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THE INFLUENCE OF DAD: AN INVESTIGATION OF ADOLESCENT FEMALES'
PERCEIVED CLOSENESS WITH FATHERS AND RISKY BEHAVIORS

By

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Thesis

presented in partial fulfillment of the requirements
for the degree of

Master of Arts
in Psychology, Developmental

The University of Montana
Missoula, MT

May 2012

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The Influence of Dad: An Investigation of Adolescent Females' Perceived Closeness with Fathers and Risky Behaviors

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Substance use and sexual behaviors are prominent college campus activities, often co-occurring. An evolutionary perspective illuminates the unique impact of father-daughter relationships on substance use and sexual risk-taking. Female adolescents who experience early physical separation from their fathers or lack relational closeness with him exhibit higher rates of substance use and accelerated reproductive development. This study examines whether female adolescents' models of father psychological presence (a component of the attachment working model) also predict risky college behavior. Eighteen to 22 year old college females were administered several scales assessing father psychological presence, sexual risk taking, substance use, impulsivity, and depression. Results revealed that father psychological presence did predict sexual risk-taking and illicit drug use (but not alcohol use) after controlling for impulsivity, other risky behavior, and mood. Consistent with evolutionary and attachment theories, psychological presence of fathers may function as protection against risky behavior.

The Influence of Dad: An Investigation of Adolescent Females'

Perceived Closeness with Fathers and Risky Behaviors

Recent decades have seen an escalating interest in the father's influence on child development as the examination of his impact has been historically overshadowed by mothers (Davis & Perkins, 1996; Parke, 2004). Traditionally, mothers have been the primary person of interest when investigating child development, particularly with regard to the impact of the early mother-child relationship (Parke, 2004). Therefore, a focus on mothers comprises the majority of the literature on parental influence. However, the increasing demands and involvement of fathers in children's lives due to women's growing participation in the workforce have demanded interest in their role as a primary socialization agent (Davis & Perkins, 1996). Indeed, data from the U.S. Census Bureau reports nearly a 3% increase in dual-earner families and approximately a 7% decrease of fathers and 2% increase of mothers in the labor force from 1986 to 2011 (2011).

In another domain, researchers have devoted increasing attention to a common problem among college campuses: risky behaviors, particularly alcohol use and sexual behaviors (Simons, Maisto, & Wray, 2010; Vander Ven & Beck, 2009). Drinking, specifically binge drinking, has become synonymous with the college experience (Ahern, 2009), and thus, antecedents and protective factors for risky drinking behaviors deserve consideration in contemporary investigations. Furthermore, drinking and sexual behaviors on college campuses—on which live many students who have just escaped the parental monitoring characteristic of adolescence—are compatible extracurricular activities (Vander Ven & Beck, 2009).

Risky College Behaviors: Alcohol Use and “Hooking-Up”

The present study was designed to examine the extent to which father-daughter relationships, in particular, predict late adolescent risk-taking. Data gathered through the American College Health Association National College Health Assessment (ACHA), which assesses status of health, problems, and risks of college adolescents, reveal various types of risky behaviors typical of this developmental period; this study targets substance use and sexual behaviors (Ahern, 2009). In a relatively large, representative sample (N=71,680), only 38% of sexually active adolescents reported use of condoms—a disconcerting finding given that sexually active students who fail to use condoms are at increased risk for sexually transmitted infections and unplanned pregnancies. Moreover, use of alcohol reduces likelihood of condom use as the field of awareness is narrowed along with the awareness of perceived threats that accompany lack of condom use (Ahern). Furthermore, other research (Vander Ven & Beck, 2009) has determined, through self-report and interview measures, that college students use alcohol as both a motive and excuse before and after a sexual encounter occurs, as many respondents had used drinking to justify sexual behaviors, but felt guilty after a casual “hook-up.” The number of students who have reported using alcohol increases this concern for the risks involved with sexual behavior considering that 38% reported consuming one to four drinks in their last drinking episode, while half as many reported never having used alcohol (Ahern).

Depression and Substance Use

The group most susceptible to the consequences of drinking and subsequent sexual behaviors is female students as they are the ones most responsible for the repercussions of their behavior (i.e., unplanned pregnancies). Moreover, female students may also be more vulnerable to alcohol use due to their elevated susceptibility to experience depression, especially in

adolescence (Reeb & Conger, 2009; Schinke, Fang, & Cole, 2008). Research examining the relationship between gender, depression, and alcohol use among an alcohol-dependent sample found that women drink more as a reaction to negative emotional experiences than men, but that this relationship was mediated by depressive symptomatology (Lau-Barraco, Skewes, & Stasiewicz, 2009). Although the sample was limited to alcohol-dependent participants, the implications of this finding are important for a further understanding of the means by which depression may influence drinking behaviors in a younger, normal sample.

Schwinn, Schinke, and Trent (2010) have reported that gender differences are disappearing among adolescent males and females with regard to substance use. Additionally, they found that higher scores on scales indexing depression and anxiety were predictive of increased substance use among both males and females. However, females scored higher on both indices of depression and anxiety than males. Although results did not support a gender difference between males and females in use of substances, the mental health status of adolescent females suggests that they may be more at risk to use substances due to their vulnerability to depression and anxiety, which is further supported by the relationship between depression and anxiety, and substance use.

Due to the elevated prevalence of depression among adolescents, researchers have begun to examine their relationships with parents to better understand this phenomenon. Although much work has been devoted to the effects of maternal depression, recent research has examined the relationship between paternal depression and the mental health status of offspring (Reeb & Conger, 2009). Reeb and Conger investigated the impact of paternal depression on adolescent mental health and found that paternal depression, after controlling for maternal depression, had a unique effect on adolescent females' depressive symptomatology accounting for 14.8% of the

variance observed—a relationship not seen to this extent in the male participants. Interestingly, paternal depressive symptomology was a stronger predictor for adolescent depressive symptoms than was maternal depressive symptoms as indicated by their respective beta-weights, .118 and .180, both at $p < .01$. Additionally, the relationship for female adolescents permitted even more explanation when they perceived the relationship with their fathers as lacking closeness, with the three-way interaction accounting for 15.3% of the variance in adolescent mental health.

Consequently, quality of the father-daughter relationship appears to be a notable influence on adolescent depressive symptoms, and further, due to the relationship found between depression and substance use, an important antecedent to investigate and advance understanding risky behaviors in emerging adulthood.

Personality Correlates of Risky Behavior

Personality is an obvious factor in examining an individual's propensity to engage in risky behaviors. Two dimensions of personality have been consistently found to relate to both substance use and sexual behaviors: sensation seeking and positive urgency. Those who have a tendency to seek out new, thrilling, and adventurous experiences (sensation seeking) and engage in rash behaviors during states of extreme positive emotion (positive urgency) participate in more risky activities, such as drinking, drug use, and risky sex than those without such tendencies.

For example, Zapolski et al. (2009) found that positive urgency predicted increases in drug use, sex without a condom, and number of sexual partners nine months after the first assessment at which participants completed a number of measures regarding sexual behavior, illegal drug use, and personality dimensions (e.g., positive urgency). Interestingly, female participants showed a greater increase in risky sexual behaviors compared to that of the male

participants. Similarly, Zuckerman (2007) reports a study that revealed that high sensation seeking adolescents (ages 14-15) were more likely to report having had sex, use of alcohol and marijuana, and having had unwanted sex when pressured or drunk compared to their low sensation seeking peers.

Studies have investigated the differential influences of sensation seeking and positive urgency on drinking behaviors (Cyders, Flory, Rainer, & Smith, 2009; Cyders, Smith, Spillane, Fischer, Annus, & Peterson, 2007). Both studies found that positive urgency and sensation seeking contribute over and above other personality correlates (i.e., negative urgency, deliberation, and persistence), however the Cyders et al. (2009) study revealed that positive urgency and sensation seeking had unique contributions to drinking behaviors. Whereas positive urgency was related to drinking quantity (how much alcohol one consumes) and problems associated with drinking (e.g., trouble with the law), sensation seeking was related to frequency of drinking (how often one drinks alcohol).

Theoretical Contributions: Attachment Theory

Attachment theory offers a unique contribution to our understanding of the links between parenting history, alcohol use, and sexual behaviors in adolescence. Broadly, it proposes that early relationships with caregivers have a significant impact on later development and functioning. Specifically, the theory proposes that nearly every infant will develop some form of an attachment bond with a caregiver and that these early experiences will have a substantial influence on a child's development (Weinfield, Sroufe, Egeland, & Carlson, 2008). The quality of interactions between caregiver and infant will determine the attachment strategy the child uses to obtain his or her attachment-related needs from one's caregiver, such as comfort in times of distress and support during exploration. Therefore, the caregiver's ability to oscillate between

providing comfort in times of need and support for the infant's exploration will largely determine the quality of the attachment bond.

Some infants experience a balance of comfort and support from their caregiver and as a consequence, develop a secure attachment strategy in which they seek proximity in times of distress and are not anxious in exploration (Weinfield et al., 2008). Caregivers of secure infants are available when the child perceives threat in the environment and they provide reassurance for the child's exploration when the threat is no longer perceived. However, these caregivers continue to be available should the child perceive danger in the environment. The child derives security from the relationship and carries forward the sense of security in his or her subsequent relationships and experiences with the world (Weinfeld et al.). Ultimately, consistent interactions experienced as sensitive, warm, and supportive are gradually internalized by the child in which he or she, others, and the world are experienced as positive and safe (Bartholomew & Horowitz, 1991; Bretherton & Munholland, 2008). Bowlby conceptualized the child's internalization of expectations for the behavior of one's attachment figures and significant others, of oneself, and of how interactions take place as "internal working models" (Bretherton & Munholland, p. 103).

Insecurely attached children do not experience confidence in the availability of their caregivers, and therefore, do not experience security within the relationship (Weinfeld et al., 2008). Their caregivers are inconsistently available and comforting when needed, and in response, these infants are anxious and fearful when exploring the environment (i.e., exhibit an anxious/ambivalent attachment style). Other infants experience a caregiver who is consistently rejecting of attachment-related needs and ignores signals of distress, thus the child adapts by minimizing expressions of distress and spends the majority of his or her time exploring the environment (i.e., exhibit an avoidant attachment). Finally, some infants experience fear much

of the time in their relationships with caregivers and this leads to the development of a strategy that lacks organization; that is, infants with a disorganized style have no coherent means by which they obtain their attachment-related needs (Lyons-Ruth & Jacobvitz, 2008). They experience an unsolvable paradox, in which the caregiver is sought in times of danger, yet the caregiver is often the source of that danger as the caregiver is either *frightening* to the infant or *frightened* of the infant. Disorganized children experience the caregiver as a source of comfort, but also of fear.

