An Examination of the Factors of Influence on Rebellious Risky Behaviors in Adolescents

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AN EXAMINATION OF THE FACTORS OF INFLUENCE ON REBELLIOUS RISKY
BEHAVIORS IN ADOLESCENTS

A Thesis
Presented to
The Faculty of the Department of Psychology
Western Kentucky University
Bowling Green, Kentucky

In Partial Fulfillment
of the Requirements of the Degree
Master of Arts

By
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December 2007
AN EXAMINATION OF THE FACTORS OF INFLUENCE ON REBELLIOUS RISKY BEHAVIORS IN ADOLESCENTS

Date Recommended 11/14/07

Director of Thesis

Dean, Graduate Studies and Research Date

12/11/2007
Acknowledgement

I would like to express my deepest gratitude to Dr. Melissa Hakman for her extraordinary guidance, countless suggestions, and unearthly patience. Thank you, also, to Drs. Debra Crisp and Jacqueline Pope-Tarrence for their priceless critiques of my work. A special thank you to the participating schools and individuals of this study for their cooperation and interest in bettering our understanding of adolescent engagement in rebellious behaviors. Finally, I would like to thank my family and friends for the unconditional support and encouragement they so generously shower upon me.
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Previous research indicates that the majority of today’s adolescents are engaging in or have engaged in some type of rebellious risky behavior, such as consuming alcohol or using tobacco or other drugs (Haynie, 2003; Kann et al., 2000; Loper, 2000; Markey, Markey, & Tinsley, 2003; Patton, McMorris, Donath, & Catalano, 2004; Rickwood, 2005; Steinberg & Morris, 2001). In order to decrease levels of adolescent engagement in these rebellious behaviors, the factors of influence on these behaviors must be identified and understood. While studies in the past have focused on individual factors that influence adolescent involvement in these behaviors, the present study incorporated multiple factors and examined the influences of pubertal development; the personality factors of extraversion, conscientiousness, and neuroticism; the parental attachment factors of trust, alienation, and communication; and the peer attachment factors of trust, alienation, and communication on engagement in rebellious risky behaviors among adolescent males and females. The present study also determined which of these factors or combination of factors most strongly influenced adolescent involvement in rebellious risky behaviors. Significant positive correlations emerged between the factors of pubertal development and parental alienation and adolescent engagement in these behaviors. Significant negative correlations emerged between the factors of conscientiousness,
parental trust, and parental communication and adolescent involvement in these behaviors. The teen’s reported level of parental trust was found to most strongly influence his or her likelihood of engaging in rebellious behaviors, while the combination of parental trust and level of pubertal development had an even greater influence on engagement in rebellious behaviors. While no significant differences emerged between levels of engagement among males and females, it was found that teens in the twelfth grade were significantly more likely to engage in these behaviors than were teens in the ninth grade.
Introduction

A significant number of adolescents in Western society are engaging in risky behaviors such as drinking alcohol, smoking cigarettes, using marijuana or other illicit drugs, and engaging in unprotected sex. A study conducted by Kann et al. (2000) indicated that more than 80% of the 15,349 adolescents surveyed reported having consumed alcohol in their lifetime, 70% reported having smoked cigarettes, 47% reported having used marijuana, and 21% reported having had unprotected sex. Adolescent involvement in these risky behaviors is of great concern, as these behaviors are often continued throughout adulthood, and effective prevention programs are needed (Pergamit, Huang, and Lane, 2001).

However, an explanation of this phenomenon is not easily agreed upon among researchers (Haynie, 2003; Kann et al., 2000; Loper, 2000; Markey, Markey, & Tinsley, 2003; Patton, McMorris, Donath, & Catalano, 2004; Rickwood, 2005; Steinberg & Morris, 2001). Numerous studies have been conducted on this topic, and several variables have been labeled as factors that influence the engagement in these risky behaviors among adolescents. Several studies, for example, have found that teenagers appear to engage in more rebellious risky behaviors (such drinking alcohol and using tobacco and other drugs) when they begin puberty at younger-than-average ages (Haynie, 2003; Markey, Markey, & Tinsley, 2003; Patton et al., 2004; Steinberg & Morris, 2001). Another study, however, points to social relationships as being a strong influence on the engagement in risky behaviors in adolescence (Cavanagh, 2004), while studies by Haynie (2003) and Bronte-Tinkew, Moore, Capps, and Zaff (2004) suggest a teen’s relationship with his or her parent(s) can greatly affect his or her decision to engage in such
behaviors. Furthermore, personality characteristics, such as extraversion, have been shown to increase a teen’s likelihood of engaging in risky behaviors (Essau, 2004). Gender differences seem to play a role in this equation as well (Kann et al., 2000).

Because a number of factors have been found to affect an adolescent’s engagement in risky behaviors, it is important to explore these variables further to see which factor or factors are of influence.

Following is a review of literature pertaining to adolescent engagement in risky behaviors. This is followed by an explanation of the present study, which is an examination of the factors influencing adolescent engagement in rebellious risky behaviors. Finally, the results of the present study are presented and discussed.
Review of Literature

It is a popular belief in Western society that today’s adolescents are engaging in more and more risky behaviors than did previous generations (Loper, 2000; Rickwood, 2005). Additionally, individuals who first engage in risky behaviors in their early teens are more likely than those who do not first engage in such behaviors until early adulthood to continue to engage in risky behaviors throughout adulthood (Pergamit, et al., 2001). In general, risky behaviors range from involvement in extreme sports, such as mountain biking, to more reckless behaviors, such as sharing intravenous needles (Gullone & Moore, 2000). Kann et al. (2000) noted that the Center for Disease Control (CDC) developed the Youth Risk Behavior Surveillance System (YRBSS) to monitor health-risk behaviors among adolescents and young adults. In 1999, YRBSS data were collected from 15,349 adolescents in 41 states. Results indicated that over 80% of adolescents surveyed reported having consumed alcohol in their lifetime. Forty-two percent reported regular cigarette smoking, while more than 70% indicated that they had tried cigarettes. Surveillance of illegal drug usage found that, at some point in their lives, 47.2% of teens reported having used marijuana, 14.6% had inhaled some substance (i.e., glue, paints, or the contents of aerosol spray cans) in order to achieve a high, and 9.5% had used cocaine. Nationwide, 9.1% of teens reported having used methamphetamines, 3.7% had used illegal, non-prescribed steroids, and 2.4% had used heroin. Nearly half (49.9%) of the teens surveyed had engaged in sexual intercourse, while 21% had done so using no form of protection. Furthermore, 37.7% of adolescents had been treated for injuries sustained while playing sports or being physically active during the 12 months preceding survey completion. Thirty-three percent admitted that, in the 30 days preceding the survey, they
had rode in a car with a driver who had been drinking alcohol, and 13% reported having
driven themselves after drinking alcohol. Seventeen percent of students had carried a
weapon in the previous 30 days, with 4.9% reporting the weapon had been a gun, and
35.7% of the adolescents surveyed had been in a physical fight in the 12 months
preceding the survey (Kann et al., 2000). Clearly, a significant number of adolescents are
engaging in risky behaviors. Because some risky behaviors, such as underage drinking
and sexual experimentation, often precede more deviant, antisocial behaviors, such as
drug trafficking and robbery, it is important that we better understand these behaviors and
the role they play in adolescent development.

Adolescent involvement in risky behaviors is often assumed to be a problem
affecting today’s young boys, whose more externalized and aggressive behaviors tend to
overshadow the more subtle acts of their female peers (Barnes, Welte, & Hoffman,
2002). Many adolescent girls, however, are undoubtedly engaging in risky behaviors.
According to the results of the YRBSS (Kann et al., 2000), teenage females are less likely
to report condom usage during intercourse than are adolescent males. Thirty-seven
percent of adolescent girls report that they currently smoke cigarettes, and eight percent
have smoked marijuana before the age of 13. The majority of females in the 12th grade
reported having consumed alcohol or used marijuana in their lifetime (87% and 53.2%
respectively), and nearly three percent (2.9%) of female adolescents reported current
cocaine use. In the 30 days preceding the YRBSS, nearly nine percent (8.7%) of female
adolescents had driven after drinking alcohol, and 27.3% had been a physical fight.
According to Loper (2000), the amount and degree of deviance in which these young
women are involved is on the rise, while the rate of arrests of teenage boys is declining. It
was noted that, in 1997, 26% of all juvenile arrests in the United States were of females, and that over one third of those girls were younger than 15. Additionally, it was found that 58% of arrests for runaways were of teenage girls. From 1993 to 1997, the number of arrests made of adolescent females for drug abuse violations increased an astounding 117% (Loper, 2000).

Although adolescent females are certainly engaging in these risky behaviors, it is not to be assumed that the behaviors of their male age-mates are to be disregarded. The YRBSS (Kann et al., 2000) concluded that 80.5% of 12th grade males reported having smoked cigarettes in their lifetime, with 57.0% having indicated current tobacco use, and 66.6% reported having consumed alcohol in the preceding 30 days. Forty-four percent of all adolescent males surveyed reported having been in a physical fight in the 12 months preceding the survey, and 17.4% admitted to drinking and driving in the 30 days preceding the survey. Fifty-one percent had used marijuana, and 12.4% had used methamphetamines in their lifetime.

