

NOT TALKING ABOUT SEX: INDIRECT PARENTAL COMMUNICATION AND
RISKY ADOLESCENT SEXUAL BEHAVIOR

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RISKY ADOLESCENT SEXUAL BEHAVIOR

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Not Talking About Sex: Indirect Parental Communication and Risky Adolescent Sexual Behavior

Despite a limited but significant decrease over the past 20 years in the number of adolescents, aged 13 to 19, who report ever having had sexual intercourse, adolescents are having sex at younger ages (Sieving, Oliphant, & Blum, 2002). In addition, according to the NCHS Health report, adolescents under the age of 18 accounted for 3.6% of live births in 2003 (Centers for Disease Control, 2004). Finally, recent years have seen an increasing number of adolescents with HIV/AIDS and other sexually transmitted diseases (Centers for Disease Control, 2004). Clearly, adolescents are engaging in sexual behaviors that have important consequences for their physical health and quality of life.

The ever-present possibility of contracting sexually transmitted diseases, combined with the life-altering, and almost certainly overwhelming changes brought on by teenage pregnancy, make adolescent sexual behavior an incredible avenue for potential devastation in teens' lives. It is essential that research examine the range of factors associated with adolescent sexual behavior, particularly risky sexual behavior such as having unprotected sex with multiple partners. Identifying correlates of adolescent risky sexual behavior provides important groundwork for research that can identify causal influences on adolescent risky sexual behavior, and for development of interventions that can promote healthy sexual development and prevent risky behavior in adolescents.

Although the grievous consequences of risky sexual behavior are clear, the factors that influence these risks are not quite as apparent. There is a large and varied body of work on factors that are hypothesized to influence risky adolescent sexual behavior,

including the community, religious practices and beliefs, the media, peers, biological factors, family characteristics, parent process variables, and adolescent attitudes and beliefs (Fisher, 2004). Of these diverse factors, parent factors are arguably among the most important potential influences on adolescent sexual behavior (Luster & Small, 1994). Indeed, although adolescence is a period during which extrafamilial influences such as peers, media, and the community become increasingly important, parents remain a large influence on youths' lives (Steinberg & Morris, 2001). Thus, comprehensive understanding of parent factors relevant to adolescent sexual development and behavior has important implications for our efforts to impact the negative consequences of risky sexual behavior.

Although the literature suggests that parent factors such as monitoring and control, warmth, and relationship quality are related to lower rates of adolescent risky sexual behavior, the role of parents' communication with their children about sexual behavior, especially their indirect communication, is less well understood. Thus, the current study examined the relation of participant reported parent indirect communication to adolescents' attitudes about sex and their risky sexual behavior. First, this paper will briefly review theory and literature on the range of potential influences on adolescent risky sexual behavior, with an in-depth focus on parent factors. Then, the paper will describe a study which examined participant reported parent indirect communication, adolescent attitudes about sex, and risky sexual behavior. Using a retrospective design, young adult research participants reported on how their parents communicated with them indirectly about sex during their childhood and adolescence, via parents' displays of

intimacy and sexuality and adolescents' perceptions of their parents' attitudes about sex. Participants also reported on their risky sexual behavior during adolescence.

Potential Influences on Adolescent Risky Sexual Behavior

Before we begin, it is important to understand what is meant by the phrase *risky adolescent sexual behavior*. Is it simply a question of age, with sexual behaviors suddenly moving arbitrarily from risky to safe? Researchers in this area of literature consider adolescent sexual behavior risky based on correlates and outcome variables that negatively influence quality of life for the adolescents, such as sexually transmitted infections, pregnancy experiences, drug use, and poorer relationship satisfaction (Whitaker, Miller, & Clark, 2000; Luster & Small, 1994; Kotchick, Shaffer, Miller & Forehand, 2001). In other words, engaging in sexual behavior at the age of 15, 14, or even 12 is not necessarily *risky* for a specific adolescent, but research has clearly demonstrated that, in general, certain adolescent sexual behavior, such as having an earlier age of sexual debut, having more sexual partners, using birth control less frequently and having more pregnancy experiences, is related to negative outcomes (Jaccard, Dittus, & Gordon, 1998; Luster & Small, 1994). Thus, for the purpose of this study, we defined risky sexual behavior as...

Although the grievous consequences of risky sexual behavior are clear, the factors that influence these risks are not quite as apparent. Historically, adolescent sexual behavior has been viewed through one of two fairly limited approaches: the theory of biological *unfoldment* or the social-learning paradigm. The theory of biological *unfoldment* views adolescent sexuality through a physiological and developmental lens, explaining sexual behavior in terms of bio-chemical drives, hormonal urges, and pubertal

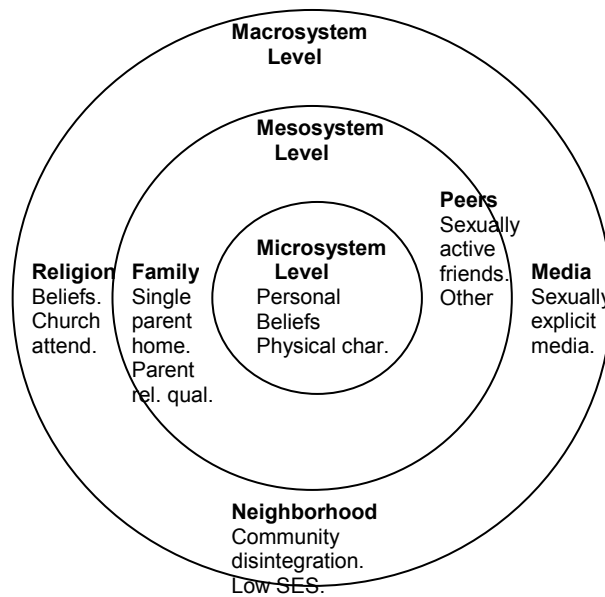
stage (Udry, Talbert, & Morris, 1986). The social-learning perspective, on the other hand, sees sexual behavior as learned through influences such as cultural indoctrination and parental modeling (Werner-Wilson, 1998). However, each of these paradigms tends to take one side of the classic *nature vs. nurture* debate and ignore the other (for a review, see Miller & Fox, 1987).

More recently, researchers have begun to see the merit of using a broader approach to understanding adolescent sexual behavior. The ecological risk-factor approach considers factors from both biological and environmental realms to form a more complete picture of adolescent behavior (Bronfenbrenner, 1989; Schweiger & O'Brien, 2005). According to Bronfenbrenner's (1989) Ecological Systems Theory, risk factors that contribute to increased likelihood of maladaptive outcomes can come from many places in a child's environment, both proximal and distal. The most specific and proximal level of environmental influence is that of the *microsystem*, or the factors present in an individual, both physically and psychologically (Bronfenbrenner, 1989). Examples of *microsystem* influences include personal beliefs and cognitions, or physical conditions. The next system level is the *mesosystem* which involves immediate contextual factors present in the individual's environment and includes examples such as parental levels of education, growing up in a single-parent or two-parent home, and peer influence and educational aspirations. The most distal level is the *macrosystem*, which includes the most broad-reaching factors, such as cultural practices and beliefs (Bronfenbrenner, 1989). Examples of macrosystem variables include socio-economic status, the nation in which one lives, and cultural views on violence. Grasping the interplay among these multiple environmental risk factors can help to provide more comprehensive

understanding of youth adjustment. For example, more proximal factors may mediate relations among more distal influences and individual behavior. More proximal factors are also more easily influenced, changed, and are more amenable to treatment. Finally, as proximal factors are frequently fairly constant and present in everyday life, they can have powerful, more immediate influences than distal factors, as a general rule.

Recently, the ecological systems framework has been applied to understanding youth sexual behavior (Small & Luster, 1994). Figure 1 illustrates these authors' conceptualization of how individual, family, and extrafamilial (also known as micro-, meso-, and macrosystem) variables may relate to risk for adolescent sexual activity. As can be seen in the figure, the *microsystem* is the level of the individual, and includes factors such as adolescent sexual beliefs and history of sexual abuse. The next level is that representing the adolescent's familial environment and includes factors such as quality of parent-child relationship and parental communication. Finally, the *macrosystem or extra-familial* level includes factors from school, the adolescent's peers, and cultural factors. This differs somewhat from Bronfenbrenner's (1989) model in that the mesosystem level is limited to family influences. Other factors which Bronfenbrenner's model includes in the mesosystem (e.g. peers) are moved to the macrosystem level in Small and Luster's conceptualization.

ERF Model for RASB



This ecological systems framework can be useful in organizing theory and literature on adolescent risky sexual behavior. Additionally, all of the factors empirically found to correlate with an increased risk of adolescent sexual behavior can be combined to present the most complete conceptual framework for understanding this area of interest. Furthermore, conceptually placing the existing literature in such a clear framework can help revealing gaps in the literature and areas that need more research (Small & Luster, 1994; Corcoran, 1999). The next section reviews existing literature on adolescent risky sexual behavior within this ecological systems framework, moving inward from the most distal factors to the individual, and identifies areas where further research is warranted. Because the meso-system level is of principal interest in the present study, we will focus most on meso- or family-level factors. First, influences from other levels are discussed more generally.

Community and the Media

Common sense dictates that every behavior is influenced by the context in which it occurs. One of larger contexts in which adolescents' behavior occurs is the community in which they live. The community, encompassing factors such as neighborhood SES, ethnic make-up, social disintegration, and percentage of women in the work-force, can influence behavior by limiting the lifestyle options available to adolescents and providing the mores and norms that shape their behavior. For example, a child growing up in rural Arkansas with seven siblings and parents who work at the chicken farm may never even think about the possibility of attending college, as he knows his parents can barely afford to put food on the table. To him, getting a job and getting out on his own as soon as possible is the only practical option.

Brewster, Billy, and Grady (1993) suggest that community characteristics play a role in shaping adolescent sexual behavior through shaping adolescents' expectations about their most probable life-course, though this is just their interpretation. Additionally, one can assume that community characteristics provide or deny individuals resources important to their developmental path and, perhaps more importantly, shape an atmosphere which supports growth and achievement, dysfunctional and risky behavior, or anything in between. Brewster, Billy, and Grady (1993) found in their sample of adolescent females that lower socio-economic status, high community disintegration, defined as resident turn-over and family dissolution, and high racial variety within the community were related to younger age at first intercourse. This does not necessarily imply that living in an ethnically varied community is directly responsible for an increased risk of sexual behavior; instead, it may be that the most ethnic diversity was present in neighborhoods with generally lower SES or lower levels of supervision of

youth, conditions which foster risky behaviors over educational and personal achievement. The same could be said for having a higher proportion of women in the workforce, which was also found to be negatively related to the adolescent use of contraception (Brewster, Billy, & Grady, 1993). The authors confirmed these results in a later study (Billy, Brewster, & Grady, 1994) for White females, additionally finding that growing up in a single-parent household is associated with a higher frequency of intercourse after sexual debut. They found that for Black adolescent females, social disintegration, and a female workforce also increased the likelihood of non-marital adolescent sexual activity (Billy, Brewster, & Grady, 1994). Neighborhood poverty has also been found to relate directly and indirectly to risky adolescent sexual behaviors such as a younger sexual debut, more sexual partners, and less frequent condom use (Ramirez-Valles, Zimmerman, & Newcomb, 1998; Upchurch, Aneshensel, Sucoff, & Levy-Storms, 1999).

Another contextual factor which has been shown to influence adolescent sexual behavior is the media. L'Engle, Brown and Kenneavey (2006) found that more exposure to sexually-related media and media that conveys an approval of adolescent sexual behavior was related to higher levels of intention to engage in sexual behavior and a greater amount of sexual behavior in general. This effect persisted even after controlling for other contextual factors including parents, peers, school, and religious influences.

Religion

Religion can also have a strong correlation with parent-adolescent communication about sex and adolescents' sexual behavior. Research has demonstrated that religion relates to adolescent sexual attitudes and behavior both directly and indirectly (Regnerus,

2005; Rostosky, Wilcox, Wright & Randall, 2004). Regnerus (2005) found that religious denomination correlated with the frequency with which parents discussed sexual issues, with Black Protestants and Mormons discussing sexual topics significantly more often than any other religious denominations. Furthermore, higher parental church attendance were related to lower frequency of conversation about sexual topics, although parent-reported religious salience, or the importance with which parents viewed religion, was related to more frequent discussions of the morality of adolescent sexual behavior. In their review of the literature, Rostosky et al. (2004), reported that involvement in a more conservative religious denomination, more frequent church attendance, and adolescent religiosity are all related to higher adolescent age at first intercourse. Interestingly, Rostosky et al. note that the relation of religion to adolescent sexual behavior is likely more complex than a simple bivariate relation. More specifically, church attendance has been found to relate to decreased sexual behavior only if the adolescents' peers also attended church, and findings tended to be stronger for girls than boys. Maternal religiosity has also been found to bear a relationship to adolescent sexual behavior, distinct from that of adolescent religiosity.

Peers

Close friends and peers have been found to be quite important to the socio-sexual development of adolescents (Smith, Udry & Morris, 1985; Christopher, Johnson & Roosa, 1993). Association with deviant peers was related to an increased risk of adolescents engaging in a number of problematic behaviors, including risky sexual behavior (Ary et al., 1999; Metzler, Noell, Biglan, Ary, & Smolkowski, 1994). Smith, Udry & Morris (1985) found that the higher the sexual involvement of an adolescent's

best same-sex friend, the more likely that the adolescent was to engage in sexual behavior; though, this relationship was moderated by level of pubertal development for adolescent females, such that at low levels of pubertal development, the sexual involvement of friends was unrelated to the adolescent's sexual behavior whereas with more advanced pubertal development, having sexually involved friends was related to more sexual involvement in the adolescent. Whitaker, Miller, and Clark (2000) found, when comparing adolescents who anticipated having sex within the next year and those who did not, that those who anticipated sex were more likely to have peers who had engaged in sexual intercourse; furthermore, those who had engaged in sex with multiple partners were more likely than those who had had only a single partner to have peers who engaged in sexual behavior. These correlates of peer sexual behavior have been confirmed across multiple ethnicities and countries (Christopher, Johnson, & Roosa, 1993). As with other potential influences, the relationship of peer factors to adolescent sexual behavior seems to be part of a more complex picture. According to Whitaker and Miller (2000), parent-adolescent communication moderates the relationship, such that adolescents who experienced less communication with their parents reported preferring peers as sources for sexual information than those who experienced higher levels of parent-adolescent sexual communication.

Biological Factors

Biology has long been considered a key factor in explaining adolescent sexual behavior. Several researchers have described the role of biological 'unfoldment', including physical forces such as pubertal development and hormones, in adolescent sexual behavior, suggesting that the timing of sexual activity may be as much a biological

issue as a social or behavioral one (Miller & Fox, 1987; Miller, Benson, & Galbraith, 2001; Kotchick, Shaffer, Forehand, & Miller, 2001; Udry, 1988). Miller, Benson and Galbraith (2001) point out that recent research has found links between genes, hormone levels, and the developmental point at which adolescents begin to engage in sexual intercourse. Udry and colleagues found evidence that levels of androgen hormones longitudinally influenced the debut of sexual intercourse of white males, as well to the level of sexual motivation, though not the sexual act itself, in adolescent females (Udry & Billy, 1987; Udry, Talbert, & Morris, 1986; Udry, 1988). Other researchers have found that early sexual development, which has been linked to a higher likelihood of risky sexual behavior, is, to a degree, inherited (Miller, Benson, & Galbraith, 2001). Miller et al. (1998) found that genes determining the number of dopamine receptors were linked to sexual debut, such that having more dopamine receptors was related to an earlier age at first intercourse. Again, these data are correlational and cannot imply causality, but they do provide further evidence that biology may play an important role in the likelihood of risky adolescent sexual behavior. Despite these obvious links, even the biggest researchers in this field explain that strictly biological models are not enough to explain adolescent sexual behavior (Udry, 1988).

Family Characteristics

Families are an incredibly important influence on the behavior of any child in many ways, and this has been found time and time again to be the case with adolescent sexual behavior (for a review, see Fisher, 2004). The very characteristics of the families that make up the context in which adolescents live relate to adolescents engagement in risky sexual behavior (Miller, Benson, & Galbraith, 2001). For instance, low family

socio-economic status has been repeatedly linked to risky adolescent sexual behavior (Inazu & Fox, 1980; Taris & Semin, 1997; Ramirez-Valles, et al., 1998; Kotchick, Shaffer, Forehand, & Miller, 2001, etc.). Numerous studies have also demonstrated that living with both biological parents is related to increased age of sexual debut (e.g., Inazu & Fox, 1980; Newcomer & Udry, 1987; Taris & Semin, 1997; & Ramirez-Valles et al., 1998; Upchurch, Aneshensel, Sucoff, & Levy-Storms, 1999). The presence of older siblings, especially those who are sexually active or pregnant, has been found to relate to increased risk of adolescent pregnancy (Miller, Benson, & Galbraith, 2001; Rodgers & Rowe, 1988; Rodgers, Rowe, & Harris, 1992; Wight, Williamson, & Henderson, 2006). Both physical and sexual family abuse have also been linked to a higher risk of risky adolescent sexual behavior (Luster & Small, 1994; Small & Luster, 1994). Finally, family religiousness and the neighborhoods in which families live also relate to adolescent sexual behavior, as described above.

Parental Process Variables

Another way in which parents influence adolescents is through parental process variables, or the dynamics of family interaction; examples include general parenting style and parent-child relationship, which consists of parental control, parental warmth/support, parent-child relationship quality and connectedness/closeness, direct parent-adolescent communication about sexual behavior, indirect parental communication, and parent sexual attitudes (Kotchick, Shaffer, Forehand, & Miller, 2001; Miller, Benson, & Galbraith, 2001; Fisher, 2004). Each of these will be addressed in turn.

General Parenting Style and Parent-Child Relationship

Parental control and monitoring have been repeatedly linked to lower levels of risky adolescent sexual behavior, usually, it is thought, by reducing the amount of opportunity available to engage in pre-marital sexual behavior (Luster & Small, 1994; Small & Luster, 1994; Hovell, et al., 1994). Wight, Williamson, and Henderson (2006) found that higher levels of parental monitoring were related to less sexual behavior in males and a later age at first intercourse, fewer sexual partners, and more consistent condom use in females. Similarly, Rodgers (1999) found that parental monitoring was linked to less risky adolescent sexual behavior, but parents' over-controlling psychological behaviors were actually related to an increased the risk of sexual behavior among daughters. Similar findings by Upchurch et al. (1999) indicated that when teens perceived too much psychological control on the part of parents, they were more likely to have an earlier sexual debut. Thus, it appears parents must walk a fine line by closely monitoring the lives of their children while not attempting to exert too much psychological control.

Parental warmth or support has also been found to relate to adolescent sexual behavior (Miller, Benson, & Galbraith, 2001). Luster and Small (1994) found that highly supportive parents had adolescents at much lower risk for having more than one sexual partner and inconsistently using contraception. In another study, they also found that parental support could be used to categorize sexually active and inactive teens (Small & Luster, 1994). Upchurch et al. (1999) found that more parental support was linked to a later age of adolescent sexual debut. Surprisingly, Rodgers (1999) found no direct relationship between support and adolescent sexual risk, but this could be due to methodological differences between that and other studies; she did find, however, that the

lack of parental support may decrease the relation between parental communication and adolescent behavior. Overall, despite some conflicting results, it appears that more parental warmth and support is protective against risky adolescent sexual behavior.

The significant relationship among parent-child relationship quality, closeness, or connectedness and adolescent sexual behaviors has also been investigated. Inazu & Fox (1980) found that mother-daughter closeness was highly related to daughters' abstinence. Davis and Friel (2001) found the same variable to be related to a later age of first intercourse for daughters. Feelings of closeness of male adolescents for their families have been found to relate to a lower likelihood of engaging in intercourse during the previous year (Lauritsen, 1994). Jaccard, Dittus and Gordon (1996) found that for both males and females, a close mother-child relationship was protective against pre-marital intercourse, frequency of intercourse, and inconsistent contraception use. They later found that adolescent satisfaction in the mother-child relationship was related to a later sexual debut (Jaccard, Dittus, & Gordon, 1998; Jaccard & Dittus, 2000). Miller, Norton, Fan and Christopherson (1998) also found that a high quality parent-child relationship was related to less risky adolescent sexual behavior. Ramirez-Valles et al. (1998) reported that parent-child connectedness is related to reduced risky adolescent sexual behavior by increasing adolescent involvement in other activities. Overall, it appears that closeness and high quality parent-child relationships are related to reduced risk of adolescent risky sexual behavior.