The attachment perspective is particularly appealing because of its “intellectual ties to fundamental principles of evolution” (Simpson & Belsky, p. 131, 2008), in that behavioral and psychological characteristics have been genetically selected over time and are the foundation for attachment relationships. Similarly, Bowlby regarded internal working models as selected by evolution. For example, individuals develop internal working models of the environment in order to better navigate in the world (Bretherton & Munholland, 2008). Equally, individuals also form internal working models that allow them to internally represent significant relationships and anticipate interactions with others based on earlier experiences with caregivers. Indeed, early relationships help shape development through their influence on the development of internal working models. Accordingly, attachment theory is able to offer explanations for recent findings and novel predictions regarding early parent-child relationships, consequent working models, and their influence on adolescent substance use and sexual behavior.

As stated earlier, most research examining the influence of early caregiver-relationships on child development has focused on the mother’s role. Consequently, research examining the relationships between mothers and their adolescents is abundant. For instance, one study examined the relationships between mothers and their adolescent daughters and concurrent

alcohol use (Schinke et al., 2008). Results revealed that mothers who monitored their daughters' friends, whereabouts, and activities, and were consistently available for them, had daughters who were half as likely to engage in alcohol use as those daughters without such monitoring and availability. The mother's monitoring and availability parallel caregiver behaviors in infancy and childhood: the mother must support her child's exploration, but also monitor whether that exploration is safe, while also remaining available for when the child feels threatened and/or is in need of comfort. Given this analogy, it would be reasonable to assume that adolescents who experienced a balance of monitoring and availability had also developed secure internal working models. These findings support the notion that mothers who balance the adolescents' needs for autonomy (while remaining available) with the need for protection of their offspring (i.e., via monitoring) have children with more adaptive social strategies as attachment theory suggests (Allen, 2008; George & Solomon, 2008).

In research on adolescent functioning, attachment is often assessed through current attachment style in general by measuring two dimensions of attachment—discomfort with closeness and anxiety about relationships (Feeney, Peterson, Gallois, & Terry, 2000). By assessing discomfort and anxiety, key characteristics of internal working models are revealed; that is, how they anticipate the behavior of others and how they view themselves in relationships. Internal working models have a strong foundation in early relationships with caregivers, but are also subject to change (Bretherton & Munholland, 2008). Indeed, the introduction of a reliable and warm relationship could redirect the child's trajectory on a more secure path; equally, however, a disruption in the attachment relationship could derail a child's secure trajectory. Nonetheless, early and stable relationships with caregivers have a profound influence on their

children's internal working models as children learn early in life whether their caregivers are available and consistent, or inconsistently available and rejecting.

The use of the discomfort and anxiety relationship dimensions permit researchers to more fully explore the attachment system at later stages as attachment in adolescence becomes increasingly internalized into internal working models and focused on peers, while shifting away from primary caregivers. High scores on either or both of these dimensions characterize insecure attachment "states of mind" (Allen, 2008, p.420); while anxious-avoidant individuals experience discomfort with closeness with others, those with anxious-ambivalent attachments are fearful of rejection and thus experience much anxiety over relationships (Feeney & Noller, 2004).

The ways in which internal working models exert their influence in adolescence have a significant impact on how individuals experience sexual relationships. Through the use of questionnaires and diary methods, Feeney and Noller (2004) found that avoidant young adults (ages 17-20) were more tolerant of casual "hook-ups" without commitment or love than were their secure and ambivalent counterparts. However, avoidant individuals have been found to exercise caution in the face of sexual risk-taking, while ambivalent individuals were less cautious, reporting inconsistent condom use and anxiety about discussing safe sex with their partners (Feeney et al., 2000). Interestingly, the ambivalent attachment was expressed differently in sexual relationships for males and females—females were much more likely to be sexually adventurous, while males were much more sexually restricted. While ambivalent females try to please their partners for fear of rejection, ambivalent males are anxious about performance and approval from others.

Insecure internal working models also have been used as an explanation for risky behaviors in college students (Feeney et al., 2000; Kotov, 2006). In a case study analysis, Kotov

related an insecure client's relationship with alcohol and men as similar to that with her unreliable primary caregivers; the client used alcohol and promiscuity with men as objects of attachment in her struggle to transition to college—both of which were unreliable sources of comfort. This allowed the client to cope with feelings of guilt for leaving her parents with whom she was insecurely attached. On the other hand, adolescents (high school seniors) whose relationships with their parents were characterized as close reported lower levels of substance use as opposed to those who did not perceive their relationships as close, which is characteristic of an insecure attachment (Kostelecky, 2005).

Recent research has been conducted investigating the influence of relationships with a physically absent father (i.e., one who does not reside in the home) on children's alcohol use. Jones and Benda (2004) examined the impact of non-residential fathers on adolescent use of alcohol. Results revealed that perceiving a poor attachment to the father and having issues relating to him are significant moderators of the relationship between having a non-residential father and adolescent alcohol use, with Beta weights of $-.32$ and $.50$, respectively, associated with those interactions. In other words, a decrease in an adolescent's perceived quality of attachment and an increase in problems relating to a non-residential father correlated with an increase in alcohol use. In comparison, attachment to mother was not as strong a predictor with a weight of $-.27$. These findings reveal the need to increase emphasis on the father's importance in his child[ren]'s development.

Evolutionary Models

Increasing attention has been paid to the father-daughter relationship and adolescent sexuality. In adolescence, the attachment behavioral system becomes incorporated with two other motivational systems, particularly when attachment shifts towards romantic others:

caregiving and sexual mating (Feeney & Noller, 2004). With regard to the latter, other related theoretical orientations within an evolutionary framework have offered explanations for the influence of the father on this system in the form of mating strategies, more specifically the Belsky, Steinberg, and Draper (BSD) and Ellis models (Belsky, Steinberg, Houts, & Halpern-Felsher, 2010; Simpson & Belsky, 2003).

The BSD model states that early caregiving communicates to infants the condition of the environment in which they and their families will develop (Belsky et al., 2010; Simpson & Belsky, 2003). Responsive, sensitive caregiving is most reproductively efficient in an environment plush with resources and a relatively safe place in which to develop abilities and characteristics. The corresponding reproductive strategy emphasizes quality: having few offspring, each with a high reproduction value. Inconsistent and neglectful caregiving may be more efficient when the future is precarious and the world is unsafe. The reproductive strategy focuses on quantity: having many offspring but of lesser reproduction value. These two different contexts in which the child develops trigger two distinct mating strategies—(1) engage in sexual intercourse early in life and engage in short-lived relationships with low parental investment (to heighten the chances for reproduction when the future is uncertain) given a history of neglectful caregiving or (2) delay mating, engage in long-term relationships, and commit high parental investment in the historical context of responsive caregiving.

In addition, the Ellis Model has claimed that fathers have a unique influence on their female children's reproductive strategies (Simpson & Belsky, 2008). The model speculates that father presence represents the conditions in which offspring develop and conveys whether two parents or one (as in the case of paternal absence) are required for the survival of their offspring. In other words, father presence acts a salient indicator of the reproductive efficacy of present and

future paternal investment. Consequently, father absence or presence influences the course of reproductive development—either it is accelerated, therefore mating occurs early and often, or delayed, and mating occurs with a committed partner (Quinlan, 2003).

Accordingly, Regnerus and Luchies (2006) examined the relationship between the quality of the parent-child relationship and the age at which adolescents over the age of 15 first engaged in sexual intercourse. Findings reflect the importance of the father-daughter relationship as virgin adolescent girls who perceived relationships with their fathers as close were significantly less likely to have engaged in their first sexual intercourse at the second test wave approximately a year after the first interview. Additional support for this unique relationship comes from Quinlan's (2003) examination of paternal absence which was found to be related to earlier onset of menarche, first sexual intercourse, and first pregnancy when separation occurred in the first five years of life. Interestingly, quantity of sexual partners was best predicted when parental separation first occurred in adolescence (between 12 and 17 years old). In line with evolutionary assumptions, early experiences with caregivers influenced reproductive and mating strategies for those whose fathers left early in their lives. No possible evolutionary explanation exists as of yet for separation occurring in adolescence correlating with quantity of sexual partners, as separation occurring early in life would be predicted to influence quantity of partners.

A recent study compared the influence of paternal physical presence to that of the quality of relationship with the father on risky sexual behavior in a sample of female biological sisters (Ellis, Schlomer, Tilley, & Butler, 2011). Results revealed that it was the quality of the relationship that was most important, not the father's duration in the home. The sample included sister-dyads from biologically intact families and families in which the parents were divorced. Older sisters from biologically disrupted families that had experienced a considerably longer

duration of low quality fathering engaged in more risky sexual behavior than did their younger sisters and their counterparts from biologically intact families. On the other hand, for sisters who experienced no disruption or experienced small differences in the father's duration in the home, there were no differences among them with regard to risky sexual behavior. Consequently, Ellis et al. suggested that the link between father relationship quality and risky sexual behavior is only significant for those with a low quality relationship (characteristic of sisters from biologically disrupted families). Indeed, they found that the association between father-daughter relationship quality and risky sexual behavior was only significant for females who reported a below average father-daughter relationship quality, as the correlation was not significant for individuals with above average relationship quality. These results suggest that "good enough" fathering can and does act as a protective factor against risky sexual behaviors, whether in biologically intact or disrupted homes.

Father Psychological Presence and its Relation to Internal Working Models

Although theoretical explanations consider the importance of the physically absent father on reproductive development, research has also examined the quality of the relationship with the father, most of which has been found for female offspring (Ellis et al., 2011). This project extends this research and theory by conceptualizing father presence as an intrapersonal construct that is represented by his *psychological* presence within the adolescent. While developing attachment theory, John Bowlby emphasized that attachment relationships continue to exert influence "from the cradle to the grave" and he conceptualized this influence in the form of "internal working models" (Bretherton & Munholland, 2008, p. 102). Bowlby contended that, through repeated experience with caregivers, children develop internal representations of attachment relationships that guide future interactions with others and expectations about the

environment. In other words, children internalize experiences with caregivers so as to form expectations about how caregivers (and other relationship partners) will behave, how they are to behave, and how interactions between relationship partners are carried out; it is by way of internal working models that an individual's caregiving history continues to influence social exchanges and development. Support comes from current research indicating a 77% concordance between infant attachment and adolescent working models (Hamilton, 2000).

John Bowlby's concept of "internal working models" overlaps with what Krampe (2009) calls the "psychological presence of the father in the child" (p. 875). As described earlier, attachment theory emphasizes that early relationships with caregivers are an important factor in the trajectory of a child's development and continue to be influential by means of internal working models. It should be noted that a child can have a physically absent caregiver, but can develop an internal working model of relationships with the caregiver and others through repeated interactions with him or her. Therefore, despite a father's physical absence from the home, a psychological presence can still develop within the child, while a father who is physically present can be psychologically absent. The current study investigated the extent to which internal working models of fathers exert their effects on social situations, particularly risky ones.