Adolescent engagement in risky behaviors has been shown to influence the lives of these individuals as they age. Pergamit, Huang, and Lane (2001) noted that the behaviors of a teen greatly influence his or her behaviors as an adult. At the age of 30, 22.94% of individuals who had first consumed alcohol between the ages of 11 to 15 are dependent upon alcohol, 16.68% report having used drugs in the preceding month, and 6.40% have been jailed at least once as an adult. Of those who had first consumed alcohol between the ages of 16 and 17, 16.39% were alcohol dependent, 13.15% report having used drugs in the preceding month, and 3.31% had been jailed as an adult. Additionally, of those who had first consumed alcohol between the ages of 18 and 19, only 9.38% were
alcohol dependent, 8.44% had used drugs in the preceding month, and 2.91% had been jailed as an adult. Similar results were shown regarding adolescent initiation of sexual behaviors and the use of marijuana and cocaine, where earlier ages of initiation of these behaviors are positively correlated with adult alcohol dependency, drug use, and jail time. Adolescents who first use marijuana between the ages of 11 and 15, for example, are more likely to be alcohol dependent at age 30 (20.30%) than are those who, by age 19, have not used marijuana (7.47%). Furthermore, correlations were found between the age of initiation of alcohol consumption, marijuana and cocaine use, and sexual activity with the poverty levels, marital status, and fertility status of these individuals at age 33. Individuals who engage in these behaviors at earlier ages (i.e., between the ages of 11 and 15) are more likely to not only live in poverty, but to spend more time at this socioeconomic level. As a result, they are more likely to be on welfare than those who did not engage in these risky behaviors until between the ages of 18 and 19 (Pergamit et al., 2001). Some risky behaviors, however, pose an immediate threat to the safety and well-being of the adolescent. Driving while under the influence of alcohol, for example, would increase the teen’s likelihood of being involved in an automobile accident. Furthermore, according to Drapela, Gebelt, and McRee (2006), adolescents who smoke cigarettes are more likely than their non-smoking peers to smoke cigarettes as adults, and long-term use of tobacco, alcohol, and other drugs has been linked to an increase in susceptibility to various cancers and other physiological ailments, such as liver and kidney damage. To determine which behaviors appear to have undesirable effects on the adolescents who engage in them, it is important to understand these risky behaviors better.
Definition of Risky Behaviors

Risky behaviors can include a wide variety of behaviors. However, in general, Gullone and Moore (2000) defined risky behaviors as those which are age inappropriate and that involve potential negative consequences but that are balanced by the perception of some positive consequence. They divided such behaviors into four distinct categories: thrill-seeking behaviors, reckless behaviors, antisocial behaviors, and rebellious behaviors. *Thrill-seeking behaviors* are defined as those that include a degree of difficulty and danger, but that are typically socially acceptable at any age. These behaviors present the individual with a sense of excitement. An example of thrill seeking can be seen in extreme sports such as mountain biking. *Reckless behaviors* are seen as thrill-seeking behaviors that, although often seen as rites of passage into adulthood, are more likely to result in health-related outcomes. Engagement in these behaviors, such as drinking and driving or sharing intravenous needles, is socially unacceptable at any age. *Antisocial behaviors*, such as cheating, also are not socially accepted in either adulthood or adolescence, but differ from reckless behaviors in that they are not seen as rites of passage. The present study will focus on the last class of risky behaviors defined as *rebellious*, which consists of behaviors engaged in by adolescents as a “rite of passage” into adulthood. The engagement in these behaviors is often acceptable for adults, but not for adolescents, and may include smoking, consuming alcohol, staying out late, and swearing. By examining the rebellious behaviors in both male and female adolescents, information regarding the differences among genders as well as the factors that influence such engagement has been obtained. This information is useful because it provides a better understanding of adolescent involvement in risky behaviors. This information can
be used to identify adolescents at risk and to create more effective prevention programs or treatment programs.

**Pubertal Development**

*Puberty* is defined by The Oxford Essential Dictionary (Abate, 1998) as “the period during which adolescents reach sexual maturity” (p. 483). While the majority of adolescent females enter into puberty between the ages of 9 and 10, and males at age 12, the age of pubertal development varies greatly among individuals, with the onset occurring for some earlier in childhood and, for others, in the later years of adolescence (Markey et al., 2003; Sinkkonen, Anttila, & Siimes, 1998). Pubertal timing appears to have a strong influence on many aspects of the individual’s life and often affects his or her psychological functioning. For instance, Steinberg and Morris (2001) noted that late-maturing males tend to have lower self-esteem and greater feelings of inadequacy than early-maturing males, who are generally more popular and have more positive self-image. Early-maturing females were found to be more popular but to have more emotional problems, lower self-image, and higher rates of anxiety, depression, and disordered eating than average- and late-developing females (Steinberg & Morris, 2001).

Pubertal development also appears to play a role in the involvement in risky behaviors in many adolescents. There are multiple theories as to why this correlation exists. For instance, the stressful-change hypothesis presumes that physical and psychological changes, such as puberty, which is especially stressful when the teen receives responses from his or her friends and family, elicit a stressful response. Such levels of stress, according to this hypothesis, then increase the likelihood of engagement in risky behaviors (Haynie, 2003). Various other studies point to an adolescent’s
personality factors as well as peer and familial relationships when explaining how pubertal development may influence one’s engagement in risky behaviors (Cavanagh, 2004; Essau, 2004; Haynie, 2003).

Two aspects of puberty are often examined in research: the first is a measure of the individual’s level of pubertal development as indicated by physical changes, such as menstruation or deepening of the voice. The second is the rate of the individual’s development compared to that of his or her peers. Regardless of the aspects used, research has indicated that early maturation leads to an increased likelihood of involvement in risky behaviors, particularly alcohol consumption, in both male and female adolescents (Haynie, 2003; Markey, Markey, & Tinsley, 2003; Patton et al., 2004; Steinberg & Morris, 2001). These studies will be examined below.

Haynie (2003) examined data from the 1995-1996 National Longitudinal Study of Adolescent Health exploring the connection between pubertal development and adolescent engagement in risky behaviors. Data from 5,477 adolescent females and their parents were collected regarding the girls’ level of pubertal development and the level of involvement in various risky behaviors. Behaviors assessed included using tobacco, alcohol, or marijuana; lying to parents; skipping school; engaging in disorderly conduct; painting graffiti; shoplifting; driving a car without permission; stealing; vandalizing property; robbing or burglarizing; selling drugs; physical fighting; being a member of a gang; and having shot or stabbed someone within the previous 12 months. The Pubertal Development Scale (PDS; Petersen, Crockett, Richards, & Boxer, 1988) assessed the pubertal developmental status of the girls. This scale is designed as a questionnaire and is often conceptualized as a subjective measure of development. Results indicated that girls
who were more developed relative to their age mates and girls who were more physically
developed overall had higher rates of involvement in all behaviors assessed. Those girls of high developmental status were significantly more involved than girls average in
development in areas of alcohol consumption, tobacco and marijuana use, public
rowdiness, drug distribution, group fights, and gang membership. The results of this study indicate that girls who mature at earlier than average ages and those who are more highly developed physically are more likely to engage in risky behaviors than their average peers. The study hypothesized that this correlation may be due to peer contexts, such as becoming involved in romantic relationships and socializing with delinquent peers, and changing parent-child relationships. However, the correlation between physical development and involvement in risky behaviors should be examined more closely in order to gain a better understanding of this trend.

Markey, Markey, and Tinsley (2003) also examined the relationship between pubertal development and the participation in risky behaviors of 60 fifth grade girls. This study implemented the Pubertal Development Scale (PDS; Petersen et al., 1988) as a measure of pubertal development as well. Involvement in risky behaviors was assessed through a self-report questionnaire regarding smoking, consuming alcohol, and kissing. The findings of this study support those of Haynie’s 2003 study in that a positive correlation was found between the degree of pubertal development and the reported participation in risky behaviors. Early-developing females have been found to be more popular, but are also more likely to use drugs and alcohol, to engage in sexual intercourse, and to have problems in school than their late-developing peers (Steinberg &
Morris, 2001). This further strengthens the assumption of a correlation between pubertal development and adolescent engagement in risky behaviors.

Steinberg and Morris (2001) noted similar results within the adolescent male population. Early-maturing males were found to be at greater risk for delinquent behavior and were more likely to engage in risky behaviors, such as drug and alcohol use, truancy, and precocious sexual activity, than their late-maturing peers. Furthermore, a study by Patton et al. (2004), examined the relationship between puberty and substance use in 10- to 15-year-old males and females. Participants included 5,769 American and Australian 5th, 7th, and 9th graders. Pubertal development was assessed via the PDS (Petersen et al., 1988). Substance usage, particularly usage of tobacco, alcohol, and cannabis, was measured using self-report questionnaires, which included items derived from the Monitoring the Future surveys (Johnston, O’Malley, & Bachman, 2002). Similar to the above studies, this study concluded that those adolescents who matured relatively early reported higher levels of substance use than did late-maturers.

Wichstrom (2001) also conducted a study on the relationship between pubertal development and adolescent engagement in risky behaviors, particularly drug and alcohol use. Twelve thousand two hundred eighty seven adolescents in grades 7 through 12 were included in this study. Participants rated their use of alcohol and other drugs, such as marijuana, tobacco, and “hard drugs,” and indicated whether or not they had engaged in sexual intercourse. Each adolescent’s pubertal development was assessed via three measures: Perceived Current Pubertal Timing, a one-item measure regarding the teen’s perceived current level of pubertal development relative to his or her same-sex peers; Perceived Initial Pubertal Timing, also a one-item measure regarding the teen’s
perception of the timing of his or her onset of puberty relative to that of his or her same-sex peers; and the Pubertal Development Scale (Petersen et al., 1988). Participants were then assessed two years later for engagement in behaviors such as drug and alcohol use. Early timing of puberty was found to have a positive correlation with alcohol use in adolescence, particularly among males.

Overall, the results of these studies offer support for the hypothesis that adolescents who enter into puberty at earlier-than-average ages are more likely to engage in risky behaviors than their average- and late-developing peers. The correlation between pubertal development and adolescent engagement in risky behaviors is possibly due to the assumption that these early maturers enter into a puberty-induced “risk period” earlier than their average- and late-developing peers. As a result, early-developers often have stronger associations than their late-developing age-mates with older adolescents and with those who already engage in risky behaviors. However, the exact nature of this correlation is still largely unknown. Furthermore, there are likely to be a multitude of additional factors that influence an adolescent’s engagement in risky behaviors.

Social and Familial Relationships

As alluded to earlier, social and familial relationships may be one area that mediates the relationship between pubertal development and adolescent engagement in risky behaviors. The biosocial model of adolescent development points to the significant relationships that exist between many social and familial interactions and the degree to which an adolescent engages in delinquent behaviors (Cavanagh, 2004).