Direct Parent-Adolescent Communication

More than any other family influence, it seems that parental communication is, at first examination, rife with conflicting results (Miller, Benson, & Galbraith, 2001; Fisher,

2004). Direct communication, in this context, is straightforward, verbal discussion between parents and adolescents about sexual topics (Fisher, 2004). A number of studies have found little or no relationship between parent-child communication and risky adolescent sexual behavior. For example, a few studies found no relationship between mother-daughter communication and daughter's intercourse status or contraception use (Furstenberg, Herceg-Baron, Shea, & Webb, 1984; Inazu & Fox, 1980). Darling and Hicks (1982) also found communication unrelated to daughter's behavior, suggesting that this was because daughters remembered little about these conversations, and their memories tended to focus on highly negative communication. Quantity and frequency (Rodgers, 1999) of parental communication have also been unrelated to adolescent sexual behavior..

In contrast to these null findings, several studies have found a positive relationship between parent-child communication and risky adolescent sexual behavior. Fox and Inazu, in another 1980 study, found that higher levels of mother-daughter sexual communication were correlated to a higher likelihood of daughter intercourse. They cite sample differences as accounting for the conflicting results of this and Inazu and Fox (1980). Fingerson (2005) found similar results in that more frequent mother-child communication was related to a greater risk of sexual behavior for both males and females. Jaccard, Dittus, & Gordon (1998) found that parent-child communication specifically about contraception correlated with adolescents being more likely to engage in sexual intercourse, but for sons, it was also associated with appropriate use of birth control.

In addition to the frequency of sexual communication, the tone of parent-child sexual communication is also related to adolescent sexual behavior. Ward and Wyatt (1994) found that parental sexual messages of a negative nature (e.g. 'sex is dirty') were related to more adolescent sexual risk behavior. Darling and Hicks (1982) found that high levels of both positive and negative sexual messages were related to more sexual behavior in sons.

Furthermore, the manner in which parents communicate with their children has been found to relate to risky sexual behavior. Whitaker, Miller, May, & Levin (1999) found that for mothers low in responsiveness to their children, there was a positive relationship between mother-adolescent communication and inconsistent adolescent contraception use. Unsurprisingly, communication with parents who have permissive sexual attitudes is associated with higher rates of sexual behavior, at least in daughters (Fisher, 1989). The results of these studies seem to indicate that high levels of conversation about sex, especially in a context of low parent support or negative sexual messages, is related to increased sexual behavior in adolescents.

Some parent-child sexual communication may also show *negative* relationships with risky adolescent sexual behavior. The quality of, or the degree to which participants report satisfaction with, communication has been found to be related to less risky sexual behavior (Miller, Norton, Fan, & Christopherson, 1998). Hutchinson (2002) found that an increase in quality of father-daughter communication was related to a decrease in the likelihood of daughters engaging in sexual behavior, among an African American sample. Fisher (1988) found that the quality of sexual communication correlated inversely with the likelihood of males engaging in intercourse and age at first intercourse;

quantity of mother-daughter communication was positively related to contraceptive use. Open and receptive mother-adolescent sexual communication has been found to relate to lower levels of risky adolescent sexual behavior (Kotchick, Dorsey, Miller, & Forehand, 1999). On the other hand, Lehr, DiIorio, Dudley and Lipana (2000) found that mother-adolescent open communication had a curvilinear relationship such that both the highest and the lowest levels of open communication were related to earlier sexual debuts than the average level of open communication. The authors hypothesize that the increased risk in the extreme groups could be due to different mechanisms; for example, high levels of open parental communication might reflect permissive parental attitudes or might indicate parents responding to a perception that adolescents have or are ready to engage in sexual behavior. Lower levels of open communication, on the other hand might indicate an inappropriately lax and uninvolved or overly strict and highly controlling parental-child relationship, both of which have been associated with higher rates of risky sexual behavior, as was mentioned above. Wight, Williamson and Henderson (2006) found a similar U-shaped relationship between levels of adolescent-reported comfort discussing sexual topics with both parents for males and with fathers only for females. The results of this and the other studies in this group indicate that, for parent-child communication to be protective against risky adolescent sexual behavior, it seems important that it occur in the context of a positive, open and supportive parent-child relationship in which parents are responsive to their children but who present a clear message that they disapprove of risky adolescent sexual behavior.

There are several possible explanations for the highly contradictory nature of studies investigating indirect parent-adolescent communication. For example, the indirect

communication is assessed with a wide variety of measures that may not be addressing the same construct. Alternatively, it is possible that it is the nature of the message received from the parent, or parent-child relationship qualities, not necessarily accounted for in all of these studies, that account for the conflicting results. Finally, it is likely that assessing parent-adolescent communication yields different results depending on whether parents or adolescents are reporting on the communication.

Indirect Parent-Adolescent Communication

Thus far, only direct parental communication of thoughts, values, and attitudes has been examined, but much parent-influenced sexual socialization takes place indirectly, as well. Darling & Hicks (1982) found that adolescent children perceive parental sexual messages both directly and indirectly through parental expression of feelings and affection. In this literature, indirect communication is the communication of sexual attitudes through physical, non-verbal behaviors, such as physical affection and the handling of nudity and privacy (Joffe & Franca-Koh, 2001). In one study, certain maternal behaviors—premarital pregnancy and a younger age of marriage—were related to more liberal sexual attitudes among adolescents (Thorton & Camburn, 1987). In another study, women who remembered perceiving their mothers being affectionate towards their fathers during their childhoods had more positive attitudes towards being affectionate in current relationships (Koblinsky & Palmeter, 1984). This indirect communication can be especially important, since there is so little direct communication about sexual topics within the family (Darling & Hicks, 1982; Fox & Inazu, 1980).

Despite its importance, little research has been done on indirect parental sexual communication and its influence on risky adolescent sexual behavior, perhaps because of

the challenges inherent in measuring such sensitive family interactions. In one of the few studies to address this relationship, Ward and Wyatt (1994) found that women who recalled no sex-related nonverbal messages from childhood experienced more risky sexual behavior than their peers. In another study, indirect parental communication was operationalized as exposure to parental affection, nudity in the home, and knowledge of parental sexual behavior and mother's menstruation, though exploratory factor analysis resulted in a construct with two dimensions: exposure to affection and nudity in the home. In this study, open and sex-positive indirect parental sexual communication, or the presence of more nudity and more frequent physical affection between parents, was related to a younger age at first intercourse, fewer sexual partners, and less sexual guilt (Joffe & Franca-Koh, 2001). Though these studies clearly indicate that indirect parental communication influences adolescent sexual behavior, neither takes into account adolescent perceptions of parental attitudes, which, considering their influence on direct parental communication, are likely to play an essential role with indirect communication, as well.

Adolescent Perception of Parental Attitudes

Adolescent perception of parental attitudes can certainly influence the relationship between parent-child communication and adolescent sexual behavior. Fisher (1989) found that more communication with parents teens perceive as liberal was related to females engaging in more sexual behavior, and communication between conservative parents and sons led to sons being more conservative themselves. Similarly, according to Moore, Peterson, & Furstenberg (1986), higher levels of communication with liberally-perceived parents was related to sons engaging in more sexual behavior, while

communication between conservative parents and daughters was related to less risky sexual behavior.

Adolescent perceptions of parental attitudes have also been found to bear a direct relationship to the sexual behavior of adolescents. In one study teens perceiving their mothers to be more liberal was related to a higher likelihood of them having sex, and teens tended to perceive their mothers as more liberal than the mothers reported being (Fingerson, 2005). Similarly, other studies have found that perceived parental permissiveness was related to increased risk of adolescent sexual behavior (Small and Luster, 1994; Taris & Semin, 1997). On the other hand, when teens perceived conservative maternal attitudes, they were also less likely to engage in sexual behavior, according to Jaccard, Dittus, and Gordon (1998), but adolescents were likely to underestimate maternal disapproval, especially in cases of low parent-child communication. Conservative paternal attitudes have also been found to be related to reduced risky adolescent sexual behavior (Dittus, Jaccard, & Gordon, 1997). Additionally, adolescent contraception use has been found to relate to parental attitudes towards adolescent contraception use, such that more positive parental attitudes towards adolescent contraception use were related to more consistent use on the part of adolescents (Jorgensen & Sonstegard, 1984).

Summary

The limited research in this area clearly demonstrates that an incredible range of factors are in some way related to risky adolescent sexual behavior. The literature also clearly demonstrates that parent-adolescent communication is of particular importance. Indirect forms of parent-adolescent communication are both important and, as of yet,

understudied, and adolescent perception of parental attitudes can certainly effect the way parental communication, both direct and indirect, is perceived. This study addresses, to some small degree, this limitation by shedding new light on the relationship between adolescent perceived indirect parental communication and risky adolescent sexual behavior, while at the same time considering their relationship with adolescent perceptions of parental attitudes.

Current Study

The current study grew most directly from the research of Joffe and Franca-Koh (2001), operationalizing and measuring indirect parental communication in a similar manner and investigating its influence on risky adolescent sexual behavior. The current study extended the literature on the potential role of adolescent perceived indirect parent-adolescent communication in adolescents' risky sexual behavior. This study offered several specific advances over existing literature. First, this study included a direct test of participant perceived indirect parental sexual communication and its relationship with risky adolescent sexual behavior. Specifically, debut of sexual intercourse, number of sexual partners, use of birth control, and pregnancy experiences were used as indicators of risky sexual behavior. Second, it investigated differences in this relationship before and after puberty, something which no study has previously done. Third, this study investigated the role of a number of background variables in the relationships of interest, including age and gender, which have been looked at previously, as well as religious denomination, religiosity, family structure, and possibly race and sexual orientation, which have not been examined in the literature. Fourth and finally, the current study

utilized a measure of adolescent perceptions of parental attitudes, in order to evaluate the effects of this variable upon the aforementioned relationship.

Several hypotheses, based on existing literature, were proposed to examine the relationship between participant reported indirect parent communication and adolescent risky sexual behavior. Together, these hypotheses test proposed direct relationships between parent communication and adolescent sexual behavior, as well as potential moderators and mediators of that proposed relationship. Hypotheses are summarized in Table 1 and elaborated here. First, we hypothesized a direct relationship between the amount of indirect parental communication during childhood and one or more of the aspects of risky adolescent sexual behavior. More specifically, as noted above the literature has suggested that adolescent perception of parents as having conservative views towards adolescent sexual behavior (e.g. that adolescents should not engage in sexual behavior and that sexual behavior should not be discussed) is related to a certain pattern of adolescent sexual behavior—a later sexual debut, with more partners, less use of birth control, and more likely pregnancy experiences. Conversely, the literature has suggested that adolescent perception of parents as having liberal views towards adolescent sexual behavior (e.g. that adolescents should be free to engage in sexual behavior and that sexual behavior should often be discussed) is related to a certain pattern of adolescent sexual behavior—an earlier sexual debut, with more partners, and more likely pregnancy experiences. Thus, we hypothesized that higher levels of participant reported indirect parental sexual communication of conservative parental views (or lower levels of liberal views) towards adolescent sexual behavior will be related to later sexual debut, more partners, less birth control use, and more pregnancy.

Second, we hypothesized that several demographic variables will moderate the relationship between communication and risky sexual behavior, such as race/ethnicity, participant religiosity, religious denomination, and presence of both parents throughout childhood. Following the literature, we expected that there would be different patterns of adolescent sexual behavior between White (later sexual debut, fewer partners, more frequent use of birth control, and fewer pregnancy experiences) and Black (earlier sexual debut, more partners, less frequent use of birth control, and more pregnancy experiences) participants; there would be differences in sexual behavior based on gender with males having earlier debuts and more partners than females; and there would be differences in sexual behavior based on the presence of both parents in the home such that having both parents would be related to a later sexual debut, fewer partners and lower likelihood of pregnancy experiences. We also expected that females would be more likely to use birth control and have fewer pregnancy experiences. The literature is limited on the effects of religiosity and participant religious denomination; thus these hypotheses were non-directional.

Third, we hypothesized that adolescent perception of parental attitudes would mediate the relationship between parent communication and adolescent sexual behavior. As part of this hypothesis, we proposed that (a) parent indirect communication about sex would be related to adolescent perceptions of parental attitudes about sex, (b) adolescent perceptions of parental attitudes would be related to risky sexual behavior, and (c) the strength of the relationship between parent communication and adolescent sexual behavior would be reduced when adolescent perceptions of parental attitudes are taken into account. There are no clear findings related to the direct relationship between

adolescent perception of paternal attitudes and adolescent sexual behavior, but the literature suggests that adolescent perception of conservative maternal attitudes are related to a later debut, fewer partners, less use of birth control and a higher likelihood of pregnancy experiences. Thus, this was the hypothesized pattern of sexual behavior for higher levels of adolescent perception of conservative parental attitudes for both parents.

Methods

Subjects

The project sample included 297 subjects (50.3% male; 49.7% female) from introductory psychology classes at the University of Missouri-Columbia. A large majority of the participants were Caucasian (84.3%), followed by African Americans (8.4%), Hispanics (1.4%) and all others (5.6%). There was a mean age of 19.15 years ($SD = 1.29$). The majority were either Protestant (30.6%) or Catholic (29.9%) and Jewish (.7%). Additionally, 20.4% responded that their religious orientation was not listed, and 8.3% responded that did not have a religious orientation. Almost all were single (96.8%), though a small percentage was married (1.1%), engaged (0.7%), divorced (0.4%) or other (1.1%). Most were raised by both of their biological parents (78.8%). Participants were required to be at least 18 years of age. Further, potential participants had to agree to participate in a study in which personal sexual material and other potentially sensitive topics were addressed. Eligible participants were identified based on the results of a question in a mass-testing session which assessed the aforementioned eligibility criteria.

Procedures

All data were gathered through an anonymous, encrypted online questionnaire website (i.e. <http://www.surveymonkey.com>). Eligible participants were contacted via an

email containing a link to the online questionnaire. The online questionnaire assessed basic demographic information and included measures of three constructs: Adolescent Perception of Parental Sexual Attitudes (APPA), as operationalized by Jaccard and Dittus (2000), Indirect Parental Sexual Communication (IPSC), adapted from the measure developed by Joffe and Franca-Koh (2001), and Risky Adolescent Sexual Behavior (RASB), as operationalized by Jaccard, Dittus, and Gordon (1998). Participants, upon accessing the survey site, were immediately presented with a consent form to which they explicitly agreed by clicking on the “I Agree” button and completing the survey. Participants were informed that participation was strictly voluntary and that they could stop the questionnaire at any point or skip any question if they felt even slightly uncomfortable with the subject matter (see Appendices 5 and 6). The initial form also instructed them to seek out a private environment in which to continue with the questionnaire (average completion time: 8.54 min.). Responses by participants were in no way linked with personally identifying information such as name, social security number, or student identification number. The IP address of the computer utilized to participate in the survey, which was automatically recorded by the website, was deleted after the survey data was downloaded. All potentially identifying demographic information (i.e. age, gender, ethnicity, etc.) is stored confidentially on the password-protected survey-hosting website until time of project completion and data deletion.

Measures

Demographic Information. The questions measuring demographic information included data on participant age, race, sexual orientation on a 5 point Likert-type scale, level of education, marital status and occupation (see Appendix 4). Furthermore, they

also included information on topics thought to be influential on results such as religiosity, which was measured by requesting a rating of the importance of religion, of participant and parents, parental occupation and highest level of education, and time spent being raised by parents (i.e. “How many years did you live with your parents/guardians?”).

Adolescent Perceptions of Parental Attitudes. The four questions dealing with adolescent perception of parental attitudes towards teenage sexual behavior and use of birth control were adapted from Jaccard and Dittus (2000). The reliability for these questions in the original study was adequate ($\alpha = 0.75$) (Jaccard & Dittus, 2000). The adaptations involved specifying separate questions for maternal attitudes and paternal attitudes for both sexual behavior and use of birth control and altering the rating scale from a 5-point to a 6-point Likert-type response scale in order to eliminate the midpoint for statistical purposes. Questions were rated on six-point Likert-type scales separately for maternal and paternal attitudes; responses ranged from *strongly approved* (1) to *strongly disapproved* (6). An example item is “How would your mother have felt about you using birth control during your teen years?” Scores were totaled separately for maternal and paternal attitudes. A total parental attitude score was taken from the sum of both paternal and maternal attitudes.

The reliability for this measure in the current study sample was adequate ($\alpha = 0.75$) (see Appendix 1).

Indirect Parental Sexual Communication. A thorough search of the relevant literature produced only one published measure for indirect parental communication and sexual attitudes (Joffe & Franca-Koh, 2001). A copy of the actual measure developed by Joffe and Franca-Koh (2001) was unobtainable, so their published description of the

measure was used to construct the measure used in this study. In the current study, indirect parental sexual communication was operationalized similarly to Joffe and Franca-Koh (2001). Additionally, psychometric data on the validity and reliability of the measure was unavailable through the published literature or through the authors.

The 39 questions of the measure developed for this study, based on the topic areas investigated by Joffe and Franca-Koh (2001) examined affection shown between parents, handling of nudity and privacy in the home, and awareness of parental sexuality and mother's menstruation (see Appendix 2). All questions, except for those regarding awareness of sexuality and menstruation, were on a five-point Likert-type scale with responses ranging from *Never* (1) to *Very often* (5). The measures indicating awareness of sexuality were presented on four-point Likert-type scale with responses ranging from *I was never aware* (1) to *I was completely aware* (4). The question measuring awareness of mother's menstruation was on a dichotomous yes-no response scale. Parental physical affection was measured overall and in the separate, individual behaviors of kissing, hugging, holding hands, cuddling, fondling, and caressing. The degree to which parents allowed respondents to have privacy in the bedroom and in the bathroom was measured separately for mothers and fathers in the bedroom and bathroom both before and after puberty. Nudity exhibited was measured separately for both parents and the respondent before and after puberty. Finally, the frequency of parental positive, negative, and neutral reactions towards nudity before and after the adolescent reached puberty was also measured. Separate total scores were created for awareness of parental sexuality, frequency of parental affection, parental nudity/privacy, and respondent nudity/privacy. Parental reactions towards nudity were summed separately for mothers and fathers.

The reliability for this measure in the current sample was adequate ($\alpha = 0.85$). A confirmatory factor analysis was performed to ascertain whether this measure followed the same pattern as that created by Joffe and Franca-Koh (2001). Initial analyses reveal that the measure used in the current sample does not strictly adhere to the two factors found in the Joffe and Franca-Koh (2001) study: a *handling of nudity* factor, which includes variables relating to the way the family handled nudity in the home, and a *expression of affection* factor, which concerns the parental affection observed by participants in the home. The initial confirmatory analyses of the study measure in the current sample, revealed that when the number of factors was constrained to 2, the variance explained was very low (25.521%) and the item loadings seemed inconsistent. When considering all of the behaviors that take place in the home that could communicate parental attitudes towards sexuality, it seemed that four factors should exist in the measure: a *handling of nudity and privacy* factor, an *expression of affection* factor, as in the Joffe and Franca-Koh study, as well as an *awareness of parental sexual behavior* factor, dealing with adolescent knowledge of parental sexual behavior, and a *respondent nudity* factor, which concerns the amount of nudity the respondent was allowed to exhibit in the home and the way parents reacted to respondent nudity. When the analysis was performed constraining the results to four factors, they cumulatively explained 44.401% of the total variance and the item loadings were consistent with the predicted factors. The following items were dropped from the analyses for not loading on any factor: *awareness of mother's menstruation* (awaremm) and *frequency of parental fondling* (freqpfond). Items measuring positive parental responses to nudity loaded with presence of parental physical affection. Items measuring negative and neutral parental

responses to nudity loaded with the *respondent nudity* items. For item loadings see Table 3.

Risky Adolescent Sexual Behavior. The five questions that measure risky adolescent sexual behavior were taken from Jaccard, Dittus, and Gordon (1998), and include standard indicators of risky sexual behavior: age of first intercourse, number of sexual partners, frequency and type of birth control usage, and pregnancy experience (Jaccard, Dittus, and Gordon, 1998). Number of sexual partners (“On average, how many sexual partners did you have a year during your teen years?”) and frequency of birth control use (“How often did you and your partner use some form of birth control to prevent pregnancy during your teen years?”) were assessed on six-point Likert-type scales ranging from *None/Always* (1) to *More than Five/Never* (6). Experience with pregnancy was indicated by a dichotomous yes/no response (“Did you ever get [get someone] pregnant during your teen years?”). Age at first intercourse was an open-ended question (“At what age were you when you first experiences sexual intercourse?”), and type(s) of birth control used were selected from a list of common forms of birth control, including condom, birth control pill, diaphragm, spermicidal foam, implant, or other (see Appendix 3). Each of the dependent variables will be investigated on an individual basis, as each conveys unique and important information about adolescent sexual behavior.