Krampe's model of father presence examines the child's perceptions of his presence as an "internal psychological state in the child" (Krampe, p. 893). Based on her earlier work, a "warm, affectionate, emotionally close relationship with the father" (Krampe, p. 882) was found to be sufficient for father presence to exist within the child. By examining the physical relationship with the father, perceptions of his involvement, and feelings about him from the child's perspective—that is, the psychological presence of the father in the child—the influence of

internal working models for fathers on present social functioning was examined and shifted the concentration from physical presence to that of psychological presence, perhaps a more important contributor to adolescents' risky behaviors and continuing development.

Hypotheses

There are several hypotheses of interest, specifically with regard to paternal psychological presence and adolescent sexual risk-taking and substance use. Past literature and theoretical contributions have reflected the importance of the father-daughter relationship on reproductive development and risk-taking in adolescence (Belsky, Steinberg, Houts, & Halpern-Felsher, 2010; Simpson & Belsky, 2003). Theoretical approaches place considerable emphasis on the unique contribution of this relationship to sexual development. Therefore, paternal psychological presence and adolescent sexual risk-taking will be the primary predictor and outcome variables of interest, respectively. However, as noted earlier, there has been substantial evidence supporting the relationship between sexual risk-taking and substance use, particularly alcohol use (Vander Ven & Beck, 2009), as well as for the relationship between alcohol consumption and father absence (Jones & Benda, 2004). Substance use will also be investigated as an outcome variable of interest as well as a possible moderator of the relationship between paternal presence and sexual risk-taking.

Evolutionary theories suggest that father presence or absence indicates the conditions of the environment in which children and their own offspring will develop (Draper & Harpending, 1982). I believe that a father with greater psychological investment in his female offspring will communicate that the world is a safe place, as well as that male partners are child-rearing resources, and as a consequence, risks are not necessary for survival. A father who invests very little, possibly even as little as the time it takes for conception, indicates that the world is unsafe

and precarious, and consequently, risks may reap rewards that benefit the survival of oneself and one's offspring. Therefore, it is hypothesized that paternal psychological presence will be a significant predictor related to both sexual risk-taking and substance use.

Hypothesis one states that paternal psychological presence (or absence) will be significantly related to adolescent females' reports of sexual risk-taking independent of other predictor variables; that is after partialling out demographics, depression, sensation seeking, positive urgency, and substance use. There has been previous support for this prediction (Hetherington, 1972; Regnerus & Luchies, 2006; Quinlan, 2003). It was specifically predicted that scores indicating a close father-daughter relationship and positive experiences of being fathered will be negatively correlated with sexual risk-taking behaviors, as indicated by number of partners and likelihood of using birth control.

With regard to substance use, *hypothesis two* states that reports of closeness with the father (i.e., paternal psychological presence) will be related to less frequency of alcohol use, less quantity of alcohol use, and fewer problems associated with alcohol use, as well as fewer reports of substance use in general (e.g., marijuana, cocaine, methamphetamine) independent of other predictors (i.e., demographics, depression, sensation seeking, and positive urgency). Physical father absence has predominantly been predictive of accelerated reproductive development, but it is anticipated that paternal *psychological* absence is related to risk-taking more generally, and because of its inclusion as a risky behavior, alcohol and drug use will also be related to this measure of paternal presence.

As noted, considerable research has revealed a significant relationship between two dimensions of impulsivity (i.e., sensation seeking and positive urgency) and risk-taking in adolescents (Zuckerman, 2007). Recall that sensation seeking refers to the propensity to seek

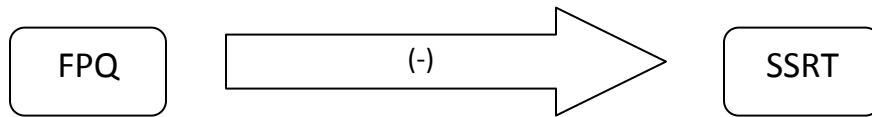
novel, thrilling, and adventurous experiences (Cyders et al., 2009), while positive urgency is defined as the tendency to engage in impulsive behaviors when experiencing an extremely positive mood (Cyders & Smith, 2010). Due to the empirically supported relationships between sensation seeking and positive urgency and both sexual risk-taking and substance use, both personality dimensions are expected to account for a significant portion of the variance in both risk-taking behaviors and thus are included as statistical controls in the present model. Because paternal presence is the primary predictor variable of importance here, the hypothesized relationships for sensation seeking and positive urgency will not be significant components of the model of interest. It is predicted that depression will also account for variability in reports of substance use, but will not be investigated and is included in the present study as a statistical control to account for possible mood-related use. Moreover, mood-dependent memory (Kihlstrom, Eich, Sandbrand, & Tobias, 2000) is always a concern in retrospective self-reporting, such is the Father Presence Questionnaire (Krampe & Newton, 2006).

Another model of interest examined the possibility of substance use as a potential moderator of the relationship between father presence and sexual risk-taking. Hypotheses one and two stated that quality of an adolescent female's relationship with her father is negatively correlated with sexual risk-taking and substance use. With this in mind, it could be the case that paternal presence is significantly related to sexual risk-taking, but that when taking into account substance use, this relationship changes. The strong relationship between alcohol use and sexual-risk taking has been well supported (Simons et al., 2010; Vander Ven & Beck, 2009) and therefore, *hypothesis three* postulates that an interaction between paternal psychological presence and substance use will predict variability in sexual risk-taking over and above either father presence or substance use alone. This is a potential outcome that is anticipated, however, due to

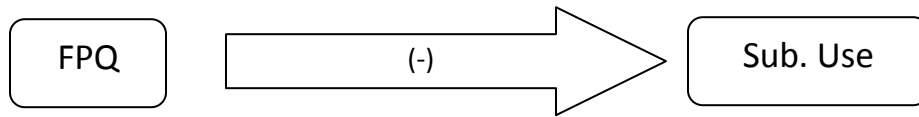
the many theoretical perspectives that suggest father absence as an important predictor of reproductive development, strategies, and future sexual risk-taking behaviors, it is an alternative model that will be tested in the analyses phase to rule out the possibility of substance use as an important moderator on the relationship of interest.

In sum there are three hypotheses of interest:

- 1) Father (psychological) presence is negatively correlated with sexual risk-taking.



- 2) Father (psychological) presence is negatively correlated with substance use.



- 3) Substance use moderates the relationship between father (psychological) presence and sexual risk-taking (model shown below).

Method

Participants

A sample of 203 18 to 22 year old female students was drawn from the psychology 100 pools at the University of Montana. Participants received credits toward the course’s research requirement for participation in the project. It was anticipated that the participants drawn from the psychology 100 pools would be adequately representative of University of Montana students and college students in general with regard to substance use and sexual behaviors. An examination of the National College Health Assessment in 2008 for the University of Montana and the national reference group reveals that the distributions are approximately equivalent, with the University of Montana showing slightly higher percentages for substance use and sexual

behaviors than the reference group (University of Montana, 2008). Participants were screened so that only female students of the appropriate age signed up for the study. The ideal sample was 160 female adolescent students, which was suggested by the power analysis program G*Power using an effect size of .15 and alpha at .05 (Faul, Erdfelder, Buchner, & Lang, 2009); however, the final sample consisted of 203 participants given sample sizes of prior, similar studies.

Eligibility was announced at the university-wide screening and testing days so that adolescent female students were the only participants who followed up for participation. Eligibility requirements were also listed at the top of sign-up sheets on which students selected times to participate.

Instruments

Father Presence Questionnaire (FPQ). The FPQ is a relatively well-cited measure of the perceived closeness with fathers and assesses the quality of participants' reports of their experiences of being fathered (Krampe & Newton, 2006). The individual scales of the FPQ have well-established, high inter-item reliability, with all items above .50 and all but two of those items considerably above that in the upper ends of the .70 to .80 range (Krampe & Newton). Three scales of the 10-scale FPQ were used: the Feelings about the Father Scale, the Perceptions of the Father's Involvement Scale, and the Physical Relationship with the Father Scale. Sample items include "I felt/feel close to my father," "My father helped me learn new things," and "I liked being held by my father." Items are assessed on a Likert-format scale ranging from 1 ("Never") to 5 ("Almost always"). Higher scores indicate more perceived closeness in the father-daughter relationship.

Substance Use Questionnaire. The substance use assessment used in the present study borrows from questions on the American Drug and Alcohol Survey (Oetting & Beauvais, 1990).

This survey has shown considerable reliability ranging from .72 to .94 (Beauvais & Oetting, 2004); the current questionnaire had a Cronbach's alpha of .86. The questionnaire inquires about drinking alcohol, marijuana, and other drug use. The participant is asked to indicate the age at which first trying alcohol, getting drunk, and using marijuana. In addition, several questions probe the extent to which the participant uses substances, including questions about frequency of alcohol, marijuana, and other drug use in the past year and past month along with one that asks the participant to characterize their use of substances (e.g., light user, very heavy drinker, etc.). Remaining questions inquire about problems incurred as a result of substance use, such as getting arrested, getting in trouble at school, and engaging in a sexual activity one later regretted. Questions regarding alcohol are summed to create a combined score for alcohol use as are those questions inquiring about drug use. Higher scores on both scales of the substance use questionnaire indicate a greater amount of alcohol and illicit drug use.

Scale of Sexual Risk-Taking (SSRT). The SSRT measures the degree to which participants engage in risky sexual behaviors as indicated by number of partners, use of birth control, and substance use before sex, for example (Metzler, Noell, & Biglan, 1992). It has been established as a reliable measure of sexual risk-taking behaviors, with the internal reliability for the current study calculated at .64 (Metzler et al.). Sample items include "Generally, in the LAST YEAR, how often have you or your partner drunk alcohol immediately before or during sexual activities?" on a scale from "Never" to "Every time" and "How many opposite sex partners have you had sex with who were also having sex with other people?" on scales assessing how many partners in the last three months and in the last year ranging from 0 to more than 41 partners.

UPPS-P Impulsive Behavior Scale. The UPPS-P assesses five dimensions of impulsive behavior: lack of premeditation, lack of perseverance, negative urgency, positive urgency, and sensation seeking (Lynam, Smith, Cyders, Fischer, & Whiteside, 2007). For the present study, the Positive Urgency and Sensation Seeking scales were used as both have established relationships with the specified risk-taking behaviors (Zapolski, Cyders, & Smith, 2009; Zuckerman, 2007). The UPPS-P has considerable reliability with estimates greater than .80 (Whiteside & Lynam, 2001). Sample questions include “I generally seek new and exciting experiences and sensations” and “When I am very happy, I can’t seem to stop myself from doing things that can have bad consequences.” All questions for positive urgency and sensation seeking are answered using a Likert format (i.e., 1=Agree Strongly to 4=Disagree Strongly) and all items are reverse scored.