Cavanagh (2004) conducted a study on the influence of pubertal timing and social relationships on the engagement of sexual behaviors in adolescent females. This
longitudinal study assessed the pubertal timing, friendship groups, and engagement in sexual intercourse of 1,299 females age 12 to 15 years through self-report measures. Only girls who reported being virgins were included in Wave I of this study, although 14% reported having lost their virginity one year later at Wave II. Of the Caucasian participants (n = 882), 26% were considered early-maturers, indicating that they had reached menarche by age 12. These girls were more likely to have lost their virginity by Wave II (20%) than were later-maturing girls (10%). These girls reported having more friends overall, more older male friends, and less same-aged or younger friends than did their later-maturing age-mates. Early-maturing girls also reported having more friends who engaged in problem behaviors, defined as drinking alcohol, getting drunk, doing something dangerous because he or she was dared, skipping school, or getting into a physical fight than did the later-maturing girls. Similar results were found among Latina girls (n = 149), with over 40% having been considered early-maturers. These early-maturing girls were nearly twice as likely as their late-maturing peers (23% vs. 13%) to have lost their virginity by Wave II. Early-maturers in this group indicated that they had more friends overall, more older male friends, and less same-age or younger friends than did the later-maturing Latina girls. Among African American girls (n = 268), more than 40% indicated that they were early-maturers. However, early-maturing girls in this group were not more likely to have transitioned into sexual activity by Wave II. They reported having fewer older male friends than their later-maturing peers. These findings indicate that the timing of pubertal development is associated with sexual debut and friendship groups of Caucasian and Latina, but not African American, adolescent girls.
The adolescent’s relationship with his or her parents also appears to influence the relationship between pubertal development and his or her involvement in risky behaviors. While physical maturity is entirely separate from psychological maturity, many parents award their early developing teens with increased amounts of responsibility. Such adult roles are expected of these teens not only by parents, but by friends and other adults as well, including teachers and coaches. Increased responsibility and the taking-on of adult roles often results in heightened stress levels for the adolescent which may, in turn, trigger the stressful-change hypothesis and lead to engagement in risky behaviors (Haynie, 2003).

Haynie (2003) also states that because these parents feel their teens are as mature psychologically as they are physically, they may decrease their levels of supervision, become more lenient regarding their child’s social groups, and allow their daughters to date older boys. Such exposure to adult social contexts may increase one’s likelihood of engaging in delinquent behaviors. Additionally, research supports the idea that although adolescents who enter into puberty at relatively younger ages than their peers are more autonomous, they are also more likely to consider the relationships with their parents to be conflictual. An argumentative relationship between parent and teen is associated with a 35% increase in party deviance as compared to teens who report non-argumentative relationships with their parents. Furthermore, teens who are granted higher levels of autonomy show elevated levels of party deviance by 9% when compared to their peers who do not report such autonomy, while those with involved parents, particularly fathers, demonstrate less risky behavior involvement (Bronte-Tinkew et al., 2004; Haynie, 2003).
Early developers are also, on average, engaged in more romantic relationships and have more delinquent friends than their later-developing peers. According to Haynie (2003), these early-developing girls were more likely to be involved in romantic relationships (62%) than their average peers (56%) and more likely to have friends who were labeled as “minor delinquents” (indicating they had engaged in at least one deviant act in the previous year) than their average peers. Chapple (2005) noted that teens who associate with deviant peers were more likely to engage in delinquent behaviors than those who did not associate with these peers. This study also found that peer rejection is positively correlated with adolescent risky behavior. Because teenagers are highly influenced by the behaviors of others, particularly their close friends and romantic partners, spending significant amounts of time with delinquent teens is not likely to have a positive impact.

Conversely, Haynie (2003) also found that adolescent girls who develop more slowly than their average peers are less likely to engage in risky behaviors, particularly party deviance. Indeed, females who are less developed than average appear to have a 21% decrease in delinquent behaviors. These findings support the belief that pubertal development is likely to affect an adolescent’s engagement in risky or deviant behaviors in social contexts. However, pubertal development and interpersonal relationships alone do not appear to determine an individual’s level of engagement in risky behaviors, and other possibilities must still be explored.

**Personality**

*Personality* is defined by The Oxford Essential Dictionary (Abate, 1998) as “distinctive character or qualities of a person, often as distinct from others” (p. 446).
Because one’s personality factors greatly affect an individual’s behaviors, it is certainly plausible that, in adolescence, personality factors may influence a teen’s engagement in specific behaviors, including those that may involve some risk.

Several models exist to explain the many aspects of personality, with one of the most commonly used and most researched models being the Five Factor Model of Personality (FFM; Costa & McCrae, 1992). This model includes five factors, or traits, of personality: Neuroticism, Extraversion, Openness to Experience, Agreeableness, and Conscientiousness. Neuroticism (N) refers to one’s tendency to experience negative feelings, such as sadness, fear, embarrassment, anger, disgust, and guilt. It is characterized by the individual’s tendency to be easily angered or discouraged. Individuals who score high on this domain are also characteristically impulsive, self-conscious, and vulnerable. They often have irrational ideas, impulse control problems, and difficulties managing their stress. Individuals with low scores on Neuroticism are typically calm, even-tempered, able to cope with stressful situations, and are generally considered to be emotionally stable.

The Extraversion (E) factor consists of several facets: warmth, outgoingness, assertiveness, excitement-seeking, and one’s positive disposition towards life. Individuals who score high on this trait are generally stimulated by large groups and by activities that involve high amounts of energy, whereas those who score low on this domain are often more reserved and prefer being alone or in social settings with only a few other people. Although low-scores tend to be more reserved than the outgoing high-scores, they are not generally unhappy, pessimistic, or suffering from social anxiety.
Characteristics such as having an active imagination, artistic sensitivity, preferences for variety, independence of judgment, and intellectual curiosity are described by the Openness to Experience (O) domain of personality. Those who score high on this domain often question authority, have a strong value system, are unconventional, and may enjoy entertaining new ethical, social, and political ideas. Individuals with low scores on this domain are often more conservative, conventional, and less interested in diverse ideas than those who score high on this domain.

Agreeableness (A) describes individual’s level of trust, unselfishness, self-expression, modesty, and compliance to authority and/or the “norm.” Individuals with high scores on this scale are often unselfish, sympathetic, eager to help others, believe that others are likewise willing to help, and are influenced by friends, family members, authority figures, and other norm sources. Individuals with low scores on this domain tend to be skeptical of others, self-centered, competitive, uncooperative, and follow their own personal rather than social norms and beliefs.

The final personality trait identified in this model is Conscientiousness (C), which examines individual differences in self-control, organization, and ability to follow-through with tasks. High-scores on this domain are generally purposeful, strong-willed, determined, reliable, and punctual. Individuals with low scores on this domain tend to be less structured and more relaxed in working toward their goals and often have difficulties with delayed gratification. By using various personality measures, it is possible to assess an individual’s standing on each of these traits.

Multiple studies have suggested a correlation between specific personality characteristics and an individual’s engagement in risky behaviors. A 2004 study by
Essau, for example, examined the personality traits and level of engagement in risky behaviors (both maladaptive behaviors, such as drug use, and socially approved behaviors, such as participation in extreme sports) in 563 German adolescents. The Adolescent Risk Taking Questionnaire (ARQ; Gullone et al. 2000) was implemented to measure the teens’ risk-taking behaviors and judgment of riskiness of specific behaviors. Additionally, the NEO Five Factor Inventory (NEO-FFI; Borkenau & Ostendorf, 1993), the German version of the NEO Five Factor Model (NEO-FFM; Costa & McCrae, 1992), measured the adolescents’ five domains of personality: Neuroticism, Extroversion, Openness to Experience, Agreeableness, and Conscientiousness. Extraversion was found to significantly predict engagement in both maladaptive and socially approved behaviors, which is in agreement with Costa & McCrae’s (1992) description of Extraversion, which states that high levels of Extraversion often increase one’s participation in thrill-seeking behaviors. Adolescents high in Neuroticism were found to be less likely to participate in risky behaviors, possibly due to the high levels of anxiety typically found in this population. Furthermore, adolescents who scored high in Conscientiousness were less likely to engage in antisocial behaviors yet more likely to engage in thrill-seeking behaviors. This finding was not surprising given that most highly conscientious individuals are energetic yet tend to abide by societal expectations (Essau, 2004).

According to Junger, Stroebe, and van der Laan (2001), from 1989 to 1993, Statistics Netherlands gathered health-related information, including engagement in delinquent behaviors, from 3,519 adolescents and young adults throughout the Netherlands. The survey was a self-report measure assessing deviant behaviors such as shoplifting, arson, assault, theft, burglary, and vandalism. Health-related behaviors
assessed included alcohol consumption, use of tobacco, and use of “soft drugs,” which were not defined. Results of this study indicated that adolescents who engage in delinquent behaviors are more likely than non-delinquent teens to partake in risky behaviors, particularly drinking alcohol, using drugs, driving while not wearing a seatbelt, engaging in unprotected sex, and having contact with more sexual partners. One possible explanation for this finding is the differences between the personality traits of those who engage in delinquent behaviors and of those who do not.

This information is particularly pertinent to the present study when considered in conjunction with the findings of the Laak et al. (2003) study on the personality characteristics of deviant adolescent females. In this study, the delinquent behaviors and personality characteristics of 33 incarcerated girls in the Netherlands were assessed. The Self-Reported Delinquency Scale (Mak, 1993; as cited in Laak et al., 2003) was used to measure delinquent behaviors, such as causing damage, doing harm, fighting, stealing, running away from home, cheating, joyriding, and using drugs. Additionally, personality traits were assessed using the Five-Factor Personality Inventory (Hendriks, 1997; as cited in Laak et al., 2003). Conscientiousness was found to be negatively correlated with levels of delinquency in these girls, while Neuroticism and delinquency were found to be positively correlated, indicating that those girls who are found to be less-structured and more impulsive are at a higher likelihood than their peers who do not possess these traits to engage in delinquent behaviors.

Given the results of the Laak et al. (2003), Junger et al. (2001), and Essau (2004) studies, it appears as though personality traits do affect an adolescent’s engagement in risky behaviors. Personality characteristics such as high levels of Extraversion and low
levels of Conscientiousness increase a teen’s likelihood of engagement in risky behaviors. Conflicting results were found regarding the effects of Neuroticism, as Essau (2004) reported that high levels of Neuroticism decreased a teen’s likelihood of engagement in risky behaviors, whereas Laak et al. (2003) reported that high levels of this personality domain increased the likelihood of these behaviors. Further research on the relationship between personality factors and engagement in risky behaviors is needed to understand this phenomenon better.

Purpose of the Present Study

Previous research has found relationships between pubertal development, characteristics of social and familial relationships, and personality factors with the level of risky behaviors in which an adolescent is likely to engage. It appears, from these previous studies, that teenagers who enter puberty at younger-than-average ages or who develop more quickly than their peers are more likely than those who develop at both an average age and average speed to engage in risky behaviors, such as drinking alcohol or using tobacco or illegal drugs (Haynie, 2003). Adolescents who largely associate with individuals who frequently engage in risky behaviors are also at a higher risk for involvement in these behaviors (Cavanagh, 2004). Additionally, teens who report low levels of parental supervision, high levels of autonomy, or conflictual relationships with their parents have also been shown to engage more frequently in risky behaviors than those teens who report cohesive relationships with their parents (Haynie, 2003).

