1-1-2010

Personality And Risk-Taking Behaviors In Emerging Adulthood

Agnes Ward
Wayne State University

PERSONALITY AND RISK-TAKING BEHAVIORS IN EMERGING ADULTHOOD

by

AGNES WARD

DISSERTATION

Submitted to the Graduate School

of Wayne State University,

Detroit, Michigan

in partial fulfillment of the requirements

for the degree of

DOCTOR OF PHILOSOPHY

2010

MAJOR: EDUCATIONAL PSYCHOLOGY

Approved by:

_____
Advisor   Date

_____

_____

_____

DEDICATION

To my mother, Alina Dmochowska, without whom I would not have achieved such big dreams. It was her ambition and courage to immigrate to the United States and give her children the best possible life that allowed me not only to learn a new language, but achieve such a high education. Through watching her life…and death, I have learned what is of real importance in life.

ACKNOWLEDGEMENTS

The dissertation process is one that requires much support and guidance. I have been blessed to have so many people that have offered me these gifts. I would like to thank my dissertation committee chair, Dr. Stephen Hillman. His guidance, encouragement, and support allowed me to produce a much higher quality of work and think much more deeply about the research process. I am also grateful to Dr. Alan Hoffman, Dr. Barry Markman, and Dr. Joseph Fitzgerald for their interest, constructive comments, and sense of humor, which kept me grounded during this process.

A special thanks to Dr. Daniel Stettner, who helped me in finding a participant sample, and whose support and understanding helped me keep my sanity during this dissertation process. I extend my thanks to the professors and study participants who made this research possible. I would also like to thank June Cline for her support.

I would like to thank my wonderful family and friends for their genuine interest, understanding, and encouragement in my endeavors. Thanks to dad for asking how the dissertation was coming along and offering motivation to finish this work. To my brother, Arthur, for helping out during all those times I couldn't tend to dad or other matters due to writing this research. And to my best friend and teacher, my husband Paul, whose help during this process was immeasurable. I could not have completed this work without his guidance and experience. He has been my angel and I am so blessed that he stood by my side to see me through another one of my "first time ever" life experiences. Thank you for your love and support.

TABLE OF CONTENTS

List of Tables

List of Figures

xi

CHAPTER I

INTRODUCTION

Risk-taking Perspectives

One of the biggest risks faced by today's young adults involves choices that they themselves make. Risk-taking behaviors are associated with the use of addictive substances and the probable costs of unprotected sex (Levitt, Selman, & Richmond, 1991). Zuckerman (1979) described risk-taking behavior as the possibility of negative results. Trimpop (1994) further defined risk-taking as "any consciously, or non-consciously controlled behavior with a perceived uncertainty about its outcome, and/or about its possible benefits or costs for the physical, economic or psycho-social well-being of oneself or others" (p.9).

Many perspectives on adolescent risk-taking behaviors exist. Wills, Sandy, and Yaeger (2000) considered physical activity level, negative emotionality, and rigidity as temperament dimensions predictive of substance abuse. Wills et al. (2000) identified the association between temperament and risky behavior as being mediated through self-control. Soothability, dependability, problem solving, and the ability to delay gratification described good self-control. Measures of poor self-control included distractibility, impatience, and impulsiveness (Sher & Trull, 1994). Negative emotionality was associated with poor self-control. In contrast, positive emotionality was associated with good self-control. The authors viewed self-control as a factor in influencing some individuals to engage in high-risk behaviors.

Zuckerman (1971) identified sensation seeking as a predictor of risk-taking behaviors. He identified four factors of sensation seeking: thrill and adventure seeking, experience seeking, disinhibition, and boredom susceptibility. It has been proposed that

individuals who score high on these factors are more likely to engage in high-risk behaviors.

Further, adolescent egocentrism has also been a focus in explaining risk-taking. The egocentrism perspective emphasizes the view of adolescents as unique or special (Greene et al., 2000). The unrealistic self-appraisal has caused some to suggest an association between adolescent egocentrism and risk-taking based upon the belief that adolescents feel negative consequences will not happen to them (Elkind, 1967, 1985). For adolescents, egocentrism occurs as adolescents' transition from formal to concrete operational thought (Greene et al., 2000).

Another view on adolescent risk-taking behavior deals with the problem-behavior perspective. The problem behavior perspective proposed by Jessor and Jessor predicts a propensity to engage in certain deviant behaviors (Irwin & Millstein, 1986). A particular set of attitudes, values, and perceptions are indicative of individuals who engage in risky behaviors. Unconventionality in values signifies adolescents who are at risk for problem behaviors (Lavery, Siegel, Cousins, & Rubovits, 1993). Lavery et al. report that these individuals place less value on academic accomplishments, greater value on independence, value independence over achievement, have greater tolerance of deviance, and are typically lower on religiosity. Overall, a pattern of higher involvement in problem behaviors such as drug use as well as delinquency has been noted, with less involvement in conventional behaviors (Donovan, Jessor, & Costa, 1991).

Furthermore, risk-taking has been theorized as normal and adaptive in adolescence. It has been noted that it is necessary for adolescents to experiment with various roles, as this is a step toward identity formation (Baumrind, 1991; Erikson, 1973). A study by Shedler and Block (1990) found that both excessive experimentation

and total abstinence from the use of substances was correlated with maladaptive personality patterns. Parents allowing for some experimentation with substances had adolescents who were considered healthy. Further, some research reports that casual drug use has not been linked with pathological behaviors (Baumrind, 1991).

One of the most popular perspectives on adolescent risk-taking behavior is the causal model of risk-taking behavior proposed by Irwin and Millstein (1986). This model demonstrates how biological maturation may influence certain psychosocial changes and the beginning stages of engaging in risky behavior. The authors reported that the time biological maturation occurs has a direct influence on adolescents' cognitive scope, perceptions of their own self, perceptions of the social environment, and their personal values. Risk-taking behaviors among adolescents are predicted from these factors. Irwin and Millstein proposed that the adolescents who mature either too early or too late are more likely to engage in high-risk behaviors. These adolescents have been identified as the early maturing females and the late maturing males.

The perspectives identified are useful in understanding risky behaviors among adolescents. However, the perspectives do not give focus to an important factor in the prediction of individuals engaging in risk-taking behaviors – personality. These perspectives also do not take into consideration cognitive appraisals of risk and the degree of engagement in risky behaviors during the particular stage of life between the ages of 18 to 25, termed emerging adulthood.

Personality

McCrae and Costa (1990) proposed that personality characteristics are the fixed, unchangeable parts of the self. The researchers argued that personality traits have a genetic influence and reach complete development in early adulthood. After age 30,

personality traits exhibit fairly little change (McCrae et al., 2000). The five major personality traits are extraversion, agreeableness, conscientiousness, neuroticism, and openness to experience (McCrae & John, 1992).

In contrast, contextualist perspectives consider the social environment to be a determinant of personality traits (Srivastava, John, Gosling, & Potter, 2003). In a study examining the relation between age, gender, and personality traits in a sample of adults ages 21 to 60, Srivastava et al. found that conscientiousness increased mostly during the 20s, while agreeableness increased most strongly during the 30s; and neuroticism decreased with age for females, but not as much for males. With age, openness decreased. Finally, extraversion declined for females, but not males.

Roberts, Caspi, and Moffitt (2001) expressed that, "Personality traits refer to individual differences in the tendency to behave, think, and feel in certain consistent ways" (p. 670). Personality has also been described as "a person's unique and relatively consistent way of feeling, thinking, and behaving" with some characteristics seen as inherited, while others resulting from early experiences (Papalia & Olds, 1995, p.162). Further, personality has been viewed as being composed of consistent patterns of behavior, or the traits of an individual (Watson, Clark, & Harkness, 1994). It is noteworthy that most definitions consider personality as mostly stable, with environmental factors accounting for some degree of influence in personality change.

Personality, Cognitive Appraisals, and Risk-taking

Research has shown that individuals who perceive positive outcomes from engagement in risky behaviors report greater engagement in these behaviors than individuals who tend to perceive negative outcomes (Benthin, Slovic, & Severson, 1993). In a study of risk perception of high school students, Benthin, Slovic, and

Severson found that individuals engaging in risky activities reported that they were aware of the risks involved and were less fearful of the risk. These individuals also reported having more personal control over the risk.

In a study by Stacy, Bentler, and Flay (1994) attitude toward alcohol use and marijuana use predicted behavior. In other words, the expectancies of an effect of a drug were related to the use of the drug. The anticipated positive effects of marijuana have been identified as relaxation/tension reduction, social/sexual facilitation, and perceptual and cognitive enhancement (Schafer & Brown, 1991). Overall, alcohol, marijuana, and cocaine use have been associated with expectations of relaxation and tension reduction. In a sample of emerging adults, Friedman, McCarthy, Bartholow, and Hicks (2007) found that expectancies of alcohol use may contribute to tension reduction as well as hostility even when no actual alcohol consumption occurs. Schafer and Brown (1991) found that college students who did not use marijuana or cocaine expected greater drug consequences. In contrast, those who had frequently used the drugs expected greater positive drug effects.

In a study by Gullone and Moore (2000), adolescents scoring high on traits of agreeableness and extraversion scored low on judging behaviors on the Adolescent Risk-taking Questionnaire (ARQ) as risky. For the most part, the opposite was true for conscientious individuals. Furthermore, the researchers found that frequent engagement in risky behaviors predicted judgment of those behaviors as less likely to be risky. Also, older adolescents were more likely to rate behaviors as less risky and display lower neuroticism scores. The researchers stated that although personality appears to be a strong predictor of risk-taking behaviors, perceptions of risk appear to be even more crucial.

Significance of the Study

Numerous research studies exist focusing on personality and risky behaviors. Studies have concentrated on one or a number of different risky behaviors stemming from early childhood to late adulthood. However, there is no significant amount of research exploring personality, outcome expectancies, and risk-taking behaviors. Research studies have not explored how individuals with different personality traits perceive risky behaviors and the outcomes of those behaviors. The knowledge of these variables in relation to each other is valuable in contributing to the research on personality traits and how they are observed in human actions and human behavior. A plethora of research studies target the adolescent population, but research targeting the specific population of emerging adulthood is far less abundant. This research is important as voluntary participation in risky activities leads to loss of lives each day. High rates of mortality are associated with behaviors such as drinking, unsafe sexual practices, and drug use. Such behaviors tend to increase during the college years, as this is a time of identity exploration and a desire to engage in a variety of experiences (Arnett, 2000).

This study explored personality factors contributing to six risky behaviors: illicit drug use, aggressive/illegal behaviors, risky sexual behaviors, heavy drinking, high-risk sports, and academic/work behaviors in a sample of 18 to 25-year-old college students. During the analysis of this study (Hypothesis 5) students were divided into two groups; 18 to 20-year-olds and 21 to 25-year-olds. Differences in personality traits between these groups were explored. The groups were divided in this way due to the 18 to 20-year-old group being considered less independent than the 21 to 25-year-old age group. This is namely due to factors such as legal drinking age, greater possibility of living out

of the home, greater possibility of finishing undergraduate school, or moving onto graduate school. These factors foster more freedom in the older age group, and therefore possibly contribute to more risk-taking behaviors. Cognitive appraisals as measured by expected risk, expected benefit, and actual involvement of the risky behaviors identified were also explored. Additional variables of focus contributing to the relationship between personality and risky behaviors were religion and locus of control. Irwin and Millstein (1986) proposed that biological maturation affects such factors as adolescents' cognitive scope, self-perceptions, perceptions of the social environment, and personal values, which lead to risk-taking behaviors. The theory of these authors was of focus when considering variables in this study.

Religion is a significant factor in the study of risk-taking due to its role as a preventative factor. A study by Zaleski and Schiaffino (2000) found that college students who have a strong identification with religious doctrine and traditions are likely to engage in less risk-related behaviors. In a study by Dulin, Hill, and Ellingson (2006) the level of activity in religious faith was correlated with abuse of alcohol, where more religious individuals were less likely to abuse alcohol. With regard to personality, religious individuals have been perceived to be more agreeable (Saroglou, Pichon, Trompette, Verschueren, & Dernelle, 2005).

The locus of control one holds, whether internal or external also plays a role in risky behaviors. McIntyre, Saudargas, and Howard (1991) found that an external locus of control significantly predicted pregnancies in adolescence. Crisp and Barber (1995) reported that among adolescents using drugs, those with an internal locus of control were aware that they were taking risks. In contrast, those adolescents with an external locus of control believed they were invulnerable to risk.

Most research does not combine these factors in relation to their contribution to risk-taking behaviors. However, it is important to study whether factors such as religion and locus of control serve as buffers to risky behaviors in emerging adults with personality types that would normally be prone to engage in greater risk.

The period of emerging adulthood is of interest in this study. Arnett (2005) described emerging adulthood as characteristic of five key features: identity explorations, instability, self-focus, transition, and possibilities. During this period of life, various roles are tried and individuals engage in a high rate of risky activities as part of their identity exploration. Arnett (2005) stated that the period of emerging adulthood is the most unstable period in the course of life.