Center for Epidemiologic Studies Depression Scale (CES-D). Depression has been found to correlate with substance use, with females being particularly vulnerable to depressive symptoms (Lau-Barraco et al., 2009; Schinke et al., 2008; Reeb & Conger, 2009). Furthermore, it is necessary to rule out mood as an influence on self-reports of past experiences (Kihlstrom et al., 2000). The CES-D (Radloff, 1977) is a 20-item assessment of depression symptoms with a reliability of .85 and was included in the present study as a statistical control to account for mood-dependent memory. Participants were prompted to respond to statements that inquire about how often the participant has felt a given way in the past week. For example, the first question on the scale states “I was bothered by things that usually don’t bother me” on which the participant would indicate frequency using a scale ranging from “Rarely or none of the time (less than a day)” to “Most or all of the time (5-7 days)”. Higher scores indicate the presence of more depression symptoms.

Demographics Questionnaire. Participants were also asked questions regarding age, ethnicity, relationship status (i.e., single, in a committed relationship, married, separated, divorced, or widowed), and primary family structure (e.g., lived with both biological parents). They were then asked to specify how long (i.e., at which ages) they lived with their biological fathers if they primarily lived with the biological mother and also how long they lived with both biological parents. If the father resides outside the home, the approximate amount of time spent with or talking to the father (e.g., two or three times a week, once a month, etc.) will also be identified. If the father has passed away, participants will be asked to specify at what age this occurred.

Procedure

In an attempt to eliminate priming effects, the instruments were ordered in such a way as to not reveal hypotheses of interest. The order is as follows: UPPS-P Impulsive Behavior Scale (Sensation Seeking and Positive Urgency Scales), Substance Use Questionnaire, CES-D, FPQ, SSRT, and lastly, the demographics inquiry. Each questionnaire was labeled with a number that identifies the given participant, all of which were contained in a manila envelope labeled with the same identifying number. The manila envelopes were placed on the tables in each small, testing room; consent forms—with no identifying features—were given to the participants in a larger room. Here, the proctor gave instructions for participation before they were assigned to a smaller room.

Participants were run in groups of two to twelve people—small enough so that each participant had a separate cubicle-like room in which to participate. This arrangement was used to provide participants with privacy while responding to the questionnaires, as some asked

relatively sensitive questions. After all participants that signed up for a given time slot arrived, the investigator or proctor asked the participants to read the consent form. The proctor then read a short description of the study, directions for completion, and finally asked if everyone was willing to participate. Participants were also reminded to respond as honestly and accurately as possible, and to remember that all results are anonymous such that their names will never be connected to their responses.

Once directions were delivered, participants were assigned to separate rooms so that each participant was alone in a room in which to fill out questionnaires. Measurements took approximately 20 to 45 minutes to complete. Once participants completed all the questionnaires in the packet, they were given a debriefing form and contact information for the investigator to later inquire about the project. Additionally, they received information regarding on-campus mental health services should they experience any discomfort following participation.

Results

Preliminary Analyses

A total sample of 203 participants was collected for the present study. All participants were female college students between the ages of 18 and 22; the average age was 19.2 years ($SD=1.2$). A majority of the sample identified their race as white/Caucasian, while the rest identified themselves as American Indian, Hispanic, Asian, Black, or other (see Table 1 for demographics). Over half of the sample reported being in a relationship, while slightly fewer were single and very few were married. Finally, most participants identified themselves as heterosexual and came from middle-class, biologically intact homes (i.e., lived with both biological parents).

Table 1
Demographics

	n	%		n	%
Age			Relationship Status		
18	75	36.9	Single	90	44.3
19	64	31.5	In a Relationship	108	53.2
20	34	16.7	Married	3	1.5
21	13	6.4	Other	1	0.5
22	16	7.9	Missing	1	0.5
Missing	1	0.5			
Race			Parent relationship status		
American Indian	6	3.0	Single	10	4.9
Asian	3	1.5	Married	133	65.5
Black	2	1.0	Separated	3	1.5
Hispanic	4	2.0	Divorced	54	26.6
White	182	89.7	Widowed	2	1.0
Other	5	2.5	Missing	1	0.5
Missing	1	0.5			
Sexual Orientation			Parental Income		
Heterosexual	188	92.6	\$0-29,999	22	10.8
Lesbian	3	1.5	\$30,000-59,999	43	21.2
Bisexual	10	4.9	\$60,000-89,999	42	20.7
Decline to Answer	1	0.5	\$90,000-149,999	39	19.2
Missing	1	0.5	\$150,000 and up	36	17.7
			Missing	21	10.3
Family Structure			Family Structure cont'd.		
Both biological parents	144	70.9	Biological father and stepmother	1	0.5
Biological mother only	21	10.3	Adoptive parents	4	2.0
Biological mother and stepfather	11	5.4	Other	11	5.4
Biological father only	7	3.4	Missing	4	2.0

Two composite variables were computed to reduce the amount of variables in the model before conducting statistical analyses. The sensation seeking and positive urgency scales were combined to create an aggregated impulsivity score. The two variables were significantly related to each other ($r=.336, p<.001$) and with the composite variable ($r=.834$ and $r=.796, p<.001$ for positive urgency and sensation seeking, respectively; see Table 2 for correlations). Although the correlation between sensation seeking and positive urgency is relatively weak, the research questions did not address either specifically, but impulsivity in general; thus, it was rational for

the present study to combine the variables to provide an overall picture of participants' impulsivity. The three scales of the FPQ—the Feelings about the Father Scale, the Perceptions of the Father's Involvement Scale, and the Physical Relationship with the Father Scale—were combined to create a combined score for father psychological presence (or equally, closeness). All scales were highly correlated with each other with bivariate correlations ranging from .80 to .90. The scales were also highly associated with the composite score, with all correlations above .90.

Depression was included as both a statistical control and as a possible confounding variable that would influence the retrospective self-reporting of participants, as was required by the FPQ. In order to test this possibility, an interaction term between depression and father psychological presence was created; it was then entered into a hierarchical regression predicting sexual risk-taking after depression and FPQ were entered simultaneously in the prior step. The interaction term for father psychological presence and depression was not significant ($\beta=.001$, $p=.824$), and therefore, depression did not account for the responses regarding father psychological presence (i.e., being depressed did not account for participants' memory for past experiences with fathers).

Data Analyses

Before statistical modeling, a correlation matrix (see Table 2) was calculated in order to examine bivariate relationships among the variables. The produced matrix revealed several significant relationships linking sexual risk-taking to impulsivity ($r = .251$, $p < .0001$), total alcohol use ($r = .512$, $p < .0001$), illicit drug use ($r = .466$, $p < .0001$), and father closeness ($r = -.198$, $p < .005$). Other notable associations involved substance use, in which impulsivity was significantly

Table 2
Correlation Matrix

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	
1. Positive Urgency	1														
2. Sensation Seeking	.336**	1													
3. Composite Impulsivity	.834**	.796**	1												
4. Alcohol Use	.361**	.302**	.402**	1											
5. Drug Use	.270**	.249**	.314**	.653**	1										
6. Depression	.326**	-.024	.194**	.169*	.164*	1									
7. Father Closeness (FPQ)	-.194**	-.051	-.151*	-.125	-.262**	-.189**	1								
8. Total on SSRT	.254**	.159*	.251**	.512**	.466**	-.055	-.198**	1							
9. Age	.102	-.023	.047	.120	.135	.054	-.145*	.286**	1						
10. Race	-.081	-.098	-.109	-.096	-.046	.013	.080	.055	.020	1					
11. Sexual Orientation	.156*	-.003	.097	.039	.283**	.319**	-.128	-.023	.188**	-.012	1				
12. Relationship Status	.003	.003	.007	.005	.006	-.056	-.031	.295**	.124	-.030	.111	1			
13. Parent Relationship Status	.029	.082	.073	.020	.063	-.007	-.355**	.129	.015	.117	.054	-.059	1		
14. Income	.040	.059	.053	-.021	-.064	-.121	.271**	-.054	.039	.027	-.079	.019	-.373**	1	

Notes: * p < .05, ** p < 0.01 level (2-tailed), N=202. Race (0=American Indian, 1=Asian, 2=Native Hawaiian, 3=Black/African American, 4=Hispanic, 5=Caucasian/White, 6=Other). Sexual orientation (0=Heterosexual, 1=Lesbian/Gay, 2=Bisexual, 3=Decline to answer). Relationship status (0=Single, 1=In a relationship, 2=Married, 3=Divorced, 4=Widowed). Parent relationship status (0=Married, 1=Separated, 2=Divorced, 3=Widowed, 4=Single/Never married).

related to both alcohol ($r = .402, p < .0001$) and illicit drug ($r = .314, p < .0001$) use. A high correlation between alcohol and illicit drug use was found at $r = .653$ ($p < .0001$). Given the aims of the current study, alcohol and illicit drug use were not summed in order to investigate specific risky behaviors and the unique contribution of different kinds of substance abuse to sexual behaviors. Interestingly, the relationship between illicit drug use and father closeness reached statistical significance ($r = -.262, p < .0001$), while the relationship between alcohol use and father closeness only approached significance ($r = -.125, p < .08$). The relationships with father closeness help illustrate the distinctiveness of the two activities.

Correlations between demographic variables and the outcome variables of interest were mostly small and not statistically significant, and due to the categorical nature of their measurement, were excluded from further regression analyses. Moreover, it is rational to expect one's relationship status to influence the amount of sexual behavior in which one engages and so it, along with the other demographic variables, is not of any real interest for the present research.

Hypotheses one and two were analyzed using hierarchical regression procedures. Hypothesis one predicted that father psychological presence would be negatively related to sexual risk-taking over and above the other variables in the model (i.e., depression, impulsivity, alcohol and drug use, and father presence). Results revealed that father psychological closeness did indeed help predict sexual risk-taking independent of the other predictors in the model. That is, the Beta-weight was statistically significant when keeping all other variables constant ($\beta = -.131, p = .042$); in other words, given an increase in father psychological closeness by one standard deviation, it is expected that sexual risk-taking would decrease by .131 standard deviation, controlling for all other variables. Additionally, the inclusion of father presence into the model resulted in a statistically significant change in R^2 ($\Delta R^2 = .016, p = .042$). In sum, the

model that accounted for the most variability in sexual risk-taking included depression, impulsivity, drug and alcohol use, and father closeness as predictors and accounted for 31.7% of the variability.

Hypothesis two stated that paternal psychological presence would be related to lower reports of alcohol and substance use. Therefore, variables were entered similarly to hypothesis one in a hierarchical regression: depression (CES-D), impulsivity, drug use (or alcohol use if drug use was the criterion variable for the given analysis), and father psychological presence (FPQ). As would be expected after examining the correlation matrix, father psychological presence did not help predict alcohol use over and above the other predictors in the model ($\beta = .061$, $p = .280$); the model containing father psychological presence accounted for the same amount of variability (45.7%) in alcohol use as that excluding it (45.7%). However, father psychological presence did help predict illicit drug use over and above depression, impulsivity, and alcohol use ($\beta = -.169$, $p = .003$). That is, controlling for all other variables, a standard deviation increase in father psychological presence would be expected to predict a .169 standard deviation decrease in drug use. Collectively, the model accounted for 44.9% of the variability in illicit substance use.