Furthermore, those adolescents whose personalities are high on the NEO-FFI (Costa & McCrae, 1992) Extraversion scale are more likely than those whose personalities are not high on this domain to engage in risky behaviors, while those whose personalities are
found to be low on the Conscientiousness scale of this inventory are less likely than others to partake in such behaviors. Research exploring the relationship between a teen’s level of Neuroticism and his or her engagement in risky behaviors, however, is conflicting, with studies pointing to both positive and negative correlations (Essau, 2004; Junger et al., 2001; and Laak et al., 2003). While these factors all influence adolescent risky behavior in some fashion, it is unknown to what extent these variables either individually or collectively influence adolescent rebellious behaviors.

Therefore, the purpose of the present study was to explore further these factors that influence risky behaviors. Specifically, this study aimed to determine which of the explored factors (levels of trust, communication, and alienation within family and peer attachments; pubertal development; and the personality factors of Neuroticism, Extraversion, and Conscientiousness) had the greatest influence on an adolescent’s level of engagement in risky behaviors.

_Hypotheses and Research Questions_

Research Question 1: Is pubertal development significantly related to adolescent engagement in rebellious risky behaviors?

H1: A significant positive correlation between the level and degree of pubertal development and adolescent risky behaviors would emerge.

Research Question 2: Are the personality factors of Extraversion, Conscientiousness, and Neuroticism significantly related to adolescent engagement in rebellious risky behaviors?

H2: A significant positive correlation between the level of Extraversion and adolescent risky behaviors would emerge.
H3: A significant negative correlation would emerge between Conscientiousness and adolescent risky behaviors.

H4: A significant negative correlation would emerge between Neuroticism and adolescent risky behaviors.

Research Question 3: Are parental attachment factors of alienation, trust, and communication significantly related to adolescent engagement in rebellious risky behaviors?

H5: A significant positive correlation would emerge between the parental attachment factor of alienation and adolescent engagement in rebellious risky behaviors.

H6: A significant negative correlation would emerge between the parental attachment factor of trust and adolescent risky behaviors.

H7: A significant negative correlation would emerge between the parental attachment factor of communication and adolescent risky behaviors.

Research Question 4: Are peer attachment factors of alienation, trust, and communication significantly related to adolescent engagement in rebellious risky behaviors?

H8: A significant positive correlation would emerge between the peer attachment factor of alienation and adolescent engagement in rebellious risky behaviors.

H9: A significant negative correlation would emerge between the peer attachment factor of trust and adolescent risky behaviors.

H10: A significant negative correlation would emerge between the peer attachment factor of communication and adolescent risky behaviors.
Research Question 5: Which variable or combination of the above variables most strongly influenced adolescent engagement in rebellious risky behaviors?

H11: No specific hypothesis was made.
Methods

Participants

Forty-seven male and 61 female adolescents (Mean age = 15.86, SD = 1.36) from the 9th through 12th grades served as participants in the present study. All participants were solicited from local schools as well as through verbal solicitation throughout the community. The majority of participants reported being Caucasian and living with married, middle-class parents. For more information regarding the demographics of the participants, see Table 1. Participants received a $5.00 gift card from Blockbuster Video for their participation.
Table 1

*Participant Demographics*

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<tr>
<th>Source</th>
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</tr>
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Measures

Informational Questionnaire (Appendix A). Each participant completed an informational questionnaire that was developed specifically for the current study. This questionnaire provided the researcher with descriptive information such as participants’ race, age, grade level, and general academic performance. The participants were also asked to indicate the marital status of their parents and to specify with which parent he or she then resided. Also, this questionnaire examined the leisure activities of the teens, such as their movie and music preferences, their television viewing tendencies, and their Internet usage. Information from this questionnaire was used primarily for descriptive purposes.

Adolescent Risk-Taking Questionnaire. The Adolescent Risk-Taking Questionnaire (ARQ; Gullone & Moore, 2000) is a two-part, self-report measure that was implemented to assess the amount and perceived risk of risk-taking behaviors in which each adolescent had engaged. The ARQ is composed of two questionnaires, the Risk Beliefs Questionnaire and the Risk Behavior Questionnaire. The Risk Beliefs Questionnaire explores the participants’ beliefs regarding the riskiness of various risky behaviors. The Risk Beliefs Questionnaire requires adolescents to indicate the level of risk they perceive in various behaviors using a five-point Likert scale ranging from “Extremely Risky” to “Not At All Risky.” The Risk Behavior Questionnaire explores participants’ level of actual engagement in the risky behaviors, ranging from rollerblading and martial arts to drinking and driving and having unprotected sex. On the Risk Behavior Questionnaire, participants indicate their level of personal engagement in
these same behaviors, using a five-point Likert scale ranging from “Never Done,” to “Done Very Often.”

For both questionnaires, a total raw score is yielded for each of the four subscales of risky behaviors, including Thrill-Seeking Behaviors, Rebellious Behaviors, Reckless Behaviors, and Antisocial Behaviors. As described previously in the document, Thrill-Seeking Behaviors (such as involvement in extreme sports) are, in this model, considered to be positive risk-taking behaviors, while Rebellious Behaviors (such as smoking and underage alcohol consumption), Reckless Behaviors (such as driving under the influence of alcohol), and Antisocial Behaviors (such as cheating and overeating) are said to involve negative risk-taking. Scores can range from 0 to 88 with higher scores on both questionnaires indicating higher engagement (behavior questionnaire) or greater perceptions of risk (belief questionnaire).

The ARQ has been found to have sound psychometric properties, with Cronbach’s alpha coefficients of 0.97 and 0.99 for the overall risk judgment and behavior scales. Alpha coefficients range between 0.86 and 0.96 for the risk judgment subscales and between 0.87 and 0.96 for the risk behavior subscales. The questionnaire has good test-retest reliability over a one-week period, with 0.79 having been reported for risk judgments and 0.78 for risk behaviors (Gullone & Moore, 2000). For the present study, each participant’s total raw score on the Rebellious Behavior subscales of the Risk Behavior Questionnaire was used as a measurement of their level of engagement in these risky behaviors. This was used as the dependent variable for this study. For the present study, each participant’s total raw score on the Rebellious Behavior subscales of the Risk
Behavior Questionnaire was used as a measurement of their level of engagement in these risky behaviors. This was used as the dependent variable for this study.

*Modified NEO Five Factor Inventory.* To gather information regarding the adolescents’ personality traits, each participant was administered a modified version of the NEO-Five Factory Inventory, an abbreviated version of the NEO Personality Inventory-Revised (Costa & McCrae, 1992). The NEO-FFI, a 60-item questionnaire, is a self-report measure of five personality characteristics and provided the researcher with information regarding the participants’ levels of the personality traits of Neuroticism, Extraversion, Openness, Agreeableness, and Conscientiousness. Each item requires the participant to answer on a Likert scale with a response of “Strongly Agree,” “Agree,” “Not Sure or Neutral,” “Disagree,” or “Strongly Disagree.” A raw score for each of the five domains was obtained by adding the participant’s item responses for that domain. These total raw scores were then converted into T-scores with a mean of 50 and a standard deviation of 10. Higher T-scores indicate that the participant possesses a higher level of that specific personality trait, such that an individual with a high T-score on the Extraversion scale is said to be highly extraverted.

The NEO-FFI scales have been found to have adequate convergent and divergent validity, with correlations ranging from .75 to .89 with the NEO-PI-R factors. Cronbach’s alpha coefficients ranging from .74 to .89 indicate that the NEO-FFI has good internal consistency. Additionally, test-retest reliability reportedly ranges between 0.75 and 0.83 for the individual scales (Costa & McCrae, 1992). Although the NEO-FFI was developed for the assessment of adult personality traits, and was thus normed on adults, Markey et al. (2003) found internal reliability coefficients to range from .41 to .74
for the five scales when a modified version of the inventory was completed by adolescents. In the modified version of this inventory, 44 of the 60 items were reworded to compensate for differences in reading levels. For example, the word “courteous” was replaced with the word “polite” on item number four. Items modified were numbers 3-6, 9-16, 18-21, 23-26, 29-31, 33, 35, 37-40, 42-51, 53, 55-56, and 58-59 (Markey et al., 2003). For the present study, the T-scores for the Neuroticism, Extraversion, and Conscientiousness scales were examined, serving as independent variables.

**Inventory of Parent and Peer Attachment.** The Inventory of Parent and Peer Attachment (IPPA; Armsden & Greenberg, 1987) was utilized to explore the adolescents’ familial and social relationships. This inventory is divided into two scales: parent and peer. The first portion of the questionnaire addresses issues such as the teens’ perception of their parents’ level of respect for and acceptance of the adolescent. This portion also examines whether or not the participant relies on his or her parent(s) when he or she is upset or in need of emotional support, giving a basic understanding of the teen’s level of attachment with his or her parent(s). The second part of this inventory examines the teen’s social or peer attachments. This assesses his or her emotional attachment to friends. The questions on the peer portion of this questionnaire are quite similar to those asked in regards to parent attachment in order to determine whether the participant’s friends are supportive, respectful, and understanding of the teen. The parent and peer scales of this inventory include 28 and 25 items, respectively. Participants rate their agreement with each statement on a five-point Likert scale ranging from “Almost Always” to “Almost Never.”
Responses were categorized separately for parent and peer attachment into three sub-scales each: trust, which measures levels of understanding and respect; communication, which measures the extent and quality of verbal communication; and alienation, which measures anger, hostility, and isolation. Every participant received a total raw score for each of these scales based on his or her responses to the items. Higher scores indicate a greater standing on that factor; for instance, an adolescent who scores high on the trust scale on the parent attachment portion of the inventory is said to have a high level of trust with his or her parent.

The IPPA has been shown to have good internal consistency, with Cronbach’s alpha coefficients ranging from .72 to .91 for the three sub-scales. Test-retest reliability over a three-week period yielded correlation coefficients ranging from .86 for peer attachment to .93 for parent attachment (Armsden & Greenberg, 1987). For the present study, each subscale score was used, serving as independent variables.