Emerging adulthood is a period where great risk-taking behavior occurs and this is significant as engagement in casual sex, sex without using contraceptives, and sex with many partners increases the risks for sexually transmitted diseases and pregnancy (Hoyle, Fejfar, & Miller, 2000). In addition, substance abuse leads to diseases acquired through sharing needles, addiction, and driving while under the influence. Therefore, personality is an important factor in risk-taking behaviors as previous research studies have shown that certain personality types are less likely to engage in risky behaviors. This research will focus on the specific personality traits as defined by Costa and McCrae.

Further, Rotter's concept of locus of control can be argued as contributing in part to an individual's personality traits (Rotter, 1975). This concept is important in that individuals with similar personality traits may have different factors of control, whether internal or external. This attribution of control to self or other factors can contribute greatly to the degree of risk-taking behaviors.

Religiosity is also an important contributor to risky behaviors as religious doctrine usually opposes such behaviors. Religion serves as an important mediating variable in this study as certain personality traits may be prone to be more religious. In a study by Wink, Ciciolla, Dillon, and Tracy (2007) conscientiousness and agreeableness were positively related to religiosity in late adulthood. It may also be that certain personality traits that are more likely to engage in risky behaviors may be less likely to engage in these behaviors due to the buffering effect of religiosity.

This study adds significantly to the current and limited research on personality, cognitive appraisals, and risk-taking behaviors in emerging adulthood. This study adds to research on personality and helps explain how specific cognitions, control beliefs, and religiosity function in combination to influence risky behaviors. This study also adds significant information to the research on personality and risk-taking behaviors and may help create more effective prevention programs targeting not only certain personality traits, but also changing the positive cognitive appraisals individuals have about risky behaviors in order to prevent engagement in these behaviors.

Research Questions

A small amount of literature focuses on personality, cognitive appraisals, and risk-taking in emerging adulthood. This study explored the contribution of personality to risk-taking behaviors in emerging adulthood. Cognitive appraisals were explored and their contribution to engaging in risky behaviors. Religiosity and locus of control were considered variables contributing to the relationship between personality and risky behaviors. The main research questions explored in this study were:

1. Do certain personality traits contribute to involvement in risk-taking behaviors?

2. Do the cognitive appraisals emerging adults hold about particular risky behaviors affect the degree to which they engage in those behaviors?

3. Do factors such as religiosity and locus of control affect the degree to which certain personality types engage in risky behaviors?

CHAPTER II

LITERATURE REVIEW

Emerging Adulthood

The period of life between the ages of 18 and 25 has been characterized as a period of changes and exploration (Arnett, 1998). It is a time that begins with the end of high school and ends with commitments to more permanent life choices (Arnett, 1998). While describing emerging adulthood, Arnett (2005) stated:

> It has been proposed that emerging adulthood is characterized by five main features: it is the age of identity explorations, especially in love and work; it is the age of instability; it is the most self-focused age of life; it is the age of feeling in-between, in transition, neither adolescent nor adult; and it is the age of possibilities, when hopes flourish, when people have an unparalleled opportunity to transform their lives. (p. 239)

Arnett (2000a) posed that this time of life is very distinct from adolescence and distinct from adulthood, reporting that this age group does not see themselves as either adolescents or adults. It is a time when individuals consider themselves to have only begun the cognitive, emotional, and behavioral transition into adulthood (Arnett & Taber, 1994). Arnett (2000a) stated that during this time of life, emerging adults are able to try on various roles in life, including those in intimate relationships, career choices, and the opinions they form about the world around them. Arnett (2007) coined this age the "age of instability" (p. 14). This is a time when personality will likely exhibit the most change (Robins, Fraley, Roberts, & Trzesniewski, 2001). Identity formation occurs during this time of life and as individuals try to form an identity, they may engage in a variety of risk-taking activities (Arnett, 2000a). Arnett (1992) stated that generally, cultures placing emphasis on becoming independent place less restrictions on the different facets of socialization compared to cultures that stress conformity and obedience, and therefore produce in their society the opportunity for more risk-taking behaviors. This may be due

to the belief that individuals in more socialized cultures are more likely to engage in risk as an expression of their individuality (Arnett, 1992).

A significant period during the transition to emerging adulthood is going away to college. The transition to college means leaving parents and changing homes. It also symbolizes more freedom (Lefkowitz, 2005). During the transition to college, emerging adults are able to explore relationships with parents, sexual relationships and attitudes, and different religious practices. Lefkowitz (2005) explored these three dimensions within the transition to college. The most common change was that in the relationship with parents. Increased closeness to one's parents was reported as well as a relationship that was more mutual. This change was reported as positive. In regard to sexuality, half of the respondents described changes in sexual attitudes, with fewer reporting changes in sexual behavior. More liberal expressions of sex were reported as well as an appreciation of sex and its meaning. Changes were generally perceived as positive. The author found that, in over half of the college participants surveyed, their religious views did not change. However, among participants who did experience a change, a stronger sense of faith was found. Changes in exploration, exposure, open-mindedness to other religions were noted as well as questioning one's own religion. The students who did report experiencing change in religious views reported it as positive.

Zuckerman and Kuhlman (2000) posed that college students typically engage in risky behaviors such as drinking alcohol, smoking, drug use, sexual intercourse, risky driving, and gambling. Arnett (2005) further reported that emerging adulthood is a period of significantly high drug use. Adams, Munro, Munro, Doherty-Poirer, and Edwards (2004) reported that a diffused identity state in emerging adulthood characterized those individuals who were most likely to use different substances. The

authors stated that failure to find a concrete identity may contribute to substance use. Further, substance use was related to illegal behaviors as well as sexual behaviors (Donovan & Jessor, 1985; McGee & Newcomb, 1992).

Even though many emerging adults view their generation as pessimistic, they appear to possess high hopes for their future (Arnett, 2000b). Arnett (2000b) found that individuals in their 20s were more likely to believe that their lives would be as good or better than their parents'. These beliefs held true for quality of life, financial well-being, career gains, and personal relationships. The author posited that this optimism may stem from the fact that many things in life seem uncertain and many possibilities have not yet become realities in emerging adulthood. The optimism allows emerging adults to progress through this stage of life with confidence.

History of Personality Research

In the first issue of what is now the *Journal of Personality*, William McDougall (1932) stated, "Personality may to advantage be broadly analyzed into five distinguishable but separable factors, namely, intellect, character, temperament, disposition, and temper…each of these is highly complex [and] comprises many variables" (p.418, as cited in Digman, 1990). Piedmont (1998) defined personality "as the intrinsic organization of an individual's mental world that is stable over time and consistent over situations" (p. 2). He proposed that there are three important points to this definition: personality is a structured system "*within*" the individual, over time personality remains consistent, and there is consistency in personality from situation to situation (p. 2). Piedmont stated that even though the environment in which we live shapes our personality, there is something "which provides the basis for the needs we

have, the ways in which we perceive and interpret the outer world, and the goals we ultimately pursue in our lives" (p. 2).

Throughout the years, theorists have attempted to present models of personality. Sigmund Freud was one of the earliest scientists to study personality. For Freud, personality was separated into two dimensions; the life instinct (Eros), and the death instinct (Thanatos) (Piedmont, 1998). Freud believed that human motivation relied on these two qualities. Later, Henry Murray focused on motivational factors while Raymond Cattell focused on the quantitative methods. Further personality structure has been studied by Theodore Millon within the biosocial model and by C.R. Cloninger within the psychobiological model (Piedmont, 1998). H.J. Eysenck developed the three-factor model which focused on three major personality traits: extraversion, neuroticism, and psychoticism (Zuckerman, Kuhlman, Joireman, Teta, & Kraft, 1993). Finally, one of the most popular models of personality is the five-factor model, or the Big Five undertaken in the 1980s by Paul Costa and Robert McCrae. These researchers developed one of the most widely used questionnaires for measuring the Big Five, the NEO Personality Inventory (Van Heck, Perugini, Caprara, & Froger, 1994).

The five-factor model has its roots in the work of researchers such as Klages, Baumgarten, and Allport and Odbert (John & Srivastava, 1999). In the 1920s and 1930s these researchers attempted to develop a taxonomy, or classification of personality traits by identifying terms related to the description of personality. Allport and Odbert found close to 18,000 dictionary terms to describe personality. They later identified four categories of personality: personality traits, temporary states, personal evaluation of judgments, physical characteristics, and capacities and talents (John & Srivastava, 1999). In the 1940s, Cattell developed a system of 16 factors to describe personality

which was welcomed as it was a more organized approach to the plethora of terms in language to describe personality (Digman, 1990). Later, Cattell's work was replicated by Fiske, who was unable to find more than five factors to explain personality. In the early 1960s, Tubes and Christal also reported that they were unable to find the number of personality factors Cattell found, but did find that five factors appear to account well. The authors supported the research of Cattell and Fiske in terms of agreeing on five factors of personality. These were surgency, agreeableness, dependability, emotional stability, and culture (Digman, 1990). Norman reproduced the five factors, which are now commonly labeled extraversion, agreeableness, conscientiousness, neuroticism, and openness to experience. Further, Goldberg conducted studies in which he found that the Big Five were consistently replicable (John & Srivastava, 1999).

The Five Factor Model

As previously mentioned, the five factor model has its roots in the work of Allport and Odbert and the adjectives they found to describe personality. However, adjectives soon proved to be limited in personality description (Piedmont, 1998). This is because there is no equal number of adjectives in the dictionary that describe all of the five personality domains. The work of Goldberg (1992) revealed that more adjectives described agreeableness than any other factor; next to follow was extraversion. Conscientiousness, neuroticism, and openness were represented by fewer and fewer factors. Piedmont (1998) also noted that people may possess qualities that may be too complex to be described by an adjective alone. He reported that another limitation of using adjectives to describe personality is their wide range of interpretation, which might make assessment imprecise.

Due to the limitations of using adjectives to describe personality, Costa and MaCrae used sentences that described each of the five domains in order to construct a measure of personality. The use of sentences also made possible the construction of "*facet scales*" for each domain (Piedmont, 1998, p. 30). Their NEO model is comprised of six facet scales for each of the five personality domains. This model has become one of the most popular measures of personality. The reason for this is that the model represents an inclusive taxonomy of personality traits that is experientially based. The NEO PI-R is commercially available and the only instrument that allows for more precise evaluation of personality dimensions. The instrument is also useful with both populations, clinical and non-clinical (Piedmont, 1998).

Five components have been linked to Costa and McCrae's five factor model (Piedmont, 1998). The first, labeled *basic tendencies*, has to do with the raw or genetic material with which individuals are born. The second component is *characteristic adaptations*, which includes skills, habits, and attitudes that evolve as an interaction with the environment. Life as it has been experienced is the third component, and labeled *objective biography*. Fourth, *external influences*, refers to one's psychological environment. The fifth component is d*ynamic processes*, which refers to the interaction of each of the four components with each other (Piedmont, 1998).

Genetics and Personality

Behavior geneticists have attempted to find degrees to which the observed qualities of individuals are linked to their genes (Piedmont, 1998). In fact, research has shown that genes play a large role in their ability to affect personality traits (Caspi, Roberts, & Shiner, 2005). Research has shown that genetic influence is evident in the Big Five and that individual differences in the personalities of both genders are

influenced by genetics and environment (Bouchard & Loehlin, 2001). It has been noted that genes contribute to the long stretch of stability in personality from adolescence on, (McGue, Bacon, & Lykken, 1993) and that changes in an individual's environment may produce short-term observable personality changes until the individual reverts back to the set points of personality determined by genes (Carey, 2003). Most studies assessing personality traits by self-report questionnaires show stronger genetic influence for identical compared with fraternal twins (Plomin & Caspi, 1999). Genetic factors account for about 25% to 50% of the variance in observed personality traits (Bouchard & McGue, 1990). Piedmont (1998) stated that personality traits are part of an individual's biological foundation, which adds to a more objective rather than subjective level of analysis and understanding.

The five factor model has shown heritability levels that appear to be noteworthy. Jang, Livesley, and Vernon's study (as cited in Piedmont, 1998) showed heritability coefficients from 41% to 61%. Loehlin (1992) reported correlations of .45 in identical twins and .20 in fraternal twins on the domains of agreeableness, conscientiousness, and openness to experience, with estimations of heritability at approximately 40%. Research has shown that genetics play a large role in personality. Costa and McCrae (1994) have stated that personality traits are largely influenced by genetics and reach full maturity early in adulthood, or by age 30.

A long quest has been made to identify specific genes that influence personality. This has proven difficult as the intricate personality traits likely involve a variety of genes. Also, gene and environment effects likely play a role in personality, which may cause genes to encode only indirectly for personality traits (Caspi, Roberts, & Shiner, 2005).

