual behaviors. In addition, surveys were self-report, and romantic partners were not examined directly. We also did not assess any other types of parental behaviors

that could also be predictors of risky sexual behavior, such as behavior control, or parental communication regarding adolescent dating and sexual behavior. The family structure measurement was limited in that it was only addressed using a dichotomous variable measuring two-parent biological or adoptive parent structure versus all other family structures. Therefore, the findings from the current study suggest that adolescents who are living with two biological or adoptive parents are better off than those who may live in some other type of family situation. Future research examining different types of family structures should also be examined.

Another important limitation is that the risky sex composite only included three risky sexual behaviors. A report on sex and HIV programs for adolescents by Kirby et al. (2006) included overall contraceptive use and frequency of sexual intercourse as indicators of risky sex, which would be beneficial to examine. Similarly, although other risky activities such as oral or anal sex may be considered less risky to teens because pregnancy is not a consequence (although these sexual behaviors do put adolescents at risk for STI's and negative emotional consequences), they are important activities to explore in understanding sexual decision-making and risk taking in adolescence (Halpern-Felsher, Cornell, Kropp, & Tschann, 2005). Examining these behaviors individually as well as with other risk behaviors associated with adolescence could help researchers understand the bigger picture of risky sexual behaviors in adolescence.

The lack of an overarching theoretical framework to this area of literature could also be considered a limitation to our study. Although research in this area has yet to be unified by theory, some different theoretical frameworks can be helpful in linking the

parent-adolescent relationship with adolescent romantic relationship behavior. Attachment theory has been well-established as the main framework used to explain how adolescents view their relationships with parents and its association with how adolescents interact with other individuals and view their relationships with romantic partners (Bowlby, 1979; Doyle, et al., 2003; Furman, et al., 2002; Hazan & Shaver 1988; Reese-Weber & Marchand, 2002). Drawing on theory from literature addressing adult attachment in romantic relationships could also be useful when considering how behaviors are carried over from the parent-adolescent relationship to the adolescent romantic relationship.

In addition to attachment theory, which can help explain associations between the parent-adolescent relationship and the ways adolescents view their relationships with close peers and romantic partners, a symbolic interactionist perspective also has been used in the literature to understand how adolescents construct their ideas of and create meanings for what is socially acceptable in terms of behaviors that characterize their romantic relationships, including sexual behaviors (Giordano, Longmore, & Manning, 2006; Manning et al., 2006). Symbolic interactionism seeks to explain the way individuals interact with their social worlds and construct their own views of different situations based on the shared meaning of their social group (Mead, 1934). According to symbolic interactionism, a person's sense of identity emerges based on the interactions he or she has with the group and the feedback the person receives from individual members of the group, or the group as a whole. People define their roles based on how they see themselves in relation to society while considering the social norms that might be

expected in their society. This way of framing human development also seeks to observe how one's perception of a situation helps to shape meaning for the person and for society (LaRossa & Reitzes, 1993). Both attachment theory and symbolic interaction theory offer insights into how parent-adolescent relationship quality influences the quality of adolescent romantic relationships and the behaviors occurring within these relationships.

Despite its limitations, this study contributes to the current research in the area of adolescent risky sexual behaviors and close relationships by including many factors in one model that help to provide a bigger picture of what risky sexual behaviors may mean for adolescents. This study further reinforces the idea that romantic relationships do matter in adolescence, and that the ways in which parents and adolescents interact is related to risky sexual behaviors within adolescent romantic relationships. The current study adds to the growing base of knowledge regarding parenting dimensions and adolescent behaviors, especially the aspects of parental psychological control and parental warmth and support. It also adds to the understanding of "hooking up" as it relates to adolescents who report having sex, but are not in dating relationships, which is a relatively new area that is yet to be extensively examined in the field.