Results

Preliminary analyses included conducting a confirmatory factor analysis for the measure of Nonverbal Parental Sexual Communication and examining descriptive

statistics and bivariate relationships for all study variables. Primary analyses tested the hypotheses that the amount of indirect parental sexual communication would be related to the age of adolescent sexual debut, the frequency of adolescent pregnancy, the number of adolescent sexual partners, and the use by adolescents of birth control. Also investigated were all of the relationships among the 4 subscales of the measure of Nonverbal Parental Sexual Communication and the items measuring Adolescent Perception of Parental Attitudes, as well as relationships among all the variables in the NPSC and APPA scales with the outcome variables. The moderation effects of the demographic variables of interest on the relationships between the NPSC and APPA measures with the outcome variables were also examined.

Preliminary Analyses

Confirming the NPSC factor structure. To confirm the factor structure of the Nonverbal Parent Sexual Communication measure identified by Joffe and Franca-Koh (2001), data from the current study were subjected to a principle axis factor analysis with Varimax rotation. In the initial, unconstrained model, the 39 items loaded on a 12 subscale factor structure that made very little sense from a theoretical perspective and was not consistent with the Joffe and Franca-Koh (2001) factor structure. The eigenvalues (see Table 2) and scree plot (see Figure 1) indicated that a 4 or 5 factor solution would be statistically acceptable. As the Joffe and Franca-Koh model could be broken down theoretically into four subscales, an analysis constrained to 4 factors was run first. The item loadings for this model are presented in Table 3. Factor solutions constrained to three, five and six factors were also explored. From a theoretical perspective, the four factor solution seemed the most appropriate. After items loading

above 0.30 on more than one factor and items loading less than 0.30 on any factor were dropped, the items loaded onto factors representing the following four domains: parental privacy, expression of parental affection, parental acceptance of nudity within the home, and parental liberality towards sex and nudity.

Descriptive statistics. Basic descriptive statistics, including means, standard deviations, medians, modes, ranges, skewness and kurtosis were calculated for each of the four NPSC subscales, the APPA items and the demographic variables (see Table 4). Cronbach's alphas for the NPSC subscales were as follows: parental privacy, $\alpha = 0.87$; expression of parental affection, $\alpha = 0.89$; parental acceptance of nudity, $\alpha = 0.85$; and parental liberality = 0.78. The demographic variables were distributed as expected, with the following exceptions: religious denomination and race (see Figures 2 and 3). Religious denomination was transformed into a dichotomous variable with Catholic and non-Catholic being the categories as Catholicism and Protestantism both greatly outnumbered any other categories and posed a theoretically interesting distinction relating to one of the RASB variables, use of birth control. Race was also transformed into a White and Black/Other dichotomy, as there were not enough participants in the other categories to maintain the categorical distinction. Similarly, in the RASB variables, frequency of use of birth control had to be transformed, because the majority of participants rated that they used birth control all of the time (see Figure 4); thus, the variable became a dichotomy between 'Use birth control all the time' and all other ratings. Sexual debut was also transformed to remove those who had not yet engaged in sexual intercourse for analytical purposes (see Figure 5). The other RASB variables were not normal, but in logical directions. The number of sexual partners variable was skewed

in the direction of more participants endorsing lower numbers of sexual partners. Likewise, many more participants stated that they had never been involved in a pregnancy than stated that they had been involved. The APPA variables regarding adolescent sex were moderately skewed in the direction of parents being opposed to adolescents engaging in sexual behavior; while the APPA variables regarding the use of birth control were moderately skewed in the direction of parents preferring that adolescents do use birth control when engaging in sexual behavior. The IPSC subscales were also not normally distributed but in theoretically understandable directions. The parent privacy subscale was skewed in the direction of parents exhibiting higher levels of privacy; while the parent liberality subscale indicated that parents generally had less liberal attitudes.

Bivariate relations among study variables. Bivariate correlations that have not been alpha corrected appear in Table 5.

Within the demographic variables, race was unrelated to gender, age or religious importance. Age was related to gender but unrelated to religious importance. Gender was also related to religious importance such that religion tended to be more important to females than males. Race was positively related to the dichotomous frequency of use of birth control variable and the parent liberality subscale but no other variables. Age was negatively related to the dichotomous frequency of use of birth control variable and the parent affection subscale, but no other variables. Gender was related to paternal perception towards both sex and birth control, such that females perceived greater paternal disapproval. Gender was also related to the parental privacy and parental affection subscales of the Indirect Parental Sexual Communication measure, again with

females scoring higher than males. Religious importance was related to all four Adolescent Perception of Parental Attitudes items, indicating that participants with higher religious importance ratings also perceived higher parental disapproval towards both sex and birth control. Religious importance was also positively related to the parental privacy and affection subscales of the NPSC measure.

Within the risky sexual behavior variables, average number of sexual partners per year was negatively related to age of sexual debut such that a later age of first intercourse was correlated with fewer sexual partners per year. The experience of pregnancy was related to the frequency of use of birth control such that participants who reported always using birth control were less likely to report having had an experience with pregnancy. Risky sexual behaviors were also related to APPA items. The average number of sexual partners per year was negatively related to three of the four Adolescent Perceptions of Parental Attitudes items such that adolescents who perceived negative paternal attitudes towards sex and negative maternal and paternal attitudes towards birth control were also likely to report fewer sexual partners per year. The frequency of use of birth control variable was related to the parental privacy subscale of the IPSC measure such that adolescents who reported always using birth control also had parents who engaged in privacy-supporting behaviors. Finally, age at sexual debut was related to perception of paternal attitudes towards sex such that adolescents who initially engaged in sex at a later age perceived their fathers as having stronger negative attitudes towards adolescent having sex.

Within parent communication variables, the parental privacy subscale was related to the parental affection subscale such that adolescents whose parents engaged in

behaviors that supported privacy also reported their parents as expressing more physical affection. The parental privacy subscale was negatively related to the parental acceptance of nudity subscale such that adolescents who had parents who engaged in privacy-supporting behaviors also reported their parents as less accepting of nudity. Finally, the parental acceptance of nudity subscale was positively related to the parent liberality subscale, such that adolescents whose parents seemed accepting of nudity also reported their parents as being more liberal in their sexual behavior. The NPSC parent expression of affection subscale was related to higher scores on adolescent perception of paternal attitudes towards sex. Higher scores on the parent liberality subscale were negatively related to perception of more negative maternal attitudes towards sex. Similarly, higher scores on the parental acceptance of nudity subscale were negatively related to adolescent perception of more negative paternal attitudes towards sex.

Variables assessing adolescents' perception of parent attitudes toward sex and birth control were highly interrelated, with adolescent perception of maternal and paternal attitudes towards adolescent sex and use of birth control all being positively related to each other.

Indirect parent communication and adolescent sexual behavior. Hierarchical multiple regression analyses examined the prediction of sexual debut and average number of sex partners per year. Step 1 predictors included the demographic variables: race, age, gender, parental presence, participant religiosity, and participant religious denomination and Step 2 predictors included the four IPSC variables. Logistic regression analyses examined the prediction of birth control use and experience of pregnancy with the same Step 1 and Step 2 predictors. Interaction terms were included to test for potential

moderation by the demographic variables. Because of the large number of interactions tested, each interaction term was entered separately as Step 3 of the regression analysis (e.g., Race x Parental Privacy was examined as Step 3, then removed and replaced with Race x Parental Affection, and so on). Simple slopes analyses were performed to further clarify all significant interactions.

For sexual debut (see Table 6), Step 1 including all demographic variables was not significant ($SS = 21.83$, $df = 6$, $F = 1.59$, $p = 0.15$). However examined separately, race significantly predicted sexual debut ($\beta = 0.82$, $t = 2.73$, $p = 0.01$), with White ($M = 16.74$, $SD = 1.43$) participants reporting later sexual debut than non-white participants ($M = 16.08$, $SD = 1.95$). Step 2, including the IPSC variables, did not significantly predict sexual debut ($SS = 26.40$, $df = 10$, $F = 1.15$, $p = 0.33$). Step 3 included, entered one at a time, each of 24 interaction terms representing the interaction of each demographic variable with each IPSC scale. Of the 24 interactions tested, five reached significance: race by parental affection ($\beta = -0.17$, $t = -2.96$, $p = 0.01$), age by parental liberality ($\beta = 0.08$, $t = 2.70$, $p = 0.03$), gender by acceptance of nudity ($\beta = 0.07$, $t = 2.12$, $p = 0.04$), religiosity by acceptance of nudity ($\beta = -0.20$, $t = -2.79$, $p = 0.01$), and religious denomination by acceptance of nudity ($\beta = -0.08$, $t = -2.05$, $p = 0.04$). For the interaction of race and parental affection, simple slopes analyses (see Table 10) indicated that for both White ($B = 0.22$, $t = 3.06$, $p = 0.003$) and Black/Other ($B = 0.82$, $t = 2.70$, $p = 0.01$) participants parental affection predicted sexual debut, with higher parental affection predicting younger age of sexual debut. However, for Black/Other participants, sexual debut was even younger than for White participants (see Figure 6). For the significant age by parental liberality interaction, simple slopes analyses did not support a meaningful

interaction, instead indicating a similar pattern for both young ($B = -1.54, t = -2.71, p = 0.01$) and older ($B = -1.35, t = 2.71, p = 0.01$) participants (see Figure 7). For the sex by parental acceptance of nudity, simple slopes analyses indicated that for female participants ($B = -0.09, t = -2.38, p = 0.02$) parental acceptance of nudity predicted later sexual debut (see Figure 8). For male participants ($B = -0.02, t = -1.34, p = 0.18$), the effect was not significant. For the interaction of religiosity and parental liberality, simple slopes analyses indicated that for participants in both the low ($B = 0.45, t = 2.64, p = 0.01$) and high ($B = 0.21, t = 2.39, p = 0.02$) religiosity categories, parental liberality predicted earlier sexual debut (see Figure 9). This effect was especially pronounced for participants in the high religiosity category. Finally, for the interaction of religious denomination and parental acceptance of nudity, simple slopes analyses revealed that for Catholic participants ($B = -0.04, t = -2.00, p = 0.05$) parental acceptance of nudity in predicted earlier sexual debut such that sexual debut was younger for Catholics in cases of high parental acceptance of nudity. Although the same pattern seemed to exist for Protestant/Other participants (see Figure 10), this effect did not reach significance ($B = 0.03, t = 1.10, p = 0.28$).

For average number of sex partners per year (see Table 7), there were no significant effects of Step 1 demographics or Step 2 IPSC variables. Of the 24 possible interactions, the interaction between religiosity and parent liberality ($\beta = 0.09, t = 2.34, p = 0.02$) was the only significant effect. Simple slopes analyses (see Table 10) indicated that for participants with low religiosity ($B = -0.23, t = -2.15, p = 0.03$) parental liberality predicted a higher average number of sexual partners per year. Though it appears when graphed (see Figure 11) that the same pattern existed for participants in the high

religiosity category ($B = -0.10$, $t = -1.85$, $p = 0.07$), this relationship did not reach significance.

For frequency of birth control (see Table 8), Step 1 containing the demographic variables was significant ($\chi^2 = 14.83$, $df = 6$, $p = 0.02$). When examined separately, the only demographic variable to be a significant predictor of birth control use was parental presence ($B = -0.39$, $OR = 0.68$, $p = 0.04$). Overall, Step 2 containing the IPSC subscales were not significant ($\chi^2 = 5.88$, $df = 4$, $p = 0.21$), although individually, parental privacy ($B = 0.05$, $OR = 1.05$, $p = 0.04$) did reach significance.. At Step 3, the interaction between religiosity and parental affection ($B = -0.09$, $OR = 0.91$, $p = 0.03$) was the only significant effect. Simple slopes analyses (see Table 10) indicated that for participants in both the low ($B = 0.28$, $OR = 1.32$, $p = 0.03$) and high ($B = 0.15$, $OR = 1.16$, $p = 0.03$) religiosity categories, parental affection predicted the higher frequency of use of birth control, although this effect seems more pronounced for the high religiosity group (see Figure 12).

Finally, for pregnancy experience none of the predictors reached significance (see Table 9).

Adolescent perceptions of parental attitudes and adolescent sexual behavior

Hierarchical multiple regression analyses examined the prediction of sexual debut and average number of sex partners per year. Step 1 predictors included the demographic variables: race, age, gender, parental presence, participant religiosity, and participant religious denomination and Step 2 predictors included the four APPA variables. Logistic regression analyses examined the prediction of birth control use and experience of pregnancy with the same Step 1 and Step 2 predictors. Interaction terms were included to

test for potential moderation by the demographic variables. Because of the large number of interactions tested, each interaction term was entered separately as Step 3 of the regression analysis (e.g., Race x Maternal Attitudes towards Birth Control was examined as Step 3, then removed and replaced with Race x Maternal Attitudes towards Sex, and so on). Simple slopes analyses were performed to further clarify all significant interactions.

For sexual debut (see Table 11), Step 1 including all demographic variables was not significant ($SS = 25.31$, $df = 6$, $F = 1.89$, $p = 0.08$). However examined separately, race significantly predicted sexual debut ($\beta = 0.82$, $t = 2.73$, $p = 0.01$), with white participants reporting later sexual debut than non-white participants. Step 2, including the APPA variables, did not significantly predict sexual debut ($SS = 40.63$, $df = 10$, $F = 4.84$, $p = 0.06$). Step 3 included, entered one at a time, each of 24 interaction terms representing the interaction of each demographic variable with each APPA scale. Of the 24 interactions tested, one reached significance: parental presence by paternal attitudes towards sex ($\beta = -2.45$, $t = -2.60$, $p = 0.02$). Simple slopes analyses (see Table 10) indicated that for both participants in the low ($\beta = -2.45$, $t = -2.60$, $p = 0.01$) and high ($\beta = -2.33$, $t = -2.59$, $p = 0.01$) parental presence categories, negative paternal attitudes towards sex predicting later sexual debut. This effect seemed more pronounced for participants in the high parental presence category (see Figure 13).

For average number of sex partners per year (see Table 12), there were no significant effects of Step 1 demographics. Step 2, containing the APPA variables, was significant ($SS = 25.38$, $df = 10$, $F = 2.21$, $p = 0.02$). When examined separately, the only demographic variable to be a significant predictor of average number of sexual partners

per year was maternal attitudes towards birth control ($\beta = -0.17$, $t = -2.32$, $p = 0.02$).

None of the 24 possible interactions was significant.

For frequency of birth control (see Table 13), Step 1 containing the demographic variables was significant ($\chi^2 = 15.45$, $df = 6$, $p = 0.02$). When examined separately, the only demographic variable to be a significant predictor of birth control use was race ($B = -0.80$, $OR = 0.45$, $p = 0.04$). Step 2 containing the IPSC subscales was not significant ($\chi^2 = 0.78$, $df = 4$, $p = 0.94$) At Step 3, of the 24 possible interactions, none were significant.

Finally, for pregnancy experience none of the predictors reached significance (see Table 14).

Interactions between indirect parent communication and adolescent perceptions of parental attitudes in predicting adolescent sexual behavior. Finally, we investigated the hypothesized relationships among the IPSC variables, adolescent perception of parental attitudes and the outcome variables. Because the differential effects of paternal and maternal views were of primary interest, the individual items for attitudes towards use of birth control and sexual behavior were combined into sums for each parent. Hierarchical multiple regression analyses examined the prediction of sexual debut and average number of sex partners per year. Step 1 predictors included the IPSC variables and Step 2 predictors included two variables representing adolescent perceptions of maternal and paternal attitudes. Logistic regression analyses examined the prediction of birth control use and experience of pregnancy with the same Step 1 and Step 2 predictors. Interaction terms were included to test for potential moderation by the parental attitude variables. Because of the large number of interactions tested, each interaction term was entered separately as Step 3 of the regression analysis (e.g., Parental Privacy x Maternal

Attitudes was examined as Step 3, then removed and replaced with Paternal Privacy x Paternal Attitudes, and so on).

For sexual debut, none of the predictors at Steps 1, 2, or 3 reached significance (see Table 15).

For average number of sexual partners per year, Step 1, containing the IPSC variables was not significant. Step 2, containing adolescent perceptions of maternal and paternal attitudes, was significant ($SS = 25.38$, $df = 10$, $F = 2.21$, $p = 0.02$). Examined separately, paternal attitudes was found to significantly predict average number of sexual partners per year ($\beta = -0.17$, $t = -2.38$, $p = 0.02$). For Step 3, containing the interaction terms, nothing reached significance.

For frequency of use of birth control (see Table 17), Step 1, containing the IPSC variables, was not significant, overall ($\chi^2 = 5.88$, $df = 4$, $p = 0.21$); however, when examined separately, parental privacy significantly predicted frequency of birth control use ($B = 0.05$, $OR = 1.05$, $p = 0.04$). In steps 2 and 3, nothing reached significance.

Finally, for pregnancy experience, nothing reached significance.

Discussion

The current study investigated the relationship between young adults' reports of their parents' indirect sexual communication and their own risky sexual behaviors in adolescence. In addition, the study examined the relation of young adults' perceptions of their parents' attitudes toward adolescent sexual behavior to both participant reported parent indirect communication about sex and young adults' self-reported risky adolescent sexual behavior (RASB). Based on existing theory regarding the role of parent attitudes and communication in predicting adolescent risky sexual behavior, several specific

hypotheses were examined. It was hypothesized that the amount of participant reported indirect parental sexual communication would be related to the age of adolescent sexual debut, the frequency of adolescent pregnancy, the number of adolescent sexual partners, and the use by adolescents of birth control, and, furthermore, that this relationship would be moderated by sample demographic characteristics and mediated by the adolescent perception of parental attitudes.

Because no measure of parents' indirect sexual communication was available, the Indirect Parental Sexual Communication Scale (IPSC) was developed for this study. Items on this questionnaire measure were intended to tap two domains that Joffe and Franca-Koh (2001) had posited as important distinct aspects of indirect parental communication regarding sexual attitudes and values – handling of nudity (including items related to parental and respondent nudity and privacy behaviors in the bedroom and bathroom) and expression of affection (including items related to parental physical affection observed by the respondent in the home). A factor analysis on the current study data did not fit this structure, with the data falling into an unconstrained factor solution of 11 factors. Theory-driven analyses instead seemed to indicate the following four domains: parental privacy (including items related to parental nudity and privacy behaviors in the bedroom and bathroom before and after the respondent reached puberty), expression of parental affection (including items concerning parental behaviors that express physical affection such as hugging and kissing), parental acceptance of nudity (including items reflecting the amount of nudity and privacy parents allowed the respondent to have during their adolescence as well as neutral parental reactions to

respondent nudity), and parental liberality (including items reflecting positive parental reactions towards respondent nudity during adolescence).

Primary analyses involved examining the relationship between the four indirect parental sexual communication subscales and each of four risky adolescent sexual behaviors -- age of sexual debut, average number of sexual partners, frequency of use of birth control, and past pregnancy experience. Only one of the sixteen relationships tested reached significance in both the bivariate correlation analyses and in the regression analyses. Scores on the IPSC Parental Privacy subscale were related to more frequent use of birth control. However, due to the lack of support for the other 15 relationships and the fact that the one significant relationship does not remain significant once alpha correction is imposed suggests that this finding may be due to chance and thus should be interpreted cautiously.

Due to the lack of research in this area, it is difficult to interpret these results in a greater context. Joffe and Franca-Koh (2001) found no significant relationships between their measure of Nonverbal Sexual Communication and adolescent contraception use, further implying the need for hesitance in interpreting the current study's significant result. The absence of more significant findings is surprising, given that other studies (Ward & Wyatt, 1994; Joffe & Franca-Koh, 2001) indicate that both an absence of sexual messages and an excess of adolescent exposure to parental affection are related to more risky adolescent sexual behaviors. On the other hand, the existing research is currently underdeveloped to the point that the degree to which the construct of indirect parental sexual communication is reflected in the adolescent behaviors measured in these studies is unclear. Furthermore, researchers are still determining how to operationalize IPSC in a

way that reveals definite and consistent results. Theoretically, the construct is still being developed; thus, it is quite possible that the IPSC scale in the current study does not evidence the underlying construct appropriately.