*Self-Administered Rating Scale for Pubertal Development.* In order to determine the participants’ levels of pubertal development, the Self-Administered Rating Scale for Pubertal Development (Carskadon & Acebo, 1993) was completed by each participant. Because males and females experience quite different changes during puberty, both a male and a female version of this questionnaire have been created. Both the male and female versions of this questionnaire ask the participant to indicate his or her levels of development in terms of growth in height, growth of body hair, and changes in skin. Females are additionally asked to rate their growth of breasts, whether or not they have had their first menstrual period, and, if so, at what age. Males are asked to indicate their growth of facial hair and whether their voices have begun to deepen. On both the female
and male versions of this inventory, participants are given response options and asked to choose the response which most accurately describes their level of development in that area, such as (in reference to the teen’s growth in height), “has not yet begun to spurt,” “has barely started,” “is definitely underway,” “seems completed,” and “I don’t know.” Responses were given point values, where “has not yet begun to spurt” was coded as 1, and response values increase as responses near “seems completed,” which was coded as 4. Participants’ overall levels of pubertal development were calculated by adding the point values given to their responses, where scores of 3 or below indicate “pre-pubertal development,” scores of 4 to 5 indicate “early pubertal development,” scores of 6 to 8 indicate “mid-pubertal development,” scores 9 to 11 indicate “late pubertal development,” and scores of 12 or greater indicate “post pubertal development.” For the purposes of the present study, each participant’s level of pubertal development was determined using this rating scale.

The Self-Administered Rating Scale for Pubertal Development has adequate reliability. It has been found to have internal consistency coefficients of .54 to .67, and correlations with the commonly utilized Tanner Growth Ratings Scales (Tanner, 1962) yielded coefficients ranging from .51 to .80 (Brooks-Gunn, Warren, Rosso, & Gargiulo, 1987). The total pubertal development score was used as an independent variable.

Procedure

After obtaining approval from the Human Subjects Review Board of Western Kentucky University (Appendix B) and from participating school boards, participants were recruited through various local school systems as well as through solicitations throughout the community. For students solicited through schools, teachers gave possible
participants a brief written explanation of the study and a consent form (Appendix C) that was completed by each teen’s parent. The students who returned the completed consent form and address form were then notified of a particular date and time to complete questionnaires at school. Participants who responded to the solicitations throughout the community were contacted by the researcher and arranged a time to complete the questionnaires at a designated location. Consent was obtained from parents and assent from the adolescents. As part of the consent process, all participants were reminded that they could withdraw from the experiment at any time without penalty. This study was part of a larger study being conducted. At the time of data collection, participants completed, in the presented order, the following questionnaires: the Self-Administered Rating Scale for Pubertal Development (Carskadon & Acebo, 1993), the informational questionnaire, the Risk Beliefs Questionnaire of the Adolescent Risk Taking Questionnaire (ARQ; Gullone, Moore, Moss, & Boyd, 2000), Rotter’s Locus of Control Scale (for the purposes of a corresponding study; Rotter, 1966), the Inventory for Parent and Peer Attachment (IPPA; Armsden & Greenberg, 1987), the Family Environment Scale (for the purposes of a corresponding study; Moos & Moos, 2002) a modified version of the NEO Five-Factor Inventory (NEO-FFI; Costa & McCrae, 1992), the Arnett Inventory of Sensation Seeking (for the purposes of a corresponding study; Arnett, 1994) and the Risk Behavior Questionnaire of the Adolescent Risk Taking Questionnaire (ARQ; Gullone, Moore, Moss, & Boyd, 2000). After completing the questionnaires, participants submitted their questionnaires to the investigator. Participants were given a $5.00 gift card from Blockbuster Video as an incentive for participation. Upon completion of the questionnaires, participants were debriefed with a typed debriefing
statement. The results of the study have been made available to those adolescents and parents who completed a request form.
Results

Descriptive Analyses

The independent variables for the present study included the level of pubertal development (Total Pubertal Development Score from PDS), level of Conscientiousness, Extraversion, and Neuroticism (Conscientiousness T-score, Extraversion T-score, and Neuroticism T-score from NEO-FFI), parental attachment styles (Total Raw Scores on Parental Trust, Communication, and Alienation scales on the IPPA), and peer attachment styles (Total Raw Scores on Peer Trust, Communication, and Alienation scales on the IPPA). The dependent variable for the present study was adolescent engagement in rebellious risky behaviors (Total Raw Score on the Rebellious Behaviors subscale of the Risk Behavior Questionnaire). For descriptives of these variables, see Table 2.
Table 2

*Descriptive Statistics of Independent and Dependent Variables*

<table>
<thead>
<tr>
<th>Variable</th>
<th>Mean</th>
<th>Standard deviation</th>
<th>Range</th>
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</thead>
</table>

**Independent Variables**

<table>
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<th>Variable</th>
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**Dependent Variable**

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<sup>a</sup>Information was gathered via the Modified NEO Five Factor Inventory (Costa & McCrae, 1992).  
<sup>b</sup>Information was gathered via the Self-Administered Rating Scale of Pubertal Development (Carskadon & Acebo, 1993).  
<sup>c</sup>Information was gathered via the Inventory of Parent and Peer Attachment (Armsden & Greenberg, 1987).  
<sup>d</sup>Information was gathered via the Adolescent Risk-Taking Questionnaire (Gullone & Moore, 2000).
Main Analyses

Results of the main analyses will be discussed below by research question. Pearson product moment correlations were run in order to test the hypotheses under Research Questions 1, 2, 3, and 4.

Research Question 1 asked if pubertal development was significantly related to adolescent engagement in rebellious risky behaviors. Hypothesis 1, which predicted that a significant positive correlation would emerge between the Total Pubertal Development Score and the Rebellious Behaviors Total Raw Score, was supported when a significant yet weak positive correlation emerged between these factors (r = .257, p = .008), indicating that the more physically mature an adolescent is, the greater the likelihood that he or she will engage in rebellious risky behaviors.

Research Question 2 asked if the personality factors of Extraversion, Conscientiousness, and Neuroticism were significantly related to adolescent engagement in rebellious risky behaviors. Hypothesis 2 predicted that a significant positive correlation would emerge between the Extraversion T-score and the Rebellious Behaviors Total Raw Score but was not supported, as no significant correlation emerged between these factors (r = -.082, p = .408). Hypothesis 3 predicted that a significant negative correlation would emerge between the Conscientiousness T-score and the Rebellious Behaviors Total Raw Score. This hypothesis was supported when a significant yet weak negative correlation emerged between these factors (r = -.275, p = .004), suggesting that adolescents who are strong-willed, purposeful, and determined are less likely to engage in rebellious risky behaviors than are those adolescents who do not possess such attributes. Hypothesis 4 predicted that a significant negative correlation would emerge between the Neuroticism T-score and the Rebellious Behaviors Total Raw Score. This hypothesis was not
supported, as no significant correlation emerged between these factors \( r = .022, p = .852 \).

Research Question 3 asked if the parental attachment factors of anger, trust, and communication were significantly related to adolescent engagement in rebellious risky behaviors. Hypothesis 5 predicted that a significant positive correlation would emerge between the Parental Alienation Raw Score and the Rebellious Behaviors Total Raw Score. A significant yet weak positive correlation emerged between these factors \( r = .244, p = .014 \), indicating that adolescents who feel alienated from their parents are more likely to engage in rebellious risky behaviors than are their peers who do not report these alienated relationships, therefore the hypothesis was supported. Hypothesis 6 predicted that a significant negative correlation would emerge between the Parental Trust Raw Score and the Rebellious Behaviors Total Raw Score. The hypothesis was supported when a significant and moderate negative correlation emerged between these factors \( r = -.425, p = .000 \), suggesting that adolescents with heightened levels of mutual respect with their parents are less likely to engage in rebellious risky behaviors than those adolescents who experience low levels of parental trust. Hypothesis 7 predicted that a significant negative correlation would emerge between the Parental Communication Raw Score and the Rebellious Behaviors Total Raw Score. This hypothesis was supported when a significant and moderate negative correlation emerged between these factors \( r = -.347, p = .000 \), suggesting that adolescents with heightened levels of verbal communication with their parents are less likely to engage in rebellious risky behaviors than those adolescents who experience low levels of verbal communication with parents.
Research Question 4 asked if peer attachment factors of anger, trust, and communication were significantly related to adolescent engagement in rebellious risky behaviors. Hypothesis 8 predicted that a significant positive correlation would emerge between the Peer Alienation Raw Score and the Rebellious Behaviors Total Raw Score. This hypothesis was not supported as no significant correlation emerged between these factors ($r = -.106, p = .286$). Hypothesis 9 predicted that a significant negative correlation would emerge between the Peer Trust Raw Score and the Rebellious Behaviors Total Raw score. This hypothesis was not supported as no significant correlation emerged between these factors ($r = .009, p = .929$). Hypothesis 10 predicted that a significant negative correlation would emerge between the Peer Communication Raw Score and the Rebellious Behaviors Total Raw score. This hypothesis was not supported as no significant correlation emerged between these factors ($r = .124, p = .215$).