Future research on adolescent dating and sexual behavior would greatly benefit from examining a more diverse population, especially regarding gender and race, as well as considering different ethnic, family structure, and socioeconomic backgrounds. In terms of family structure, future research should examine other ways of measuring family structure, specifically, distinguishing between two-parent biological or adoptive homes, single parent homes, and stepfamilies. Given the literature on father involvement,

examining father absence or presence in the household would also be beneficial to future research. Also, examining other types of risky sexual behaviors would help researchers to gain a clearer and more contemporary picture of the activities that may be associated with risky sex. It is possible that adolescents may not view sexual activities other than intercourse as risky because pregnancy is not possible, but sexual activities such as oral and anal sex are important to examine as well, due to the risk of sexually transmitted diseases.

Although the current study only measured one type of contraceptive (condom use), it would be beneficial to study other forms of birth control use. Future research also should examine more types of risky sexual behaviors as well as adolescent sexual activities outside of relationships. These lines of inquiry would benefit from both quantitative and qualitative research designs that investigate the meaning of sex to adolescents and what they consider normative versus risky for themselves and among their peer group. Furthermore, examining possible gender and/or age differences between adolescents hooking up with sex partners and those who are having sex in long-term relationships would be beneficial, especially examining whether older males coerce younger females to engage in sexual activity without being in a relationship with them.

Developing an overarching theory regarding the nature of the parent-adolescent relationship, adolescent romantic relationships, and adolescent risky sexual behaviors would also greatly benefit future research and provide a framework for understanding how each are connected. Research in the area of parental communication with adolescents on sensitive topics such as sexuality and dating may also benefit from

understanding how certain aspects of the parent-adolescent relationship may be related to the behaviors adolescents choose to engage in when in romantic relationships. Finally, considering other relationship influences, such as those with peers, close friends, siblings, and dating partners on adolescent risky sexual activity is needed. The topics of adolescent dating and sexual behaviors are moving to the forefront of research and warrant careful examination.

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APPENDIX A

Measures

A-1. *Demographics*

1. Age: _____

2. Sex: (A) Male (B) Female

3. Race/Ethnicity (Check all that apply):
   - (A) Black/African American
   - (B) White/Caucasian
   - (C) Hispanic/Latino
   - (D) Native American
   - (E) Asian American
   - (F) Other: _____(Please specify)

4. Are you currently dating or going out with someone?
   (A) Yes (B) No

   4a. If yes, how long (in months) have you been dating or going out?

   _____months

5. Who do you live with all of the time (or most of the time if you live in multiple households)?
   - (A) Both of your original (biological or adoptive) parents
   - (B) An original (biological or adoptive) parent and a stepparent
   - (C) A single parent
   - (D) Other _____ (please specify)

A-2. *Risky Sexual Behavior*

1. In the past 1 month (30 days), did you have sexual intercourse?

   (a) no (b) yes

2. How old were you when you first had sexual intercourse? (Circle the most accurate answer)

   (a) I have never had sexual intercourse (item recoded for analysis)
   (b) 9 years old or younger
   (c) 10 years old
   (d) 11 years old
   (e) 12 years old
   (f) 13 years old
   (g) 14 years old
   (h) 15 years old
   (i) 16 years old
   (j) 17 years old
   (k) 18 years old or older.

3. During your life, with how many different people have you had sexual intercourse? (Circle the most accurate answer)

   (a) I have never had sexual intercourse
   (b) 1 person
   (c) 2 people
   (d) 3 people
   (e) 4 people
   (f) 5 people
   (g) 6 or more people

4. Since your first time, how much of the time did you or your sexual partner use a condom (rubber) when you had sexual intercourse? (Circle the most accurate answer)

   (a.) I have never had sexual intercourse (item recoded for analysis
   (b.) None of the times
   (c.) Less than half of the times
   (d.) About half of the times
   (e.) Most of the times
   (f.) Always

A-3. *Parent-Adolescent Relationship Quality: Warmth and Support*

1 = Not at all

2 = A Little Bit

3 = Quite a Bit

4 = Very Much

1. To what extent can you turn to a parent (parent-figure) for advice about problems?
2. To what extent could you count on a parent (parent-figure) for help with a problem.
3. To what extent can you count on a parent (parent-figure) to give you honest feedback, even if you might not want to hear it
4. To what extent can you count on a parent (parent-figure) to listen to you when you are very angry at someone else?
5. To what extent can you count on a parent (parent-figure) to distract you from your worries when you feel under stress?