Despite the lack of overall direct relationships between IPSC scales and RASB, it is possible that such relationships might exist for subgroups of participants. Thus, the potential moderation of several theoretically important demographic variables on the relationship between IPSC and RASB was investigated. The relation of gender, race/ethnicity, parental presence, participant religiosity and religious denomination to RASB were all investigated for direct relationships through bivariate correlations and later tested for direct relationships and interactions with the IPSC subscales through linear and logistic regression analyses. Because age and race/ethnicity were significantly correlated with RASB variables, they were included in analyses investigating moderation; the other demographic variables were included for the sake of thoroughness. Race was found to be directly related to sexual debut, and the demographic variable parental presence was significantly related to frequency of use of birth control. Both of these relationships make sense in the context of the literature with Black adolescents having a lower age of sexual debut and the presence of both parents having a protective effect by allowing children more exposure to parental attitudes and monitoring. As for moderation effects, several relationships were found to be significant predictors. Race was found to moderate the relationship between the parental expression of affection subscale and sexual debut. Although for all participants, age of sexual debut was lower in cases where parental affection was high, this effect was more marked for Black participants (see Figure 6). Just as there is little research examining the relationships

between participant reported indirect parental sexual communication and adolescent outcomes, there is no research examining race differences among these relationships. In the more general adolescent sexual risk literature, race/ethnicity has been found to be a risk factor (Upchurch, Aneshensel, Sucoff, & Levy-Storms, 1999). In the parental direct communication literature, race/ethnicity was related to differences in family communication, with Black participants having more communication about sex from their parents and generally before they engaged in sexual behavior than Whites, but race itself was not predictive of differences in risky outcome variables (Hutchinson, 2002). It is possible that for our White participants, physical affection was a marker for the presence of more direct communication, parent presence, or parent relationship quality, all of which are factors that have been found to influence risky adolescent sexual behavior (Hutchinson, 2002; Fisher, 2004).

Additionally, age was found to moderate the relationship between the parental liberality subscale and sexual debut such that sexual debut was later for all participants in cases of higher parental liberality. However, due to the similarity of the pattern of interactions, this result should be interpreted cautiously. As the vast majority of the sample (93.6%) fell between 18 and 22 years of age, the differences between *older* and *younger* participants in these analyses are very slight, and the result could be due to random error within this particular sample. Alternatively, perhaps the younger participants in the sample are fresh from their family homes and thus their sexual behavior may be more heavily influenced by parents' behaviors and values, whereas influence on older participants' sexual behavior may be more broadly influenced. Gender was found to moderate the relationship between parental acceptance of nudity

and sexual debut. Although for males acceptance of nudity did not predict age of sexual debut, for females higher acceptance of nudity predicted later sexual debut. As one of only two interactions that were significant for one category of participants and non-significant for another, this is perhaps the most dramatic interaction of those investigated. Gender differences are far from uncommon in the literature regarding sexual development and behavior. Literature in the realm of parental and family influence on adolescent sexuality seems to indicate that females are susceptible to somewhat different influences than males when it comes to sexual risk-taking behavior; more specifically, a lack of parental communication about sexual issues and monitoring are greater risk factors for females than males (Luster & Small, 1994; Upchurch, Aneshensel, Sucoff, & Levy-Storms, 1999). A basic understanding of socialization differences makes it clear that boys and girls are raised differently and thus would be differently exposed to and influenced by parental attitudes. In the case of this interaction effect, perhaps higher levels of parental acceptance of nudity indicate a closeness between parents and daughters, thus indicating the likelihood of a more open communication dyad in which parental attitudes are communicated more frequently or more clearly to growing adolescent females. Since boys are generally brought up to be independent and masculine, perhaps male participants were less influenced by their parents' acceptance of nudity and other indicators of their attitudes towards sexuality.

Religiosity was also found to moderate the relationship between parental liberality and sexual debut such that sexual debut was earlier for participants with high religiosity than for participants with low religiosity in cases of high parental liberality. One might assume that personal religious beliefs would be protective for an adolescent against the

influence of more liberal parental beliefs. This does not appear to be the case in this sample, as participants with high religiosity seemed to be more influenced by high levels of parental liberality. The literature is clear in its support of the idea that children are influenced to some degree by parental attitudes towards adolescent sexual behavior (Fisher, 2004). Thus, it seems possible that if adolescents' personal beliefs differ from those of their parents, the resulting conflicts could lead to such unpleasant experiences as fighting, frustration, confusion and anxiety. Even if the parents are supportive of their children having their own personal beliefs, adolescent exposure to parental beliefs and behavior, the beliefs and behavior that it is a child's tendency to model, could cause them confusion and internal turmoil. It seems possible that one result of this inner frustration and confusion could be to act out sexually at a younger age than peers whose beliefs are more in line with those of their more sexually liberal parents. Alternatively, this effect could feasibly be the result of adolescents who engaged in sexual behavior earlier, in line with permissive parental attitudes, and then, after the experience, had a change of heart and moved from the worldview of their childhood towards something more religious and, potentially, conservative.

The last significant interaction for sexual debut was that of religious denomination moderating the relationship between acceptance of nudity and sexual debut such that sexual debut was earlier for Catholic participants in cases of high parental acceptance of nudity than in cases of low parental acceptance of nudity, a relationship that was non-significant for Protestant/Other participants. The Catholic/Protestant dichotomy was included in the analyses specifically to investigate its relationship to frequency of use of birth control, as Catholics and Protestants tend to differ in beliefs

regarding the use of birth control; however, there was no effect involving that outcome. It seems possible that Catholic participants were, for some reason, more susceptible to parental behaviors which may indicate a greater acceptance towards adolescent nudity and sexuality than were Protestant participants and those of other religious beliefs. Alternatively, though the numbers were small, perhaps grouping participants from other religious backgrounds, potentially non-Christian, with Protestants in the dichotomous variable truncated the effect of parental acceptance of nudity for this category. In retrospect, doing so seems to have limited the interpretability of this result.

For the RASB variable average number of sexual partners per year, religiosity was found to moderate the relationship between parental liberality and partners per year such that the number of partners per year was higher for participants with lower levels of religiosity in cases of high parental liberality than in cases of lower parental liberality. There was a similar trend among participants with high levels of religiosity, but this effect did not quite reach significance. This result makes sense in light of the idea that participants with low levels of religiosity are likely to have modeled the attitudes toward sexuality of their liberal parents, and, without the potential obstruction of personal religious beliefs about sexual behavior to interfere, these more permissive attitudes could influence behavior, resulting in more sexual partners. The fact that participants in the high religiosity category seemed to trend in the same direction but did not reach significance seems to bolster the idea that permissive parental behaviors are influential, especially when not countered by personal, more conservative beliefs.

Finally, religiosity was found to moderate the relationship between parental affection and frequency of use of birth control such that use of birth control was more

frequent for participants with low religiosity and with high religiosity in cases of high parental affection. The fact that all participants used birth control more frequently in cases of high parental affection may indicate that high levels of parental affection are a reflection of a healthy romantic relationship and a healthy model for adolescents to follow. Perhaps affectionate parents also have a close and affectionate relationship with their children and are, thus, able to better communicate their own attitudes about sexual behavior to their children. The graphed interaction effects seem to indicate that highly religious participants were even more influenced by parental affection, but this could be a random effect, as the relationship is equally significant for both groups.

Since previous research has found the presence of both parents during childhood (Inazu & Fox, 1980) to be negatively correlated with levels of risky adolescent sexual behavior, presence of significant relationships among this variable and the RASB items is unexpected. Religiosity's place as the most frequent moderator in the relationships among IPSC variables and the RASB outcomes is unsurprising considering the importance of parent and adolescent religiosity in the literature (Rostosky, et al., 2004). As for the significant relationships with age, gender and race/ethnicity, it is apparent that, in line with the ecological risk-factor approach (Small & Luster, 1994) these microsystem level characteristics determine the manner in which outcomes are related to mesosystem factors such as qualities of the family system.

Next, the relationships among APPA and RASB variables were investigated. Of the main effects relationships tested, only three reached significance. Race was found to be related to sexual debut and the frequency of use of birth control, which is in line with the literature. Adolescent perceptions of negative maternal attitudes towards birth control

were related to fewer adolescent sexual partners, a relationship corresponding to theory. Previous research indicates that conservative parental attitudes are related to less RASB (Fisher, 2004). Testing for potential moderation of relationships among APPA variables and RASB outcomes by the demographic variables of interest revealed only one significant relationship. Parental presence moderated the relationship between adolescent perception of paternal attitudes towards sex and sexual debut such that sexual debut was later for all participants in cases where fathers strongly disapproved of adolescent sexual behavior. Perhaps this relationship is as straight-forward as it seems. It is likely that adolescent perception of high paternal disapproval influenced their decisions on when to engage in sexual behavior. Of course, it is also possible that adolescents are more likely to perceive paternal attitudes in relationships that are closer physically or emotionally. As the relationship appears, when graphed, to be stronger for participants in the high parental presence category, it seems that the more exposure participants had to their fathers, the clearer and more influential paternal attitudes would become.

Finally, the originally hypothesized mediation of the IPSC-RASB relationship by adolescent perceptions of parents' attitudes toward adolescent sexual behavior was explored. When looking at adolescent perception of parental attitudes in terms of maternal attitudes and paternal attitudes, maternal attitudes were not significantly related to any of the outcome variables, but adolescent perception of paternal attitudes was related to the average number of sexual partners per year. The literature indicates that, when fathers are present in their children's lives, their attitudes are potentially more influential than maternal attitudes (Fisher, 2004). This seems to be supported by these results. The lack of significant mediating relationships among IPSC subscales and

adolescent perception of parental attitudes was unexpected, and potential reasons for this lack will be explored in the limitations section.

Limitations

There are a number of ways in which this study could have been improved. The first and most glaring deficiency is the less-than-ideally rigorous manner in which the measure of IPSC was developed and its subsequently limited psychometric qualities. More specifically, the three major problems with the IPSC include its retrospective nature, the potentially unrepresentative behaviors measured, and the lack of more thorough psychometric testing of the measure. Due the extreme retrospective nature of the measure, which required participants to think back over the past 10 or so years, potentially potent errors of memory may exist, thus reducing the validity of the results. Furthermore, it is entirely possible that, though the construct of IPSC might exist and be related to RASB, the specific behaviors chosen based to a degree on one other study to attempt to gauge its influence might not be representative of the construct in any meaningful manner. Gathering conceptually important behaviors from large sample pools with input from experts in the field would be a much more appropriate way to begin developing such a measure. Finally, the lack of even the most basic pilot testing of the measure, in conjunction with no investigation of concurrent and divergent validity or test-retest reliability would have made even theoretically congruent significant results suspect. Administering the measure to multiple samples of university students, multiple times to some, and with measures for social desirability, direct parental sexual communication, and indirect communication of parental gender roles would permit for a much clearer understanding of whether the IPSC scale measures the intended construct.

The lack of empirical support for the relationship between IPSC and RASB does not necessarily invalidate that such a relationship exists. Rather, psychometric deficiencies in the measure developed, the somewhat homogeneous sample tested, and the behaviors used to operationalize IPSC may have masked any relationships between the constructs of interest.

As noted, another limitation of the study involves the participant sample. The study sample was mostly homogeneous across demographic variables of interest, thus limiting study power to investigate differences across groups. Furthermore, from a theoretical perspective it is reasonable to assume that college students as a group would have different results on the dependent measure than individuals from the same age group who pursued different life paths. For example, pregnant teenagers might drop out of high school and get a job to provide for their children rather than go to college.

In addition, better or more comprehensive measures of APPA and RASB might have been useful. The APPA measure used was very vague, simply asking respondents to report their general perceptions of parent attitudes on two topics. Asking about a wider range of specific topics (i.e. adolescent making-out vs. penile-vaginal intercourse, or asking about younger vs. older adolescents), as well as including a parent-report measure of attitudes towards these topics could have been very useful and interesting, providing an avenue for comparing the accuracy of adolescent perceptions as well as revealing specific variability that might have been lost in the more general measure. In other words, adolescents might have perceived their parents as having negative feelings about adolescents having intercourse, but not perceived any negative parental feelings towards adolescent kissing, but since only the two broader questions were asked, these potentially

revealing differences were lost. Furthermore, a measure of direct parental sexual communication, as well as a measure of personal adolescent sexual beliefs and attitudes would help disentangle the extent to which adolescents' risky sexual behavior is related to parents' direct and indirect communication, adolescents' views (accurate or inaccurate) about their parents' sexual attitudes, and adolescents' own sexual attitudes. Though previous research on RASB (Jaccard, Dittus, & Gordon, 1998) has looked specifically at the four variables measured in the current study, other adolescent sexual behaviors (i.e. kissing, holding hands, dating, false pregnancy scares, etc.) and better-worded items might have revealed more support for the hypothesized relationships.

Finally, this study included numerous analyses conducted without alpha correction, thus potentially capitalizing on chance. Although we focused primarily on a priori hypotheses, we also elected to conduct broader exploratory analyses that might guide future study. However, we must note that these exploratory analyses should be interpreted with caution, due to their high number, and should clearly be replicated before being integrated into the literature.

Implications

The present study seems to indicate that participants reported indirect parental sexual communication does not have much of a direct effect on the presence of risky adolescent sexual behaviors. Nevertheless, the empirical literature on risky adolescent sexual behavior indicates that these behaviors are influenced by a large and complicated interacting network of factors, ranging from personal beliefs to community characteristics and national media (Fisher, 2004; Small & Luster, 1994). Furthermore, the influence of parents on RASB is present and important (Miller, Benson, & Galbraith, 2001). The

importance of direct, verbal parental communication regarding sexual topics has been indicated over and over again (i.e. Miller, Norton, Fan, & Christopherson, 1998; Hutchinson, 2002; Fisher, 1988), but not all parent-child communication takes place verbally as research on gender roles and religious beliefs indicate (Rotosky, et al., 2004). Thus, this study attempted to shed more light on the role that indirect parental sexual communication plays in the complicated network of influences on RASB. If replicated in future research, the current study's findings would indicate that risky adolescent sexual behaviors and parental behaviors regarding sex, privacy and affection are not directly related. Accordingly, highly private parents who never speak of sex or demonstrate affection could have children who engage in similarly risky sexual behaviors as the children of parents who are highly affectionate and model the caring and sex-positive relationship they want their children to find. Such findings could be relieving to parents who are uncertain how to behave in a way which will help their adolescents develop the healthiest relationship possible. However, the fact that the hypothesized relationships between IPSC and RASB were not found does not necessarily rule out the importance of parental behaviors and other forms of indirect parental sexual communication. Future research that addresses the limitations of the current study might reveal such relationships. Additionally, parental behavior should not be entirely ignored, as the complex network of factors that influence adolescent sexual behavior is still not entirely understood. The results of this study indicate that adolescents' perceptions of parental attitudes towards adolescent sexual behavior and the use of birth control are related to adolescent risky sexual behavior. Because no measures of direct parental sexual communication were included in this study, the degree to which these perceptions are

influenced by verbal parental sexual communication cannot be measured, but other research has already indicated that such communication is important (Fisher, 2004; Miller, Benson, & Galbraith, 2001). Thus, from a clinical perspective, parents who desire to do their best to minimize RASB should both directly, verbally communicate their sexual beliefs, values and attitudes to their adolescents and be aware of how their children are perceiving parental beliefs and values.

Future Directions

Despite its limitations, the present study did attempt to begin clarifying an understudied but important area and provided additional support for the importance of adolescent perception of parental attitudes when discussing RASB. Given the theoretically-implied importance of IPSC in predicting adolescent RASB, future research that improves upon the current study, for example by using a better-developed measure of IPSC and utilizing prospective techniques, is warranted. Additionally, although survey methods have a long history in psychological research, other methods of obtaining behavioral data, such as observing actual parent-child interactions and sexual communication would seem much more potentially fruitful, as well as psychometrically appropriate. Longitudinal and observational research, though time- and resource-intensive, could be amazingly illuminating, revealing much more clearly the factors that lead to development of overly liberal adolescent sexual attitudes and subsequent risky adolescent sexual behavior.

Conclusion

The results of the current study provide no empirical support for the importance of participant reported indirect parental sexual communication in predicting adolescent

sexual behaviors. Though the hypothesized relationships were not found, theory and previous literature indicate that the construct of indirect parental sexual communication warrants further consideration in attempting to understand the complex interacting network of influence on the presence of risky adolescent sexual behaviors

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Table 1

Hypotheses of the Current Study

Hypothesis	
1.	There will be a direct relationship between the amount of participant indirect parental communication during childhood and one or more of the aspects of risky adolescent sexual behavior.
2.	Demographic variables (race/ethnicity, parent religiosity, religious denomination, and presence of both parents throughout childhood) will moderate the relationship between communication and sex risky sexual behavior.
3.	Adolescent perception of parental attitudes will mediate the relationship between parent communication and adolescent sexual behavior. (a) Participant reported parent indirect communication about sex will be related to adolescent perceptions of parental attitudes about sex. (b) Adolescent perceptions of parental attitudes will be related to risky sexual behavior. (c) The strength of the relationship between parent communication and adolescent sexual behavior will be reduced when adolescent perceptions of parental attitudes are taken into account.

Table 2

Eigenvalues and Percentage of Variance Accounted for by the Rotated Four-Factor Solution of the NPSC scale

Factor	Eigenvalue	% Variance	Cumulative % Variance
1	6.220	15.948	15.948
2	4.587	11.761	27.709
3	3.424	8.779	36.488
4	3.086	7.913	44.401
5	2.192	5.622	50.022
6	1.896	4.862	54.885
7	1.827	4.685	59.570
8	1.536	3.940	63.510
9	1.420	3.640	67.150
10	1.254	3.215	70.365
11	1.151	2.951	73.316
12	1.024	2.626	75.942

Table 3

Rotated Factor Loadings for the CFA of the NPSC Scale with a Four-Factor Solution

Item	Factor 1	Factor 2	Factor 3	Factor 4
After puberty paternal privacy bedroom	.751	-.128	.068	.176
Before puberty paternal privacy bedroom	.718	-.184	.053	.142
Before puberty maternal privacy bedroom	.706	-.260	.078	.068
After puberty maternal privacy bedroom	.691	-.284	.059	.013
After puberty maternal privacy bathroom	.659	-.250	-.062	-.175
After puberty paternal privacy bathroom	.629	-.014	-.003	-.036
Before puberty paternal privacy bathroom	.616	-.047	.055	.037
Before puberty maternal privacy bathroom	.594	-.333	-.014	-.079
After puberty respondent privacy bedroom	.471	.177	.063	-.249
After puberty respondent privacy bathroom	.471	.154	.153	-.214
Before puberty respondent privacy bedroom	.333	.148	.001	-.281
Before puberty respondent privacy bathroom	.329	.128	.106	-.281
Before puberty maternal neutral reactions to nudity	.036	.722	.044	.137
Before puberty paternal neutral reactions to nudity	-.028	.665	.011	.126
After puberty maternal neutral reactions to nudity	-.013	-.665	-.018	.309
Before puberty maternal negative reactions to nudity	.029	-.586	.036	.249
After puberty maternal negative reactions to nudity	-.064	.531	-.087	.211
Before puberty paternal negative reactions to nudity	-.054	.476	.143	.299
After puberty paternal neutral reactions to nudity	.137	-.463	.077	.300
Before puberty parental nudity	-.180	.441	.157	.250
After puberty respondent nudity	-.083	.313	.093	.239
Awareness of mother's menstruation	<i>.051</i>	<i>-.167</i>	<i>-.079</i>	.262
Frequency parental kissing	.069	.020	.872	.285
Frequency parental hugging	.088	.028	.853	-.084
Frequency parental holding hands	.049	-.039	.793	-.022
Parental physical affection	.101	.029	.772	-.058
Frequency parental cuddling	-.050	.050	.756	.042
Frequency parental caressing	.099	.064	.469	.175
Frequency parental fondling	<i>.036</i>	<i>.021</i>	<i>.276</i>	<i>.214</i>
After puberty maternal positive reactions to nudity	.064	.060	.060	.660
Before puberty maternal positive reactions to nudity	.028	.082	.091	.574
After puberty paternal positive reactions to nudity	-.023	-.053	-.022	.504
Before puberty paternal positive reactions to nudity	-.008	-.058	-.028	.449
Awareness parental sexual behavior	-.029	.088	.087	.346
After puberty parental nudity	-.205	.305	.076	.329
Awareness parental use of sexual aids	<i>-.078</i>	<i>.091</i>	<i>-.096</i>	<i>.259</i>
Awareness of parental use of birth control	<i>-.030</i>	<i>.103</i>	<i>.083</i>	<i>.170</i>

Scores in italics indicate dropped items. Bold scores indicate factor loading.