Hypothesis three predicted that substance use would be a moderator of the relationship between father psychological presence and sexual risk-taking. The lack of relationship linking father psychological presence to alcohol use eliminated the need to test alcohol use as a moderator for the relationship, countering what was expected. Father psychological presence was linked to drug use, however, which in turn was associated with sexual risk-taking, thus illicit drug use was tested as a moderator of the relationship between father psychological presence and sexual risk-taking. In the first step, father psychological presence (FPQ) and drug use were

entered, while the second step included the interaction between drug use and father psychological presence (FPQ x drug use) to examine the impact of father psychological presence on sexual risk-taking in the context of the interaction. Moderation would be achieved if the effect of including the interaction between drug use and father psychological presence significantly weakens or possibly amplifies—changes the strength of—the relationship between father psychological presence and sexual risk-taking (Baron & Kenny, 1986). Results indicated that including the interaction between father psychological presence and drug use did not significantly predict sexual risk-taking over and above father psychological presence and drug use alone ($\beta=.412$, $p=.09$). Therefore, drug use was not a moderating factor in the relationship between father psychological presence and sexual risk-taking.

Follow-up analyses examined the utility of grouping participants according to their scores on the FPQ in order to investigate group differences. Participants' father psychological closeness scores were mean centered and placed into one of two groups—one characterized by below average father psychological closeness (scores below 0; $n=78$) or by above average closeness (scores above 0; $n=125$). Separate analyses of variance (ANOVAs) were conducted to examine group differences on the dependent variables of interest—sexual risk-taking, alcohol use, illicit drug use, age of participants' first drink, age at which participants first used marijuana, and number of sexual partners in the participant's lifetime (see Table 3 for descriptive statistics). The multiple ANOVAs revealed group differences for the sample on all the outcome variables of interest, although all did not reach statistical significance for the population. Significant group differences were revealed with regard to sexual risk-taking ($F[1, 197]=11.911$, $p=.001$, $d=.501$), drug use ($F[1, 189]=11.123$, $p=.001$, $d=.427$), age of first drink ($F[1, 187]=7.334$, $p=.007$,

Table 3
Differences on Risky Behaviors for Groups of
Below and Above Average Father Closeness

	Group 1			Group 2		
	n	Mean	SD	n	Mean	SD
Sexual Risk-Taking	75	68.05	41.45	124	46.82	42.41
Alcohol Use	77	17.26	11.24	124	13.92	8.89
Drug use	75	9.55	11.91	116	4.47	9.05
Age of 1st Drink	74	14.64	3.07	115	15.74	2.50
# of Sexual Partners (lifetime)	78	4.95	6.36	125	2.81	4.80
Age of 1st Marijuana Use	52	15.85	2.26	63	16.54	2.00

Note: Group 1 (Participants with FPQ scores below average, or 0 after mean center). Group 2 (Participants with FPQ scores above average, or 0 after mean center).

d=.358), alcohol use ($F[1, 199] = 5.472, p = .02, d = .297$), and number of sexual partners in a lifetime ($F[1, 201] = 7.407, p = .007, d = .336$). Group differences for the age of participants' first marijuana experimentation approached significance ($F[1, 113] = 3.045, p = .08, d = .305$). Those who scored below average on the FPQ had significantly higher sexual risk-taking and substance use scores than did those who reported above average closeness. Significant differences were also found with regard to individual items on the questionnaires. Females who reported an above average psychologically close relationship with their father reported fewer sexual partners over their lifetime compared to those who did not experience such a quality relationship. Additionally, these females were, on average, more than a year older when they took their first drink of alcohol than those who reported below average closeness.

Given the group differences on sexual risk-taking, follow-up analyses examined whether father psychological presence was a stronger predictor for participants reporting a below average father-daughter relationship than those above average. Ellis et al. (2011) suggested that the link between father relationship quality and risky sexual behavior was more significant for those with a low quality father-daughter relationship (i.e., below average). Therefore, hierarchical

regression analyses were conducted for each group of participants regressing sexual risk-taking on depression, impulsivity, and drug and alcohol use, similar to that tested for hypothesis one. For individuals reporting below average FPQ scores, father psychological presence did not help predict sexual risk-taking over and above the other predictors in the model ($\beta = -.018$, $p = .871$); for those with above average scores, father psychological presence did help predict sexual risk-taking controlling for all other variables ($\beta = .135$, $p = .092$). The results revealed that father psychological presence was a stronger predictor for sexual risk-taking in the group reporting above average father psychological presence than that reporting below average, but that it was not quite a statistically significant predictor at .092. However, it approached significance, and therefore, the result suggests that the father-daughter relationship may be more important for individuals with higher quality relationships, contrary to findings of the Ellis et al. study. Interestingly, the results indicate that a one unit increase in father psychological presence predicts a .135 *increase* in sexual risk-taking for individuals with above average father psychological presence, given the inclusion of the other variables, indicating that when the relationship is already “good enough,” making it any better may increase daughters’ sexual risk-taking behaviors. Future research is needed to clarify the inconsistency found between the Ellis et al. study and the present work.

Discussion

Results indicated that an adolescent female’s psychological representation of the relationship with her father did indeed help predict risky behaviors over and above mood, impulsivity, and other risky behaviors. These results are consistent with the hypotheses and other research in this area (Ellis et al., 2011; Feeney et al., 2000; Jones & Benda, 2004; Regnerus & Luchies, 2006; Quinlan, 2003). Furthermore, the relationships found between father

psychological presence and both sexual risk-taking and substance use provide support for life-history and attachment perspectives (Belsky, Steinberg, Houts, & Halpern-Felsher, 2010; Simpson & Belsky, 2008). These findings help substantiate claims that early experiences with male caregivers (and the resulting psychological representation) have a considerable influence on later female adolescent functioning in settings that are characterized by risky behaviors (i.e., college campuses). The findings have important implications for theory, interventions, and future research. However, many limitations exist that will restrict the extent to which these findings can be extrapolated to the general population.

Before discussing the study's implications, it should be noted that causal inferences will follow although such causal interpretations are referring solely to statistically significant associations. Due to the nature of the present research question, it was not possible to randomly assign individuals to groups of psychologically absent and psychologically present fathers, and therefore, the study was limited to a correlational design. However, in order to facilitate interpretation, correlational results are being conceptually treated as causal in the following paragraphs. Further research should better address the causal path from paternal psychological presence (or absence) to later risky behavior, perhaps by utilizing longitudinal data or examining the efficacy of intervention programs derived from the presumption that increased father psychological presence acts as a later protective factor against risky behavior. Nonetheless, the findings of the present study have important implications for father-daughter relationships and subsequent risky behavior on college campuses.

In accordance with theory and research (Belsky, Steinberg, Houts, & Halpern-Felsher, 2010; Ellis et al., 2011; Feeney et al., 2000; Jones & Benda, 2004; Regnerus & Luchies, 2006; Quinlan, 2003; Simpson & Belsky, 2008), the present findings suggest that relationships with

fathers are a potential protective factor against the development of risky behaviors in college. Consistent with evolutionary theory predictions, female adolescents who reported experiencing a close psychological relationship with their father engaged in significantly less risky sexual behaviors generally, and had fewer sexual partners over their lifetime than their counterparts who did not experience such a close relationship. For instance, it could be the case that females who recall their father as physically affectionate and supportive, and express love and admiration for their father, grow up expecting the same qualities in a romantic partner, and therefore, are selective in their choice of sexual relationships. Conversely, females who experienced an unsupportive and unaffectionate father for whom they have little adoration develop strategies that maximize reproductive opportunities, and so are not as selective, for men have not been experienced as warm and loving so there is no reason to waste time finding one.

The quality of relationship with one's father also helped predict illicit drug use over and above other important predictors. Interestingly, however, parallel findings were not found for alcohol use. These findings are inconsistent with research that has linked the quality of father-child relationship to subsequent alcohol use (Jones & Benda, 2004; Kostecky, 2005; Kotov, 2006) as father psychological presence was not correlated with less alcohol use. Still, group differences were found for alcohol use and the age at which one drank alcohol, which suggests that the father relationship may be related to drinking, but not when considered in the context of mood, personality, and illicit drug use. Alternatively, alcohol use on college campuses is not only typical, it is expected; therefore, it is likely that many other factors that were not considered were exerting a greater influence on the choice to drink than does one's relationship with her father. On the other hand, one must seek out drugs for use as they are not as salient and accessible on college campuses as is alcohol. Moreover, given that it is illegal, it is that much

more difficult to experiment with drugs, and therefore, one must be highly motivated to do so. For example, a female who experienced a cold and rejecting relationship with her father may develop strategies that involve considerable risk and appeal to a certain subset of the opposite sex (i.e., males who engage in drug use themselves). These females may maximize their riskiness in order to reap the benefits of belonging to a select group, most of which are male.

The present findings are consistent with research suggesting that a close relationship with the father can act as a protective factor against risky behavior (Ellis et al., 2011). This conclusion has significant implications for the identification of females who have a low quality relationship with their fathers, and as a result, are vulnerable to the development of risky behaviors—most notably, risky sexual behavior. For instance, adolescent girls who experience a low quality relationship with their fathers may be identified as vulnerable for early pregnancy or substance abuse. In an effort to enhance relationship quality between daughters and fathers, schools could recruit fathers to assist in school and extracurricular functions, with the goal of increasing paternal supportiveness and facilitating a close relationship. Similar efforts could focus on increasing the involvement of proximate and available grandfathers. Clearly, such preventative and intervening efforts require an intimate knowledge of the adolescent's family life, and therefore, the encouragement of father involvement and the enhancement of father-child relationships from birth should be the ultimate goal of intervention efforts.

There are several limitations in the present study to be addressed, the first of which is the composition of the sample. Given the recruitment from the University's Psychology 100 pool, the sample was likely composed of individuals who were generally high functioning. The females included in the sample were all college students, most of whom came from the middle class—as evidenced by parental income. It is likely that individuals who decide to attend college

have relatively supportive parents with whom they have had a “good enough” relationship, as was evident in the negatively skewed distribution for father psychological presence. As a result, low variability in the quality of paternal relationship limits the extent to which one can generalize conclusions to more vulnerable populations. Therefore, sexual risk-taking and father closeness should be examined in populations outside of the college setting.

These results are limited to the specified age range, and therefore, it is not known if the influence of the father relationship is more or less powerful at other periods in development. Future research should examine different developmental periods to understand the father’s influence on risky behaviors over the course of the child’s developmental trajectory. Also, the sample was drawn from a population of convenience at a small, state university, and so is probably not representative of college campuses around the nation as well as high risk, impulsive populations. Therefore, further research should investigate more diverse and at-risk populations, such as non-student samples, in which there may be more variation in family structures and among lower quality fathering in order to better understand the extent of the father’s influence.