A-4. *Parent-Adolescent Relationship Quality: Psychological Control*

1 = Not like them

2=Somewhat like them

3 = A lot like them

My parents (parent-figures) are people who:

1. Change the subject whenever I talk
2. Often interrupt me
3. Would like to be able to tell me how to feel or think about things all the time
4. Are always trying to change how I feel or think about things
5. Bring up past mistakes when they criticize me

A-5. *Relationship Anxiety*

1 = Strongly Disagree
2 = Disagree a Little Bit
3 = Neutral or Can't Decide between Disagree or Agree
4 = Agree a Little Bit
5 = Strongly Agree

1. I worry that romantic partners won't care about me as much as I care about them
2. I worry a fair amount about losing my partner
3. I often wish that my partners' feelings for me were as strong as my feelings for him/her
4. I worry about being alone
5. My desire to be very close sometimes scares people away
6. I need a lot of reassurance that I am loved by my partner
7. I usually discuss my problems and concerns with my partners
8. When I'm not involved in a relationship, I feel somewhat anxious and insecure
9. It helps to turn to my romantic partner in times of need

A-6. *Depression (past 7 days)*

1 = Rarely or none (Less than 1 day)

2 = Some or a little (1 - 2 days)

3 = Occasionally or moderately (3 - 4 days)

4 = Most of the time (5 - 7 days)

1. I did not feel like eating; my appetite was poor
2. I felt that everything I did was an effort
3. I thought my life had been a failure
4. My sleep was restless
5. I felt lonely
6. I felt sad
7. I could not get "going"

A-7. *Self-Esteem*

1 = Strongly Disagree

2 = Disagree a Little Bit

3 = Neutral or Can't Decide between Disagree or Agree

4 = Agree a Little Bit

5 = Strongly Agree

1. I feel I'm a person of worth, at least on an equal basis with others
2. I feel I have a number of good qualities
3. I am able to do things as well as most people
4. I take a positive attitude toward myself
5. On the whole, I am satisfied with myself

APPENDIX B

Regression Analyses Using Square Root Transformation

Table12. Regression analyses predicting risky sexual behaviors using a square root transformation.

Variable	Full Sample (n=3,031)			Nonvirgin Sample (n=1,554)		
	B	*SE B*	β	*B*	*SE B*	β
Gender	-.15	.03	-.08***	-.16	.02	-.19***
Race	-.18	.03	-.10***	-.08	.02	-.11***
Age	.19	.01	.31***	.09	.01	.30***
Family Structure	-.26	.03	-.16***	-.6	.02	-.08**
PWS_1	-.03	.02	-.03	-.03	.01	-.06*
PPC_2	.11	.03	.08***	.02	.02	.03
Relationship Anxiety	-.02	.02	-.02	.00	.01	.00
Depression	.09	.02	.07***	.04	.01	.01**
Self-Esteem	.00	.02	.00	-.02	.01	.01*
R^2	.17			.16		
F for change in R^2	70.695***			31.716***		

[1] PWS denotes parental warmth and support
[2] PPC denotes parental psychological control
$p < .50$, * $p < .01$, ** $p < .001$***

Table 13. Main effects and interactions tested to predict risky sexual behaviors for the non-virgin sample using square root transformation for dependent variables.