Cultural Generalizability of the Five Factor Model

The results of numerous research studies have shown that the five factor model is generalizable to a variety of different cultures and that the five factors operate similarly across cultures (Piedmont, 1998). McCrae, Terracciano, and 78 Members of the Personality Profiles of Cultures Project showed cross cultural generalizability of the five personality domains in 50 cultures (as cited in Ortiz et al., 2007). McCrae et al. (as cited in Piedmont, 1998) have noted that in countries such as Korea, Italy, and Croatia similar qualities in individuals emerge. For example, the fact that adolescents and young adults score higher on neuroticism, extraversion, and openness to experience and lower on agreeableness and conscientiousness compared to individuals over 30 years of age is generalizable across cultures (Piedmont, 1998). Ortiz et al. (2007) found that the five factor model replicated well in a sample of Mexican university students. Reliability was poor for a few facet scales, however, for the indigenous Mexican scales, reliability proved to be good. Further, a study by McCrae and Costa (1997) examining the cross cultural generalizability of the five factor model in samples of German, Portuguese, Hebrew, Chinese, Korean, and Japanese samples showed similar structures when comparing five varimax-rotated main components. The authors posed that personality traits may be universal. Additionally, the traits of the five factor model as measured by the NEO PI-R proved consistent when measured in Russian and Czech samples, further supporting the universality of personality traits (McCrae et al., 2004).

Further evidence for universal changes in personality is evidenced in a study examining the differences in personality traits across the life span in samples of individuals from Germany, Italy, Portugal, Croatia, and South Korea. McCrae et al. (1999) found that across cultures, older adults were lower on traits of extraversion and

openness to experience and higher in agreeableness and conscientiousness when compared to younger adults. A less consistent finding emerged relating to the trait of neuroticism, where younger adults were more likely to score higher on this domain.

The Big Five Factors of Personality

 Extraversion.

Costa and McCrae (1985) have labeled this domain as representing the amount of interpersonal interactions along with their intensity. Adjectives such as active, assertive, energetic, enthusiastic, outgoing, and talkative describe the domain (McCrae & John, 1992). Extraversion focuses on positive affect and captures an individual's capacity for enjoyment with being around other people as well as their level of activity (Piedmont, 1998).

The six facets central to the domain of Extraversion are: warmth, gregariousness, assertiveness, activity, excitement-seeking, and positive emotions (Piedmont, 1998). Warm individuals are characterized as high on affection and friendliness. Gregarious individuals are likely surrounded by others and are likely to have developed many friendships. Assertive individuals are likely to speak their minds and take on leadership roles. Active individuals have a great sense of energy and may be described as hurried. Individuals high on excitement-seeking like to be in stimulating and noisy environments and may be described as risk-takers. Those with high positive emotions are described as individuals who are optimists, joyous, and laugh easily.

Extraversion has been linked to social interaction and the motivation for reward, with the latter said by some to be the central aspect of this trait (Lucas, Diener, Grob, Suh, & Shao, 2000). However, Ashton, Lee, and Paunonen (2002), showed that

extraversion was specifically linked to attention regarding social aspects of interaction, not motivation for rewards.

Agreeableness.

Agreeableness refers to the attitude one holds toward other individuals. These attitudes can vary from very kind to cold-hearted (Piedmont, 1998). Adjectives used to describe agreeableness are: appreciative, forgiving, generous, kind, sympathetic, and trusting (McCrae & John, 1992).

The central facets used to describe the domain of agreeableness are: trust, straightforwardness, altruism, compliance, modesty, and tender-mindedness (Piedmont, 1998). Trust describes individuals who are able to forgive easily and are able to trust others. Individuals who are straightforward tend to be direct and are not deceiving. Altruistic individuals have a genuine care and concern for others and a willingness to help others. Compliant individuals tend to be kind and prevent outward feelings of aggression. Modest individuals tend to be reserved and unpretentious. Tender-minded individuals tend to have a sympathetic nature and are warm-hearted.

Jensen-Campbell and Graziano (2001) reported that agreeableness appears to be the domain shown to carry the least level of understanding, as studies have focused more on the trait of extraversion in terms of social behavior. Agreeable individuals are less likely to engage in inappropriate or conflictual behaviors. Further, the authors reported that negotiation has often been used as a means of decreasing conflict among agreeable individuals.

Conscientiousness.

The domain of conscientiousness evaluates an individual's framework toward achieving goals (Piedmont, 1998). This domain is characterized by adjectives such as efficient, organized, planful, reliable, responsible, and thorough (McCrae & John, 1992).

The six major facets comprising the domain of conscientiousness are: competence, order, dutifulness, achievement striving, self-discipline, and deliberation (Piedmont, 1998). Competent individuals are seen as smart and capable. Individuals who score high on order are orderly and deliberate. Individuals who are dutiful may be described as ethical and moral. Individuals who are high scorers on achievement striving are goal oriented and work hard to reach their goals. Self-discipline describes individuals who stay on tasks and are able to complete them. Deliberation describes individuals who are cautious and think before making decisions. A study by Roberts, Bogg, Walton, Chernyshenko, and Stark (2004) found five components "on the lower-order structure of conscientiousness: orderliness, decisiveness, reliability, impulse control, and industriousness" (p. 174).

Neuroticism.

Neuroticism is descriptive of individuals who may have difficulty with emotional stability (Piedmont, 1998). Adjectives describing this domain include: anxious, self-pitying, tense, touchy, unstable, and worrying (McCrae & John, 1992).

The six facets as described by Costa and McCrae comprising neuroticism are: anxiety, angry hostility, depression, self-consciousness, impulsiveness, and vulnerability (Piedmont, 1998). Tension and nervousness are descriptive of individuals who score high on anxiety. Angry hostility describes individuals who are prone to experience angry emotions. Depression is descriptive of individuals who are likely to experience sad

mood and hopelessness. Self-conscious individuals tend to feel insecure and are sensitive to the critiques of others. Impulsiveness describes individuals who are easily tempted and do not possess a strong ability for self-control.

Openness to experience.

Openness to experience is a domain descriptive of individuals who tend to be creative and untraditional (Piedmont, 1998). Adjectives used to describe this domain include: artistic, curious, imaginative, insightful, original, and exhibiting a wide range of interests (McCrae & John, 1992). The major facets of openness to experience are: fantasy, aesthetics, feelings, actions, ideas, and values (Piedmont, 1998). Individuals with high scores on fantasy are imaginative and engage in daydreaming. Aesthetic individuals are moved by expressions of that which is artistic and beautiful. Feelings is a facet descriptive of individuals who have higher emotional responsiveness than the average person. Actions describe individuals who are high in novelty seeking and enjoy trying new things. Individuals who score high on the facet of ideas are open to new and unconventional ideas. Individuals scoring high on values tend to be open to reevaluate their belief system, whether it be in areas such as politics or religion. According to Diehm and Armatas (2004) openness to experience seems most closely associated with sensation seeking in terms of its cognitive features.

The five domains with the 30 facet scales give a remarkable amount of information about an individual and comprise the present day revised NEO Personality Inventory. This trait-based inventory, building its foundation on the five-factor personality model, is a powerful tool for providing "information relevant to interpersonal style, character, levels of emotional well-being, aspiration levels, and a wide range of other psychologically relevant information" (Piedmont, 1998, p. 10).

Stability and Change of Personality Traits

Researchers who support the five-factor model propose that personality traits do not usually undergo changes in adulthood, but if a change occurs, it can be accounted for by genetics (McCrae et al., 2000). In a review of data of over 80 longitudinal studies, Roberts et al. (as cited in Caspi, Roberts, & Shiner, 2005) showed that when the domain of extraversion was divided into dominance and sociability; the former increased from adolescence to middle age, while the ladder increased in adolescence and decreased in emerging adulthood and old age. Agreeableness and conscientiousness showed increases in emerging adulthood and mid-age (McCrae et al., 2000). In turn, neuroticism decreased in emerging adulthood while openness to experience increased in adolescence and emerging adulthood, and decreased in old age. Caspi, Roberts, and Shiner noted that the greatest amount of change in personality occurs in early adulthood.

In a study by Roberts, Caspi, and Moffitt (2001), development of personality was examined in individuals between the ages of 18 and 26. Although in this study personality exhibited little change over the span of the 8 years studied, individuals showed increased levels of forcefulness, decisiveness, and ambition, particularly in career related endeavors. The researchers noted that as individuals get older, they become more reflective, planful, and purposeful. The ages of 18 and 26 have been linked with greater maturity. The authors noted that, in the age group studied, past research has shown that as individuals increase in age, crime rates tend to decrease. This may be attributed to a greater sense of maturity.

One of the factors known to promote consistency in personality with age is the development of identity (Roberts & Caspi, 2003). Identity has been known to provide a

certain marker for making decisions. A clearly developed identity may serve "as a filter for life experiences and lead individuals to interpret new events in ways that are consistent with their identities" (Caspi, Roberts, & Shiner, 2005, p. 469). Ozer and Benet-Martinez (2006) reported that while personality has an affect on an individual's identity, so too does identity affect personality as it becomes a part of the individual's personality through exploration and commitment. Marcia (1966) identified four identity states: identity-achieved, foreclosure, moratorium, and identity-diffused. Marcia posed that identity achievement is identified as having made a commitment to a particular set of beliefs. He identified foreclosed individuals as those who have made commitments without exploring various other options. Further, individuals in moratorium are those who have not made commitments to any particular set of beliefs and are still exploring options. Finally, identity diffused individuals have not made commitments nor have they begun the process of exploration.

The identity state of foreclosure has been associated with decreased openness to experience. In turn, identity achievement has been associated with decreased neuroticism, conscientiousness, and extraversion. Neuroticism has been linked to the identity stages of moratorium and diffusion (Duriez, Soenens, & Beyers, 2004; Helson & Srivastava, 2001).

A study by Clancy and Dollinger (1993) explored the relationship between personality and identity in a sample of college students. The authors found that individuals who were classified as identity achieved scored higher on conscientiousness and extraversion, and lower on neuroticism. Individuals who were classified as low on openness to experience were more likely to be in the foreclosed identity state. Also, neuroticism was associated with identity states of moratorium and identity diffused.

Caspi, Roberts, and Shiner (2005) stated that personality development that follows a normal developmental span may contribute to the stability of personality. The researchers state that domains such as agreeableness, conscientiousness, and emotional stability tend to increase with age as well as remain stable. This is due to the fact that descriptors of these traits are less likely to change. It is also noted that these traits may allow for more effective coping with difficult or stressful life events.

Pullmann, Raudsepp, and Allik (2006) studied personality stability and change in a sample of Estonian young adults between the ages of 12 and 18, over a 2-year time period. The authors found that the domain of openness to experience increased while agreeableness and conscientiousness decreased between the stated ages. Another finding was that, overall, young adults reported traits of personality consistently over the time span of the study. The study also found that intelligence and academic achievement did not moderate the consistency of personality in this age group.

A study by Brown and Moskowitz (1998) examined the existence of fluctuations in behavior when individuals interacted with others. In a sample of individuals ranging from age 19 to 63, the authors found normal variations in behavior during interactions with others. They found that dominant and submissive behaviors, and their opposites, increased during the week but decreased during the weekends. An interesting finding emerging from this study was that extraverted individuals appeared to exhibit a cycle of greater interaction with more individuals during the day and evening hours compared to other individuals.

McCrae et al. (2000) reported that the domains of neuroticism, extraversion, and openness to experience decrease from 18 to 30 years of age while agreeableness and conscientiousness increase during this age period. Personality change still occurs after

age 30, but it is a less pronounced process. A study by Srivastava, John, Gosling, and Potter (2003) also showed that the domain of conscientiousness increased throughout emerging adulthood whereas the domain of agreeableness showed increases throughout young adulthood, or the 30s.

In a study on personality change by Robins, Fraley, Roberts, and Trzesniewski (2001), the authors found that, throughout the college years, levels of agreeableness, conscientiousness, and emotional stability increased. With regard to rank ordering, individual variations in agreeableness and neuroticism showed the lowest uniformity while openness to experience was the most constant.

A study of interest on adjustment difficulties and personality posed that adjustment problems in childhood may lead to psychological difficulties in adulthood (Ge & Conger, 1999). This study posed that changes in personality may occur as a result of emotional and behavioral difficulties. In addition, an individual's environment was predicted to be a strong indicator of personality in adulthood due to the influential experiences one has during adolescence. Difficulties in adjusting during adolescence were related to personalities that were less socially competent and more prone to negative emotions.

Personality and Risk-taking Behavior

Sexual risk-taking.

A significant amount of research has focused on personality and its contribution to risk-taking behaviors due to the consequences of such behaviors. Sexual risk-taking is among the many risky behaviors that emerging adults engage in. Unprotected sex and a variety of partners make risks of pregnancy and sexually transmitted diseases a reality. Increased levels of sensation seeking have been known to increase sexual risk-

taking behaviors since these individuals are more likely to judge their behaviors as less likely to lead to risk (Hoyle, Fejfar, & Miller, 2000).