Additional correlations can be found in Table 3.
Table 3

*Pearson Product Moment Correlations of Independent Variables and Dependent Variable*

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<tbody>
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</tr>
<tr>
<td>2. Extraversion</td>
<td>.279**</td>
<td>---</td>
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<td></td>
<td></td>
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<tr>
<td>3. Neuroticism</td>
<td>-.186</td>
<td>-.350**</td>
<td>---</td>
<td></td>
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<td></td>
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<tr>
<td>4. Pubertal Development</td>
<td>-.099</td>
<td>.001</td>
<td>-.138</td>
<td>---</td>
<td></td>
<td></td>
<td></td>
<td></td>
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</tr>
<tr>
<td>5. Parental Trust</td>
<td>.362**</td>
<td>.381**</td>
<td>-.242**</td>
<td>-.051</td>
<td>---</td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>6. Parental Communication</td>
<td>.434**</td>
<td>.471**</td>
<td>-.180</td>
<td>-.183</td>
<td>.788**</td>
<td>---</td>
<td></td>
<td></td>
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<tr>
<td>7. Parental Alienation</td>
<td>-.368**</td>
<td>-.400**</td>
<td>.391**</td>
<td>.093</td>
<td>-.789**</td>
<td>-.734**</td>
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</tr>
<tr>
<td>8. Peer Trust</td>
<td>.126</td>
<td>.134</td>
<td>-.233*</td>
<td>-.105</td>
<td>.215*</td>
<td>.113</td>
<td>-.189</td>
<td>---</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>9. Peer Communication</td>
<td>.114</td>
<td>.207*</td>
<td>-.127</td>
<td>-.087</td>
<td>.044</td>
<td>.159</td>
<td>-.065</td>
<td>.818**</td>
<td>---</td>
<td></td>
<td></td>
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<tr>
<td>10. Peer Alienation</td>
<td>-.135</td>
<td>-.102</td>
<td>.442**</td>
<td>.033</td>
<td>-.143</td>
<td>-.118</td>
<td>.261**</td>
<td>-.672**</td>
<td>-.507**</td>
<td>---</td>
<td></td>
</tr>
<tr>
<td>11. Rebellious Behaviors</td>
<td>-.275**</td>
<td>-.082</td>
<td>.022</td>
<td>.257**</td>
<td>-.425**</td>
<td>-.347**</td>
<td>.244*</td>
<td>.009</td>
<td>.124</td>
<td>-.106</td>
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</tr>
</tbody>
</table>

* p < .05 (two-tailed). ** p < .01 (two-tailed).
In order to answer Research Question 5, the independent variables that were found to be significantly correlated with the Rebellious Behaviors Total Raw Score (the Total Pubertal Development Score, the Conscientiousness T-score, the Parental Trust Raw Score, the Parental Alienation Raw Score, and the Parental Communication Raw Score) were entered into a forward stepwise multiple regression. Regression results indicate an overall model of two factors (Parental Trust Raw Score and Total Pubertal Development Score) significantly predicted the Rebellious Behaviors Total Raw Score, $R^2 = .25$, $R^2_{adj} = .23$, $F(2, 93) = p < .05$. This model accounted for 24.7% of the variance in Rebellious Behaviors. A summary of the regression model is presented in Table 4. Overall, the Parental Trust Raw Score alone was found to account for 20% of the variance of the Rebellious Behaviors Total Raw Score, while a model combining the Parental Trust Raw Score and the Total Pubertal Development Score was found to account for 25% of this variance.
Table 4

*Regression Model for the Prediction of Rebellious Behaviors Total Raw Score*

<table>
<thead>
<tr>
<th>Step</th>
<th>$R$</th>
<th>$R^2$</th>
<th>$R^2_{adj}$</th>
<th>$\Delta R^2$</th>
<th>$F_{chg}$</th>
<th>$p$</th>
<th>df1</th>
<th>df2</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Parental Trust Raw Score</td>
<td>.45</td>
<td>.20</td>
<td>.19</td>
<td>.20</td>
<td>.00</td>
<td>.00</td>
<td>1</td>
<td>94</td>
</tr>
<tr>
<td>2. Total Pubertal Development Score</td>
<td>.50</td>
<td>.25</td>
<td>.23</td>
<td>.05</td>
<td>.02</td>
<td>.01</td>
<td>1</td>
<td>93</td>
</tr>
</tbody>
</table>
*Exploratory Analyses*

A One-way Analysis of Variance was run in order to examine whether there were significant differences between the levels of rebellious behavior based on gender and grade. No significant difference in level of engagement in these behaviors emerged between males ($m = 11.22, sd = 4.48$) and females ($m = 9.98, sd = 4.57$, $F(1, 107) = 3.30, p = .072$). A significant difference did emerge, however, in the level of rebellious behaviors between grade levels ($F(3, 107) = 7.30, p = .000$). Tukey post hoc analyses revealed that the significant differences existed between ninth and twelfth graders ($m_d = 4.36, p = .002$). Twelfth graders endorsed the greatest frequency of engagement in rebellious behaviors ($m = 13.31, se_m = 0.85$), followed by tenth graders ($m = 12.92, se_m = 1.69$), then eleventh graders ($m = 10.65, se_m = 0.71$), while ninth graders reported engaging in the least amount of risky behaviors ($m = 8.58, se_m = 0.65$). See Table 5 for the results of these tests of between-subjects effects.
Table 5

*Tukey Post Hoc Analyses of Differences Between Grade Levels and Gender*

<table>
<thead>
<tr>
<th>Source</th>
<th>Type III sum</th>
<th>df</th>
<th>Mean square</th>
<th>F</th>
<th>p</th>
</tr>
</thead>
<tbody>
<tr>
<td>Grade Level</td>
<td>373.69</td>
<td>3</td>
<td>124.57</td>
<td>7.30</td>
<td>.00</td>
</tr>
<tr>
<td>Gender</td>
<td>56.29</td>
<td>1</td>
<td>56.29</td>
<td>3.30</td>
<td>.07</td>
</tr>
<tr>
<td>Error</td>
<td>1690.44</td>
<td>99</td>
<td>17.08</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>14019.00</td>
<td>107</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Corrected Total</td>
<td>2190.73</td>
<td>106</td>
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</tbody>
</table>
Discussion

The purpose of the current study was to further explore several factors collectively that have been shown through previous research to influence engagement in rebellious risky behaviors in adolescents. Specifically, this study aimed to determine which of the explored factors (levels of trust, communication, and alienation within family and peer attachments; pubertal development; and the personality factors of Neuroticism, Extraversion, and Conscientiousness) had the greatest influence on adolescent engagement in rebellious risky behaviors. In exploring these relationships, several questions were posed and answered.

The first research question in the present study asked if an adolescent’s level of pubertal development was significantly related to his or her engagement in rebellious risky behaviors. Previous studies in this area have found that a relationship exists between these variables, such that individuals who physically develop more quickly than their average age-mates are more likely to engage in risky behaviors than are average developers (Cavanagh, 2004; Essau, 2004; Haynie, 2003; Markey et al., 2003; Patton et al., 2004; Steinberg et al., 2001). Results of the present study support the findings of previous research findings that adolescents who enter puberty at younger than average ages are more likely than their average peers to engage in rebellious risky behaviors. For example, a 13-year-old who has completed pubertal growth is more likely to engage in rebellious risky behaviors (such as using drugs and alcohol) than is a 13-year-old who is in the early stages of puberty. Multiple theories exist to explain this relationship. For instance, some research has suggested that the impact of the stress that accompanies pubertal development may lead adolescents to engage in various types of risky behaviors,
thus those who enter puberty before their peers are more likely than those peers to engage in such behaviors (Haynie, 2003). Other research has suggested that changes that occur within the parent/child relationship during pubertal development may lead to strained relationships and low levels of supervision, which may in turn lead to an increase in adolescent rebellious behaviors (Cavanagh, 2004).

The present study also examined whether the personality factors of Extraversion, Conscientiousness, and Neuroticism were significantly related to an adolescent’s engagement in rebellious risky behaviors. Previous research on the relationships between personality factors and risky behaviors has yielded some contradicting results. Although some studies have concluded that significant positive relationships exist between the personality factor of Extraversion and risky behaviors (Essau, 2004; Eysenck, 1964, 1976, 1985, as cited in Laak et al., 2003; Gullone & Moore, 2000), several additional studies have concluded that no such relationship exists (Heaven, 1996, as cited in Laak et al., 2003; Laak et al., 2003; Markey et al., 2003). The results of the present study supported that research that has found no significant relationship to exist between Extraversion and adolescent engagement in rebellious risky behavior. One possible explanation for this difference points to the contradicting findings of previous studies in the area of Extraversion and adolescent engagement in risky behaviors. To determine what sort of relationship, if any, exists between Extraversion and adolescent engagement in rebellious risky behaviors, additional research should be conducted.

Conflicting results have been found regarding the relationship between Neuroticism and risky behaviors, as well: while some studies have a found a significant negative relationship between these factors (Essau, 2004), others have found that a
positive relationship exists (Eysenck, 1964, 1976, 1985, as cited in Laak et al., 2003; Heaven, 1996, as cited in Laak et al., 2003), yet others have found no relationship at all (Gullone & Moore, 2000; Laak et al., 2003; Markey et al., 2003). The results of the present study supported some research in this area but did not support all studies, as no significant relationship emerged between Neuroticism and adolescent engagement in rebellious risky behavior. One possible explanation for this difference points to the contradicting findings of previous studies in the area Neuroticism and adolescent engagement in risky behaviors. Because such contradictory findings are prevalent in this area, more research is needed in exploring the possible relationship between Neuroticism and adolescent engagement in rebellious risky behaviors.

Studies generally conclude that a negative relationship exists between Conscientiousness and engagement in rebellious risky behaviors, such that as one’s level of Conscientiousness increases, his or her likelihood of engagement in rebellious risky behaviors decreases (Essau, 2004; Junger; 2001; Laak et al., 2003). The present study detected a significant negative relationship between an adolescent’s level of Conscientiousness and his or her engagement in rebellious risky behaviors, supporting the findings of most previous research in regards to these factors (Essau, 2004; Junger; 2001; Laak et al., 2003). This relationship suggests that adolescents who are strong-willed and determined are less likely to engage in rebellious risky behaviors than are their peers who are less structured.

The third research question of the present study asked if the parental attachment factors of alienation, trust, and communication were significantly related to adolescent engagement in rebellious risky behaviors. Previous research has found that adolescents
who describe their relationships with parents to be conflictual or argumentative are more likely to engage in risky behaviors than those who report non-argumentative relationships. Additionally, those who are granted higher levels of autonomy are also more likely to engage in these behaviors than their peers with more involved parents (Haynie, 2003). The results of the present study indicate that, in regards to parent/teen relationships, minimal amounts of anger, high levels of trust, and open and honest communication lessen the likelihood that the adolescent will engage in rebellious risky behaviors. Adolescents, then, who consider their relationships with their parents to be non-conflictual, open, honest, and cohesive are less likely to become involved in rebellious risky behaviors than are those who do not report such relationships. These findings are congruent with the results of previous research in this area, which strongly support the notion that parental attachment factors play a large role in adolescent engagement in rebellious risky behaviors (Bronte-Tinkew et al., 2004; Haynie, 2003).

Haynie (2003) points to the possible link between the changes in parent/teen relationships that often occur when the child enters puberty and suspects that many parents become more lenient and relationships become more conflictual during this time. Regardless, it is important to consider the implications of this finding: parents’ relationships with their teenagers greatly impact the teens’ involvement in risky behaviors.