Variable	Risky Sex Composited			Frequency of Condom Use		
	B	*SE B*	β	*B*	*SE B*	β
Main Effect Variables						
Gender	-.28	.04	-.19***	-.04	.02	-.04
Race	-.15	.03	-.11***	-.08	.02	-.09***
Age	.16	.01	.30***	-.01	.01	-.04
Family Structure	-.11	.03	-.08**	.02	.02	.02
PWS[1]	-.05	.02	-.06*	-.01	.01	-.01
PPC[2]	.04	.03	.03	-.02	.02	-.02
Relationship Anxiety	.00	.02	.00	-.01	.01	-.01
Depression	.07	.03	.08**	-.04	.02	-.07*
Self-Esteem	-.04	.02	-.05*	.02	.01	.04
Interactions Tested						
Gender x PW	-.01	.04	-.01	.01	.03	.03
Race x PW	.03	.04	.03	.03	.03	.05
Age x PW	.00	.01	.00	.00	.01	.01
Family Structure x PW	-.01	.04	-.01	.07	.03	.08**
Rel. Anxiety x PW	.04	.02	.04	-.02	.01	-.03
Depression x PW	.04	.03	.04	.01	.02	.01
Self-Esteem x PW	-.02	.02	-.03	-.00	.01	.00
Gender x PPC	-.11	.06	-.09	.08	.04	.10
Race x PPC	-.04	.05	-.03	-.09	.04	-.10*
Age x PPC	.00	.02	.00	-.01	.02	-.02
Family Structure x PPC	.04	.06	.02	-.07	.04	-.06
Rel. Anxiety x PPC	-.02	.03	-.01	.00	.02	.00
Depression x PPC	-.01	.04	-.01	-.01	.03	-.01
Self-Esteem x PPC	.06	.03	.05*	.02	.02	.03
Additional Interactions Tested						
Gender x Race	.31	.07	.25***	-.02	.05	-.03
Gender x Self-Esteem	-.04	.04	-.05	.07	.03	.13**

[1] PWS denotes parental warmth and support
[2] PPC denotes parental psychological control
* $p < .05$, ** $p < .01$, *** $p < .001$

Table 14. Main effects and interactions tested to predict risky sexual behaviors for the non-virgin sample using square root transformation for dependent variables.

Variable	Number of Sexual Partners			Years since Exposure to Sexual Intercourse		
	B	*SE B*	β	*B*	*SE B*	β
Main Effect Variables						
Gender	-.22	.03	-.18***	-.31	.03	-.21***
Race	-.13	.03	-.13***	-.21	.03	-.16***
Age	.08	.01	.19***	.19	.01	.37***
Family Structure	-.07	.03	-.06*	-.12	.03	-.09***
PWS_1	-.04	.02	-.07*	-.03	.02	-.04
PPC_2	.03	.03	.03	.02	.03	.02
Relationship Anxiety	.01	.02	.01	-.02	.02	-.03
Depression	.04	.02	.06*	.05	.02	.05
Self-Esteem	-.02	.02	-.03	-.02	.02	-.03
Interactions Tested						
Gender x PW	-.05	.04	-.07	.04	.04	.04
Race x PW	.03	.03	.04	.04	.04	.04
Age x PW	.02	.01	.00	.01	.01	.02
Family Structure x PW	.05	.03	.05	.00	.04	.00
Rel. Anxiety x PW	.01	.02	.01	.04	.02	.04
Depression x PW	.03	.02	.04	.03	.02	.03
Self-Esteem x PW	-.02	.02	-.03	-.02	.02	-.03
Gender x PPC	-.02	.02	-.02	-.10	.06	-.08
Race x PPC	-.08	.05	-.07	-.08	.05	-.06
Age x PPC	.00	.02	-.01	-.02	.02	-.03
Family Structure x PPC	-.03	.05	-.02	.00	.05	.00
Rel. Anxiety x PPC	-.02	.02	-.03	.00	.03	.00
Depression x PPC	-.04	.03	-.03	.01	.04	.00
Self-Esteem x PPC	.07	.02	.08**	.03	.03	.03
Additional Interactions Tested						
Gender x Race	.24	.06	.24***	.22	.07	.18**
Gender x Self-Esteem	-.02	.03	-.03	.04	.04	.05