Emerging adults discuss topics such as dating and appearances of the opposite sex with peers. Sexually active individuals have been more likely to discuss topics relating to sex more frequently than those who remain abstinent (Lefkowitz, Boone, Shearer, 2004). Also, those who engage in sexual activities have been more likely to discuss topics relating their experiences of sex than those who remain abstinent. The latter individuals focus on topics of abstinence, which is indicative of their experience. (Lefkowitz et al., 2004). Lefkowitz et al. also discovered that those emerging adults who were more likely to discuss abstinence, were more likely to be more conventional about their attitudes toward sex and less likely to believe that condoms were a reliable method in preventing pregnancy and sexually transmitted diseases.

Most individuals tend to progress into emerging adulthood with the loss of their virginity. In a sample of 18 to 27-year-olds, Halpern, Waller, Spriggs, and Hallfors (2006) found that older participants were more likely to have their first sexual intercourse after marriage. However, these individuals were also more likely to have had premarital sex than to be virgins compared to the younger group. Virgins also had a tendency to be about a year younger than those who had sex. The authors also found that those adolescents who were deemed more physically attractive were more likely to have had sex before reaching adulthood.

A study by Trobst et al. (2000) examined predictors of risky behaviors, awareness of vulnerability, and response to a risk reduction program focusing on HIV infection in a sample of 18 to 62-year-olds who were classified as low socio-economic status. The researchers found that risky behavior emerged among individuals high on

domains of neuroticism and low conscientiousness. Low conscientiousness was also associated with inability to profit from interventions. Individuals high on openness to experience were more apt to deny the possibility of HIV infection. Further research by Trobst, Herbst, Masters, and Costa (2002) established that neuroticism and low conscientiousness were predictive of behaviors such as a history of using condoms sporadically during sexual intercourse, prior risk-taking involving sexual activity, and sharing needles in the past. Individuals scoring low on agreeableness were also in the category specified. It was hypothesized that this may be due to the fact that the domains share a level of emotional anguish, poor self-restraint, and hostility.

Further findings on personality by Miller et al. (2004) confirm that neuroticism, extraversion, and low agreeableness are indicative of an increased number of sexual partners and the use of mind-altering substances while engaging in sex. Decreased frequency of condom use and early parenthood have been associated with neuroticism and openness to experience. Sex with partners outside one's relationship characterized emerging adults high on neuroticism and agreeableness. Early engagement in sex has been characteristic of the four domains stated, excluding conscientiousness. The domain of conscientiousness has not been related to the use of mind altering substances when engaging in sex. It was related to a tendency to think before making a decision and include one's morals into the decision making process.

In one of the largest studies on personality and risk-taking behaviors, Schmitt (2004) examined sexual risk-taking in a sample of 16,363 individuals from 52 nations. The study showed that across most of the nations studied, low agreeableness and low conscientiousness were associated with infidelity. Also, a weak relationship was found between the domains of agreeableness and conscientiousness with sexual promiscuity.

Extraversion, in turn, was associated with sexual promiscuity in not all, but a large number of the regions studied.

Alcohol and drug use.

Current trends in research state that personality factors have an effect on substance abuse (Flory, Lynam, Milich, Leukefeld, & Clayton, 2002). Kandel, Kessler, and Margulies (1978) attempted to predict the initiation into the use of drugs. The authors reported that relationship with parents, increased parental control, and a lack of closeness with parents predicted drug use. Having friends who engage in drug use was a strong influence on the adolescents' use of drugs as well. The adolescents' attitudes about drug use played a role in their involvement with drugs.

Wills, Sandy, and Yaeger (2000) reported that substance abuse is related "to poor self-control and to risk-taking tendency" (p. 1144). The authors further stated that problem behaviors in adolescence, such as substance abuse, stem from events in an individual's life, their ability to cope, affiliation with deviant peers, susceptibility, and family factors. In terms of psychological health related to drug use, an earlier study by Shedler and Block (1990) found that frequent drug users were impulsive, unable to conform, hostile, and lacking in close friendships. Shedler and Block found that abstainers, in turn, were more anxious, were not open to try new things, and lacked social skills. Characteristics of both drug users and abstainers share descriptive terms related to the neuroticism trait and it may be likely that even though both groups share traits of neuroticism, their personality profiles would likely show significant decreases in the other personality traits. Shedler and Block found that some level of experimentation with drugs was not found to be negative, and individuals in this category appeared to be the most psychologically adjusted. Similar findings were presented in a study utilizing a

sample of 891 municipal workers, which explored personality and alcohol use. In this study Cook, Young, Taylor, and Bedford (1998) found that individuals who drank in moderation were less maladjusted than abstainers. This study also found that individuals who were more extraverted were more likely to show increases in the consumption of alcohol, compared to conscientious individuals.

The opposite was true for degrees of adjustment in abstainers in a more recent study by Walton and Roberts (2004). They reported that in a sample of college undergraduate students, individuals who abstained from drugs and alcohol were not maladjusted. These individuals had a tendency to be very conscientious. The abstainers were not more neurotic than the moderate and heavy users. In fact, individuals identified as heavy users of drugs and alcohol were more neurotic and had lower scores on conscientiousness.

Flory, Lynam, Milich, Leukefeld, and Clayton (2002) found that alcohol abuse symptoms were associated with decreased agreeableness and conscientiousness, but increased scores on extraversion in a sample of 21-year-olds. The authors speculated that these individuals are more prone to be unconforming, lack trust, and show higher impulsivity. Further, marijuana abuse symptoms were related to lower scores on agreeableness and conscientiousness and increased scores on openness to experience. These marijuana abusing individuals share the same features as the alcohol abusing group, but may also be associated with higher levels of sensation seeking. This study did not find an association between neuroticism and the abuse of substances.

Quantity of alcohol use has been associated with the social setting. Individuals drinking in social settings are more likely to drink similar quantities as their drinking

partner. The characteristics that describe these drinkers are social, agreeable, and positive. Individuals high on extraversion and emotional stability have also been known to drink at a greater frequency during the week (Peterson, Morey, & Higgins, 2005).

Studies have shown that males tend to use alcohol and marijuana more than females, whereas females have been associated with more cigarette smoking (Labouvie & McGee, 1986). Welte and Barnes (1987) found that among a sample of New York State junior and senior high school students, females reported smoking at a more increased rate than males, but males smoked more cigarettes on a daily basis than females. Students who were older and who identified themselves as white, smoked more than minority groups.

In a study examining the effects of adolescent drug use on young adulthood, Newcomb and Bentler (1987) found that young adults in this category were married at an earlier age, had families earlier, and were involved in the work force earlier. Use of heavy drugs was also associated with feelings of loneliness, limited social support, and an increased tendency to think about suicide.

Illegal behaviors, high-risk sports, and deviant academic/work behaviors.

Preference to engage in risky activities such as high-risk sports, risky or dangerous careers, illegal activities and driving recklessly are indicative of sensation seekers (Zuckerman, 1994). Risky actions are performed when the benefits of the action is higher than its cost (Burns & Wilde, 1995). Individuals who are high sensation seekers are more daring on the road and have a tendency to acquire more road violations than low sensation seekers (Furnham & Saipe, 1993; Jonah, 1997). These individuals are also more likely to ignore amber lights and merge into a very busy road (Rosenbloom & Wolf, 2002).

Individuals who drink and drive have been known to be aggressive, engage in deviant behaviors more often, and use illegal substances (Everett, Lowry, Cohen, & Dellinger, 1999). Bingham, Elliot, and Shope (2007) found that alcohol use contributed to drinking and driving, engaging in more risk-taking, hostility, cigarette smoking, and seat belt use for women. For men, alcohol use was associated with group drinking and driving, hostility, and smoking cigarettes. Both genders who reported decreased social support for drinking and driving were more likely to be in the low drinking and driving group.

With regard to violent behaviors, males are likely to have engaged in behaviors involving threatening someone, using force, or physically hurting someone (Williams, Van Dorn, Hawkins, Abbott, & Catalano, 2001). Further, individual beliefs and attitudes have been found to have a strong association with violent behaviors, along with opportunities for antisocial behaviors and stressful life events (Williams et al., 2001).

High-risk sports have been linked to greater levels of sensation seeking (Slanger & Rudestam, 1997). Sensation seeking has been linked more so with the physically experienced sensations of the activity rather than cognition (Zuckerman, 1992). Individuals who participate in high-risk sports, such as surfing, have higher levels of sensation seeking and report higher intrinsic motivation for engaging in the sport. This is indicative of participation in the sport for the pleasure of the activity itself rather than extrinsic reward (Diehm & Armatas, 2004).

Participation in high-risk sports has also been attributed to greater levels of self-efficacy, repression, and motivation (Slanger & Rudestam, 1997). Individuals who are more likely to believe that they have the potential to carry out an activity, are more likely to approach it with self-assurance. Also, those who repress past failures and focus

mainly on their successes may be more likely to engage in risky sports. Furthermore, risky sports have also been linked with the desire to obtain mastery over the sport, which is a large motive for risk (Slanger & Rudestam, 1997).

Personality traits have been examined in relation to high-risk sports. Kajtna, Tusak, Baric, and Burnik (2004) evaluated personality traits in a sample of high-risk sport athletes comprising of alpinists, sky divers, paragliders, white water kayakers, downhill mountain bikers, motocross riders, downhill skiers, and ski jumpers. The authors used the Big Five Observer Scale. They found that high-risk sport athletes were more emotionally stable, conscientious, extraverted, and scored higher on acceptability than non-risk sport athletes and non-athletes. In contrast, the dimension of openness was highest in non-risk sport athletes than high-risk sports athletes, with non-athletes exhibiting the lowest scores.

In relation to academic behaviors, a longitudinal study examined early school failure and its influence on attaining status at midlife. The study examined individuals in three life stages: early adolescence, young adulthood, and middle adulthood. Findings revealed that education is a significant mediator on later status attainment. A high degree of deviant behaviors mediated the effect of school failure on socioeconomic success in later life as well (Chen & Kaplan, 2003). The authors maintained that early negative experiences may affect the life course in disadvantaged ways, influencing socioeconomic status in later life.

The perceptions of business students regarding academic dishonesty were explored in a study by Rakovski and Levy (2007). The authors found that dishonest acts in the classroom were viewed to be more serious than dishonest acts outside of class. Also, active dishonest acts were viewed to be more severe than passive ones. Students

believed that penalties should be placed on the more serious dishonest acts. The authors also found that students who were more likely to cheat were younger and had a lower GPA compared to students who were least likely to cheat. Considering gender, women have been shown as less likely to cheat.

Considering work place behaviors, in a study assessing aggression in relation to prediction of counterproductive work behaviors, Bing et al. (2007) found that in a sample of college students in a university setting, openly aggressive individuals engaged in behaviors that were noted as unproductive, such as traffic violations. In turn, overcompensating prosocial individuals were less likely to engage in such behaviors. In an organizational setting, individuals who were openly aggressive reported a higher propensity to engage in deviant behaviors.

The Influence of Cognitive Factors to Involvement in Risk-taking Behaviors

Many intervention programs designed to decrease risk-taking behaviors focus on education about the risky behavior and changing attitudes about the behavior in question. More favorable attitudes toward marijuana use and alcohol use have been related to engaging in these behaviors (Stacy, Bentler, & Flay, 1994). Goldman, Brown, and Christiansen defined outcome expectancies as beliefs that one holds about the possible costs of their behavior (as cited in Katz, Fromme, & D'Amico, 2000). Drinking alcohol and drug use is more likely to occur when individuals believe that positive outcomes will result from these behaviors (Benthin, Slovic, & Severson, 1993). Stress reduction and the ability to relax have been associated with alcohol, marijuana, and cocaine. In turn, attitudes related to the consequences of drug use resulted in nonuse (Schafer & Brown, 1991). Adolescents who engage in risky activities tend to report that they know the risks associated with the activity, are not very scared of the risks,

perceive less likelihood that risks will happen to them, and participate in the risky behavior more frequently (Benthin, Slovic, & Severson, 1993).

Individuals tend to hold certain preconceptions regarding alcohol use. It has been noted that females expect to have more favorable experiences when drinking, whereas males expect to be more aroused and aggressive (Brown, Goldman, Inn, & Anderson, 1980). Research has shown that females in college who have used marijuana associated greater negative effects with the use of the drug. Men, in contrast, appeared to report more positive affects such as reducing tension and boosting cognition (Schafer & Brown, 1991).

Further, preconceptions about alcohol include those of alcohol playing a role in alleviating anxiety (Kashdan, Collins, & Elhai, 2006). It has been noted that socially anxious individuals may use mind altering substances in order to feel more comfortable in social situations. In contrast, socially anxious individuals who hold negative expectancies of risk-taking intend to engage in these behaviors less. Further, research has shown that among college students, engagement in risky behaviors such as sexual activities, drug use, and aggression may serve as a mode of obtaining acceptance from peers (Kashdan et al., 2006).