The present study also asked if the peer attachment factors of alienation, trust, and communication were significantly related to adolescent engagement in rebellious risky behaviors. Limited research has been conducted on these specific factors; however, a study by Chapple (2005) concluded that teens who experience high levels of peer rejection are more likely than average to engage in risky behaviors. The results of the
present study, however, indicate that there is no relationship between levels of peer alienation, trust, or communication and adolescent involvement in rebellious risky behaviors. Although peer rejection and peer alienation may be related concepts, the two differ in that peer rejection indicates that the teen is not accepted among his or her peers, while peer alienation includes rejection, but also the elements of anger and hostility. Therefore, it is possible that a correlation exists between peer rejection and engagement in risky behaviors but does not exist between peer alienation and engagement in these behaviors. Although peer trust and communication may not be significant predictors of adolescent involvement in risky behaviors, other elements of peer relationships may serve as a large influence on a teen’s decision to engage in rebellious risky behaviors in ways in which the present study did not observe. For instance, an adolescent with friends who frequently engage in rebellious risky behaviors may be more likely to engage in similar behaviors than would be a teen without such friends, a possibility not examined in the present study.

The final question posed by the current study asked which of the explored variables most strongly influenced adolescent engagement in rebellious risky behaviors. Because no known study has examined the combination of the factors included in the present study, a hypothesis was not formed regarding this question. A stepwise multiple regression concluded that parental trust was the strongest predictor of adolescent engagement in rebellious risky behaviors, where teens with high levels of parental trust were least likely to engage in these behaviors. Furthermore, a combination of parental trust and pubertal development was able to give an even stronger prediction of engagement in rebellious risky behaviors. The combination of parental trust and pubertal
development, however, only accounted for 24.7% of the variance, indicating that there are other factors contributing to adolescent engagement in rebellious risky behaviors. Such factors may include the adolescent’s engagement in other risky behaviors, such as antisocial, thrill-seeking, and reckless behaviors; the level of involvement in risky behaviors of his or her friends; the adolescent’s socioeconomic status; the teen’s exposure to drugs and alcohol; and his or her self-image or self-esteem. While these factors were not included in the current study, further exploration in these areas would provide a much-needed addition to the currently available research on the factors of influence on risky behaviors in adolescence.

Exploratory analyses were run in order to examine whether significant differences emerged between the levels of rebellious behaviors based on grade level or gender. No significant differences emerged between genders in the level of engagement in rebellious risky behaviors. This finding was in agreement with previous research that has found that, although males are more likely than females to engage in antisocial risky behaviors, the majority of both male and female adolescents have engaged in multiple rebellious risky behaviors (Barnes et al., 2002; Kann et al., 2000).

A significant difference in levels of engagement in rebellious behaviors did emerge, however, among grade levels. Specifically, adolescents in the twelfth grade were significantly more likely to engage in rebellious behavior than were those students in the ninth grade, although overall, participants in all grade levels reported low to moderate engagement in these behaviors. There are several possible explanations for this difference. For instance, because the present study and previous research have shown that adolescents who are physically mature engage in more risky behaviors than those who
are not physically mature, it is understandable that older adolescents or those in higher grade levels would be more likely to engage in risky behaviors than younger adolescents in lower grade levels (Cavanagh, 2004; Essau, 2004; Haynie, 2003; Markey et al., 2003; Patton et al., 2004; Steinberg et al., 2001). It is also plausible that adolescents in the twelfth grade may be more likely to associate with older adolescents and thus may be more likely to engage in the adult-like rebellious behaviors of their young adult friends, such as consuming alcohol or using tobacco or other drugs, than ninth graders may be. Furthermore, adolescents in the twelfth grade may have easier access to alcohol, tobacco, and drugs than ninth graders do, and may therefore be more likely to use such substances. Future studies should be conducted to understand better the emergence of this difference in rebellious behaviors between grade levels. Understanding which groups of adolescents are at greatest risk of engagement in these behaviors will allow prevention and treatment programs to be tailored to these individuals. Additionally, because the participants of the present study overall reported low to moderate levels of involvement in these behaviors, future research should examine populations with higher levels of engagement in these behaviors to better understand those adolescents who more frequently engage in rebellious behaviors.

Because many factors examined in the present study have not been researched in depth, it would be of great benefit to the field for future research to explore the influences of peer rejection, alienation, trust, and communication on engagement in rebellious risky behaviors. Also, the influences of pubertal development, parent and peer attachments, and personality characteristics on the remaining three types of risky behaviors (thrill-seeking, antisocial, and reckless) should be examined to better understand the
relationships that exist between these factors of influence and all types of risky behaviors. Future research should also include larger, more diverse population samples in regards to socioeconomic class, race, ethnicity, religious affiliation, and geographic location to address possible generalizability issues.

The present study is valuable in that multiple factors, each of which having been previously examined in separate studies, have been integrated into one study on the influences on adolescent engagement in rebellious risky behaviors. Previous studies have examined the influence of one or two of these factors on risky behaviors. Through combining these factors into one study, a multiple regression was admissible, allowing the most influential factor(s) to be identified. All instruments used in the present study have been found to have valid psychometric properties and are widely accepted in the field as legitimate means of gathering data. Additionally, both male and female adolescents were included in the present study in order to explore any differences that may exist in the involvement in rebellious behaviors among genders. The present study provided clinically significant information that will be useful in developing prevention and treatment programs aimed at those adolescents who are at high risk of engaging in rebellious risky behaviors.

Although all reasonable efforts were made to prevent any weaknesses in the current study, time and financial restraints resulted in three limitations. First, all measures included in the present study were self-report in nature. As such, the indications of the participants may be inaccurate. Next, the results of the present study are not generalizable to all adolescents. The conservative size, homogenous demographic makeup, and reported low to moderate levels of engagement in rebellious risky behaviors of the
sample limit the generalizability of the results of the present study. It is unknown how applicable the results would be for a larger or more diverse population, a population of 13- to 18-year-olds who are not in high school, one of high schoolers not in this age range, or one with high levels of involvement in rebellious risky behaviors. The third and final limitation of the present study regards the variables of interest. Certainly there are factors of influence on adolescent engagement in rebellious risky behaviors that were not examined at length in the present study, such as peer engagement in risky behaviors, amount of time spent with rebellious peers, exposure to risky behaviors at home, school, or in the community, and the perceived consequences of involvement in rebellious risky behaviors. The dependent variable of rebellious risky behaviors, also, could be expanded to encompass all types of risky behaviors, including thrill-seeking, reckless, and antisocial behaviors.

Overall, the present study suggests that pubertal development and parental trust are significant predictors of adolescent engagement in rebellious risky behaviors. Therefore, teens, especially those who are not more physically developed than average, who experience mutual understanding, respect, and trust with parents are less likely than average to engage in behaviors such as drinking alcohol and using drugs. Furthermore, teens who feel that their relationships with their parents are not filled with anger or alienation, those who perceive they have open and positive verbal communication with their parents, and those who are characteristically strong-willed, determined, and reliable are also less likely than average to engage in rebellious risky behaviors. These findings are valuable in that they present evidence of the importance of parental relationships with teens, personality factors, and pubertal development in influencing involvement in
rebellious risky behaviors. This knowledge can be used in identifying those adolescents who may be at-risk for involvement in such behaviors in order to prevent the engagement in risky behaviors and to treat these individuals. In treating rebellious adolescents, it is important to take into consideration the relationship that teen has with his or her parent(s). Because parental attachment factors, particularly parental trust, strongly influence an adolescent’s likelihood of engaging in rebellious behaviors, the parent/teen relationship will likely become a focus in preventing and treating adolescent engagement in such behaviors. Additionally, because pubertal development and grade level also play strong roles in adolescent involvement in rebellious behaviors, these factors should be taken into consideration in prevention and treatment strategies. Although a teen’s pubertal development or grade level cannot be reasonably altered, these factors should be taken into account in explaining such behaviors and also in identifying at-risk youth.
References


Appendix A

Informational Questionnaire
Informational Questionnaire

Please answer each question to the best of your knowledge.

Basic Demographic Information
1. How old are you? _____
2. What grade are you currently in? 9th 10th 11th 12th post high school
3. What type of grades do you typically make? Predominantly As Bs Cs Ds Fs
4. Are your parents:
   a. married
   b. divorced
   c. widowed
   d. separated
   e. never married & not living together
   f. not married but living together
5. Who do you live with the majority of the time?
   a. Biological mother and biological father
   b. Biological mother only
   c. Biological mother and significant other
   d. Biological father only
   e. Biological father and significant other
   f. Adoptive parents
   g. Other (ex. Grandparents, other kin)
6. How would you describe your family based on income?
   a. lower class
   b. middle class
   c. upper class
   d. don’t know
7. What is your race?
   a. Asian
   b. Black/African Decent
   c. East Indian
   d. Latino/Hispanic
   e. Middle Eastern
   f. Native American
   g. Pacific Islander
   h. White/Caucasian
   i. Other
8. Are you involved in activities outside of school (e.g. baseball, etc)? If yes, please list the activities.
   a. No
   b. Yes -_________________________________________
Media
9. On average, how many hours a week do you watch TV?
   a. none
   b. 1-5
   c. 6-10
   d. 11-15
   e. 16 or more
10. What type of TV shows do you watch the most (circle only one category)?
    a. Comedies (Friends, Everybody Loves Raymond)
    b. Drama (Desperate Housewives, ER)
    c. Reality (Survivor, The Bachelor, The Apprentice)
    d. Soap operas (The Bold and the Beautiful, Days of Our Lives)
    e. Action
    f. Sci-Fi
    g. News, Education, and History
11. How many hours a week do you listen to radio/music?
   a. none
   b. 1-5
   c. 6-10
   d. 11-15
   e. 16 or more

12. What type of music do you listen to THE MOST (circle the primary type of music you listen to)?
   a. Rap/Hip hop
   b. Alternative
   c. Country
   d. Classical
   e. Christian, gospel
   f. Rock
   g. Other: ________________________________

13. How many hours a week do you spend on the internet?
   a. none
   b. 1-5
   c. 6-10
   d. 11-15
   e. 16 or more

14. For what purpose do you use the internet? (Circle all that apply)
   a. communication (Email, instant messenger)
   b. Emotional Support from others (My space groups, chat rooms, message boards)
   c. Educational purposes (news, research, reference)
   d. Recreational purposes (games, clubs, interests, entertainment)
   e. Shopping

15. How often do you view magazines?
   a. Everyday
   b. Once a week
   c. Once a month
   d. Once every few months
   e. Once a year
   f. Never

16. What type of magazine do you view the most?
   a. sports
   b. fashion
   c. teen
   d. special interests (Cars, hunting, cooking)
   e. music

Piercing & Tattoos

17. Do you have any tattoos? Yes  No
   If yes, how many?
   Indicate location: Back/Neck  ankle/leg/foot  wrist/arm/hand  body parts that always remain covered
   If yes, how old were you when you got your first tattoo? ___________________________

18. Do you have any piercings (i.e. ears pierced, tongue, etc?) Yes  No
   If yes, please indicate the number at the appropriate location....
   ____nose  ____ear  ____lip  ____tongue  ____eyebrow  ____covered body parts
   If yes, how old were you when you got your first piercing? ___________________________
Development & Friends

19. At what age did you begin puberty? _____

20. How many close friends (those who you spend time with on a regular basis) do you have? _______

21. Do you use media (e.g. chat rooms, message boards) to get emotional support or social interaction?  
   Yes  No

22. Do your friends engage in risky behaviors (e.g. drinking, doing drugs, etc)?  Yes  No

23. How often do you engage in risky behaviors with your friends?  
   1  2  3  4  5
   Never  Seldom  Moderately  Frequently  Almost all the time

Read the following statements and circle the answer that corresponds.