1 PWS denotes parental warmth and support
2 PPC denotes parental psychological control
* $p < .05$, ** $p < .01$, *** $p < .001$

APPENDIX C

Regression Analysis for Full Sample

Main effects for full sample Similar results for explaining variance in risky sex were found when analyses were conducted with the full sample. Each of the four demographic variables was found to be significant predictors of risky sexual behaviors. Parental warmth and parental psychological control were also both found to be significant. In terms of the three psychological well being variables, only depression was significant at the main effect level when predicting risky sexual behaviors. With all predictors in the model, approximately 18% of the variance is explained.

For the full sample, gender moderated the association between parental psychological control and risky sexual behaviors; both males (t= 4.11) and females (t=2.26) showed significance after post hoc testing. Gender also moderated the association between race and risky sexual behavior. Depression moderated the relationship between parental warmth and risky sexual behaviors, but neither high levels of depression (t= 1.94) nor low levels of depression (t= 1.50) were significant after post hoc testing. In the full sample, the moderating effect of depression on the relationship between parental warmth/support and risky sexual behaviors was not found to be significant. Post hoc testing revealed that both males and females showed significant moderation of the relationship between parental psychological control and risky sexual behavior. Although t-scores for both genders was found to be significant, the steepness of the slope was stronger for males (t= 4.11) than for females (t=2.26) in the full sample.

Table 15. Main effects and interactions tested to predict risky sexual behaviors.

Variable	Full Sample (n=3,031)			Non Virgin Sample (n=1,554)		
	B	*SE B*	β	*B*	*SE B*	β
Main Effect Variables						
Gender	-.1.17	.17	-.12***	-.56	.06	-.11***
Race	-1.04	.16	-.12***	-.26	.05	-.11***
Age	1.09	.06	.32***	.28	.02	.32***
Family Structure	-1.28	.15	-.12***	-.16	.06	-.15**
PWS_1	-.22	.10	-.04**	-.09	.04	-.04**
PPC_2	.54	.15	.07***	.06	.05	.07***
Relationship Anxiety	-.09	.10	-.02	-.01	.03	-.02
Depression	.50	.12	.08***	.13	.04	.08**
Self-Esteem	-.04	.09	-.01	-.06	.03	-.01*
Interactions Tested						
Gender x PW	.01	.21	.00	-.04	.22	-.01
Race x PW	.25	.18	.08	.19	.19	.08
Age x PW	-.02	.07	.00	-.03	.08	-.01
Family Structure x PW	-.18	.18	-.02	-.06	.21	-.01
Rel. Anxiety x PW	.03	.10	.00	.19	.11	.04
Depression x PW	.30	.12	.04*	.20	.13	.04
Self-Esteem x PW	-.13	.09	.14	-.11	.09	-.03
Gender x PPC	-.78	.30	-.09**	-.71	.32	-.11**
Race x PPC	-.12	.27	-.03	-.22	.29	-.07
Age x PPC	-.04	.10	-.01	-.02	.11	.00
Family Structure x PPC	.03	.26	.00	.25	.29	.02
Rel. Anxiety x PPC	.09	.15	.01	-.09	.15	-.01
Depression x PPC	-.24	.18	-.02	-.05	.20	-.01
Self-Esteem x PPC	.06	.13	.01	.26	.14	.04
Additional Interactions Tested						
Gender x Race	2.28	.37	.26***	1.78	.38	.27***
Gender x Self-Esteem	-.09	.19	-.02	-.12	.20	-.05

[1] PWS denotes parental warmth and support
[2] PPC denotes parental psychological control
* $p < .05$, ** $p < .01$, *** $p < .001$