It has been theorized that individuals who may be identified as high in sensation seeking and low in conformity may expect positive outcomes to result from risk-taking. In contrast, those individuals who are more likely to conform to rules and authority are less likely to believe positive outcomes will result from risk-taking behaviors (Katz, Fromme, & D'Amico, 2000). Katz, Fromme, and D'Amico found that conformity to social standards, previous experience with risk-taking behaviors, and positive expectancies have been associated with the use of substances, whereas past sexual experiences

predicted sexual risk-taking. Sensation seekers also appeared to hold more positive expectancies for drinking heavily and engaging in sexual risk-taking. In contrast, individuals identified as social conformists were affiliated with negative outcome expectancies of drug use and drinking heavily. The authors suggested that the biological basis of personality may play a role in outcome expectancies, which may further have an influence in risk-taking behaviors. Generally, sensation seekers may underestimate the risks of their behaviors as they achieve pleasure in engaging in them (Rosenbloom, 2003). The amount of perceived risk may be reduced in high sensation seekers while their confidence to avoid consequences may be increased (Jonah, 1997).

In a study by Beyth-Marom, Austin, Fischhoff, Palmgren, and Jacobs-Quadre (1993) adolescents and adults gave similar answers regarding perceived consequences of risky behaviors. The behaviors were identified as drinking and driving, smoking marijuana, skipping school, taking father's vehicle without permission or license, engaging in sexual intercourse, and going to a beer party. Both groups of individuals reported more negative results from engaging in the risk-taking behaviors specified.

Religion and Risk-taking

"Religiosity is a multidimensional construct that refers to a person's religious fervor, regardless of the content of their beliefs" (Brown, Parks, Zimmerman, & Phillips, 2001, p. 697). Religiosity has been hypothesized to be a protective factor against many risk-taking behaviors. Religion has been thought to teach morality and good citizenship. Religion has also been viewed as bringing individuals together and facilitating bonding (Johnstone, 2004). Some researchers believe that religion allows individuals to internalize morality (Barkan, 2006).

Miller, Davies, and Greenwald (2000) found that religion was associated with decreased alcohol and drug use. The church, as a religious entity, is believed to educate adolescents on the dangers of engaging in risky behaviors (Kutter & McDermott, 1997). Lefkowitz, Gillen, and Shearer reported that religiosity has been linked with later age of first intercourse and less engagement in sexual activity (as cited in Barkan, 2006). Barkan reported that in a sample of adults who have never been married, religiosity was related to fewer sexual partners due to the belief that sex before marriage is wrong.

Research has also shown that college students reporting decreased levels of intrinsic and extrinsic religiosity were more sexually active. Zaleski and Schiaffino (2000) stated that identification with a certain religion may protect from sexual risk-taking behaviors. However, those who reported higher religious beliefs used condoms less suggesting that religiosity may represent a risk factor for unsafe sexual activity among those individuals who are sexually active (Zaleski & Schiaffino, 2000).

In a study of racial differences, black adolescents were more religious than white adolescents, drank less alcohol, and had fewer drinking problems than white adolescents. The findings of this study showed that the use of alcohol and problematic drinking was predicted by different magnitudes of religiosity (Brown, Parks, Zimmerman, & Phillips, 2001).

In relation to gender, behaviors such as smoking, binge drinking, and the use of marijuana have been more frequent in a sample of Hungarian males than Hungarian females. Males also drank and smoked at an earlier age than females (Piko & Fitzpatrick, 2004). However, church attendance predicted lower levels of the use of substances mentioned among adolescents. It is of interest to note that male

adolescents may benefit more from church attendance and praying to decrease smoking and binge drinking than female adolescents (Piko & Fitzpatrick, 2004). Perhaps this is due to male adolescents having increased peer pressure, and religiosity through church attendance and praying serves as a guard against such pressure.

In several studies on behavior and religion conducted by Saroglou, Pichon, Trompette, Verschueren, and Dernelle (2005) religious people were less aggressive, perceived themselves higher on traits such as empathy and honesty, and were perceived this way more by friends. Generally, the authors expressed that religious individuals appeared to express a certain prosocial quality.

McNamara, Burns, Johnson, and McCorkle (2010) reported that religious practices aid in improving an individual's ability to avoid temptations and increase behaviors seen as moral and promoting self-discipline and self-control. These behaviors, in turn, generate "implementation intentions". Implementation intentions can be viewed as the transformation of a desired long-term goal into a plan of implementation. These implementation intentions may enhance safer sex practices and other health behaviors such as religious practice, which was shown to generate higher implementation intentions related to avoiding risky behaviors.

The studies summarized above discuss the behaviors of religious individuals, or their cognitions. Studies on religion used as a mediator to safer health behaviors in individuals who may be genetically predisposed to risky behaviors are very minimal. A mediator helps to clarify the nature between the relationship of the independent and dependent variables. In this regard, studies on whether religion mediates the relationship between personality traits and risky behaviors are minimal. This is especially true when one takes into account the personality type an individual may

naturally acquire from birth parents that may be more prone to risky behaviors, such as extraversion. Few studies research religion's role as a buffer to risky behaviors in individuals already genetically prone to engage in risk-taking.

Locus of Control and Risk-taking

Locus of control refers to the perception one has about the control they have over events in their life. Rotter stated that an internal locus of control refers to the belief that events are under one's control whereas an external locus of control refers to the perception that events are under the control of some outside or powerful force (as cited in Miller & Mulligan, 2002). An internal locus of control appears to be a factor in less risk-taking behaviors (Gullone & Moore, 2000). This may be a result of those with an internal locus of control being more knowledgeable about health issues (Price-Greathouse & Trice, 1986). In a study of locus of control and risk-taking in a population of drug users whose method was injecting, Crisp and Barber (1995) found that individuals with an internal locus of control were apt to more precisely assess the risk of HIV compared to those with an external locus of control. It is of interest to note that safer sex practices were not employed among the internals in this study. Further findings confirm that when the factor of mortality is involved as a factor in risk-taking behaviors, individuals with an internal locus of control tend to engage in risky behaviors less than externals (Miller & Mulligan, 2002).

In a study on internalizing and externalizing behavior problems in adolescence, Ric, Steele, Forehand, Armistead, and Brody (1995) found that externalizing behavior problems (measured by the conduct disorder subscale of a problem behavior checklist) were related to hard drug use, marijuana use, and alcohol use in early adulthood. This was especially true for males. In contrast, higher scores on internalizing behavior

problems (measured by an anxiety-withdrawal subscale of the checklist) were suggestive of less marijuana use, and less hard drug use in young adulthood.

Control factors have also been studied as related to risky driving. In a sample of college undergraduate students, those who believed that accidents were caused by their own behavior were involved in more car accidents than those individuals who believed accidents were caused by external forces. Therefore, individuals with an internal locus of control may attribute being in an accident to their behavior and their skill level rather than to other drivers. This may increase overconfidence in one's ability to avoid accidents (Ozkan & Lajunen, 2005).

Goggin, Malcarne, Murray, Metcalf, and Wallston (2007) developed a God related locus of control scale which found that the control one attributes to God plays a part in their sexual risk-taking behaviors. The authors reported that youth who believed that God is in control were more likely to deal with difficult situations in a non-sexual way, were less likely to engage in sexual behavior, and had more control over the occurrence of sexual engagement.

Summary

The five-factor model of personality describes the five major personality traits that are studied in present day research. The model is invaluable to understanding the five main personality domains that are characteristic of all humans. The use of this model in relation to risk-taking behaviors in emerging adulthood can provide significant information on the personality characteristics of individuals that are more prone to engage in risk, as well as the cognitive appraisals each personality trait may hold with regard to risky behaviors. Further, religiosity and locus of control are important factors in terms of the role they play in contributing to, or preventing risk. The purpose of this

research is intended to expand the understanding of risk-taking behaviors in regard to personality and cognitions in order to develop prevention programs tailored to specific personality types, and to aid in changing those cognitions related to risk-taking behaviors.

Hypotheses

H_{1a}: A statistically significant relationship exists among emerging adult college students between self-reported involvement in risk-taking behaviors, including illicit drug use, aggressive/illegal behaviors, risky sexual behaviors, heavy drinking, high-risk sports, and academic/work behaviors and positive cognitive appraisals of these behaviors.

H_{1b}: A statistically significant relationship exists among emerging adult college students between self-reported involvement in risk-taking behaviors, including illicit drug use, aggressive/illegal behaviors, risky sexual behaviors, heavy drinking, high-risk sports, and academic/work behaviors and negative cognitive appraisals of these behaviors.

H_2: Emerging male and female adult college students with different personality traits will self-report lower use of alcohol and marijuana.

H_{2a1}: Emerging adult college students with higher scores on agreeableness will self-report higher involvement with alcohol use and marijuana use than emerging adult college students with lower scores on agreeableness.

H_{2a2}: Emerging male adult college students with higher scores on agreeableness will self-report higher involvement with alcohol use and marijuana use than emerging female adult college students with higher scores on agreeableness.

H_{2b1}: Emerging adult college students with higher scores on conscientiousness will self-report lower involvement with alcohol use and marijuana use than emerging adult college students with lower scores on conscientiousness.

H_{2b2}: Emerging female adult college students with higher scores on conscientiousness will self-report lower involvement with alcohol use and marijuana use than emerging male adult college students with higher scores on conscientiousness.

H_{2c1}: Emerging adult college students with higher scores on neuroticism will self-report higher involvement with alcohol use and marijuana use than emerging adult college students with lower scores on neuroticism.

H$_{2c2}$: Emerging male adult college students with higher scores on neuroticism will self-report higher involvement with alcohol use and marijuana use than emerging female adult college students with higher scores on neuroticism.

H$_{2d1}$: Emerging adult college students with higher scores on extraversion will self-report higher involvement with alcohol use and marijuana use than emerging adult college students with lower scores on extraversion.

H$_{2d2}$: Emerging male adult college students with higher scores on extraversion will self-report higher involvement with alcohol use and marijuana use than emerging female adult college students with higher scores on extraversion.

H$_{2e1}$: Emerging adult college students with higher scores on openness to experience will self-report higher involvement with alcohol use and marijuana use than emerging adult college students with lower scores on openness to experience.

H$_{2e2}$: Emerging male adult college students with higher scores on openness to experience will self-report higher involvement with alcohol use and marijuana use than emerging female adult college students with higher scores on openness to experience.

H$_3$: Self-reported involvement of emerging adult college students in risk-taking behaviors can be predicted from age, gender, higher scores for neuroticism and for positive appraisals, and lower scores for negative appraisals of these behaviors.

H$_4$: The relationship between self-reported involvement of emerging adult college students in risk-taking behaviors and personality traits is mediated by scores for religiosity.

H$_{4a}$: The relationship between self-reported involvement of emerging adult college students in risk-taking behaviors and neuroticism scores is mediated by scores for religiosity.

H$_{4b}$: The relationship between self-reported involvement of emerging adult college students in risk-taking behaviors and extraversion scores is mediated by scores for religiosity.

H$_{4c}$: The relationship between self-reported involvement of emerging adult college students in risk-taking behaviors and openness to experience scores is mediated by scores for religiosity.

H$_{4d}$: The relationship between self-reported involvement of emerging adult college students in risk-taking behaviors and agreeableness scores is mediated by scores for religiosity.

H[4e]: The relationship between self-reported involvement of emerging adult college students in risk-taking behaviors and conscientiousness scores is mediated by scores for religiosity.

H[5]: Emerging adult college students with a more internal locus of control and higher scores for conscientiousness and agreeableness personality traits and lower scores for neuroticism, extraversion, and openness to experience personality traits will self-report lower levels of involvement in risky behaviors.

H[6]: Younger emerging adult male and female college students (ages 18 to 20 years) will have different scores for the five personality traits than older emerging adult male and female college students (ages 21 to 25 years).

    H[6a]: Younger emerging adult male and female college students (ages 18 to 20 years) will have lower scores for agreeableness than older emerging adult male and female college students (ages 21 to 25 years).

    H[6b]: Younger emerging adult male and female college students (ages 18 to 20 years) will have lower scores for conscientiousness than older emerging adult male and female college students (ages 21 to 25 years).

    H[6c]: Younger emerging adult male and female college students (ages 18 to 20 years) will have lower scores for openness to experience than older emerging adult male and female college students (ages 21 to 25 years).

    H[6d]: Younger emerging adult male and female college students (ages 18 to 20 years) will have higher scores for neuroticism than older emerging adult male and female college students (ages 21 to 25 years).

    H[6e]: Younger emerging adult male and female college students (ages 18 to 20 years) will have higher scores for extraversion than older emerging adult male and female college students (ages 21 to 25 years).

CHAPTER III

METHODOLOGY

Research Design

This study employed a nonexperimental cross-sectional design using a sample of undergraduate university students. The design used was appropriate as survey instruments were used and no treatment or intervention was provided to the participants in this study. The participants were asked to complete questionnaires assessing personality, cognitive appraisals of risk-taking, actual risk-taking, locus of control, and religiosity. A demographic questionnaire was also employed.

Participants

The participants in the study were recruited from a large university in Southeast Michigan. Four hundred questionnaires were distributed with a total of 302 collected. Forty-seven questionnaires were omitted form the study as they were incomplete. The complete sample consisted of 255 unmarried male and female participants between the ages of 18 and 25. All other groups were excluded from the study. No restrictions on ethnicity were employed. The unmarried sample was expected to engage in greater risk-taking behaviors. Further, the 255 participant sample size allowed the researcher to make appropriate decisions on the null hypotheses. This number of participants allowed for power greater than .80.