Table 4

Means and Standard Deviations for Demographic Variables, NPSC Subscales and APPA items

Items	N	M	SD	Median	Mode	Range	Skewness	Kurtosis
Age	285	19.15	1.29	19.00	19.00	18-29	3.10	16.74
Gender	284	1.50	0.50	0.00	0.00	1-2	.01	-2.01
Religious importance	282	2.06	0.70	2.00	0.00	1-3	-0.09	-0.91
Race	285	0.84	0.37	1.00	1.00	0-1	-1.89	1.57
Average sex partners per year	280	2.22	1.10	2.00	2.00	1-5	0.90	0.54
Religious importance	282	2.06	0.69	2.00	2.00	1-3	-0.09	-0.91
Religious (denomination dichotomous)	281	0.30	0.46	0.00	0.00	0-1	0.90	-1.20
Pregnancy experience	273	0.03	0.16	0.00	0.00	0-1	6.04	34.68
Frequency of use of birth control (dichotomous)	224	0.63	0.48	1.00	1.00	0-1	-0.54	-1.72
Sexual Debut (virgins not included)	225	16.64	1.54	7.00	17.00	11-21	-0.38	0.79
Parental Presence	281	0.78	0.41	1.00	1.00	0-1	-1.41	-0.02
Perception of maternal attitudes towards sex	279	5.04	1.11	5.00	6.00	1-6	-0.99	0.23
Perception of paternal attitudes towards sex	276	4.88	1.31	5.00	6.00	1-6	-1.20	0.90
Perception of maternal attitudes towards birth control	278	2.05	1.58	1.00	1.00	1-6	1.37	0.58
Perception of paternal attitudes towards birth control	276	2.22	1.64	1.00	1.00	1-6	1.16	0.05
Parental privacy subscale	267	23.72	7.52	25.00	23.00	7-35	-0.47	-0.52
Parental affection subscale	274	15.88	5.65	16.00	14.00	6-30	0.13	-0.72
Parental acceptance of nudity subscale	262	20.76	7.01	10.00	16.00	8-40	0.46	-0.29
Parental liberality subscale	266	8.64	2.90	7.00	7.00	6-19	1.23	0.65

Table 5

Intercorrelations for NPSC Subscales, APPA items, and Demographic Variables

	1 ^a	2 ^a	3 ^a	4 ^a	5 ^b	6 ^b	7 ^b	8 ^b	9 ^c	10 ^c	11 ^c	12 ^c	13 ^d	14 ^d	15 ^d
1. Race															
2. Age	.01														
3. Gender (M=0, F=1)	-.04	-.15*													
4. Religious importance	.00	-.02	.17**												
5. Average sex partners per year	.09	-.01	-.01	-.10											
6. Pregnancy experience	.07	.05	.02	.02	.09										
7. Frequency of use of birth control	.14*	-.15*	.08	.01	-.01	-.18**									
8. Sexual debut	-.09	.08	-.02	.08	-.44**	-.06	.13								
9. Perception of MA towards Sex	.05	.06	-.10	.16**	-.11	-.03	.01	.09							
10. Perception of PA towards sex	-.07	.05	.29**	.22**	-.22**	-.05	.01	.17*	.52**						
11. Perception of MA towards BC	-.03	-.01	.08	.16**	-.17**	-.02	.02	.13	.38**	.28**					
12. Perception of PA towards BC	-.03	-.03	.23**	.14*	-.18**	-.02	-.02	.08	.20**	.40**	.80**				
13. Parental privacy subscale	.00	-.05	.14*	.15*	-.07	.06	.15*	.07	-.02	.02	.11	.08			
14. Parental affection subscale	-.02	-.15*	.16**	.26**	-.00	-.07	.02	.05	.04	.18**	.08	.11	.13*		
15. Parental acceptance of nudity sub.	-.05	.11	.08	-.00	.03	.02	-.07	-.06	-.12	-.21**	-.05	-.10	-.27**	.04	
16. Parental liberality subscale	.36**	-.03	.04	-.06	.06	-.025	-.05	-.08	-.12*	-.09	-.08	-.07	-.04	.05	.12*

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a = Demographic variable; b = Risky Adolescent Sexual Behavior variable; c = Adolescent Perception of Parental Attitude variable; d= Indirect Parental Sexual Communication variable
 * p < .05, ** p < .01.

Table 6

Linear Regressions of Interactions of IPSC and Demographic Variables with Sexual Debut

Variable	<i>B</i> (B)	<i>t</i>	<i>Sig.</i>	Wald/Odds Ratio
Step 1:	SS(df)	F	Sig.	
Demographic Variables	21.83(6)	1.59	0.15	
Race	0.82	2.73	0.01**	
Age	0.08	0.94	0.35	
Gender	-0.07	-0.33	0.74	
Parental Presence	-0.01	-0.17	0.86	
Religiosity	0.23	1.39	0.17	
Religious Denomination	-0.24	-0.97	0.34	
Step 2:				
IPSC Variables	26.40(10)	1.15	0.33	
Parental Privacy	0.00	0.10	0.92	
Parental Affection	0.02	0.74	0.46	
Acceptance of Nudity	-0.02	-1.10	0.27	
Parental Liberality	-0.01	-0.21	0.83	
Step 3: ^a				
Interactions				
Race X Parental Privacy	0.04	0.75	0.45	
Race X Parental Affection	-0.17	-2.96	0.01**	
Race X Acceptance of Nudity	0.09	1.81	0.07	
Race X Parental Liberality	-0.10	-0.95	0.34	
Age X Parental Privacy	0.00	0.01	0.99	
Age X Parental Affection	0.02	1.26	0.21	
Age X Acceptance of Nudity	0.02	0.95	0.65	
Age X Parental Liberality	0.08	2.70	0.03*	
Gender X Parental Privacy	0.00	0.13	0.90	
Gender X Parental Affection	-0.05	-1.10	0.28	
Gender X Acceptance of Nudity	0.07	2.12	0.04*	
Gender X Parental Liberality	0.07	0.74	0.50	
Presence X Parental Privacy	0.01	0.90	0.37	
Presence X Parental Affection	0.01	0.51	0.61	
Presence X Acceptance Nudity	-0.02	-0.95	0.34	
Presence X Parental Liberality	-0.04	-1.05	0.30	
Religiosity X Parental Privacy	0.01	0.25	0.81	
Religiosity X Parental Affection	0.03	0.95	0.34	
Religiosity X AcceptanceNudity	-0.03	-1.00	0.32	
Religiosity X Parental Liberality	-0.20	-2.79	0.01**	
Rel. Denom. X Parental Privacy	-0.05	-1.50	0.14	
Rel. Denom X Parental Aff.	0.01	0.14	0.89	
Rel. Denom. X Accept. Nudity	-0.08	-2.05	0.04*	
Rel. Denom X Par.Liberality	-0.03	-0.28	0.78	

* $p \leq 0.05$, ** $p \leq 0.01$, *** $p \leq 0.001$

(B and Wald/Odds Ratio only for logistic regressions on dichotomous outcome variables.)

^a Each interaction term was entered separately and independently into Step 3 of the regression equation.

Table 7

Linear Regressions of Interactions of IPSC and Demographic Variables with Average Sex Partners per Year

Variable	<i>B</i> (B)	<i>t</i>	<i>Sig.</i>	Wald/Odds Ratio
Step 1:	SS(df)	F	Sig.	
Demographic Variables	6.86(6)	0.95	0.46	
Race	-0.28	-1.42	0.16	
Age	0.00	0.06	0.95	
Gender	-0.03	-0.19	0.85	
Parental Presence	0.00	0.05	0.96	
Religiosity	-0.18	-1.68	0.10	
Religious Denomination	-0.09	-0.54	0.59	
Step 2:				
IPSC Variables	8.26(10)	0.68	0.74	
Parental Privacy	-0.00	-0.33	0.74	
Parental Affection	0.00	0.19	0.85	
Acceptance of Nudity	0.01	0.70	0.49	
Parental Liberality	0.01	0.45	0.65	
Step 3: ^a				
Interactions				
Race X Parental Privacy	-0.01	-0.32	0.75	
Race X Parental Affection	0.07	1.74	0.08	
Race X Acceptance of Nudity	0.03	0.84	0.40	
Race X Parental Liberality	0.06	0.90	0.37	
Age X Parental Privacy	0.01	0.56	0.58	
Age X Parental Affection	0.01	0.46	0.65	
Age X Acceptance of Nudity	0.01	0.74	0.46	
Age X Parental Liberality	-0.02	-0.69	0.49	
Gender X Parental Privacy	-0.02	-0.75	0.46	
Gender X Parental Affection	-0.00	-0.07	0.94	
Gender X Acceptance of Nudity	-0.04	-1.79	0.07	
Gender X Parental Liberality	-0.08	-1.51	0.13	
Presence X Parental Privacy	-0.00	-0.14	0.89	
Presence X Parental Affection	-0.00	-0.22	0.83	
Presence X Acceptance Nudity	0.01	0.46	0.64	
Presence X Parental Liberality	0.02	0.87	0.38	
Religiosity X Parental Privacy	-0.02	-1.62	0.11	
Religiosity X Parental Affection	-0.02	-0.85	0.40	
Religiosity X AcceptanceNudity	-0.02	-0.98	0.33	
Religiosity X Parental Liberality	0.09	2.34	0.02*	
Rel. Denom. X Parental Privacy	0.01	0.52	0.61	
Rel. Denom X Parental Aff.	0.02	0.53	0.60	
Rel. Denom. X Accept. Nudity	0.01	0.31	0.76	
Rel. Denom X Par.Liberality	0.06	0.93	0.36	

* $p \leq 0.05$, ** $p \leq 0.01$, *** $p \leq 0.001$

(B and Wald/Odds Ratio only for logistic regressions on dichotomous outcome variables.)

^a Each interaction term was entered separately and independently into Step 3 of the regression equation.

Table 8

Logistic Regressions of Interactions of IPSC and Demographic Variables with Frequency of Use of Birth Control

Variable	<i>B</i> (B)	<i>t</i>	<i>Sig.</i>	Wald/Odds Ratio
Step 1:	Chi-sq.	df	Sig.	
Demographic Variables	14.83	6	0.02	
Race	-0.69		0.11	2.62/0.50
Age	-0.17		0.15	2.08/0.84
Gender	-0.19		0.55	0.36/0.83
Parental Presence	-0.39		0.04*	4.31/0.68
Religiosity	0.13		0.58	0.31/1.14
Religious Denomination	0.08		0.83	0.05/1.08
Step 2:				
IPSC Variables	5.88	4	0.21	
Parental Privacy	0.05		0.04*	4.28/1.05
Parental Affection	0.02		0.43	0.61/1.02
Acceptance of Nudity	-0.00		0.96	0.00/1.00
Parental Liberality	0.03		0.59	0.29/1.03
Step 3: ^a				
Interactions				
Race X Parental Privacy	-0.03		0.50	0.07/0.97
Race X Parental Affection	0.14		0.13	2.32/1.15
Race X Acceptance of Nudity	0.10		0.21	1.60/1.11
Race X Parental Liberality	0.32		0.12	2.46/1.37
Age X Parental Privacy	-0.05		0.09	2.94/0.95
Age X Parental Affection	-0.03		0.47	0.53/0.98
Age X Acceptance of Nudity	-0.01		0.67	0.18/0.99
Age X Parental Liberality	0.04		0.66	0.20/1.04
Gender X Parental Privacy	0.02		0.68	0.17/1.02
Gender X Parental Affection	0.09		0.12	2.39/1.09
Gender X Acceptance of Nudity	0.01		0.81	0.06/1.01
Gender X Parental Liberality	-0.07		0.63	0.24/0.94
Presence X Parental Privacy	0.02		0.63	0.23/1.02
Presence X Parental Affection	0.01		0.82	0.05/1.00
Presence X Acceptance Nudity	0.04		0.32	1.00/1.04
Presence X Parental Liberality	-0.05		0.52	0.42/0.95
Religiosity X Parental Privacy	-0.02		0.54	0.38/0.98
Religiosity X Parental Affection	-0.09		0.03*	4.66/0.91
Religiosity X AcceptanceNudity	-0.00		0.92	0.01/1.00
Religiosity X Parental Liberality	-0.15		0.18	1.81/0.86
Rel. Denom. X Parental Privacy	-0.03		0.51	0.43/0.97
Rel. Denom X Parental Aff.	-0.06		0.38	0.76/0.94
Rel. Denom. X Accept. Nudity	-0.02		0.78	0.08/0.98
Rel. Denom X Par.Liberality	-0.09		0.57	0.32/0.92

* $p \leq 0.05$, ** $p \leq 0.01$, *** $p \leq 0.001$

(B and Wald/Odds Ratio only for logistic regressions on dichotomous outcome variables.)

^a Each interaction term was entered separately and independently into Step 3 of the regression equation.

Table 9

Logistic Regressions of Interactions of IPSC and Demographic Variables with Pregnancy Experience

Variable	<i>B</i> (<i>B</i>)	<i>t</i>	<i>Sig.</i>	Wald/Odds Ratio
Step 1:	Chi-sq.	df	Sig.	
Demographic Variables	1.23	6	0.98	
Race	0.06		0.96	0.00/1.06
Age	0.22		0.31	1.05/1.25
Gender	-0.18		0.84	0.04/0.84
Parental Presence	-0.11		0.49	0.47/0.89
Religiosity	0.24		0.71	0.14/1.27
Religious Denomination	-0.23		0.80	0.06/0.79
Step 2:				
IPSC Variables	4.18	4	0.38	
Parental Privacy	0.05		0.40	0.71/1.05
Parental Affection	-0.15		0.10	2.64/0.86
Acceptance of Nudity	0.03		0.63	0.24/1.03
Parental Liberality	-0.14		0.50	0.47/0.87
Step 3: ^a				
Interactions				
Race X Parental Privacy	-1.34		0.99	0.00/0.25
Race X Parental Affection	12.15		0.99	1.00/0.00
Race X Acceptance of Nudity	5.74		0.99	0.00/0.00
Race X Parental Liberality	-1.24		0.99	0.00/0.29
Age X Parental Privacy	-0.21		0.17	1.84/0.81
Age X Parental Affection	0.33		0.17	1.84/1.38
Age X Acceptance of Nudity	-0.06		0.52	0.41/0.95
Age X Parental Liberality	1.49		0.13	2.26/4.43
Gender X Parental Privacy	0.11		0.45	0.58/1.11
Gender X Parental Affection	0.37		0.25	1.31/1.44
Gender X Acceptance of Nudity	0.13		0.35	0.87/1.14
Gender X Parental Liberality	-0.90		0.17	1.92/0.41
Presence X Parental Privacy	-0.23		0.13	2.36/0.79
Presence X Parental Affection	0.29		0.25	1.30/1.33
Presence X Acceptance Nudity	0.06		0.68	0.18/1.06
Presence X Parental Liberality	-0.47		0.20	1.68/0.62
Religiosity X Parental Privacy	-0.21		0.08	3.13/0.81
Religiosity X Parental Affection	-0.05		0.79	0.07/0.95
Religiosity X AcceptanceNudity	-0.17		0.14	2.14/0.84
Religiosity X Parental Liberality	0.92		0.15	2.04/2.52
Rel. Denom. X Parental Privacy	2.69		0.08	3.08/0.00
Rel. Denom X Parental Aff.	1.59		0.16	2.01/4.88
Rel. Denom. X Accept. Nudity	2.69		0.13	2.31/0.00
Rel. Denom X Par.Liberality	6.95		0.17	1.86/0.00

* $p \leq 0.05$, ** $p \leq 0.01$, *** $p \leq 0.001$

(*B* and Wald/Odds Ratio only for logistic regressions on dichotomous outcome variables.)

^a Each interaction term was entered separately and independently into Step 3 of the regression equation.

Table 10

Simple Slopes Analyses of Significant Interactions on Outcome Variables

Simple Slopes on Sig.	<u>B(B)</u>	<u>t</u>	<u>Sig.</u>	Wald/Odds Ratio
Freq. Birth Control				
Parental Affection				
LoReligiosity	0.28		0.03	4.95/1.32
HiReligiosity	0.15		0.03	4.77/1.16
Sexual Debut				
Parental Affection				
White	0.22	3.06	0.003	
Black/Other	0.82	2.70	0.01	
Parental Liberality				
Younger	-1.54	-2.71	0.01	
Older	-1.35	-2.71	0.01	
LoReligiosity	0.45	2.64	0.01	
HiReligiosity	0.21	2.39	0.02	
Accept. Nudity				
Male	-0.02	-1.34	0.18	
Female	-0.09	-2.38	0.02	
Protestant/Other	0.03	1.10	0.28	
Catholic	-0.04	-2.00	0.05	
Ave. Partners p/Year				
Parent Liberality				
LoReligiosity	-0.23	-2.15	0.03	
HiReligiosity	-0.10	-1.85	0.07	
Sexual Debut				
PASex				
LoPresence	-2.45	-2.60	0.01	
HiPresence	-2.33	-2.59	0.01	

* $p \leq 0.05$, ** $p \leq 0.01$, *** $p \leq 0.001$

(B and Wald/Odds Ratio only for logistic regressions on dichotomous outcome variables.)

Table 11

Linear Regressions of Interactions of APPA and Demographic Variables with Sexual Debut

Variable	<i>B</i> (B)	<i>t</i>	<i>Sig.</i>	Wald/Odds Ratio
Step 1:	SS(df)	F	Sig.	
Demographic Variables	25.31(6)	1.89	0.08	
Race	0.78	2.85	0.01**	
Age	0.10	1.24	0.22	
Gender	-0.06	-0.28	0.78	
Parental Presence	0.00	0.07	0.95	
Religiosity	0.25	1.59	0.11	
Religious Denomination	-0.17	-0.72	0.47	
Step 2:				
APPA Variables	40.63(10)	4.84	0.06	
Maternal Attitudes Sex	-0.09	-0.72	0.47	
Maternal Attitudes BC	0.17	1.55	0.12	
Paternal Attitudes Sex	0.12	1.00	0.32	
Paternal Attitudes BC	0.02	0.16	0.88	
Step 3: ^a				
Interactions				
Race X MASex	-0.37	-0.99	0.33	
Race X MABC	-0.32	-1.03	0.30	
Race X PASex	0.12	0.41	0.68	
Race X PABC	-0.15	-0.50	0.62	
Age X MASex	-0.05	-0.66	0.51	
Age X MABC	-0.08	-0.46	0.64	
Age X PASex	-0.10	-1.07	0.29	
Age X PABC	0.12	0.69	0.49	
Gender X MASex	-0.34	-1.24	0.22	
Gender X MABC	-0.03	-0.08	0.94	
Gender X PASex	+0.06	-0.23	0.82	
Gender X PABC	0.10	0.27	0.79	
Presence X MASex	0.01	0.08	0.94	
Presence X MABC	0.05	0.26	0.80	
Presence X PASex	0.18	2.40	0.02*	
Presence X PABC	-0.14	-0.79	0.43	
Religiosity X MASex	0.08	0.40	0.69	
Religiosity X MABC	0.43	2.25	0.09	
Religiosity X PASex	0.14	0.85	0.40	
Religiosity X PABC	-0.31	-1.57	0.12	
Rel. Denom. X MASex	0.24	0.76	0.45	
Rel. Denom. X MABC	-0.13	-0.42	0.68	
Rel. Denom. X PASex	-0.04	-0.17	0.87	
Rel. Denom. X PABC	-0.09	-0.33	0.74	

* $p \leq 0.05$, ** $p \leq 0.01$, *** $p \leq 0.001$

(B and Wald/Odds Ratio only for logistic regressions on dichotomous outcome variables.)

^a Each interaction term was entered separately and independently into Step 3 of the regression equation.

Table 12

Linear Regressions of Interactions of APPA and Demographic Variables with Average Sex Partners per Year

Variable	<i>B</i> (B)	<i>t</i>	<i>Sig.</i>	Wald/Odds Ratio
Step 1:	SS(df)	F	Sig.	
Demographic Variables	8.05(6)	1.12	0.35	
Race	-0.30	-1.63	0.10	
Age	-0.02	-0.31	0.76	
Gender	0.00	0.03	0.98	
Parental Presence	0.00	-0.01	0.99	
Religiosity	-0.17	-1.68	0.09	
Religious Denomination	-0.10	-0.66	0.51	
Step 2:				
APPA Variables	25.38(10)	2.21	0.02*	
Maternal Attitudes Sex	0.07	0.87	0.38	
Maternal Attitudes BC	-0.17	-2.32	0.02*	
Paternal Attitudes Sex	-0.07	-0.83	0.41	
Paternal Attitudes BC	-0.04	-0.48	0.64	
Step 3: ^a				
Interactions				
Race X MASex	-0.03	-0.14	0.89	
Race X MABC	0.16	0.74	0.46	
Race X PASex	0.33	1.67	0.10	
Race X PABC	-0.29	-1.44	0.15	
Age X MASex	-0.04	-0.77	0.44	
Age X MABC	-0.06	-0.49	0.62	
Age X PASex	-0.04	-0.74	0.46	
Age X PABC	0.08	0.66	0.51	
Gender X MASex	0.16	0.86	0.39	
Gender X MABC	-0.02	-0.07	0.95	
Gender X PASex	0.21	1.27	0.20	
Gender X PABC	-0.03	-0.14	0.89	
Presence X MASex	0.00	0.05	0.96	
Presence X MABC	0.10	0.86	0.40	
Presence X PASex	-0.02	-0.32	0.75	
Presence X PABC	-0.11	-1.05	0.29	
Religiosity X MASex	-0.03	-0.26	0.79	
Religiosity X MABC	-0.16	-1.19	0.24	
Religiosity X PASex	-0.13	-1.16	0.25	
Religiosity X PABC	0.11	0.86	0.39	
Rel. Denom. X MASex	0.04	0.18	0.86	
Rel. Denom. X MABC	-0.09	-0.47	0.64	
Rel. Denom. X PASex	-0.06	-0.33	0.74	
Rel. Denom. X PABC	0.05	0.25	0.80	

* $p \leq 0.05$, ** $p \leq 0.01$, *** $p \leq 0.001$

(B and Wald/Odds Ratio only for logistic regressions on dichotomous outcome variables.)