APPENDIX D

Post Hoc Analysis Worktables

NV gender*PPC –> risky sex SUM						Standard error of slope				t-value
Treating gender as the Moderator Moder Moded		Slope of Modified Variable	Slope of Product Term	hi & lo value for gender	Slope: b_i@X	Var(b_i) Var of Slope of Modified Variable	Var(b_j) Var of Slope of Product Term	Cov(b_i,b_j) Covariance of Slopes	Standard Error	b@X / S.E.
gender	PPC	.723055	-.709104	1	0.014	.084093	.102476	-.077795	0.17600852	0.079
gender	PPC	.723055	-.709104	0	0.72306	.084093	.102476	-.077795	0.28998793	2.4934

FULL : depr*PW –>risky sex						Standard error of slope				t-value
Treating Depression as the Moderator ModerModed		Slope of Modified Variable	Slope of Product Term	hi & lo value for Depression	Slope: b_i@X	Var(b_i) Var of Slope of Modified Variable	Var(b_j) Var of Slope of Product Term	Cov(b_i,b_j) Covariance of Slopes	Standard Error	b@X / S.E.
Depr	PW	-.248252	.297714	3.89	0.90986	.010515	.014480	-.001359	0.46803289	1.944
Depr	PW	-.248252	.297714	2.23	0.41565	.010515	.014480	-.001359	0.27651664	1.5032

NV: relanx*PW–>exposure						Standard error of slope				t-value
Treating RA as the Moderator ModerModed		Slope of Modified Variable	Slope of Product Term	hi & lo value for Rel Anx.	Slope: b_i@X	Var(b_i) Var of Slope of Modified Variable	Var(b_j) Var of Slope of Product Term	Cov(b_i,b_j) Covariance of Slopes	Standard Error	b@X / S.E.
R.Anx	PW	-.138759	.112224	3.57	0.26188	.002595	.002512	-.00065	0.17311611	1.5127
R.Anx	PW	-.138759	.112224	1.93	0.0778	.002595	.002512	-.00065	0.0971748	0.801

NV gender*PPC –> exposure						Standard error of slope				t-value
Treating gender as the Moderator Moder Moded		Slope of Modified Variable	Slope of Product Term	hi & lo value for Gender	Slope: b_i@X	Var(b_i) Var of Slope of Modified Variable	Var(b_j) Var of Slope of Product Term	Cov(b_i,b_j) Covariance of Slopes	Standard Error	b@X / S.E.
Gen	PPC	.294293	-.321693	1	-0.027	.019099	.023247	-.017668	0.0837257	-0.327
Gender	PPC	.294293	-.321693	0	0.29429	.019099	.023247	-.017668	0.13819913	2.1295

NV: SEst*PPC –> #partners						Standard error of slope				t-value
Treating SEst as the Moderator Moder Moded		Slope of Modified Variable	Slope of Product Term	hi & lo value for SEst	Slope: b_i@X	Var(b_i) Var of Slope of Modified Variable	Var(b_j) Var of Slope of Product Term	Cov(b_i,b_j) Covariance of Slopes	Standard Error	b@X / S.E.
SEst	PPC	.086582	.236388	4.90	1.24488	.006982	.005462	.000026	0.37199384	3.3465
SEst	PPC	.086582	.236388	3.16	0.83357	.006982	.005462	.000026	0.24837002	3.3562

NV famstruc*PW –> condom use						Standard error of slope				t-value
Treating Fam Struc. as the Moderator Moder Moded		Slope of Modified Variable	Slope of Product Term	hi & lo value for Fam Struc.	Slope: b_i@X	Var(b_i) Var of Slope of Modified Variable	Var(b_j) Var of Slope of Product Term	Cov(b_i,b_j) Covariance of Slopes	Standard Error	b@X / S.E.
Fstru.	PW	-.079755	.23266	1	0.15291	.002900	.008297	-.002341	0.0807156	1.8944
Fstru.	PW	-.079755	.23266	0	-0.08	.002900	.008297	-.002341	0.0538516	-1.481