1. I am as smart as other teenagers.  
   Strongly disagree  disagree  agree  strongly agree

2. I am as attractive as other teenagers.  
   Strongly disagree  disagree  agree  strongly agree

3. I am happy with myself as a person.  
   Strongly disagree  disagree  agree  strongly agree

4. I make as good of grades as other students.  
   Strongly disagree  disagree  agree  strongly agree

5. I make friends as easy as other people.  
   Strongly disagree  disagree  agree  strongly agree

6. I am as confident in myself as other people.  
   Strongly disagree  disagree  agree  strongly agree

7. On a scale of 1 to 5, how often do you feel sad or depressed?  
   1  2  3  4  5
   Never  Seldom  Moderately  Frequently  Almost all the time

8. On a scale of 1 to 5, how often do you feel anxious or worried?  
   1  2  3  4  5
   Never  Seldom  Moderately  Frequently  Almost all the time

9. On a scale of 1 to 5, how often do you feel happy and content?  
   1  2  3  4  5
   Never  Seldom  Moderately  Frequently  Almost all the time
Appendix B

Human Subjects Review Board Letter of Approval
The Spirit Makes the Master

In future correspondence please refer to HS07-023, November 9, 2006

Audrey Roach
c/o Dr. Melissa Hakman
Department of Psychology
WKU

Dear Audrey:

Your revision to your research project, "Examination of Factors Influencing Adolescent Risk Behavior," was reviewed by the HSRB and it has been determined that risks to subjects are: (1) minimized and reasonable; and that (2) research procedures are consistent with a sound research design and do not expose the subjects to unnecessary risk. Reviewers determined that: (1) benefits to subjects are considered along with the importance of the topic and that outcomes are reasonable; (2) selection of subjects is equitable; and (3) the purposes of the research and the research setting is amenable to subjects' welfare and producing desired outcomes; that indications of coercion or prejudice are absent, and that participation is clearly voluntary.

1. In addition, the IRB found that you need to orient participants as follows: (1) signed informed consent is required; (2) Provision is made for collecting, using and storing data in a manner that protects the safety and privacy of the subjects and the confidentiality of the data. (3) Appropriate safeguards are included to protect the rights and welfare of the subjects.

Your research amendments therefore meet the criteria of Full Board Review and are approved until September 27, 2007

2. Please note that the institution is not responsible for any actions regarding this protocol before approval. If you expand the project at a later date to use other instruments please re-apply. Copies of your request for human subjects review, your application, and this approval, are maintained in the Office of Sponsored Programs at the above address. Please report any changes to this approved protocol to this office. Also, please use the stamped Informed Consent documents that are included with this letter. A Continuing Review protocol will be sent to you in the future to determine the status of the project.

Sincerely,

Sean Rubino, M.P.A.
Compliance Manager
Office of Sponsored Programs
Western Kentucky University

cc: HS file number Roach HS07-023
cc: Dr. Melissa Hakman
Appendix C

Initial Informational and Consent Packet
Dear Parents,

My name is Audrey Roach, and I am a graduate student currently working toward obtaining my master’s degree in Clinical Psychology at Western Kentucky University. I am working on a research project under the direction of Melissa Hakman, Ph.D. through the Child and Family Research Laboratory. In order for me to obtain information regarding teenager’s understanding of and involvement in risky behaviors and what things contribute to their engagement in such behaviors, I need both male and female adolescents to complete a series of questionnaires. If you are interested in allowing your teenager to participate in this study, please read and sign the attached consent statement which provides more information about the study, including the questionnaires. You also need to complete the request for results form if you would like copies of the overall results. Once these are completed, please return the forms to the main office at the school by **Wednesday, March 21, 2007**. Once it is returned, your teenager will be given the opportunity to complete some questionnaires at a designated date and time in the upcoming weeks under the direction of the researcher.

All information provided by your teenager will be kept confidential and will not be released. **Questionnaires will have participant numbers rather than names on them.** It should be noted that these questionnaires have been used in numerous studies with no significant risk or discomfort. However, if at any point, your teenager should become uncomfortable and decide to discontinue participation, he/she can stop without penalty or prejudice. **This will not affect any services your adolescent may receive from the school or from Western Kentucky University in the future.** All completed questionnaires will be gathered by the researcher or her assistant. Once your teenager completes the questionnaires, he/she will be given a free movie or game rental from Blockbuster Video. If you have any questions, please contact Melissa Hakman, Ph.D. at (270) 745-5435. Your teenager’s participation is greatly appreciated.

Sincerely,

Audrey L. Roach, BA
Informed Consent Statement
Parent Form

Project Title: Examination of Factors Influencing Adolescent Risky Behavior

Researchers: Audrey Roach, B.A.
Melissa Hakman, Ph.D.
Western Kentucky University
Department of Psychology
(270) 745-5435

You are being asked to allow your teenager to participate in a project conducted through Western Kentucky University. The University requires that you give your signed agreement for your teenager to participate in this project.

In the attached letter, you were provided with an explanation of the purpose of the project, what your teenager will have to do, and the potential benefits/risks of participation. During participation, if your teenager should have any questions about the project, he/she may contact me using the contact information which you were provided. A basic explanation of the project is written below. Please read this explanation and contact the researcher with any questions you may have.

A. Purpose: This study examines teenagers’ understanding of and involvement in risky behaviors and what things contribute to their engagement in such behaviors.

B. Procedures: This study will involve completion of forms. Specifically,

1. Your teenager will complete several forms. One will ask questions about his or her risk involvement and perception of these risks. Another will ask questions about sensation seeking. Two forms will ask questions about his or her relationship with family and friends. Another will ask questions about your teenager’s views as to why things happen. Three forms will ask questions about development, personality, and demographic areas such as ethnicity, etc. These will be completed by your teenager with the researcher during school time within the next couple of weeks.

C. Duration of Participation: Your teenager’s participation is completely voluntary and may be ended at any point without penalty or prejudice. This study is designed to last approximately 30 minutes – 1 hour.

D. Confidentiality: All information provided by your teenager will be kept confidential and will not be released. Forms will have numbers, rather than names on them. All information will be kept in a secure place that is open only to the researchers and their assistants. This information will be saved as long as it is useful; typically such information is kept for five years after publication of the results. Results from this study may be presented at professional meetings or in publications. Your teenager will not be identified individually; we will be looking at the group as a whole.

E. Benefits: For participating in this study, your teenager will be given a $5.00 gift card from Blockbuster Video for one free new release video or game rental after he completes the forms. If you are interested, we will send you a copy of the result of the study when it is finished.

F. Discomfort and Risks: The risks for the study are minimal. The forms have been used in previous studies with no harmful effects. As always, your teenager may withdraw at anytime without prejudice or consequence.
I have been fully informed about what is expected of my teenager in this study. I am aware of what my teenager will be asked to do and the benefits of his/her participation. I also understand that it is not possible to know all potential risks in a study, and I believe that reasonable safeguards have been taken to reduce both the known and unknown risks to my teenager. I also understand/agree with the following statements (Please check to note that you agree):

___ I affirm that I am 18 year of age or older.
___ I agree to allow my child, ____________________ , to complete the following questionnaires: The Inventory of Parent and Peer Attachment, the Adolescent Risk Taking Questionnaire, the Arnett Inventory of Sensation Seeking, 2 subscales on the Family Environmental Scale, Rotter’s Locus of Control Scale, informational questionnaire, modified version of the NEO-FFI, and the Pubertal Development Questionnaire at school with the researcher.

I understand that I may contact the researcher at the following address and phone number, should I desire to discuss my teenager’s participation in the study. Melissa Hakman, Ph.D., 256 Tate Page Hall, Department of Psychology, Western Kentucky University, Bowling Green, KY 42101, (270)745-5435. I may also contact Dr. Phillip E. Meyers, Human Protection Administrator at (270) 745-4652. I have read and fully understand this consent form. I sign it freely and voluntarily. A copy of this form will be given to me. I hereby give permission for my teenage child to participate in this study.

_________________________________________  __________________________
Signature of Parent/Legal Guardian                     Date

_________________________________________  __________________________
Witness                     Date

THE DATED APPROVAL ON THIS FORMS INDICATED THAT THIS PROJECT HAS BEEN REVIEWED AND APPROVED BY THE WESTERN KENTUCKY UNIVERSITY HUMAN SUBJECTS REVIEW BOARD.
Dr. Phillip E. Myers, Human Protection Administrator
TELEPHONE: (270) 745-4652
Request for Results Form

____ I am not interested in receiving a copy of the results for this study.

____ I am interested in obtaining a copy of the results for this study.
If so, please provide your mailing address.

Name:  

Address:  

______________________________

______________________________
INFORMED CONSENT STATEMENT
(For minors only)

I, __________________________, understand that my parents have given permission for me to participate in a project that looks at how characteristics about myself, characteristics of my family, characteristics of my friends, and changes in my body that take place during the teen years influence the kinds of things that I do. I will be required to fill out several forms with the researcher on a designated day at school. I understand that this project is under the direction of Dr. Melissa Hakman at Western Kentucky University, and the forms will not be seen by anyone except for Dr. Hakman and/or her research assistants. I also understand that I will be identified by a number, and my name will not be attached to any of the information I provide on the forms. Finally, I understand that I am allowed to stop participating in the project at anytime without penalty nor will it affect any of the services I may receive from Western Kentucky University in the future.

Signature ___________________________ Date ______________________
Witness ___________________________