A considerable limitation of the current study is its reliance on self-report measurements. For instance, it has been established that mood affects memory, and given the retrospective nature of a majority of the FPQ’s questions, it was a concern that depressed mood would influence participants’ recollections of past relationships with her father. However, the results do not indicate that depression influenced their recall as father closeness predicted sexual risk-taking and drug use *over and above* depressive symptoms. Moreover, an interaction between depression and father presence did not help predict risky behavior independent of depression and father presence alone, indicating that depression did not account for the relationship between father closeness and risky behavior. In sum, despite concerns about self-reporting, it appears that

the score representing the father-child relationship was unaffected by mood and provides a relatively reliable picture of the quality of relationship—as recalled, not as experienced at the time—a working model.

One final limitation that should significantly influence later study was the nature of the questions that were asked to assess the extent to which an individual engages in risky behavior. Although the questionnaires asked many questions relevant to an assessment of risky behaviors in college students, several questions were not included that could have been even more significant indicators of a given participant's level of risk. For example, the sexual risk-taking scale did not inquire about the age at which the participant first had sexual intercourse or about previous pregnancies or abortions; indeed, such events would be salient indices of sexual risk-taking. Additionally, the substance use questionnaire only included about 30 questions inquiring about alcohol use, while nearly 50 asked about illicit drug use. Given alcohol's prevalence on college campuses (Vander Ven & Beck, 2009), it would be beneficial to include more questions that are specifically related to the type of drinking in which one engages (e.g., binge or social) along with the setting in which it usually takes place (e.g., alone or at parties), for example. Indeed, if certain forms of alcohol abuse are more associated with risky sexual behavior, then one might expect that these forms of abuse would be influenced by father psychological presence, in accordance with the findings concerning illicit drug use.

Given these limitations, there is considerable future research needed to clarify the present findings. Future research should focus on the impact of father psychological presence on adolescent male risk-taking to better understand the possible differential influences of the father-child relationship on sons and daughters. In addition, younger and more diverse populations should be utilized in order to examine the father's influence throughout development as well as

among at-risk populations, in which there is more variation in lower father-daughter relationship quality (Ellis et al., 2011). For example, research should examine early adolescence, a time in which adolescents are increasingly exposed to opportunities for risk-taking. Longitudinal research that investigates the father's influence on risky behavior through childhood and adolescence would facilitate our understanding of the extent to which the father-child relationship exerts influence over a lifetime, and if this influence strengthens or weakens over time, as well as provide information about developmental trajectories and processes.

An alternative explanation for the relationship between father psychological presence and risky behaviors may address the importance of the direct role of the mother on the father-daughter relationship. It has been found that the mother-daughter relationship does influence her daughter's risk-taking (Schinke et al., 2008), but more relevant here is her influence on the father-daughter relationship. The mother has an important role in negotiating the relationship between father and child as she is traditionally the primary caregiver. Some psychologists have posited that the mother is in the position to *allow* the relationship between the father and child and acts as a mediator of their relationship (Williamson, 2004). Moreover, she is an important means by which the child understands the father's availability and responsiveness as she is in the position to portray how the father is as a parent to the child (Krampe, 2009). As a result, "the child perceives the father directly but also through the eyes of the mother" (Williamson, p. 214). Consequently, either or both the mother-father relationship and the mother-daughter relationship may function as mediators or moderators of the father-daughter relationship and risky behavior. For example, it may be that a close father-daughter relationship reduces sexual risk-taking, but only when the mother-daughter relationship is also close. Since information regarding mothers

and perceptions of mother-daughter relationships was not gathered, no comparisons can be made regarding the importance of the father relative to that of the mother in adolescent risky behaviors.

Despite significant limitations, the study adds to our knowledge about the importance of father-child relationships and their influence on risky behaviors in college. Past theorizing and studies have primarily focused on the *physical* presence or absence of the father in the home rather than his quality of relationship with his children (Simpson & Belsky, 2008; Quinlan, 2003). Ellis et al.'s recent (2011) study helped fill the gap in the literature by comparing the influence of paternal physical presence to that of the father-daughter relationship quality. This study extends their work by investigating the influence of internal working models (of fathers) on current behavior in individuals functioning in an environment rich in opportunities for risk—that is, college campuses. Further, this work helps unite attachment theory with evolutionary models in explaining risky behavior and mating strategies in adolescent females. Still, future work is needed to further disentangle the influence of paternal physical presence from that of psychological presence, and the extent to which one may be more important than the other for subsequent risky behaviors.

The present findings lend support to the continuing claim that fathers are important influences in their children's lives (Davis & Perkins, 1996; Parke, 2004). With their increasing involvement in the home, it will be important to emphasize the importance of how fathers spend their time in the home and the quality of relationships they develop with their children. Given these findings, it is apparent that a female's relationship with her father exerts influence on her development, and those that experience a warm and loving father are less vulnerable to risky behaviors and the subsequent consequences of those behaviors. Nonetheless, history indicates that not all individuals will experience a close relationship with their fathers, and as a result,

efforts are needed to counter the long-term influence of a low quality relationship. Indeed, the results have implications for existing intervention efforts such as the mentoring program “Big Brothers Big Sisters.” For instance, the results suggest that young females lacking a significant male figure should be paired with a male mentor as opposed to a female one; unsurprisingly, there are potential risks involved with this practice, thus research is needed to investigate this intervention effort. Ultimately, it is important for the field to continue examining the influence of the father and the potential protective nature of his relationship with his children. The link between early experiences with fathers and future risk-taking has helped validate the importance of the father-child relationship and the continuation of fathers’ inclusion in developmental research and literature.

References

- Ahern, N. R. (2009). Risky behavior of adolescent college students. *Journal of Psychosocial Nursing, 47*, 21-25.
- Allen, J. P. (2008). The attachment system in adolescence. In J. Cassidy & P. R. Shaver (Eds.), *Handbook of Attachment*, (2nd ed., pp. 419-435). New York, NY US: The Guilford Press.
- Baron, R. M. & Kenny, D. A. (1986). The moderator-mediator variable distinction in social psychological research: Conceptual, strategic, and statistical consideration. *Journal of Personality and Social Psychology, 51*(6), 1173-1182.
- Beauvais, F., Edwards, R., & Oetting, E. (2004). American drug and alcohol survey: Reliability and validity. Available from www.rmbsi.com/relvalid.html
- Belsky, J., Steinberg, L., Houts, R. M., & Halpern-Felsher, B. L. (2010). The development of reproductive strategy in females: Early maternal harshness → Earlier menarche → Increased sexual risk-taking. *Developmental Psychology, 46*(1), 120-128.
- Bretherton, I. & Munholland, K. A. (2008). Internal working models in attachment relationships: Elaborating a central construct in attachment theory. In J. Cassidy & P. R. Shaver (Eds.), *Handbook of Attachment*, (2nd ed., pp. 102-127). New York, NY US: The Guilford Press.
- Cyders, M. A., Flory, K., Rainer, S., & Smith, G. T. (2009). The role of personality dispositions to risky behavior in predicting first-year college drinking. *Addiction, 104*, 193-202.
- Cyders, M. A. & Smith, G. T. (2010). Longitudinal validation of the urgency traits over the first year of college. *Journal of Personality Assessment, 92*(1), 63-69.

- Cyders, M. A., Smith, G. T., Spillane, N. S., Fischer, S., Annus, A. M., & Peterson, C. (2007). Integration of impulsivity and positive mood to predict risky behavior: development and validation of a measure of positive urgency. *Psychological Assessment*, 19(1), 107-118.
- Davis, J. E. & Perkins, W. E. (1996). *Fathers' care: A review of the literature*. National Center on Fathers and Families, 3-36.
- Del Giudice, M. (2009). Sex, attachment, and the development of reproductive strategies. *Behavioral and Brain Sciences*, 32, 1-67.
- Draper, P. & Harpending, H. (1982). Father absence and reproductive strategy: An evolutionary perspective. *Journal of Anthropological Research*, 38(3), 255-273.
- Ellis, B. J., Schlomer, G. L., Tilley, E. H., & Butler, E. A. (in press). Impact of fathers on risky sexual behavior in daughter: A genetically and environmentally controlled sibling study. *Development and Psychopathology*.
- Faul, F., Erdfelder, E., Buchner, A., & Lang, A.-G. (2009). Statistical power analyses using G*Power 3.1: Tests for correlation and regression analyses. *Behavior Research Methods*, 41, 1149-1160.
- Feeney, J. A. & Noller, P. (2004). Attachment and sexuality in close relationships. In J. H. Harvey, A. Wenzel, & S. Sprecher (Eds.), *Handbook of Sexuality in Close Relationships* (1st ed., pp. 183-201). Mahwah, NJ US: Lawrence Erlbaum Associates Publishers.
- Feeney, J. A., Peterson, C., Gallois, C., & Terry, D. J. (2000). Attachment style as a predictor of sexual attitudes and behavior in late adolescence. *Psychology and Health*, 14, 1105-1122.

- George, C. & Solomon, J. (2008). The caregiving system: A behavioral systems approach to parenting. In J. Cassidy & P. R. Shaver (Eds.), *Handbook of Attachment*, (2nd ed., pp. 833-856). New York, NY US: The Guilford Press.
- Hamilton, C. E. (2000). Continuity and discontinuity of attachment from infancy through adolescence. *Child Development*, *71*(3), 690-694.
- Hetherington, E. M. (1972). Effect of father absence on personality development in adolescent daughters. *Developmental Psychology*, *7*(3), 313-326.
- Kihlstrom, J., Eich, E., Sandbrand, D., & Tobias, B. (2000). Emotion and memory: Implications for self-report. *The science of self-report: Implications for research and practice* (pp. 81-99). Mahwah, NJ US: Lawrence Erlbaum Associates Publishers.
- Kostecky, K. L. (2005). Parental attachment, academic achievement, life events and their relationship to alcohol and drug use during adolescence. *Journal of Adolescence*, *28*, 665-669.
- Krampe, E. M., & Newton, R. R. (2006). The Father Presence Questionnaire: A new measure of the subjective experience of being fathered. *Fathering*, *4*(2), 159-190.
- Lau-Barraco, C., Skewes, M. C., & Stasiewicz, P. R. (2009). Gender differences in high-risk situations for drinking: Are they mediated by depressive symptoms? *Addictive Behaviors*, *34*, 68-74.
- Lynam, D., Smith, G. T., Cyders, M. A., Fischer, S., & Whiteside, S. A. (2007). The UPPS-P: A multidimensional measure of risk for impulsive behavior. Unpublished technical report.