^a Each interaction term was entered separately and independently into Step 3 of the regression equation.

Table 13

Logistic Regressions of Interactions of APPA and Demographic Variables with Frequency of Birth Control

Variable	<i>B</i> (<i>B</i>)	<i>t</i>	<i>Sig.</i>	Wald/Odds Ratio
Step 1:	Chi-sq.	df	Sig.	
Demographic Variables	15.45	6	0.02*	
Race	-0.80		0.04*	4.16/0.45
Age	-0.18		0.12	2.36/0.84
Gender	-0.23		0.45	0.58/0.79
Parental Presence	-0.31		0.45	3.53/0.74
Religiosity	0.12		0.61	0.26/1.12
Religious Denomination	0.22		0.53	0.34/1.24
Step 2:				
APPA Variables	0.78	4	0.94	
Maternal Attitudes Sex	0.01		0.94	0.01/1.01
Maternal Attitudes BC	0.12		0.51	0.45/1.12
Paternal Attitudes Sex	0.05		0.74	0.12/1.05
Paternal Attitudes BC	-0.08		0.62	0.25/0.92
Step 3: ^a				
Interactions				
Race X MASex	-0.52		0.43	0.62/0.60
Race X MABC	-1.83		0.10	2.65/0.16
Race X PASex	0.37		0.50	0.55/1.45
Race X PABC	2.14		0.06	3.43/8.51
Age X MASex	0.09		0.48	0.51/1.09
Age X MABC	-0.44		0.27	1.21/1.03
Age X PASex	0.03		0.87	0.03/1.03
Age X PABC	0.16		0.68	0.18/1.18
Gender X MASex	-0.08		0.86	0.03/0.92
Gender X MABC	-0.78		0.20	1.63/0.46
Gender X PASex	-0.35		0.39	0.76/0.71
Gender X PABC	0.98		0.13	2.27/2.65
Presence X MASex	-0.19		0.38	0.78/0.83
Presence X MABC	-0.21		0.69	0.16/0.81
Presence X PASex	0.44		0.12	2.36/1.55
Presence X PABC	0.04		0.93	0.01/1.04
Religiosity X MASex	-0.07		0.83	0.05/0.93
Religiosity X MABC	0.01		0.97	0.00/1.01
Religiosity X PASex	0.18		0.51	0.44/1.20
Religiosity X PABC	0.21		0.58	0.31/1.23
Rel. Denom. X MASex	0.26		0.61	0.26/1.29
Rel. Denom. X MABC	-0.36		0.54	0.38/0.70
Rel. Denom. X PASex	-0.41		0.32	1.00/0.67
Rel. Denom. X PABC	-0.31		0.58	0.30/0.74

* $p \leq 0.05$, ** $p \leq 0.01$, *** $p \leq 0.001$

(*B* and Wald/Odds Ratio only for logistic regressions on dichotomous outcome variables.)

^a Each interaction term was entered separately and independently into Step 3 of the regression equation.

Table 14

Logistic Regressions of Interactions of APPA and Demographic Variables with Pregnancy

Variable	<i>B</i> (<i>B</i>)	<i>t</i>	<i>Sig.</i>	Wald/Odds Ratio
Step 1:	Chi-sq.	df	Sig.	
Demographic Variables	2.67	6	0.85	
Race	0.87		0.32	0.97/2.40
Age	0.24		0.27	1.20/1.27
Gender	-0.41		0.63	0.24/0.67
Parental Presence	-0.07		0.68	0.17/0.93
Religiosity	0.04		0.95	0.00/1.04
Religious Denomination	-0.81		0.33	0.96/0.45
Step 2:				
APPA Variables	1.58	4	0.81	
Maternal Attitudes Sex	0.04		0.94	0.01/1.04
Maternal Attitudes BC	-0.03		0.96	0.00/1.01
Paternal Attitudes Sex	-0.40		0.32	0.99/0.68
Paternal Attitudes BC	0.01		0.99	0.00/1.01
Step 3: ^a				
Interactions				
Race X MASex	-0.85		0.45	0.57/0.43
Race X MABC	17.43		0.99	0.00/0.00
Race X PASex	0.52		0.53	0.40/1.68
Race X PABC	13.74		0.99	0.00/0.00
Age X MASex	0.01		0.97	0.00/1.01
Age X MABC	-0.14		0.79	0.07/0.87
Age X PASex	-0.52		0.08	3.12/0.60
Age X PABC	0.19		0.29	1.14/1.20
Gender X MASex	-1.21		0.26	1.26/0.30
Gender X MABC	0.92		0.66	0.20/2.50
Gender X PASex	1.78		0.09	2.90/5.94
Gender X PABC	-2.82		0.17	1.87/0.06
Presence X MASex	-0.19		0.64	0.22/0.83
Presence X MABC	0.00		0.99	0.00/1.00
Presence X PASex	0.18		0.52	0.41/1.20
Presence X PABC	-0.37		0.55	0.36/0.69
Religiosity X MASex	0.73		0.23	1.45/2.08
Religiosity X MABC	-1.34		0.15	2.05/0.26
Religiosity X PASex	-0.16		0.74	0.11/0.85
Religiosity X PABC	0.39		0.60	0.28/1.48
Rel. Denom. X MASex	-0.64		0.55	0.36/0.53
Rel. Denom. X MABC	0.21		0.83	0.05/1.24
Rel. Denom. X PASex	-0.23		0.10	0.10/0.79
Rel. Denom. X PABC	0.13		0.90	0.02/1.14

* * $p \leq 0.05$, ** $p \leq 0.01$, *** $p \leq 0.001$

(*B* and Wald/Odds Ratio only for logistic regressions on dichotomous outcome variables.)

^a Each interaction term was entered separately and independently into Step 3 of the regression equation.

Table 15

Linear Regressions of Interactions of IPSC variables and Parental Attitudes on Sexual Debut

Variable	<i>B</i> (B)	<i>t</i>	<i>Sig.</i>	Wald/Odds Ratio
Step 1:	SS(df)	F	Sig.	
IPSC Variables	26.40(10)	1.15	0.33	
Parental Privacy	0.00	0.10	0.92	
Parental Affection	0.02	0.74	0.46	
Acceptance of Nudity	-0.02	-1.10	0.27	
Parental Liberality	-0.01	-0.21	0.83	
Step 2:				
Parental Attitudes	40.63(10)	4.84	0.06	
Maternal Attitudes	0.07	0.52	0.60	
Paternal Attitudes	0.14	1.29	0.20	
Step 3: ^a				
Interactions				
P. Privacy X MA Att.	-0.22	-0.62	0.53	
P. Privacy X PA Att.	-0.27	-0.83	0.41	
P. Affection X MA Att.	-0.27	-0.84	0.40	
P. Affection X PA Att.	-0.70	-2.27	0.06	
Accept. Nud. X MA Att.	-0.28	-0.93	0.35	
Accept Nud. X PA Att.	-0.35	-1.40	0.16	
P. Liberality X MA Att.	-0.02	-0.06	0.95	
P. Liberality X PA Att.	-0.11	-0.38	0.71	

* $p \leq 0.05$, ** $p \leq 0.01$, *** $p \leq 0.001$

(B and Wald/Odds Ratio only for logistic regressions on dichotomous outcome variables.)

^a Each interaction term was entered separately and independently into Step 3 of the regression equation

Table 16

Linear Regressions of Interactions of IPSC variables and Parental Attitudes on Average Number of Partners per Year

Variable	<i>B</i> (B)	<i>t</i>	<i>Sig.</i>	Wald/Odds Ratio
Step 1:	SS(df)	F	Sig.	
IPSC Variables	8.26(10)	0.68	0.74	
Parental Privacy	-0.00	-0.33	0.74	
Parental Affection	0.00	0.19	0.85	
Acceptance of Nudity	0.01	0.70	0.49	
Parental Liberality	0.01	0.45	0.65	
Step 2:				
Parental Attitudes	25.38(10)	2.21	0.02*	
Maternal Attitudes	-0.02	-0.29	0.77	
Paternal Attitudes	-0.17	-2.38	0.02*	
Step 3: ^a				
Interactions				
P. Privacy X MA Att.	0.14	0.44	0.66	
P. Privacy X PA Att.	0.18	0.60	0.55	
P. Affection X MA Att.	-0.05	-0.17	0.87	
P. Affection X PA Att.	0.25	0.95	0.35	
Accept Nud X MA Att.	0.16	0.63	0.53	
Accept Nud X PA Att.	0.26	1.16	0.25	
P. Liberality X MA Att.	0.66	2.66	0.07	
P. Liberality X PA Att.	0.47	1.90	0.06	

* $p \leq 0.05$, ** $p \leq 0.01$, *** $p \leq 0.001$

(B and Wald/Odds Ratio only for logistic regressions on dichotomous outcome variables.)

^a Each interaction term was entered separately and independently into Step 3 of the regression equation.

Table 17

Logistic Regressions of Interactions of IPSC variables and Parental Attitudes on Frequency of Birth Control Use

Variable	<i>B</i> (B)	<i>t</i>	<i>Sig.</i>	Wald/Odds Ratio
Step 1:	Chi-sq.	df	Sig.	
IPSC Variables	5.88	4	0.21	
Parental Privacy	0.05		0.04*	4.28/1.05
Parental Affection	0.02		0.43	0.61/1.02
Acceptance of Nudity	-0.00		0.96	0.00/1.00
Parental Liberality	0.03		0.59	0.29/1.03
Step 2:				
Parental Attitudes	0.78	4	0.94	
Maternal Attitudes	0.05		0.77	0.08/1.05
Paternal Attitudes	-0.10		0.51	0.43/0.91
Step 3: ^a				
Interactions				
P. Privacy X MA Att.	-0.00		0.90	0.02/1.00
P. Privacy X PA Att.	0.01		0.73	0.12/1.01
P. Affection X MA Att.	-0.02		0.44	0.61/0.98
P. Affection X PA Att.	-0.02		0.40	0.70/0.98
Accept. Nudity X MA Att.	-0.02		0.44	0.59/0.99
Accept Nudity X PA Att.	-0.01		0.55	0.36/0.99
P. Liberality X MA Att.	-0.05		0.28	1.15/0.95
P. Liberality X PA Att.	-0.07		0.12	2.42/0.94

* $p \leq 0.05$, ** $p \leq 0.01$, *** $p \leq 0.001$

(B and Wald/Odds Ratio only for logistic regressions on dichotomous outcome variables.)

^a Each interaction term was entered separately and independently into Step 3 of the regression equation.

Table 18

Logistic Regressions of Interactions of IPSC variables and Parental Attitudes on Pregnancy

Variable	<i>B</i> (B)	<i>t</i>	<i>Sig.</i>	Wald/Odds Ratio
Step 1:	Chi-sq.	df	Sig.	
IPSC Variables	4.18	4	0.38	
Parental Privacy	0.05		0.40	0.71/1.05
Parental Affection	-0.15		0.10	2.64/0.86
Acceptance of Nudity	0.03		0.63	0.24/1.03
Parental Liberality	-0.14		0.50	0.47/0.87
Step 2:				
Parental Attitudes	1.58	4	0.81	
Maternal Attitudes	-0.07		0.88	0.02/0.93
Paternal Attitudes	-0.07		0.87	0.03/0.93
Step 3: ^a				
Interactions				
P. Privacy X MA Att.	-0.04		0.55	0.37/2.44
P. Privacy X PA Att.	-0.01		0.90	0.02/1.00
P. Affection X MA Att.	-0.05		0.55	0.35/0.95
P. Affection X PA Att.	0.02		0.76	0.09/1.02
Acceptance of Nudity X MA Att.	0.02		0.69	0.16/1.02
Acceptance of Nudity X PA Att.	0.04		0.42	0.66/1.04
P. Liberality X MA Att.	0.11		0.42	0.66/1.12
P. Liberality X PA Att.	0.10		0.35	0.88/1.11

* $p \leq 0.05$, ** $p \leq 0.01$, *** $p \leq 0.001$

(*B* and Wald/Odds Ratio only for logistic regressions on dichotomous outcome variables.)

^a Each interaction term was entered separately and independently into Step 3 of the regression equation.

Figure 1

Scree Plot of Unconstrained Factor Solution with Varimax Rotation Containing Final Selection of Variables

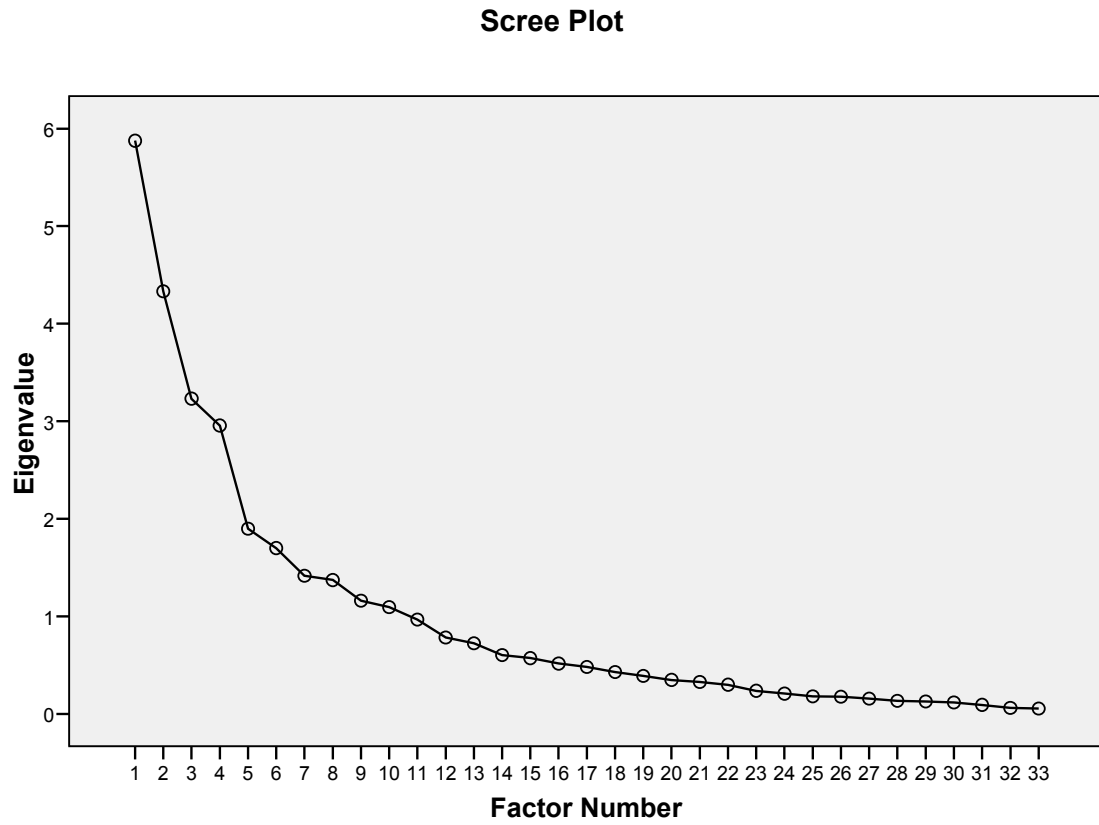


Figure 2

Histogram of Demographic Variable Race before Recoding

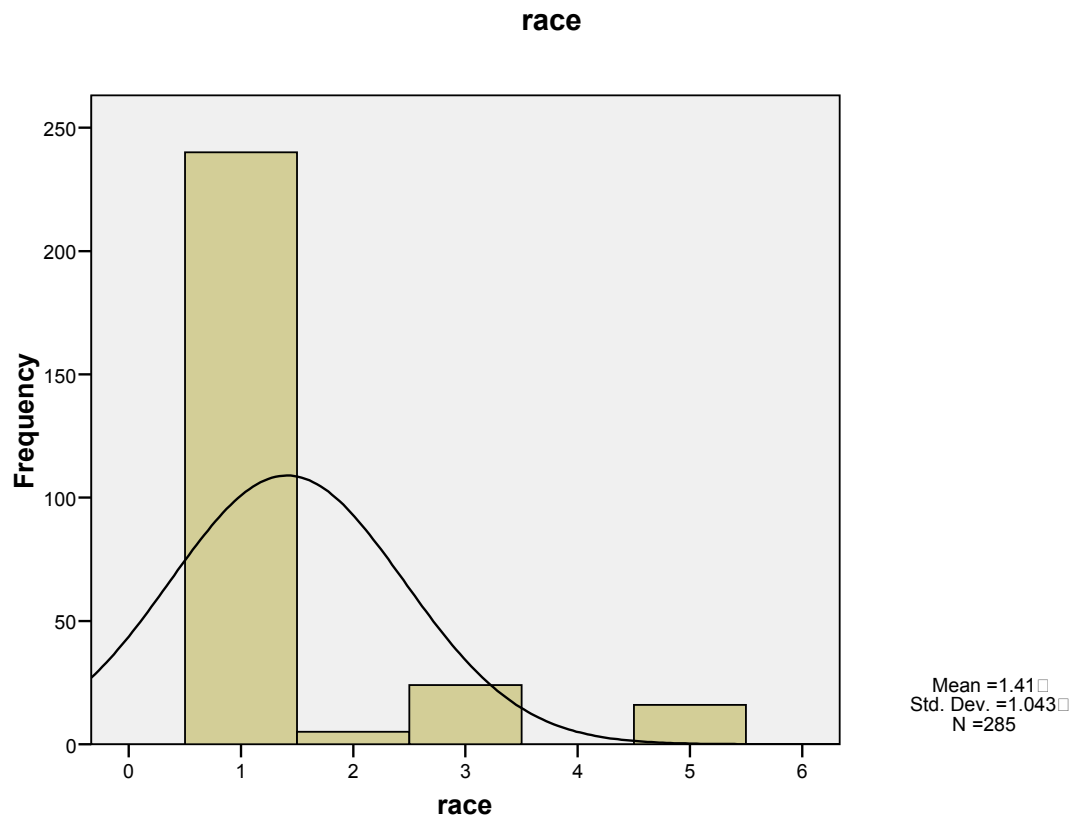


Figure 3

Histogram of Demographic Variable Religious Denomination before Recoding

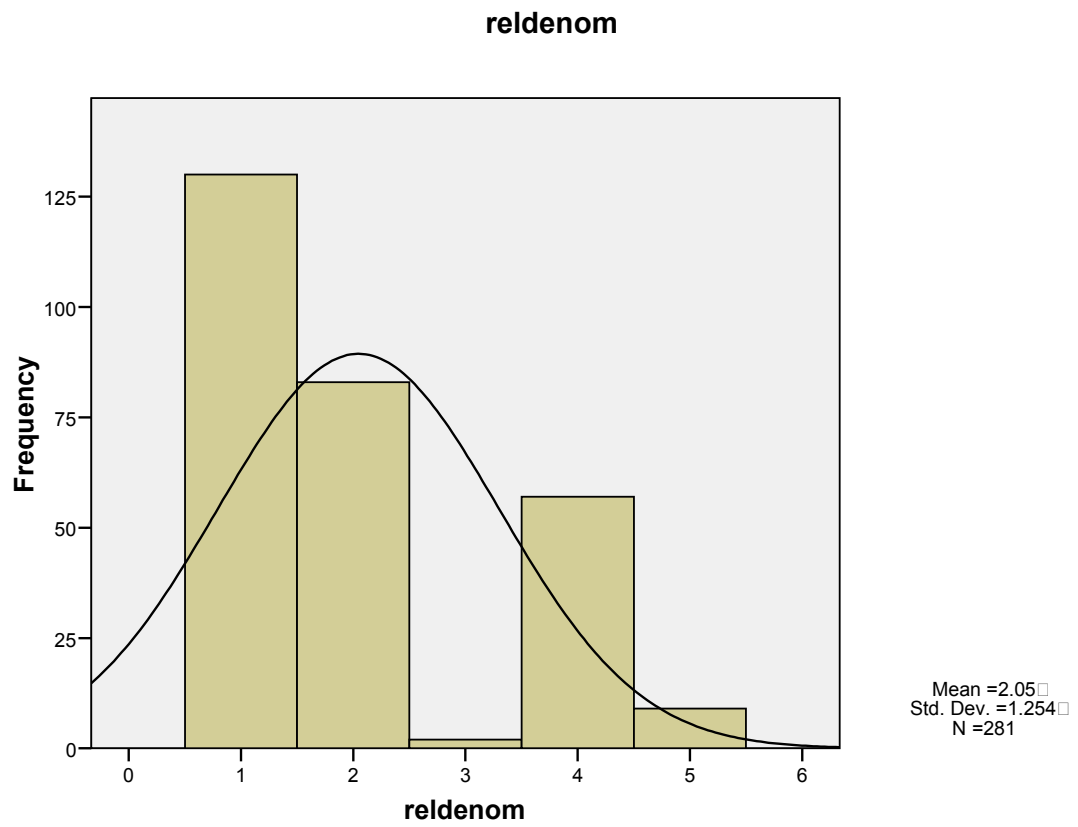


Figure 4

Histogram of the Demographic Variable Frequency of Use of Birth Control before Recoding