NV: gender*PPC –> condom use						Standard error of slope				t-value
Treating Gender as the Moderator Moder Moded		Slope of Modified Variable	Slope of Product Term	hi & lo value for Gender	Slope: b_i@X	Var(b_i) Var of Slope of Modified Variable	Var(b_j) Var of Slope of Product Term	Cov(b_i,b_j) Covariance of Slopes	Standard Error	b@X / S.E.
gender	PPC	-.271955	.293397	1	0.0214	.016506	.020114	-.015269	0.0779872	0.2749
gender	PPC	-.271955	.293397	0	-0.272	.016506	.020114	-.015269	0.12847568	-2.117

NV: race*PPC –> condom use						Standard error of slope				t-value
Treating Race as the Moderator Moder Moded		Slope of Modified Variable	Slope of Product Term	hi & lo value for Race	Slope: b_i@X	Var(b_i) Var of Slope of Modified Variable	Var(b_j) Var of Slope of Product Term	Cov(b_i,b_j) Covariance of Slopes	Standard Error	b@X / S.E.
Race	PPC	.140970	-.297479	1	-0.1565	.011480	.016073	-.010276	0.083672	-1.871
Race	PPC	.140970	-.297479	0	0.14097	.011480	.016073	-.010276	0.1071447	1.3157

FULL gender*PPC–> risky sex						Standard error of slope				t-value
Treating Gender as the Moderator Moder Moded		Slope of Modified Variable	Slope of Product Term	hi & lo value for gender	Slope: b_i@X	Var(b_i) Var of Slope of Modified Variable	Var(b_j) Var of Slope of Product Term	Cov(b_i,b_j) Covariance of Slopes	Standard Error	b@X / S.E.
Gende	PPC	1.146368	-.77827	1	0.3681	.077687	.091793	-.071458	0.16298466	2.2585
gender	PPC	1.146368	-.77827	0	1.14637	.077687	.091793	-.071458	0.27872388	4.1129

NV gender*race–> risky sex						Standard error of slope				t-value
Treating Gender as the Moderator Moder		Slope of Modified Variable	Slope of Product Term	hi & lo value for Gende r	Slope: b_i@X	Var(b_i) Var of Slope of Modified Variable	Var(b_j) Var of Slope of Product Term	Cov(b_i,b_j) Covariance of Slopes	Standard Error	b@X / S.E.
gender	race	-2.110405	1.77755	1	-0.3329	.109670	.143584	-.108726	0.18921416	-1.759
gende r	race	-2.110405	1.77755	0	-2.1104	.109670	.143584	-.108726	0.33116461	-6.373

NV race*gender–> risky sex						Standard error of slope				t-value
Treating Race as the Moderator Moder Moded		Slope of Modified Variable	Slope of Product Term	hi & lo value for Race	Slope: b_i@X	Var(b_i) Var of Slope of Modified Variable	Var(b_j) Var of Slope of Product Term	Cov(b_i,b_j) Covariance of Slopes	Standard Error	b@X / S.E.
Rac e	gender	-2.794755	1.77755	1	-1.0172	.089872	.143584	-.089872	0.2317585	-4.389
Rac e	gender	-2.794755	1.77755	0	-2.7948	.089872	.143584	-.089872	0.29978659	-9.322

NV gender*sest–> condom use						Standard error of slope				t-value
Treating gender as the Moderator Moder Moded		Slope of Modified Variable	Slope of Product Term	hi & lo value for gender	Slope: b_i@X	Var(b_i) Var of Slope of Modified Variable	Var(b_j) Var of Slope of Product Term	Cov(b_i,b_j) Covariance of Slopes	Standard Error	b@X / S.E.
gende	SEST	-.014686	.230390	1	0.2157	.005495	.007607	-.005362	0.0487647	4.4234
gende r	SEST	-.014686	.230390	0	-0.015	.005495	.007607	-.005362	0.0741283	-0.198