- Metzler, C. W., Noell, J., & Biglan, A. (1992). The validation of a construct of high-risk sexual behavior in heterosexual adolescents. *Journal of Adolescent Research, 7*(2), 233-249.
- Oetting, E. R. and Beauvais, F. (1990) Adolescent drug use: Findings of national and local surveys. *Journal of Consulting and Clinical Psychology, 58*, 385-394.
- Parke, R. D. (2004). Fathers, families, and the future: A plethora of plausible predictions. *Merrill-Palmer Quarterly, 50*(4), 456-470.
- Pawlowski, B., Atwal, R., & Dunbar, R. I. M. (2008). Sex differences in everyday risk-taking behavior in humans. *Evolutionary Psychology, 6*(1), 29-42.
- Radloff, L. S. (1977). The CES-D scale: A self-report depression scale for research in the general population. *Applied Psychological Measurement, 1*, 385-401.
- Reeb, B. T., Conger, K. J. (2009). The unique effect of paternal depressive symptoms on adolescent functioning: associations with gender and father-adolescent relationship closeness. *Journal of Family Psychology, 23*(5), 758-761.
- Regnerus, M. D. & Luchies, L. B. (2006). The parent-child relationship and opportunities for adolescents' first sex. *Journal of Family Issues, 27*(2), 159-183.
- Schinke, S. P., Fang, L., Cole, K. C. A. (2008). Substance use among early adolescent girls: risk and protective factors. *Journal of Adolescent Health, 43*, 191-194.
- Schwinn, T. M., Schinke, S. P., & Trent, D. N. (2010) Substance use among late adolescent urban youths: Mental health and gender influences. *Addictive Behaviors, 35*, 30-34.

Simons, J. S., Maisto, S. A., & Wray, T. B. (2010). Sexual risk taking among young adult dual alcohol and marijuana users. *Addictive Behaviors, 35*, 533-536.

Simpson, J. A., & Belsky, J. (2008). Attachment theory within a modern evolutionary framework. In P. R. Shaver & J. Cassidy (Eds.), *Handbook of attachment: Theory, research, and clinical applications* (2nd ed., pp. 131-157). New York: Guilford.

Smith, G. T., McCarthy, D. M., & Goldman, M. S. (1995). Self-reported drinking and alcohol-related problems among early adolescents: Dimensionality and validity over 24 months. *Journal of Studies on Alcohol, 56*, 383-394.

Quinlan, R. J. (2003). Father absence, parental care, and female reproductive development. *Evolution and Human Behavior, 24*, 376-390.

University of Montana. (2008). *National college health assessment: Spring 2008* [Data file]. Available from <http://life.umt.edu/curry/DOCS-NCHA/NCHA2008-Comprehensive-Summary.pdf>

U. S. Census Bureau. (2011). *Married couples by labor force status by spouse: 1986 to present* [Data file]. Available from <http://www.census.gov/aprd/techdoc/cps/cps-main.html>

Vander Ven, T. & Beck, J. (2009). Getting drunk and hooking up: An exploratory study of the relationship between alcohol intoxication and casual coupling in a university sample. *Sociological Spectrum, 29*(5), 626-648.

Whiteside, S. P. & Lynam, D. R. (2001). The Five Factor Model and impulsivity: Using a structural model of personality to understand personality. *Personality and Individual Differences, 30*, 669-689.

- Williamson, M. (2004). The importance of fathers in relation to their daughters' psychosexual development. *Psychodynamic Practice, 10*(2), 207-219.
- Zapolski, T. C. B., Cyders, M. A., & Smith, G. T. (2009). Positive urgency predicts illegal drug use and risky sexual behavior. *Psychology of Addictive Behaviors, 23*(2), 348-354.
- Zuckerman, M. (2007). Sensation seeking and substance use and abuse: Smoking, drinking, and drugs. In *Sensation seeking and risky behavior* (pp. 107-143). Washington, DC: American Psychological Association.
- Zuckerman, M. (2007). Sensation seeking and sex. In *Sensation seeking and risky behavior* (pp. 145-168). Washington, DC: American Psychological Association.

Appendix A

The Father Presence Questionnaire

The FPQ

This is a questionnaire about fathers. It is a questionnaire about individuals' relationships with their biological fathers.

Please circle the number for each question that best describes your overall feelings about and experiences with your biological father.

If you are uncertain about a question, do not leave it blank. Make your best guess.

1 - Never

2 - Seldom

3 - Occasionally

4 – Frequently

5 - Almost Always

GO TO NEXT PAGE

	Nev.	Seld.	Occas.	Freq.	Alm. Always
1. I love my father very much.	1	2	3	4	5
2. I could/can talk with my father about anything.	1	2	3	4	5
3. As a child, I felt warm and safe when I was with my father.	1	2	3	4	5
4. I felt/feel close to my father.	1	2	3	4	5
5. My father hurt my feelings.	1	2	3	4	5
6. My father is very important to me.	1	2	3	4	5
7. When I remember past experiences with my father, I feel angry.	1	2	3	4	5
8. I felt my father was behind me and supported my choices or activities.	1	2	3	4	5
9. I feel disappointed with my father.	1	2	3	4	5
10. I looked up to my father.	1	2	3	4	5
11. I felt/feel inspired by my father.	1	2	3	4	5
12. My father had a negative influence on my life.	1	2	3	4	5
13. I need my father.	1	2	3	4	5
14. My father has a special place in my life and no one could replace him.	1	2	3	4	5
15. My father and I enjoyed/enjoy being together.	1	2	3	4	5
16. My father had a negative influence on my relationships with the opposite sex.	1	2	3	4	5
17. I want to be like my father.	1	2	3	4	5

GO TO NEXT PAGE

	Nev.	Seld.	Occas.	Freq.	Alm. Always
1. My father and I played together.	1	2	3	4	5
2. My father helped me with schoolwork when I asked him.	1	2	3	4	5
3. My father helped me learn new things.	1	2	3	4	5
4. My father attended my school functions.	1	2	3	4	5
5. My father was too harsh when he disciplined me.	1	2	3	4	5
6. My father and I participated in activities or hobbies together.	1	2	3	4	5
7. My father attended my sporting events or other activities in which I participated.	1	2	3	4	5
8. My father ignored my questions.	1	2	3	4	5
9. I could go to my father for advice or help with a problem.	1	2	3	4	5
10. My father helped me to think about my future.	1	2	3	4	5
11. My father was concerned about my safety.	1	2	3	4	5
12. My father taught me right from wrong.	1	2	3	4	5
13. My father expected too much from me.	1	2	3	4	5
14. My father knew my whereabouts.	1	2	3	4	5
15. My father listened to me when I would talk with him.	1	2	3	4	5
16. My father seemed angry or displeased with me.	1	2	3	4	5
17. My father told me that he loved me.	1	2	3	4	5
18. My father was impatient with me.	1	2	3	4	5
19. My father understood me.	1	2	3	4	5
20. My father was mean to me.	1	2	3	4	5
21. My father encouraged me.	1	2	3	4	5

GO TO NEXT PAGE

	Nev.	Seld.	Occas.	Freq.	Alm. Always
22. My father punished me excessively.	1	2	3	4	5
23. My father made my life harder.	1	2	3	4	5
24. When I was a child, my father ignored me.	1	2	3	4	5
25. My father was involved with my life or me.	1	2	3	4	5
1. I sat on my father's lap.	1	2	3	4	5
2. My father hugged and/or kissed me.	1	2	3	4	5
3. My father's voice was comforting and reassuring.	1	2	3	4	5
4. My father's touch was comforting and reassuring.	1	2	3	4	5
5. My father let me sit on his shoulders.	1	2	3	4	5
6. My father held me when I was a baby.	1	2	3	4	5
7. My father would hold my hand or put his arm around me.	1	2	3	4	5
8. My father tucked me into bed.	1	2	3	4	5
9. My father and I shared meals together.	1	2	3	4	5
10. My father changed my diapers or bathed me when I was a baby.	1	2	3	4	5
11. I liked being held by my father.	1	2	3	4	5
12. My father would talk with me when I was a baby.	1	2	3	4	5
13. My father cared about my body and my health.	1	2	3	4	5

GO TO NEXT PAGE

Appendix B

Substance Use Questionnaire

Substance Use Questionnaire

This is a questionnaire that inquires about your substance use. Please indicate which response best represents your substance use with a circle or a mark. Please be as honest and accurate as you can in your responses.

Have you ever had alcohol to drink--more than a few sips? Yes No

Have you ever gotten drunk? Yes No

How old were you when you first drank more than a sip or two of alcohol? _____

How old were you when you first got drunk? _____

How often in the last year have you:	None	1-2 times	3-9 times	10-19 times	20-49 times	>50 times
Had alcohol to drink?						
Gotten drunk?						

How often in the last month have you:	None	1-2 times	3-9 times	10-19 times	>20 times
Had alcohol to drink?					
Gotten drunk?					

In using alcohol, are you a:	Non-user	Very light drinker	Light drinker	Moderate drinker	Heavy drinker	Very heavy drinker
------------------------------	----------	--------------------	---------------	------------------	---------------	--------------------

Has your drinking caused you any of the following problems?	None	1-2 times	3-9 times	10 or more
Have a car crash?				
Get arrested?				
Have money problems?				
Get in trouble at school?				
Interfere with school work?				
Fight with friends?				
Fight with parents?				
Passed out?				
Blacked out?				
Hurt yourself?				
Hurt someone else?				
Engage in sexual activity that you later regretted?				

During the past 30 days, on how many days did you have 5 or more drinks of alcohol in a row, that is, within a couple of hours?	0 days	1 days	2 days	3 to 5 days
		6 to 9 days	10 to 19 days	20 or more days

Have you ever tried marijuana?	Yes	No
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How old were you when you first tried marijuana? _____

How often in the past year have you used marijuana?	None	1-2 times	3-9 times	10-19 times	20-49 times	>50 times
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How often in the past month have you used marijuana?	None	1-2 times	3-9 times	10-19 times	>20 times	Several times/day
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In using marijuana, are you a:	Non-user	Very light user	Light user	Moderate user	Heavy user	Very heavy user
--------------------------------	----------	-----------------	------------	---------------	------------	-----------------

Have you ever tried any of the following drugs?	Yes	No
Amphetamines (stimulants, speed, etc.)		
Cocaine		
Crack (rock, smoke cocaine)		
LSD (acid)		
Other hallucinogen (mescaline, peyote, mushrooms, etc.)		
Heroin		
Methamphetamines (Crystal meth, ice, crank)		
Ecstasy ("XTC", MDMA)		

Have you used any of these drugs to get high in the last year ?	None	1-2 times	3-9 times	10-19 times	20-49 times	>50 times
Amphetamines (stimulants, speed, etc.)						
Cocaine						
Crack (rock, smoke cocaine)						
LSD (acid)						

Have you used any of these drugs to get high in the last year ?	None	1-2 times	3-9 times	10-19 times	20-49 times	>50 times
Other hallucinogen (mescaline, peyote, mushrooms, etc.)						
Heroin						
Methamphetamines (Crystal meth, ice, crank)						
Ecstasy ("XTC", MDMA)						

Have you used any of these drugs to get high in the last month ?	None	1-2 times	3-9 times	10-19 times	>20 times
Amphetamines (stimulants, speed, etc.)					
Cocaine					
Crack (rock, smoke cocaine)					
LSD (acid)					
Other hallucinogen (mescaline, peyote, mushrooms, etc.)					
Heroin					
Methamphetamines (Crystal meth, ice, crank)					
Ecstasy ("XTC", MDMA)					

In using each of following, are you a:	Non-user	Very light user	Light user	Moderate user	Heavy user	Very heavy user
Amphetamines (stimulants, speed, etc.)						
Cocaine						
Crack (rock, smoke cocaine)						
LSD (acid)						
Other hallucinogen (mescaline, peyote, mushrooms, etc.)						
Heroin						
Methamphetamines (Crystal meth, ice, crank)						
Ecstasy ("XTC", MDMA)						

Has your use of marijuana or other drugs every caused you any of the following problems?	No	1-2 times	3-9 times	>10 times
Get a traffic ticket?				
Have a car crash?				
Get arrested?				