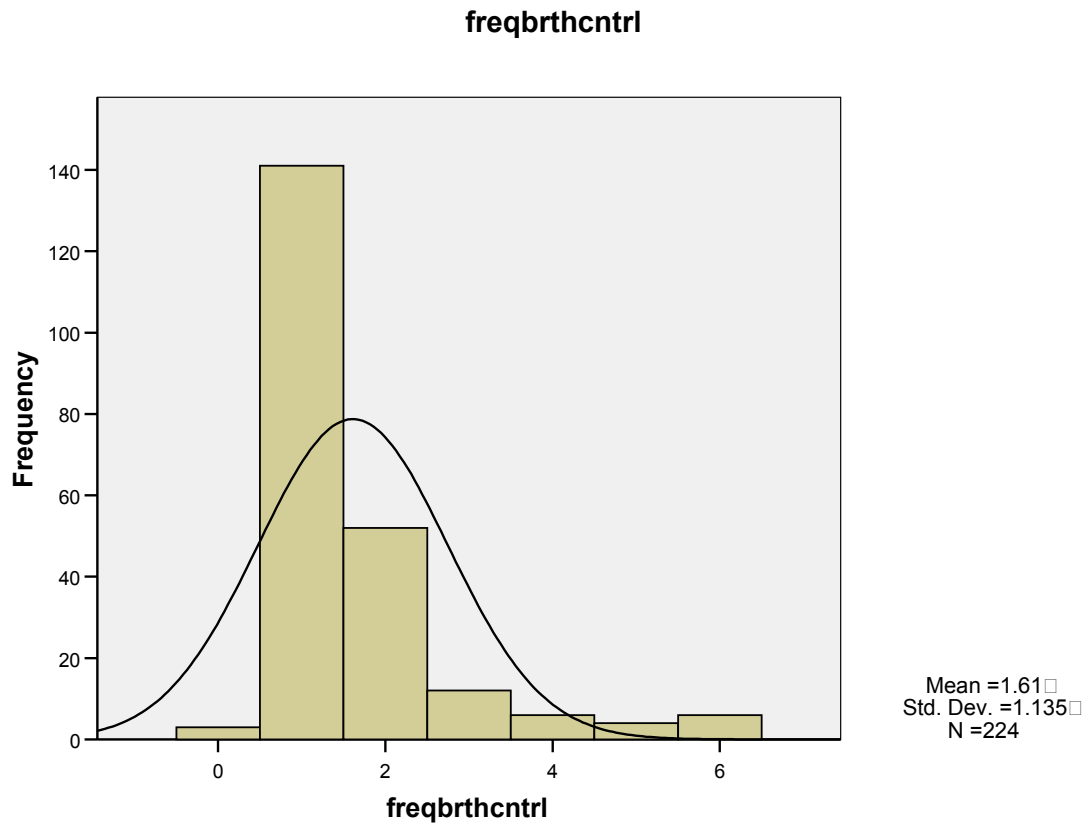


Figure 5

Histogram of Risky Adolescent Sexual Behavior Variable Sexual Debut before Recoding

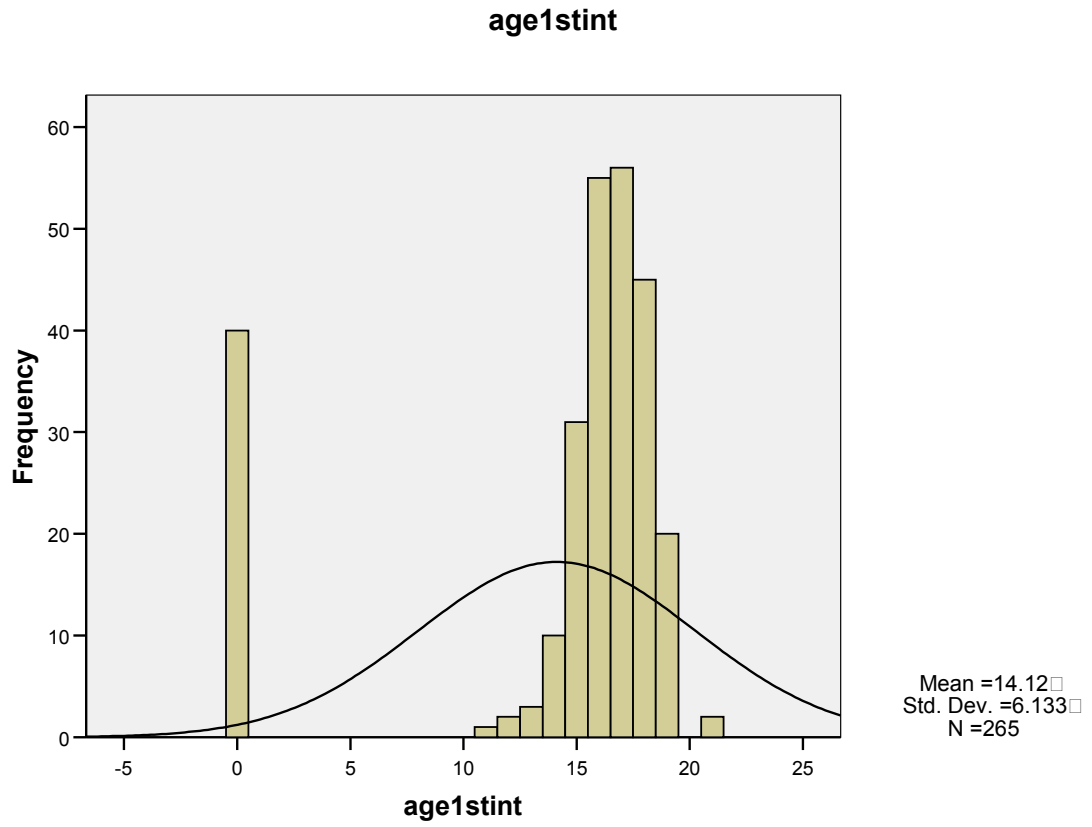
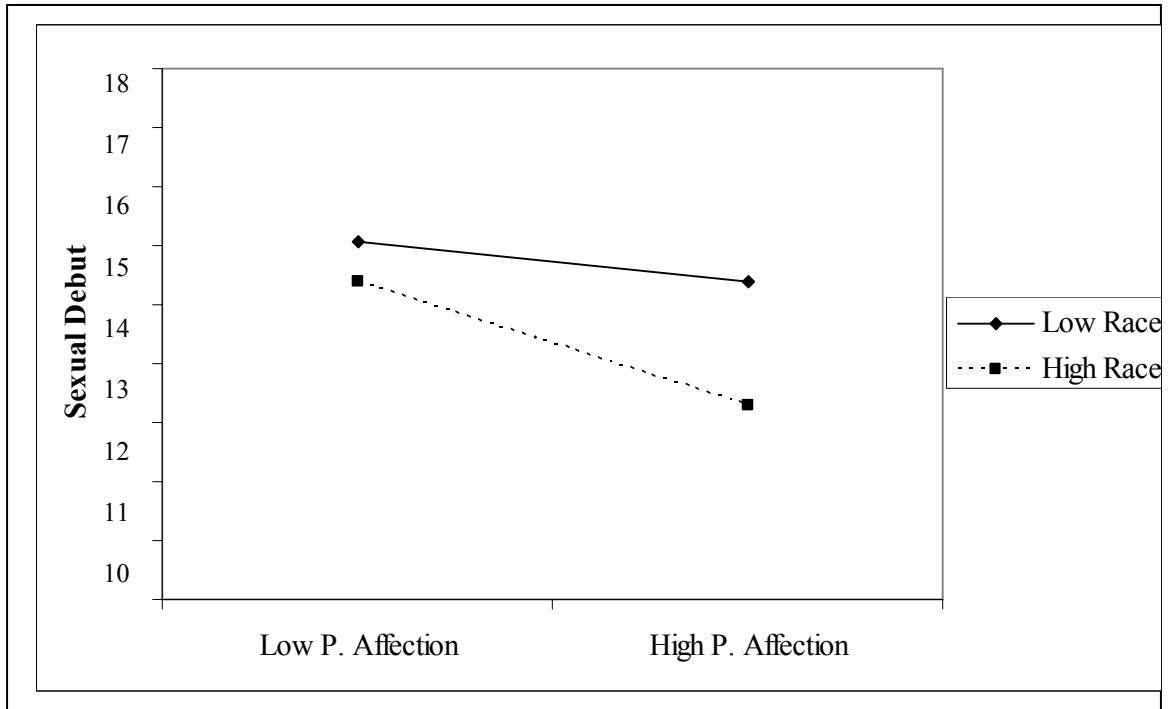


Figure 6

Plot of Simple Slopes Analysis for Interaction of Parental Affection and Race Predicting Sexual Debut



(Low Race represents White participants, and High Race represents Black/other participants.)

Figure 7

Plot of Simple Slopes Analysis for Interaction of Parental Liberality and Age Predicting Sexual Debut

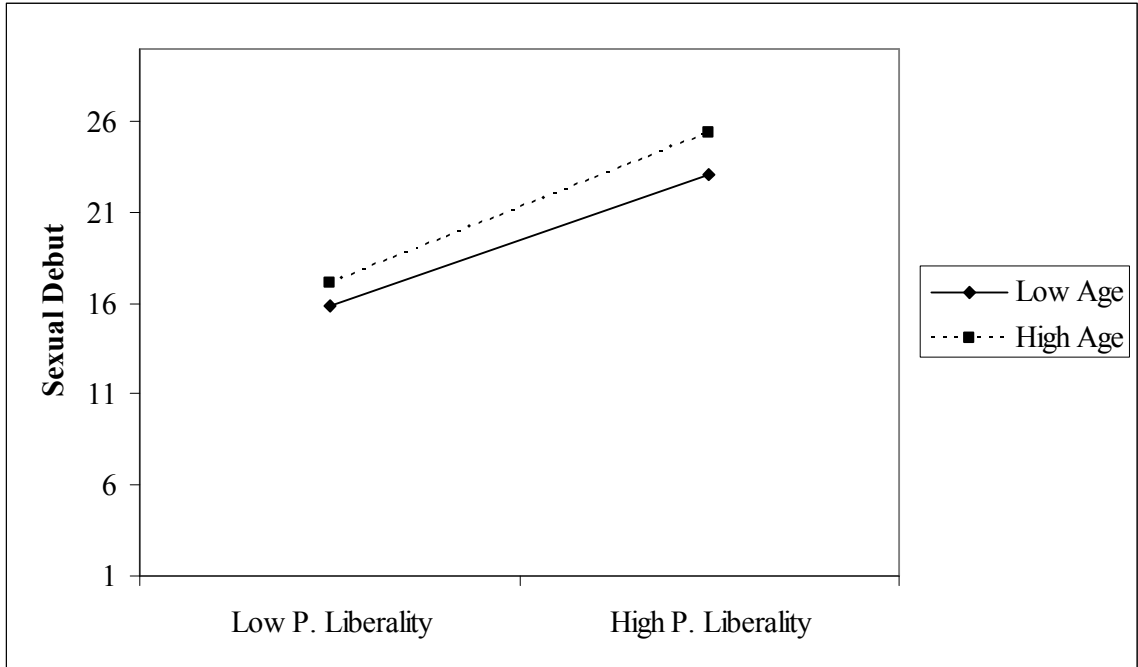
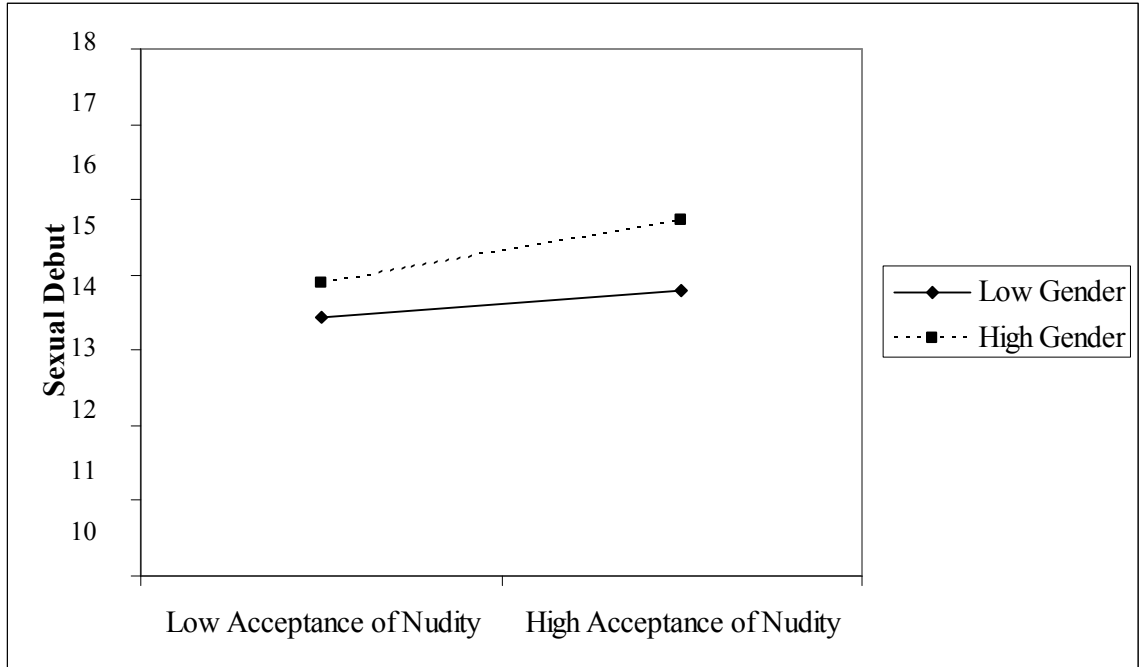


Figure 8

Plot of Simple Slopes Analysis for Interaction of Acceptance of Nudity and Gender in Predicting Sexual Debut



(Low Gender represents male participants and High Gender represents female participants.)

Figure 9

A Plot of Simple Slopes Analysis for Interaction of Parental Liberality and Religiosity in Predicting Sexual Debut

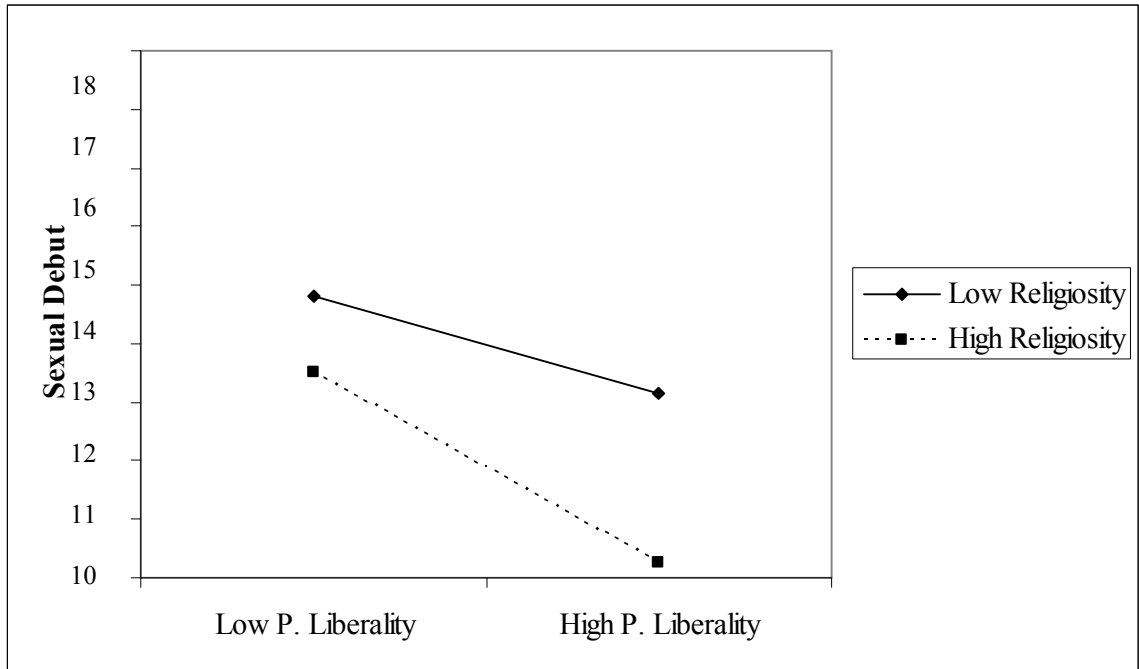
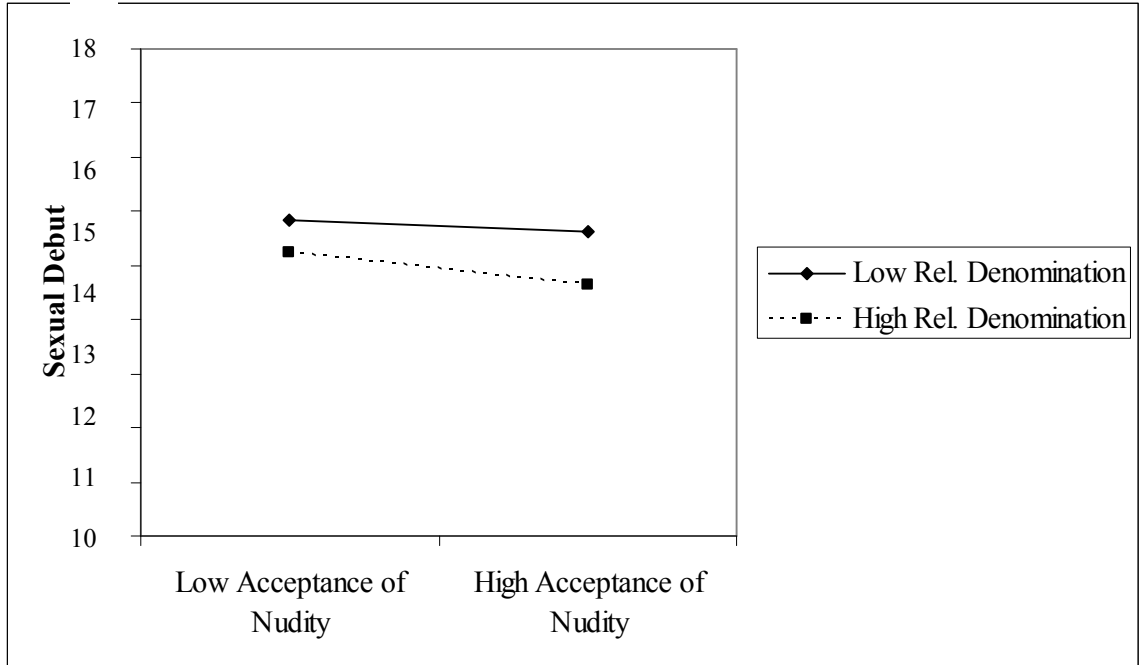


Figure 10

A Plot of Simple Slopes Analysis for Interaction of Acceptance of Nudity and Religious Denomination in Predicting Sexual Debut



(Low Religious Denomination represents Protestant/Other participants, and High Religious Denomination represents Catholic Participants.)