Data Collection Procedure

Following approval from the Human Investigation Committee (HIC) at Wayne State University and approval from the university utilized, the researcher made initial contact with the professors of the linguistics and psychology classes in the department. The researcher, a limited licensed psychologist, attended classes either before or

toward the end of the class period to discuss the purpose of the study. The researcher explained the purpose of the study as conducting research on personality and risk-taking behaviors. Students were told that participation was completely voluntary. Participants were also informed that this study was for unmarried individuals ages 18 to 25 only, and asked those within this age group who were willing to participate to raise their hand so that the researcher could distribute the information forms and questionnaire packets. The questionnaire packet included an information form, a demographic survey, the NEO Five-Factor Inventory, Cognitive Appraisal of Risky Events Questionnaire, Internal-External Locus of Control Scale, and the Religiosity Measures Questionnaire. The information form stated that students could contact the researcher if questions arose. However, no student contacted the researcher. The questionnaires were placed in counterbalanced order. Participants were asked not to write their name on the questionnaires. Each participant completed the questionnaires independently as directions for completion were listed on each measure. Students were able to take the questionnaires home and were asked to bring the completed questionnaires back to class in a sealed envelope provided. The researcher collected the completed questionnaires.

Instruments

Demographic information.

A brief demographic survey was utilized to collect personal information about the respondents. Items included: participants' age, gender, race/ethnicity, years in college, and residential status as measured using Hollingshead Four-Factor Index of Social Status (1975). The items also included marital status, employment status, and religion.

Items on this survey used a combination of forced-choice and fill-in-the blank responses.

NEO Five-Factor Inventory (NEO-FFI).

The NEO Five-Factor Inventory is a 60-item short version of the 240-question Revised NEO Personality Inventory measuring the five major domains, or traits of personality. The NEO-FFI provides scores for the five main domains of personality: Neuroticism, Extraversion, Openness, Agreeableness, and Conscientiousness. It is considered a good measure of personality when time constraints are imposed and global personality information is required (Costa & McCrae, 1985). The inventory is appropriate to use with individuals ages 17 and older and requires a sixth-grade reading level. The NEO-FFI consists of five 12-item scales measuring each domain. According to Costa and McCrae, the inventory takes about 10 to 15 minutes to complete. The inventory employs a Likert-type scale where the five responses range from 1 for "Strongly Disagree" to 5 for "Strongly Agree." After reverse scoring the negatively worded items, the numeric responses for each item on the subscales were summed to obtain a total score. Higher scores on each of the personality traits indicated greater presence of the trait.

Validity. Correlation with the NEO Personality Inventory validimax factors obtained by Costa and McCrae showed that the NEO-FFI scale correlations ranged from .75 for Conscientiousness to .89 for Neuroticism. The NEO-FFI was also correlated with scales from Costa and McCrae's concise 240-item personality measure, the NEO PI-R in the sample used in the Augmented Baltimore Longitudinal Study of Aging (ABLSA) conducted by the National Institute on Aging (Costa & McCrae, 1985). Correlations were .92 for Neuroticism, .90 for Extraversion, .91 for Openness to

Experience, .77 for Agreeableness, and .87 for Conscientiousness (Costa & McCrae, 1985). Also, McCrae reported correlations between spouse ratings on the NEO-FFI and self-reports on the full domain scales of the NEO PI-R ranged from .24 to .67, N=68, p.<.05. This finding was suggestive of cross-observer validity (as cited in Costa and McCrae, 1985). Even though the NEO-FFI scales are subsets of the NEO PI-R domain scales, the NEO-FFI scales share some of the validity of the NEO PI-R scales, with convergent correlations ranging from .56 to .62, with none of the divergent correlations exceeding .20 (Costa & McCrae, 1985). With regard to convergent and discriminant validity of the 30 NEO PI-R, convergent validity is shown by the fact that the NEO PI-R facet scales are correlated with other measures similar in construct. For example, Spielberger et al. (as cited in Costa and McCrae, 1985) noted that Anxiety on the NEO PI-R is related to Anxiety as it is measured by the State-Trait Personality Inventory. Buss and Durkee (as cited in Costa and McCrae, 1985) noted that trust on the NEO PI-R is positively correlated with the Trusting scale of the Interpersonal Style Inventory and shows a negative correlation with the Suspicion scale of the Buss-Durkee Hostility Inventory. Costa and McCrae state that with appropriate criteria all 30 scales show considerable correlations. A study by Gough and Heilbrun (as cited in Costa and McCrae, 1985) examined the 300 items of the Adjective Check List and found that the seven largest correlates were identified for each of the 30 NEO PI-R facets, showing discriminant validity of the facet scales.

Reliability. Internal consistency of the NEO-FFI was calculated from the Employment Sample which consisted of 1,539 individuals employed by a national organization (Costa, McCrae, & Dye, 1991; Costa & McCrae, 1985). Coefficients were .86 for Neuroticism, .77 for Extraversion, .73 for Openness to Experience, .68 for

Agreeableness, and .81 for Conscientiousness. McCrae reported that internal consistency was also evident by the analysis of data from 91 spouse ratings, showing that the NEO-FFI scales correlate well with the full 48-item domain scales of the NEO PI-R. Correlations were as follows: .93 for Neuroticism, .90 for Extraversion, .94 for Openness to Experience, .88 for Agreeableness, and .89 for Conscientiousness. Coefficient alphas were as follows: .90 for Neuroticism, .78 for Extraversion, .76 for Openness to Experience, .86 for Agreeableness, and .90 for Conscientiousness (as cited in Costa & McCrae, 1985). Overall, good internal consistency is evident. Internal consistency of the 240-item NEO PI-R scale was calculated as the following coefficient alphas for Neuroticism, Extraversion, Openness to Experience, Agreeableness, and Conscientiousness: .92, .89, .87, .86, and .90. Additionally, a three month test-retest comparison was made between the NEO PI-R and the NEO-FFI, which found .79, .79, .80, .75, and .83 for the following traits, Neuroticism, Extraversion, Openness to Experience, Agreeableness, and Conscientiousness respectively (as cited in Costa & McCrae, 1985).

Cronbach alpha coefficients were obtained for each of the five personality traits using data from the present study. The alpha coefficients were .75, .81, .66, .74, and .82 for Neuroticism, Extraversion, Openness to Experience, Agreeableness, and Conscientiousness respectively. These alpha coefficients were similar to those found in earlier studies.

Cognitive Appraisal of Risky Events Questionnaire (CARE).

The Cognitive Appraisal of Risky Events Questionnaire (CARE; Fromme, Katz, & Rivet, 1997) assesses the following: perceptions of risk-taking behaviors related to risks and benefits of engaging in six risky behaviors; expected involvement in the six risky

activities within a six month period; and past frequency of involvement. The risky activities are identified as: Illicit Drug Use, Aggressive/Illegal Behaviors, Risky Sexual Behaviors, Heavy Drinking, High-risk Sports, and Academic/Work Behaviors. For the purpose of this study, the following scales were used: the appraisals of Expected Risk, the appraisals of Expected Benefit, and an altered version of the Expected Involvement Scale. The original Expected Involvement Scale measures how likely the participant is to engage in the six risky activities identified. The instructions for completion were altered by the researcher from "how likely" to state, "…to what degree have you engaged in these activities within the last 6 months?" The title of the scale was changed to "Actual Involvement" to reflect the change in instructions. The six types of risky activities are assessed on each of the three subscales.

Each of the three scales used consists of 30 questions on a 7-point Likert scale ranging from "Not at all Likely" (1) to "Extremely Likely" (7). In the "Actual Involvement" scale, response wording was changed to include from "Not at All" (1) to "A Lot" (7). The numeric responses from each of the subscales were summed to obtain a total score. Higher scores reflected greater risk-taking.

Validity. Item content and construct validity was assessed by students completing the three subscales of the questionnaire. After three exploratory factor analyses were conducted for the Expected Risk, Expected Benefit, and Expected Involvement, items loading below .40 for at least two of the three analyses, or equally on more than one factor within an analysis were deleted (Fromme, Katz, & Rivet, 1997). Fromme, Katz, and Rivet established construct validity for drug and alcohol use, aggression, and unsafe sex as these are considered traditional risk behaviors. As expected, for the identified risky behaviors, Expected Benefit, Expected Involvement, and Frequency of

Involvement ratings were significantly positively correlated with the Impulsive Unsocialized Sensation Seeking questionnaire and negatively correlated with the Social Conformity questionnaire. Criterion validity was shown after a 10-day follow-up period in which over 50% of individuals reported some involvement in each of the risky activities, except for illicit drug use and risky sexual practices. The CARE proves to be psychometrically sound in measuring outcome expectancies and risk-taking among emerging adults (Fromme, Katz, & Rivet, 1997).

Reliability. Chi-square difference tests revealed that, for expected risk, expected benefit, and expected involvement, a six-factor model provided a better fit than a one-factor model (p<.001) revealing a multi-dimensional construct. The covariation among Expected Risk, Expected Benefit, and Expected Involvement ratings for each factor was examined using Person correlation coefficients. The intercorrelations ranged from r = .02 (Expected Risk for sex and sports) to r = .68 (Expected Risk for Aggression and Academic/Work Behaviors). Internal reliability and correlations among items and factors provided Cronbach alpha coefficients ranging from .64 to .90. Total item correlations also provided support for further internal reliability. Test-retest correlations ranged from r = .51 to .65 for Expected Risk and from r = .58 to .79 for Expected Benefit (Fromme, Katz, & Rivet, 1997). The authors stated that even though modest test-retest correlations were found, they were similar to other expectancy questionnaires such as the Marijuana Effect Expectancy Questionnaire which had a test-retest correlation of r = .66.

Data from the present study were used to determine the internal consistency of the three measures of the Cognitive Appraisal of Risky Events questionnaire. Table 1 presents the results of this analysis. The alpha coefficients using data from the present

study ranged from .64 to .95, providing support that the CARE had adequate internal consistency for use in this study.

Table 1

Cronbach Alpha Coefficients
Cognitive Appraisal of Risky Events Questionnaire

Subscale	Negative Appraisals	Positive Appraisals	Actual Involvement
Illicit Drug Use	.89	.85	.81
Aggressive/Illegal Behaviors	.95	.87	.75
Risky Sexual Behaviors	.93	.82	.64
Heavy Drinking	.85	.85	.90
High-risk Sports	.80	.87	.67
Academic/Work Behaviors	.89	.74	.82

Internal-External Locus of Control (I-E scale).

Rotter's (1966) Internal-External Locus of Control scale measures an individual's belief about their world; their expectations about the control of reinforcement, as either internal or external. The scale has been used in more than half of the internal-external locus of control research (Miller & Mulligan, 2002). The scale has 23 items and uses a forced-choice format. The scale also includes six filler items used to assure ambiguity. Each item consists of two sentences lettered a or b. Participants are asked to circle the statement that they most strongly believe to be true. The Internal-External Locus of Control scale is scored in the direction of externality (Rotter, 1966). Low scores (closest to 0) are considered indicative of an internal locus of control, whereas high scores (closest to 23) are considered indicative of an external locus of control (Miller & Mulligan, 2002). In this study, a median split was used. Individuals scoring above the

median were classified as externals and individuals scoring below the median were classified as internals.

Validity. Rotter (1966) reported that evidence of construct validity is shown through predictable differences for participants above and below the median of the I-E scale, as well as behavioral criteria correlations. In a study of Chinese employees, Tong and Wang (2006) found that when comparing scores for Rotter's I-E scale to Levenson's IPS scale, individuals with higher external control obtained lower scores on the internal dimension (r [79] = -.33, p = .003 < .01) and got higher scores on Levenson's chance dimensions and powerful others dimensions (r [80] = .47, p < .001 < .01; r [80] = .47, p < .001 < .01). As evidenced by these findings, Rotter's scale appears to have good convergent validity. Correlation analyses reveal that Chinese employees with an external locus of control had lower self-efficacy, lower job motivation, higher desire to leave, greater work-related stress, and lower job satisfaction. The findings were consistent with the past research, showing that among Chinese employees, Rotter's scale has a level of criterion-related validity (Tong & Wang, 2006). Correlation analysis revealed that lower job performance (r [306] = -.27, p < .001) among Chinese employees with an external locus of control. Decreased task performance (r [306] = -.15, p = .007), fewer behaviors of altruism (r [306] = -.31, p < .001), and fewer conscientious behaviors (r [306] = -.28, p < .001) were also noted. This shows empirical validity for Rotter's scale.

Further, a study by Zerega, Tseng, and Greever (1976) administered Rotter's Internal-External Locus of Control Scale (Rotter, 1966) and the MacDonald-Tseng Internal-External Locus of Control scale to a sample of 541 Catholic high school students between the ages of 13 and 18. The MacDonald-Tseng Internal-External

Locus of Control scale is based on Rotter's scale of factor analysis. The concurrent validity of Rotter's I-E scale to the MacDonald Tseng scale was established (r = .42, p < .001).