NV gender*race–> # parnters						Standard error of slope				t-value
Treating gender as the Moderator Moder	Moded	Slope of Modified Variable	Slope of Product Term	hi & lo value for gender	Slope: b_i@X	Var(b_i) Var of Slope of Modified Variable	Var(b_j) Var of Slope of Product Term	Cov(b_i,b_j) Covariance of Slopes	Standard Error	b@X / S.E.
gender	race	-1.083098	.874013	1	-0.2091	.030751	.040261	-.030487	0.10018982	-2.087
gender	race	-1.083098	.874013	0	-1.0831	.030751	.040261	-.030487	0.17535963	-6.176

NV race*gender–> #parnters						Standard error of slope				t-value
Treating race as the Moderator Moder	Moded	Slope of Modified Variable	Slope of Product Term	hi & lo value for race	Slope: b_i@X	Var(b_i) Var of Slope of Modified Variable	Var(b_j) Var of Slope of Product Term	Cov(b_i,b_j) Covariance of Slopes	Standard Error	b@X / S.E.
Rac	gender	-1.320730	.874013	1	-0.4467	.025200	.040261	-.024958	0.12467959	-3.583
Race	gender	-1.320730	.874013	0	-1.3207	.025200	.040261	-.024958	0.15874508	-8.32

FULL race*gender–>risky sex						Standard error of slope				t-value
Treating race as the Moderator Moder	Moded	Slope of Modified Variable	Slope of Product Term	hi & lo value for race	Slope: b_i@X	Var(b_i) Var of Slope of Modified Variable	Var(b_j) Var of Slope of Product Term	Cov(b_i,b_j) Covariance of Slopes	Standard Error	b@X / S.E.
Rac	gender	-2.750189	2.281775	1	-0.4684	.095824	.137497	-.095414	0.2061383	-2.272
Race	gender	-2.750189	2.281775	0	-2.7502	.095824	.137497	-.095414	0.30955452	-8.884

FULL gender*race–> risky sex						Standard error of slope				t-value
Treating gender as the Moderator Moder	Moded	Slope of Modified Variable	Slope of Product Term	hi & lo value for gend	Slope: b_i@X	Var(b_i) Var of Slope of Modified Variable	Var(b_j) Var of Slope of Product Term	Cov(b_i,b_j) Covariance of Slopes	Standard Error	b@X S.E.
gender	race	-2.828867	2.281775	1	-0.5471	.109545	.137497	-.108000	0.1761874	-3.105
gender	race	-2.828867	2.281775	0	-2.8289	.109545	.137497	-.108000	0.33097583	-8.547

NV gender*race–>yrs. Exp						Standard error of slope				t-value
Treating gender as the Moderator Moder	Moded	Slope of Modified Variable	Slope of Product Term	hi & lo value for gender	Slope: b_i@X	Var(b_i) Var of Slope of Modified Variable	Var(b_j) Var of Slope of Product Term	Cov(b_i,b_j) Covariance of Slopes	Standard Error	b@X S.E.
gender	Race	-1.21370	.804935	1	-0.4088	.024934	.032645	-.024720	0.0902164	-4.531
gender	Race	-1.21370	.804935	0	-1.2137	.024934	.032645	-.024720	0.15790503	-7.686

NV race*gender->yrs. Exp						Standard error of slope				t-value
Treating race as the Moderator Moder	Moded	Slope of Modified Variable	Slope of Product Term	hi & lo value for race	Slope: b_i@X	Var(b_i) Var of Slope of Modified Variable	Var(b_j) Var of Slope of Product Term	Cov(b_i,b_j) Covariance of Slopes	Standard Error	b@X S.E.
Rac	gender	-1.580795	.804935	1	-0.7759	.020433	.032645	-.020237	0.11226754	-6.911
race	gender	-1.580795	.804935	0	-1.5808	.020433	.032645	-.020237	0.14294405	-11.06