Figure 11

A Plot of Simple Slopes Analysis for Interaction of Parental Liberality and Religiosity in Predicting Average Number of Sexual Partners per Year

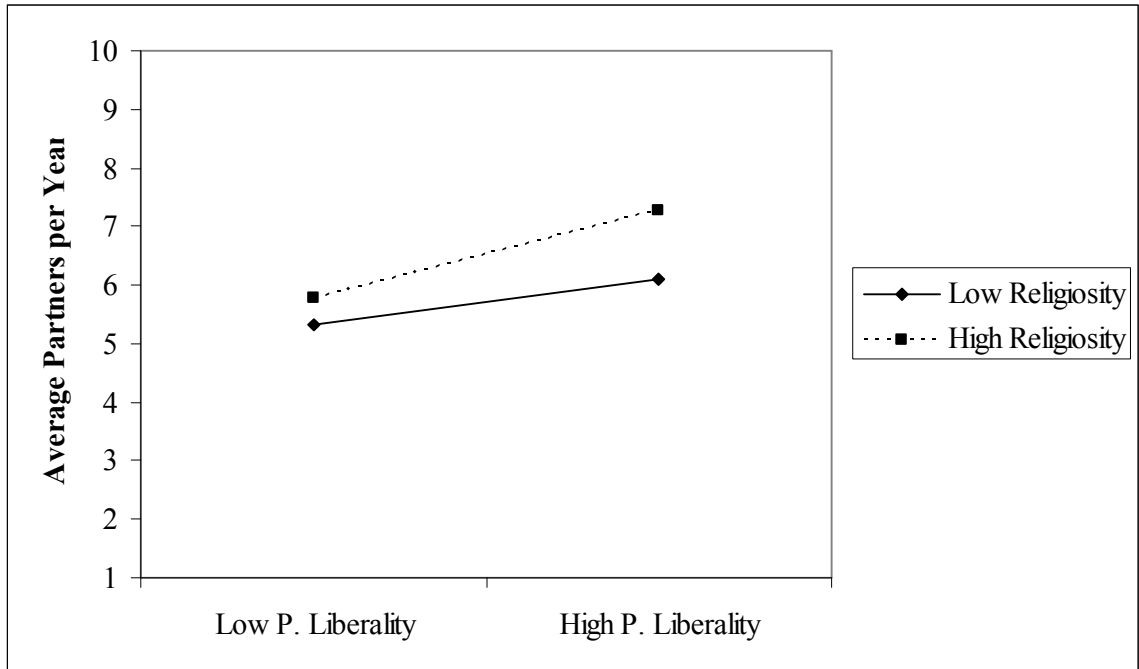
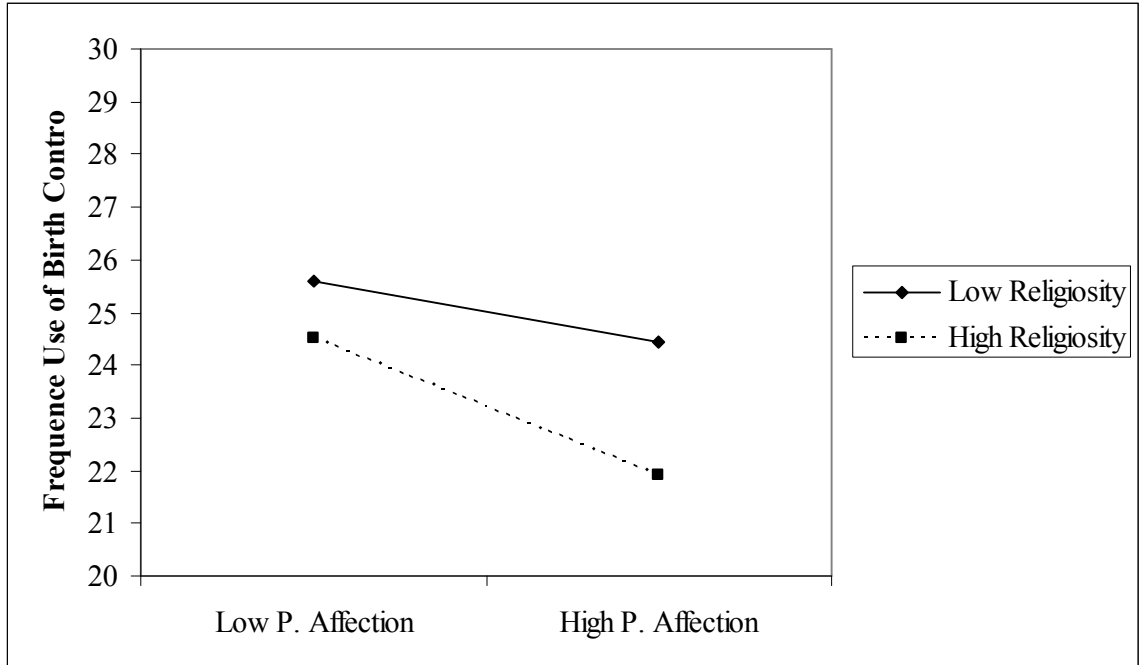


Figure 12

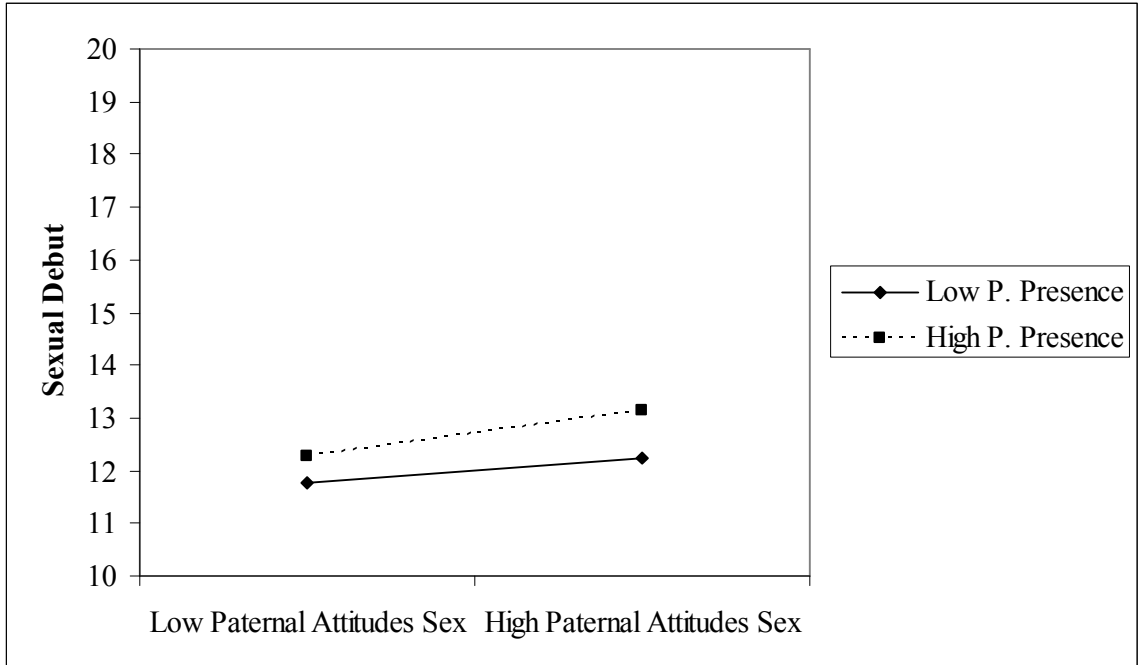
A Plot of Simple Slopes Analysis for Interaction of Parental Affection and Religiosity in Predicting Frequency of Use of Birth Control



(Frequency of Use of Birth Control was coded so that higher levels of birth control use resulted in numbers as higher use is less risky.)

Figure 13

A Plot of Simple Slopes Analysis for Interaction of Paternal Attitudes towards Sex and Parental Presence in Predicting Sexual Debut



Appendix 1

Measure of Adolescent Perception of Parental Attitudes (adapted from Jaccard and Dittus, 2000)

1) How would your mother have felt about your having sex during your teen years?

- Strongly approved
- Somewhat approved
- Mildly approved
- Mildly disapproved
- Somewhat disapproved
- Strongly disapproved

2) How would your father have felt about your having sex during your teen years?

- Strongly approved
- Somewhat approved
- Mildly approved
- Mildly disapproved
- Somewhat disapproved
- Strongly disapproved

3) How would your mother have felt about your using birth control during your teen years?

- Strongly approved
- Somewhat approved
- Mildly approved
- Mildly disapproved
- Somewhat disapproved
- Strongly disapproved

4) How would your father have felt about your using birth control during your teen years?

- Strongly approved
- Somewhat approved
- Mildly approved
- Mildly disapproved
- Somewhat disapproved
- Strongly disapproved

Appendix 2

Measure of Indirect Parental Sexual Communication (operationalized like Joffe &

Franca-Koh, 2001)

1) During your childhood and teenage years, how aware were you of your parents' sexual behavior?

- I was never aware
- I was somewhat aware
- I was very aware
- I was completely aware

2) During your childhood and teenage years, how aware were you of your parents' use of contraceptives?

- I was never aware
- I was somewhat aware
- I was very aware
- I was completely aware

3) During your childhood and teenage years, how aware were you of your parents' use of sexual aids?

- I was never aware
- I was somewhat aware
- I was very aware
- I was completely aware

4) During your childhood and teenage years, were you aware of your mother's menstruation?

- Yes
- No

5) During your childhood and teenage years, how frequently did your parents express physical affection?

- Never
- Occasionally
- Sometimes
- Somewhat often
- Very often

6) During your childhood and teenage years, how frequently did your parents kiss?

- Never
- Occasionally
- Sometimes

- Somewhat often
- Very often

7) During your childhood and teenage years, how frequently did your parents hug?

- Never
- Occasionally
- Sometimes
- Somewhat often
- Very often

8) During your childhood and teenage years, how frequently did your parents hold hands?

- Never
- Occasionally
- Sometimes
- Somewhat often
- Very often

9) During your childhood and teenage years, how frequently did your parents cuddle?

- Never
- Occasionally
- Sometimes
- Somewhat often
- Very often

10) During your childhood and teenage years, how frequently did your parent exhibit sexual groping or fondling?

- Never
- Occasionally
- Sometimes
- Somewhat often
- Very often

11) During your childhood and teenage years, how frequently did your parents caress or otherwise romantically touch each other?

- Never
- Occasionally
- Sometimes
- Somewhat often
- Very often

12) Before you reached puberty, how often was nudity exhibited by your parents in your home?

- Never
- Occasionally
- Sometimes

- Somewhat often
- Very often

13) Before you reached puberty, how frequently did your father insist on privacy while in the bathroom?

- Never
- Occasionally
- Sometimes
- Somewhat often
- Very often

14) Before you reached puberty, how frequently did your mother insist on privacy while in the bathroom?

- Never
- Occasionally
- Sometimes
- Somewhat often
- Very often

15) Before you reached puberty, how frequently did your mother insist on privacy while in the bedroom?

- Never
- Occasionally
- Sometimes
- Somewhat often
- Very often

16) Before you reached puberty, how frequently did your father insist on privacy while in the bedroom?

- Never
- Occasionally
- Sometimes
- Somewhat often
- Very often

17) Before you reached puberty, how frequently were you permitted to exhibit nudity in your home?

- Never
- Occasionally
- Sometimes
- Somewhat often
- Very often

18) Before you reached puberty, how frequently were you permitted privacy while in the bathroom?

- Never
- Occasionally
- Sometimes
- Somewhat often
- Very often

19) Before you reached puberty, how frequently were you permitted privacy while in the bedroom?

- Never
- Occasionally
- Sometimes
- Somewhat often
- Very often

20) Before you reached puberty, how frequently did your father react negatively to nudity?

- Never
- Occasionally
- Sometimes
- Somewhat often
- Very often

21) Before you reached puberty, how frequently did your mother react negatively to nudity?

- Never
- Occasionally
- Sometimes
- Somewhat often
- Very often

22) Before you reached puberty, how frequently did your father react positively to nudity?

- Never
- Occasionally
- Sometimes
- Somewhat often
- Very often

23) Before you reached puberty, how frequently did your mother react positively to nudity?

- Never
- Occasionally
- Sometimes

- Somewhat often
- Very often

24) Before you reached puberty, how frequently did your father react in a neutral fashion to nudity?

- Never
- Occasionally
- Sometimes
- Somewhat often
- Very often

25) Before you reached puberty, how frequently did your mother react in a neutral fashion to nudity?

- Never
- Occasionally
- Sometimes
- Somewhat often
- Very often

26) After you reached puberty, how often was nudity exhibited by your parents in your home?

- Never
- Occasionally
- Sometimes
- Somewhat often
- Very often

27) After you reached puberty, how frequently did your father insist on privacy while in the bathroom?

- Never
- Occasionally
- Sometimes
- Somewhat often
- Very often

28) After you reached puberty, how frequently did your mother insist on privacy while in the bathroom?

- Never
- Occasionally
- Sometimes
- Somewhat often
- Very often

29) After you reached puberty, how frequently did your mother insist on privacy while in the bedroom?

- Never
- Occasionally
- Sometimes
- Somewhat often
- Very often

30) After you reached puberty, how frequently did your father insist on privacy while in the bedroom?

- Never
- Occasionally
- Sometimes
- Somewhat often
- Very often

31) After you reached puberty, how frequently were you permitted to exhibit nudity in your home?

- Never
- Occasionally
- Sometimes
- Somewhat often
- Very often

32) After you reached puberty, how frequently were you permitted privacy while in the bathroom?

- Never
- Occasionally
- Sometimes
- Somewhat often
- Very often

33) After you reached puberty, how frequently were you permitted privacy while in the bedroom?

- Never
- Occasionally
- Sometimes
- Somewhat often
- Very often

34) After you reached puberty, how frequently did your father react negatively to nudity?

- Never
- Occasionally
- Sometimes
- Somewhat often
- Very often

35) After you reached puberty, how frequently did your mother react negatively to nudity?

- Never
- Occasionally
- Sometimes
- Somewhat often
- Very often

36) After you reached puberty, how frequently did your father react positively to nudity?

- Never
- Occasionally
- Sometimes
- Somewhat often
- Very often

37) After you reached puberty, how frequently did your mother react positively to nudity?

- Never
- Occasionally
- Sometimes
- Somewhat often
- Very often

38) After you reached puberty, how frequently did your father react in a neutral fashion to nudity?

- Never
- Occasionally
- Sometimes
- Somewhat often
- Very often

39) After you reached puberty, how frequently did your mother react in a neutral fashion to nudity?

- Never
- Occasionally
- Sometimes
- Somewhat often
- Very often

Appendix 3

Measure of Risky Adolescent Sexual Behavior (Jaccard, Dittus, and Gordon, 1998)

1) At what age were you when you first experienced sexual intercourse?

- Below 14
- 14 – 15
- 15-16
- 16-17
- 17-18
- Above 18

2) On average, how many sexual partners did you have a year during your teen years?

- None
- One
- Two to Three
- Four to Five
- More than Five

3) How often did you and your partner use some form of birth control to prevent pregnancy during your teen years?

- Always
- Somewhat often
- Occasionally
- Sometimes
- Rarely
- Never

4) What form(s) of birth control did you and your partner use?

- Condom
- Birth control pills
- Diaphragm
- Spermicidal Foam
- Implant
- Other

5) Did you ever get (get someone) pregnant during your teen years?

- Yes
- No

Appendix 4

Measure of Demographic Information

- 1) What is your current age?
- 2) What is your gender?
 - Male
 - Female
- 3) What is your race/ethnicity?
 - Caucasian
 - Hispanic
 - African American
 - Native American
 - Other (please specify)
- 4) What is your sexual orientation?
 - 100% Heterosexual
 - 75% Heterosexual
 - Bisexual
 - 75% Homosexual
 - 100% Homosexual
 - Other (please specify)
- 5) Whom were you raised by during your teen years?
 - Both biological parents
 - Biological Mother only
 - Biological Father only
 - Stepparent(s) other legal guardian
 - Foster/adoptive Parent(s)
 - Other (please specify)
- 6) How many years did you live with your parents/guardians?
- 7) What is your occupation?

8) What is your level of education?

- Some high school
- High school diploma or GED
- Some college
- BA
- Some graduate school
- Graduate degree

9) What is your marital status?

- Single/Never married
- Married
- Engaged
- Separated
- Divorced
- Widowed
- Other (please specify)

10) What is your religious denomination?

- Protestant
- Roman Catholic
- Jewish
- Other (please specify)
- None

11) How important would you say that religion was to you during your childhood?

- Not at all important
- Somewhat important
- Very important

12) Father's level of education:

- Some high school
- High school diploma or GED
- Some college
- BA
- Some graduate school
- Graduate degree

13) Mother's level of education:

- Some high school
- High school diploma or GED
- Some college
- BA
- Some graduate school
- Graduate degree

14) What is your father's religious denomination?

- Protestant
- Roman Catholic
- Jewish
- Other (please specify)
- None

15) How important would you say religion was to your father during your childhood?

- Not at all important
- Somewhat important
- Very important

16) What is your mother's religious denomination?

- Protestant
- Roman Catholic
- Jewish
- Other (please specify)
- None

17) How important would you say religion was to your mother during your childhood?

- Not at all important
- Somewhat important
- Very important

Appendix 5

Parental Nonverbal Communication, Attitudes, and Adolescent Sexual Behavior

Informed Consent

IRB #1047125, Expiration 04/04/2006

Thank you for volunteering to participate in this study. Below you will find a description of the procedures and explanation of your rights as a research participant. In accordance with the policies of the University of Missouri-Columbia, we ask that you read this information carefully and click the button at the bottom of the page indicating that you have read and understand the information.

This study investigates the relationship of perceptions of parental sexual attitudes, parental nonverbal communication, and past sexual behavior. Your participation will involve filling out a few questionnaires online. The study should take 30 minutes to an hour. There will be approximately 50 participants in this study.

Your participation in this study may expose you to potentially emotionally evocative topics which may be considered somewhat sensitive topics and how they relate to behaviors, but is otherwise no more risky than usual day-to-day behavior. You are free to skip any question that you wish not to answer and may leave the study at any time without any penalty or loss of credits. The experimenter will inform you if any new information appears that may affect your willingness to participate. Your responses to all materials are confidential and your name will be in no way attached to any responses you provide. There is a very slight possibility that a security breach on the SurveyMonkey website could lead to someone obtaining the IP addresses of the computers used to fill out the surveys and link them with the survey responses, but the staff work very

diligently to ensure the strongest security and privacy possible for the information obtained. You may find out more information about SurveyMonkey's security precautions by going to the Help Center at <http://surveymonkey.com> and searching for 'security' in the search task bar. Any questions can be emailed to the website staff. To insure confidentiality, you should complete all materials in a private environment. Certain rights are guaranteed to you as a research participant. You can be assured that all your responses on all questionnaires will be held in the strictest confidence. No one other than the experimenters will have access to your responses. Furthermore, it is your right to stop participation any time you desire. You may do so without losing the course credit you have been promised for participating.

I understand that:

- 1) My participation in this study will at least partially fulfill the research requirements for my Psychology 1000 class. I am also aware that there are other ways of fulfilling my research requirement (e.g., completing a paper; completing an exam on alternative readings). These alternatives are described in the syllabus for my Psychology 1000 class.
- 2) Results from my participation in this study will be held in strictest confidence and that my name will not be used in conjunction with any data derived from this experiment.
- 3) I may discontinue my participation in this experiment AT ANY TIME I DESIRE.
- 4) My clicking the button at the bottom of this page indicates my agreement and understanding of all the information provided.
- 5) You must be at least 18 years of age to participate.

If you have any questions about this project, please feel free to contact Dr. Joe LoPiccolo

at 573-882-7752. For additional information regarding human participation in this research, please feel free to contact the UMC Campus IRB Office at 573-882-9585.

Appendix 6

Parental Nonverbal Communication, Attitudes, and Adolescent Sexual Behavior

Debriefing Form

Thank you for your willingness to participate in this study. The information you have provided is very appreciated and will be useful in increasing the realm of scientific knowledge.

The purpose of this study is to understand the inter-relationship of certain parental behaviors, adolescent perceptions of parental attitudes, and adolescent sexual behavior.

The literature has already shown that adolescent perceptions of parental attitudes can influence adolescent sexual behavior. Furthermore, parental nonverbal communication has been shown to have some influence on adolescent perceptions of parental attitudes.

But the specifics of this relationship have yet to be discovered. The information you have provided is an important piece of this puzzle. We believe that this inter-relationship will provide valuable information about the development of adolescent sexual attitudes, which, in turn, determine adolescent sexual behaviors. Through understanding this relationship, we can come to a better understanding of how to influence adolescent sexual attitudes and prevent risky adolescent sexual behavior.

By filling out online surveys, you allow us to collect your responses without attaching any personally identifying information, thus ensuring anonymity. The questionnaires you filled out were developed from existing measures in the field of sexual behavior research.

If you are interested in more information about these measures, please contact William Crow.

If participation in this study has brought up any thoughts or feelings that you wish to

discuss, feel free to contact the MU Counseling Center at (573)882-6601 or the Psychological Services Clinic at

If you have any questions regarding the study, its methodology, hypothesis, or any other aspect, please feel free to contact William Crow at (573)289-0784, cwc8rc@mizzou.edu or Dr. Joseph LoPiccolo at 573-882-7752, lopiccoloj@missouri.edu . There are no right or wrong answers to any of these questions. We just wanted to gauge your honest thoughts, feelings, and memories. Thanks again for your time and attention