Reliability. This scale possesses fairly high internal consistency. A sample of 400 college participants was used to determine internal consistency. An internal consistency coefficient of .70 was reported. In the study of Chinese employees mentioned, reliability analysis showed Cronbach's alpha was .77, with two items receiving the lowest item-total correlations and discriminations being deleted. After two weeks the test-retest reliability was .82 (Tong & Wang, 2006). The Cronbach alpha coefficient of .69 obtained from data for the present study was adequate for use with this sample.

In the Catholic high school student sample, Zerega, Tseng, and Greever (1976) found the product-moment correlation between the test and retest measures over an eight month period was *r* = .55. A *t* test indicated a value of 1.14 with 305 degrees of freedom when examining the mean difference between test and retest scores. No significant difference between the two means was indicated.

Religiosity Measures Questionnaire.

The Religiosity Measures Questionnaire evaluates the impact of religion on a respondent's daily life and the extent of their participation in ritualistic practices. Reference to any particular religious affiliation is minimized so as to assure that a high religiosity score can still be obtained without affiliation with a certain religious institution (Rohrbaugh & Jessor, 1975). Of importance is one's cognitive orientation toward a "transcendent reality" and not an outward religious organization (Boivin, 1999, p. 307). The instrument measures four dimensions of religiosity: ritual, consequential, ideological, and experiential. The measure consists of an 8-item multiple-choice answer

format. Items are scored from 0 (indicating least religiosity) to 4 (indicating greatest religiosity). The exception to this scoring is the first question which asks, "How many times have you attended religious services during the past year?" The highest score for each of the four subscales is 8 and the total possible score is 32 (Rohrbaugh & Jessor, 1975). A high school reading level is needed to complete the measure. In this study, a median split was used. Individuals scoring above the median were classified as having high religiosity, and individuals scoring below the median were classified as having low religiosity.

Validity. Regarding construct validity, Rohrbaugh and Jessor (1975) surveyed college and high school students asking them to rate their overall religiosity on a 10-point scale and correlations were found between the overall religiosity scores from the Religiosity Measures Questionnaire and the self-rating. These were as follows: college males, $r = .78$; college females, $r = .81$; high school males, $r = .83$; and high school females, $r = .84$. Construct validity had a correlation matrix coefficient value of .69. Also, results of past research on religiosity confirmed that high school students of both genders had significantly higher religiosity scores than their counterparts in college. To test the construct validity of the composite scale, four intercorrelation matrices were obtained for each of the four subgroups (male and female college students and male and female high school students). The construct validity was supported by the consistent results, with Rohrbaugh and Jessor reporting that the average correlation in the four matrices was .69. These *r* values were either similar to or greater than the reliability coefficients obtained for the four subscales. As a result of these analyses, Rohrbaugh and Jessor concluded that the composite scale had good construct validity.

Reliability. High internal consistency was found for the Religiosity Measures Questionnaire. Among the college and high school population surveyed by Rohrbaugh and Jessor (1975), psychometric properties of the religiosity subscales and the composite measure proved to be similar. The obtained Cronbach coefficient alpha was over .90, indicating good internal reliability. An alpha coefficient of .93 was obtained from data in the present study, providing evidence that the instrument had good internal consistency.

Data Analysis

Data collected from the participants was entered into a computer file for analysis using SPSS – Windows, ver. 17.0. The data analysis was divided into three sections. The first section used frequency distributions and measures of central tendency and dispersion to provide a profile of the participants. The second section of the data analysis used descriptive statistics to provide baseline information for each of the scaled variables. The third section of the chapter used inferential statistical analyses, including Pearson product moment correlations, multiple linear regression analysis, mediation analysis, and multivariate analysis of variance (MANOVA). All decisions on the statistical significance of the findings will be made using a criterion alpha level of .05. The statistical analyses that were used to test each hypothesis are presented in Figure 1.

Figure 1

Statistical Analysis

Hypothesis	Variables	Statistical Analysis
H_{1a}: A statistically significant relationship exists among emerging adult college students between self-reported involvement in risk-taking behaviors, including illicit drug use, aggressive/illegal behaviors, risky sexual behaviors, heavy drinking, high-risk sports, and academic/work behaviors and positive cognitive appraisals of these behaviors. H_{1b}: A statistically significant relationship exists among emerging adult college students between self-reported involvement in risk-taking behaviors, including illicit drug use, aggressive/illegal behaviors, risky sexual behaviors, heavy drinking, high-risk sports, and academic/work behaviors and negative cognitive appraisals of these behaviors.	<u>Self-reported involvement in risk-taking behaviors</u> • Illicit drug use • Aggressive/Illegal behaviors • Risky sexual behaviors • Heavy drinking • High-risk sports • Academic/Work behaviors <u>Cognitive appraisals</u> Positive cognitive appraisals Negative cognitive appraisals	Pearson product moment correlations were used to determine the magnitude and direction of the relationships between self-reported involvement in risk-taking behaviors and cognitive appraisals.
H_2: Emerging male and female adult college students with different personality traits will self-report different use of drinking and illicit drug use. H_{2a1}: Emerging adult college students with higher scores on agreeableness will self-report higher involvement with heavy drinking and illicit drugs than emerging adult college students with lower scores on agreeableness. H_{2a2}: Emerging male adult college students with higher scores on agreeableness will self-report higher involvement with heavy drinking and illicit drugs than emerging female adult college students with higher scores on agreeableness. H_{2b1}: Emerging adult college students with higher scores on conscientiousness will self-report lower involvement with heavy drinking and illicit drugs than emerging adult college students with lower scores on	<u>Dependent Variable</u> Heavy Drinking • Drinking alcohol too quickly • Drinking more than 5 alcoholic beverages • Playing drinking games Illicit Drug Use • Trying/using drugs other than alcohol or marijuana • Smoking marijuana • Mixing drugs and alcohol <u>Independent Variables</u> Personality Traits • Neuroticism • Extraversion • Openness to experience • Agreeableness • Conscientiousness Gender • Male • Female	Separate 2 X 2 multivariate analysis of variance (MANOVAs) were used to determine if alcohol use and marijuana use differ by high and low scores on personality traits and gender of the participants. Each of the personality traits were treated as a separate independent variable in the analyses. If a statistically significant difference was found on the omnibus F tests for the main effect of personality trait and gender, the mean scores were examined to determine the direction of the difference. If a statistically significant difference was obtained for the interaction between personality trait and gender, simple effects were used to determine which groups were contributing to the significant result.

Hypothesis	Variables	Statistical Analysis
conscientiousness.		
H_{2b2}: Emerging female adult college students with higher scores on conscientiousness will self-report lower involvement with heavy drinking and illicit drugs than emerging male adult college students with higher scores on conscientiousness.		
H_{2c1}: Emerging adult college students with higher scores on neuroticism will self-report higher involvement with heavy drinking and illicit drugs than emerging adult college students with lower scores on neuroticism.		
H_{2c2}: Emerging male adult college students with higher scores on neuroticism will self-report higher involvement with heavy drinking and illicit drugs than emerging female adult college students with higher scores on neuroticism.		
H_{2d1}: Emerging adult college students with higher scores on extraversion will self-report higher involvement with heavy drinking and illicit drugs than emerging adult college students with lower scores on extraversion.		
H_{2d2}: Emerging male adult college students with higher scores on extraversion will self-report higher involvement with heavy drinking and illicit drugs than emerging female adult college students with higher scores on extraversion.		
H_{2e1}: Emerging adult college students with higher scores on openness to experience will self-report higher involvement with heavy drinking and illicit drugs than emerging adult college students with lower scores on openness to experience.		
H_{2e2}: Emerging male adult college students with higher scores on openness to experience will self-report higher involvement with heavy drinking and illicit drugs than emerging female adult college students with higher scores on openness to		

Hypothesis	Variables	Statistical Analysis
experience.		
H₃: Self-reported involvement of emerging adult college students in risk-taking behaviors can be predicted from age, gender, higher scores for neuroticism and for positive appraisals, and lower scores for negative appraisals of these behaviors.	<u>Criterion Variables</u> Self-reported involvement in risk-taking behaviors • Illicit drug use • Aggressive/Illegal behaviors • Risky sexual behaviors • Heavy drinking • High-risk sports • Academic/Work behaviors <u>Predictor Variables</u> Age Gender Neuroticism Positive cognitive appraisals Negative cognitive appraisals	Separate stepwise multiple linear regression analyses were used to determine which of the predictor variables could be used to predict each of the subscales measuring self-reported involvement in risk-taking behaviors. Before completing the stepwise multiple linear regression analysis, an intercorrelation matrix was developed using Pearson product moment correlations to determine which of the predictor variables were significantly related to the criterion variables. Only those predictor variables that significantly related to the criterion variables were included in the stepwise multiple linear regression analyses.
H₄: The relationship between self-reported involvement of emerging adult college students in risk-taking behaviors and personality traits is mediated by scores for religiosity. H₄ₐ: The relationship between self-reported involvement of emerging adult college students in risk-taking behaviors and neuroticism scores is mediated by scores for religiosity. H₄ᵦ: The relationship between self-reported involvement of emerging adult college students in risk-taking behaviors and extraversion scores is mediated by scores for religiosity. H₄ᵪ: The relationship between self-reported involvement of emerging adult college students in risk-taking behaviors and openness to experience scores is mediated by scores for religiosity. H₄d: The relationship between self-reported involvement of emerging adult college students in risk-taking behaviors and agreeableness scores is mediated by scores for religiosity. H₄ₑ: The relationship between self-reported involvement of emerging adult college	<u>Criterion Variables</u> Self-reported involvement in risk-taking behaviors • Illicit drug use • Aggressive/Illegal behaviors • Risky sexual behaviors • Heavy drinking • High-risk sports • Academic/Work behaviors <u>Predictor Variable</u> Neuroticism Extraversion Openness to experience Agreeableness Conscientiousness <u>Mediating Variable</u> Religiosity	Baron and Kenny (1986) Mediator Model analysis was used to test this hypothesis. Separate multiple linear regressions were used to determine the mediating effect of religiosity on the relationship between involvement in risk-taking behaviors and personality traits. The process used to test this hypothesis included: Step 1: A multiple linear regression analysis was used to examine the strength of the relationship between the predictor variable and each of the criterion variables. If the predictor variable was not explaining a significant amount of variance in the criterion variable, the mediation process could not be completed. Step 2: A second multiple linear regression analysis was used to examine the relationship between the predictor variable, and the mediating variable, religiosity. According to Baron and Kenny (1986), the predictor variable and the mediating variable must be significantly related. Step 3. The relationship between the mediator variable and the criterion variable was examined on this step. The mediating variable and the criterion variable must be significantly related for a mediating effect to exist. Step 4. The mediating variable (religiosity) and the predictor variable were entered hierarchically in a multiple linear regression analysis, with involvement in risk-taking behaviors used as the criterion

Hypothesis	Variables	Statistical Analysis
students in risk-taking behaviors and conscientiousness scores is mediated by scores for religiosity.		variable. The effect that the mediating variable had on the relationship between the predictor and criterion variables was examined. According to Lindley and Walker (1993), the relationship between the predictor and criterion variables should be statistically significant on the first step. The relationship should be nonsignificant after the inclusion of the mediating variable for a mediating effect to exist. If a mediating effect was found, the Sobel test was conducted as suggested by Baron and Kenny (1986). The Sobel test determined if the relationship between the predictor and criterion variable is partially mediated by religiosity.
H_5: Emerging adult college students with a more internal locus of control and higher scores for conscientiousness and agreeableness personality traits and lower scores for neuroticism, extraversion, and openness to experience personality traits will self-report lower levels of involvement in risky behaviors.	<u>Criterion Variables</u> Self-reported involvement in risk-taking behaviors • Illicit drug use • Aggressive/Illegal behaviors • Risky sexual behaviors • Heavy drinking • High-risk sports • Academic/Work behaviors <u>Predictor Variables</u> Locus of control Neuroticism Extraversion Openness to experience Agreeableness Conscientiousness	Separate stepwise multiple linear regression analysis were used to determine which of the personality traits could be used to predict self-reported involvement in risk-taking behaviors. Before conducting the stepwise multiple linear regression analysis, an intercorrelation matrix using Pearson product moment correlations was created to determine which of the predictor variables were significantly related to the criterion variables. Only those predictor variables that were significantly related to the criterion variables were used in the stepwise multiple linear regression analysis.
H_6: Younger emerging adult male and female college students (ages 18 to 20 years) will have different scores for the five personality traits than older emerging adult male and female college students (ages 21 to 25 years). H_{6a}: Younger emerging adult male and female college students (ages 18 to 20 years) will have lower scores for agreeableness than older emerging adult male and female college students (ages 21 to 25 years). H_{6b}: Younger emerging adult male and female college students (ages 18 to 20 years) will have lower scores for conscientiousness than older emerging adult male and female college students (ages	<u>Dependent Variables</u> Neuroticism Extraversion Openness to experience Agreeableness Conscientiousness <u>Independent Variable</u> Age Gender	Separate Mann-Whitney U tests for two independent samples were used to determine if the five personality factors differed by age and gender. Age was a continuous variable that was divided into two groups 18 to 20-year-olds and 21 to 25-year-olds using a median split. To test the interaction between age and gender, four groups were formed, male 18 to 20-year-olds, female 18 to 20-year-olds, male 21 to 25-year-olds, and female 21 to 25-year-olds. Because of the discrepancy in the number of participants in each of the four groups, Kruskal-Wallis one-way analysis of variance were used to compare the four groups on each of the five personality factors.