Has your use of marijuana or other drugs every caused you any of the following problems?	No	1-2 times	3-9 times	>10 times
Have money problems?				
Get in trouble at school?				
Interfere with school work?				
Fight with friends?				
Fight with parents?				
Have a "bad trip"?				
Engage in something sexual that you later regretted?				
Hurt yourself?				
Hurt someone else?				

When I answered the questions about alcohol:

- I was very honest
- I said I used them more than I really do
- I said I used them less than I really do

When I answered the questions about drugs:

- I was very honest
- I said I used them more than I really do
- I said I used them less than I really do

Appendix C

Scale of Sexual Risk-Taking

Scale of Sexual Risk Taking

(Metzler, C. W., Noell, J., & Biglan, A., 1992)

This section asks how often you have done different things. Mark the box that best describes your answer. Remember, your answers are confidential.

1. Generally, in the LAST YEAR, how often have you or your partner drunk alcohol immediately before or during sexual activities?

Never Some About Most Every I am not
 times half times time sexually
 times times sexually
 active

2. Generally, in the LAST YEAR, how often have you or your partner used marijuana or drugs (other than alcohol) immediately before or during sexual activities?

Never Some About Most Every I am not
 times half times time sexually
 times times sexually
 active

3. How many DIFFERENT TIMES have you had a sexually transmitted disease such as gonorrhea (clap), herpes, or chlamydia, etc?

0 1 2 3 4 5 6 7 8 9 10 11+

This section asks about having sex (sexual intercourse) with a person of the opposite sex.

Sex (sexual intercourse) means: Penis in vagina, going all the way, screwing, getting laid, making love. This does not include rape (forced sex).

Opposite sex means: females with males.

4. Have you ever had sexual intercourse with a member of the opposite sex?

YES NO

If your answer is NO, please go to the next section, question 12
 If your answer is YES, please continue.

5. How many TIMES have you had sex with someone of the opposite sex?

In the LAST 3 MONTHS:

0 1 2 3 4 5 6 7 8 9 10 11-20 21-40 41+

In the LAST YEAR:

0 1 2 3 4 5 6 7 8 9 10 11-20 21-40 41+

6. How many DIFFERENT PEOPLE of the ~~opposite sex~~ have you had sex with?

In the LAST 3 MONTHS:

0 1 2 3 4 5 6 7 8 9 10 11-20 21-40 41+

In the LAST YEAR:

0 1 2 3 4 5 6 7 8 9 10 11-20 21-40 41+

In your ENTIRE LIFE:

0 1 2 3 4 5 6 7 8 9 10 11-20 21-40 41+

7. How many opposite sex partners have you had sex with who were also having sex with other people?

In the LAST 3 MONTHS:

0 1 2 3 4 5 6 7 8 9 10 11-20 21-40 41+

In the LAST YEAR:

0 1 2 3 4 5 6 7 8 9 10 11-20 21-40 41+

8. How many TIMES have you had sex with someone of the opposite sex who has ever shot (injected) I V drugs?

In the LAST 3 MONTHS:

0 1 2 3 4 5 6 7 8 9 10 11-20 21-40 41+

In the LAST YEAR:

0 1 2 3 4 5 6 7 8 9 10 11-20 21-40 41+

9. How many TIMES have you had sex with someone of the opposite sex whom you did not know very well?

In the LAST 3 MONTHS:

0 1 2 3 4 5 6 7 8 9 10 11-20 21-40 41+

In the LAST YEAR:

0 1 2 3 4 5 6 7 8 9 10 11-20 21-40 41+

10. In the LAST 3 MONTHS, when you had sex, how often did you use some kind of birth control?

 Never Some times About half Most times Every time

11. In the LAST 3 MONTHS, when you had sex, how often did you or your partner wear a condom (rubber)?

Never

Some
timesAbout
halfMost
timesEvery
time

This question asks about having anal sex with a person of the opposite sex.
ANAL SEX (anal intercourse) means: penis in the butt or rectum. This does not include rape (forced sex).

OPPOSITE SEX means: females with males.

12. In your ENTIRE LIFE, how many TIMES have you had anal sex (anal intercourse) with someone of the opposite sex?

0

1

2

3

4

5

6

7

8

9

10

11-
2021-
40

41+

Appendix D

UPPS-P Impulsive Behavior Scale

UPPS-P

Below are a number of statements that describe ways in which people act and think. For each statement, please indicate how much you agree or disagree with the statement. If you **Agree Strongly** circle **1**, if you **Agree Somewhat** circle **2**, if you **Disagree somewhat** circle **3**, and if you **Disagree Strongly** circle **4**. Be sure to indicate your agreement or disagreement for every statement below. Also, there are questions on the following pages.

	Agree Strongly	Agree Some	Disagree Some	Disagree Strongly
1. I generally seek new and exciting experiences and sensations.	1	2	3	4
2. When I am very happy, I can't seem to stop myself from doing things that can have bad consequences.	1	2	3	4
3. I'll try anything once.	1	2	3	4
4. When I am in great mood, I tend to get into situations that could cause me problems.	1	2	3	4
5. I like sports and games in which you have to choose your next move very quickly.	1	2	3	4
6. When I am very happy, I tend to do things that may cause problems in my life.	1	2	3	4
7. I would enjoy water skiing.	1	2	3	4
8. I tend to lose control when I am in a great mood.	1	2	3	4
9. I quite enjoy taking risks.	1	2	3	4
10. When I am really ecstatic, I tend to get out of control.	1	2	3	4
11. I would enjoy parachute jumping.	1	2	3	4
12. Others would say I make bad choices when I am extremely happy about something.	1	2	3	4
13. I welcome new and exciting experiences and sensations, even if they are a little frightening and unconventional.	1	2	3	4
14. Others are shocked or worried about the things I do when I am feeling very excited.	1	2	3	4
15. I would like to learn to fly an airplane.	1	2	3	4
16. When I get really happy about something, I tend to do things that can have bad consequences.	1	2	3	4
17. I sometimes like doing things that are a bit frightening.	1	2	3	4
18. When overjoyed, I feel like I can't stop myself from going overboard.	1	2	3	4

Please go to the next page

	Agree Strongly	Agree Some	Disagree Some	Disagree Strongly
19. I would enjoy the sensation of skiing very fast down a high mountain slope.	1	2	3	4
20. When I am really excited, I tend not to think of the consequences of my actions.	1	2	3	4
21. I would like to go scuba diving.	1	2	3	4
22. I tend to act without thinking when I am really excited.	1	2	3	4
23. When I am really happy, I often find myself in situations that I normally wouldn't be comfortable with.	1	2	3	4
24. I would enjoy fast driving.	1	2	3	4
25. When I am very happy, I feel like it is ok to give in to cravings or overindulge.	1	2	3	4
26. I am surprised at the things I do while in a great mood.	1	2	3	4

Appendix E

Center for Epidemiological Studies Depression Scale

Center for Epidemiologic Studies Depression Scale (CES-D), NIMH

Below is a list of the ways you might have felt or behaved. Please tell me how often you have felt this way during the past week.

Week	During the Past			
	Rarely or none of the time (less than 1 day)	Some or a little of the time (1-2 days)	Occasionally or a moderate amount of time (3-4 days)	Most or all of the time (5-7 days)
1. I was bothered by things that usually don't bother me.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
2. I did not feel like eating; my appetite was poor.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
3. I felt that I could not shake off the blues even with help from my family or friends.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
4. I felt I was just as good as other people.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
5. I had trouble keeping my mind on what I was doing.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
6. I felt depressed.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
7. I felt that everything I did was an effort.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
8. I felt hopeful about the future.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
9. I thought my life had been a failure.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
10. I felt fearful.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
11. My sleep was restless.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
12. I was happy.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
13. I talked less than usual.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
14. I felt lonely.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
15. People were unfriendly.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
16. I enjoyed life.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
17. I had crying spells.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
18. I felt sad.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
19. I felt that people dislike me.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
20. I could not get "going."	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

SCORING: zero for answers in the first column, 1 for answers in the second column, 2 for answers in the third column, 3 for answers in the fourth column. The scoring of positive items is reversed. Possible range of scores is zero to 60, with the higher scores indicating the presence of more symptomatology.

Appendix F

Demographics Questionnaire

Demographics Questionnaire

1. How old are you? _____
2. What is your racial group? (*You may check more than one*)
 - American Indian/Alaska Native
 - Asian
 - Native Hawaiian or Other Pacific Islander
 - Black or African American
 - Hispanic or Latino
 - White, non-Hispanic or Latino
 - Other: _____
3. What is your relationship status?
 - Single
 - In a relationship
 - Married
 - Divorced
 - Widowed
4. What is your parent's relationship status?
 - Married
 - Separated
 - Divorced
 - Widowed
 - Single (Never Married)
5. If parents are divorced, at what age were you when they divorced? _____
6. From birth to age 18, what was the main family structure in which you lived? (*You may check more than one*)
 - Lived with both biological parents
 - Lived with biological mother
 - Lived with biological mother and stepfather
 - Lived with biological father
 - Lived with biological father and stepmother
 - Lived with adoptive mother and father
 - Lived with neither parent (specify) _____
 - Other (Specify) _____
7. If your parents were separated or divorced and you lived with your mother, how often did you see or talk with your father?
 - Every day
 - Two or three times a week
 - Once a month
 - Several times a year

- Once a year
- Once every few years
- Rarely
- Never

8. If your father died before your 18th birthday, at what age were you when he died?_____

Appendix G

Proctor Script

Proctor Script

“Good afternoon. My name is Whitney Rostad. Today, I’m going to ask you to fill out a series of questionnaires. These questionnaires ask several questions concerning early relationships, personality, and college behaviors. All of your responses to these questions will be confidential and anonymous; that is, none of your answers will be associated with your name. None of the questionnaires given to you will ask you for your name, except for the consent form which will be collected before you begin the packet of questionnaires. Therefore, we will have no way to identify your answers with your name. Please be very honest and as accurate as you can in your responses. At any point in the study if the questions become too uncomfortable to answer, you may skip the question or stop completely and still receive two research credits for your participation. Please read the consent form in front of you. If you agree to participate in the study, please sign on the designated line.

If you agree to participate, please complete the questionnaires in the order in which they are presented in the envelope. Be sure to read any directions and to remember to look for questions on the back. Please bring the packet up to me when you are finished and I will sign your research requirement sheet. Thank you and please let me know if you have any questions.”