Hypothesis	Variables	Statistical Analysis
21 to 25 years). H_{6c}: Younger emerging adult male and female college students (ages 18 to 20 years) will have lower scores for openness to experience than older emerging adult male and female college students (ages 21 to 25 years). H_{6d}: Younger emerging adult male and female college students (ages 18 to 20 years) will have higher scores for neuroticism than older emerging adult male and female college students (ages 21 to 25 years). H_{6e}: Younger emerging adult male and female college students (ages 18 to 20 years) will have higher scores for extraversion than older emerging adult male and female college students (ages 21 to 25 years).		

CHAPTER IV

RESULTS OF DATA ANALYSIS

Chapter IV presents the results of the statistical analyses that have been used to describe the sample and address the research questions and associated hypotheses. The chapter is divided into four sections. The first section presents a profile of the participants using descriptive statistics, with a description of the scaled variables included in the second section. The results of the inferential statistical analyses used to address each of the research questions and hypotheses are presented in the third section, with ancillary findings in the fourth section.

The purpose of the study was to explore personality factors contributing to six risky behaviors: illicit drug use, aggressive/illegal behaviors, risky sexual behaviors, heavy drinking, high-risk sports, and academic/work behaviors in a sample of 18 to 25-year-old college students. Cognitive appraisals as measured by expected risk, expected benefit, and actual involvement of the risky behaviors identified were also explored. Additional variables of focus in contributing to the relationship between personality and risky behaviors identified include religion and locus of control.

The researcher distributed 400 surveys over four consecutive semesters to students in 13 undergraduate English and Psychology classes at a large suburban, baccalaureate-degree granting university. Six English classes and seven Psychology classes were surveyed. Of this number, 302 students returned their survey packets. In reviewing the survey packets, the researcher eliminated 47 incomplete survey packets, resulting in 255 completed surveys that were used in the data analysis. Only surveys that were 100% complete were used in this study.

Description of the Sample

The students completed a short demographic survey to provide information on their personal characteristics. The first question was their age. The responses to this question were summarized using frequency distributions. Table 1 presents results of this analysis.

Table 1

Frequency Distributions
Age

Age in Years	Number	Percent
18	85	33.3
19	83	32.5
20	37	14.5
21	18	7.1
22	11	4.3
23	14	5.5
24	6	2.4
25	1	.4
Total	255	100.0

The largest group of students (n = 85, 33.3%) reported their ages as 18 years, with 83 (32.5%) indicating they were 19 years of age. One (0.4%) student was 25 years of age and 6 (2.4%) were 24 years of age.

The students provided their gender on the survey. Frequency distributions were used to summarize their responses for presentation in Table 2.

Table 2

Frequency Distributions
Gender

Gender	Number	Percent
Male	51	20.0
Female	204	80.0
Total	255	100.0

The majority of the respondents (n = 204, 80.0%) indicated their gender as female. Fifty-one (20.0%) students reported their gender as male. As the data were obtained from students enrolled in English and Psychology classes, the discrepancy in the numbers of male and female students may be related to the higher enrollment of females in these classes.

The participants' ethnicity was obtained on the survey. Frequency distributions were used to summarize the responses for presentation in Table 3.

Table 3

Frequency Distributions
Ethnicity

Ethnicity	Number	Percent
Asian	4	1.6
Black/African American	12	4.7
Native American	1	.4
Pacific Islander	4	1.6
Spanish/Hispanic/Latino/Latina	2	.8
White/Caucasian	220	86.2
Other	12	4.7
Total	255	100.0

The majority of the participants (n = 220, 86.2%) reported their ethnicity as White/Caucasian. Twelve (4.7%) participants indicated their ethnicity as Black/African American, with another 12 (4.7%) reporting "other" as their ethnicity. They did not provide any additional information regarding their specific ethnicity.

The marital status of the students was obtained on the demographic survey. The responses to this question were summarized using frequency distributions. Table 4 presents results of this analysis.

Table 4

Frequency Distributions
Marital Status

Marital Status	Number	Percent
Single, never married	247	96.8
Engaged	4	1.6
Living with partner	4	1.6
Total	255	100.0

The majority of participants (n = 247, 96.8%) reported their marital status as single, never married. Four (1.6%) were engaged and an additional 4 (1.6%) were living with a partner.

The employment status of the participants was identified by the participants. The results of the frequency distribution used to summarize the responses are presented in Table 5.

Table 5

Frequency Distributions
Employment Status

Employment Status	Number	Percent
Full-time employed	14	5.5
Part-time employed	147	57.6
Self-employed	5	2.0
Not employed, but looking for work	16	6.3
Not employed, and not looking for work	2	.8
Student	71	27.8
Total	255	100.0

The largest group of participants (n = 147, 57.6%) reported they were employed part-time, with 14 (5.5%) indicating they were employed full-time. Five (2.0%) of the participants were self-employed. Seventy-one (27.8%) participants reported they were students. Sixteen (6.3%) participants were not employed, but were looking for work, while 2 (0.8%) were not employed and were not looking for work.

The students were asked to indicate their educational level (year in college). Their responses were summarized using frequency distributions for presentation in Table 6.

Table 6

Frequency Distributions
Educational Level (Year in College)

Educational Level (Year in College)	Number	Percent
First year in college	114	44.7
Second year in college	73	28.6
Third year in college	28	11.0
Fourth year in college	24	9.4
Fifth year in college	16	6.3
Total	255	100.0

The largest group of participants (n = 114, 44.7%) were in their first year of college, with 73 (28.6%) in their second year of college. Twenty-eight (11.0%) students were in their third year in college and 24 (9.4%) were in their fourth year of college. Sixteen (6.3%) students reported they were in their fifth year of undergraduate education.

The students provided their residential status on the survey. Their responses were summarized using frequency distributions. Table 7 presents results of this analysis.

Table 7

Frequency Distributions
Residential Status

Residential Status	Number	Percent
Reside alone	10	4.0
Reside with roommates	45	17.8
Reside with partner/spouse	8	3.2
Reside with parents	189	75.0
Total	252	100.0

Missing 3

The majority of the participants (n = 189, 75.0%) indicated they were living with their parents. Forty-five (17.8%) were living with roommates and 10 (4.0%) were living alone. Eight (3.2%) students indicated they were residing with a partner/spouse. Three participants did not provide a response to this question.

The participants were asked to indicate their religious affiliation. The responses to this question were summarized using frequency distributions for presentation in Table 8.

Table 8

Frequency Distributions
Religious Affiliation

Religious Affiliation	Number	Percent
Agnostic	18	7.1
Atheist	8	3.2
Buddhist	1	.4
Christian	191	75.8
Hindu	2	.8
Jewish	5	2.0
Muslim	5	2.0
Other	22	8.7
Total	252	100.0

Missing 3

The majority of the participants (n = 191, 75.8%) reported their religious affiliation as Christian. Eighteen (7.1%) students indicated they were agnostic and 8 (3.2%) were atheist. Twenty-two (8.7%) students reported "other" as their religious affiliation, but did not provide additional information to explain their response. Three students did not provide a response to this question.

The participants indicated the number of times they attended religious services during the past year. Their responses were summarized using descriptive statistics. Table 9 presents results of this analysis.

Table 9

Descriptive Statistics
Number of Times Attended Religious Services

| | | | | | Range |
Number	Mean	SD	Median	Minimum	Maximum
250	20.74	31.56	5	0	212

Missing 5

The students reported they had attended religious services a mean of 20.74 (sd = 31.56) times in the last year. The median number of religious services attended was 5, with a range from 0 to 212. In examining the frequency distributions, it was noted that at least 92% of the participants had attended religious services no more than one time a week. Five students did not provide a response to this question.

Description of the Scaled Variables

The scaled variables were scored using the scale developers' protocols. The scores were summarized using descriptive statistics. For the purpose of this study, a missing value analysis was completed and any missing values that were found were replaced with mean scores. None of the variables with missing values had more than 20% of the values missing. The missing value analysis from SPSS – Windows, ver. 17.0 was used to replace missing values with total variable mean scores. Table 10 presents the descriptive statistics for the Religiosity Measures Questionnaire and Locus of Control.

Table 10

Descriptive Statistics
Religiosity Measures and Locus of Control

Measure	N	Mean	SD	Median	Range of Actual Scores		Range of Possible Scores	
					Minimum	Maximum	Minimum	Maximum
Religiosity	255	16.76	7.43	18	0	28	0	28
Locus of Control	255	10.91	3.71	11	3	23	0	23

Religiosity Measures. The mean score for religiosity was 16.76 (sd = 7.43), with a median of 18. Both the actual and possible scores ranged from 0 to 28, with higher scores indicating greater levels of religiosity.

Locus of control. The mean score for locus of control was 10.91 (sd = 3.71). The median score was 11, with actual scores ranging from 3 to 23. Possible scores on this scale could range from 0 to 23. Using the median split, scores less than 11 were indicative of an internalized locus of control, while scores greater than 11 were reflective of an externalized locus of control.

The Cognitive Appraisal of Risky Events (CARE) questionnaire was completed three times by the participants. The students indicated the likelihood of negative consequences if they participated in risky behaviors. They also indicated the likelihood of positive consequences if they participated in risky behaviors. Finally, the students' indication of their actual involvement in the risky activities within the past six months was assessed. Descriptive statistics were used to summarize their responses to these items. Table 11 presents results of these analyses.

Table 11

Descriptive Statistics
Cognitive Appraisal of Risky Events (CARE)

Measure	N	Mean	SD	Median	Range of Actual Scores		Range of Possible Scores	
					Minimum	Maximum	Minimum	Maximum
Likelihood of Negative Consequences*								
Illicit drug use	255	16.93	5.30	19	3	21	3	21
Aggressive/Illegal behaviors	255	47.10	13.90	50	9	63	9	63
Risky sexual Behaviors	255	33.87	9.61	37	6	42	6	42
Heavy drinking	255	14.32	4.99	15	3	21	3	21
High-risk sports	255	9.50	4.96	8	4	28	4	28
Academic/Work behaviors	255	25.08	7.01	25	5	35	5	35
Total Score	255	146.47	36.33	154	33	210	30	210
Likelihood of Positive Consequences*								
Illicit drug use	255	4.98	3.42	3	3	21	3	21
Aggressive/Illegal behaviors	255	13.29	6.05	11	8	40	9	63
Risky sexual Behaviors	255	10.16	5.41	8	6	33	6	42
Heavy drinking	255	7.27	4.23	6	3	21	3	21
High-risk sports	255	19.28	6.76	21	4	28	4	28
Academic/Work behaviors	255	8.81	6.86	8	5	23	5	35
Total Score	255	63.87	20.16	60	30	126	30	210
Actual Involvement in Last Six Months*								
Illicit drug use	255	4.23	3.03	3	3	21	3	21
Aggressive/Illegal behaviors	255	13.87	5.09	12	9	37	9	63
Risky sexual Behaviors	255	8.43	3.94	6	6	26	6	42
Heavy drinking	255	7.75	5.22	6	3	21	3	21
High-risk sports	255	8.61	4.53	7	4	24	4	28
Academic/Work behaviors	255	14.07	5.60	13	5	32	5	35
Total Score	255	56.96	17.06	53	30	118	30	210

*Note: Higher scores indicate greater likelihood of positive and negative consequences of risky behaviors and higher self-reported actual involvement

The scores for the likelihood of negative consequences, likelihood of positive consequences, and actual involvement in the last six months provide information regarding university students' cognitive appraisal of risk-taking behaviors. In examining the mean scores, it appeared that participants who perceived the risk-taking behaviors

were associated with a higher likelihood of negative consequences were more likely to avoid being involved in those activities. Higher scores on the risky behaviors scales indicated more positive perceptions of the negative and positive effects of risky behavior and greater self-reported involvement in these behaviors.

The NEO Five-Factor Inventory (Costa & McCrae, 2003) measured five personality factors: agreeableness, conscientiousness, neuroticism, extraversion, and openness to experience. Descriptive statistics were used to summarize the mean scores for each of the five factors. Table 12 presents results of this analysis.

Table 12

Descriptive Statistics
NEO Five-Factor Inventory

Measure	N	Mean	SD	Median	Range of Actual Scores		Range of Possible Scores	
					Minimum	Maximum	Minimum[1]	Maximum[2]
Agreeableness	255	32.51	5.71	33	15	46	0	48
Conscientiousness	255	33.19	6.43	33	8	47	0	48
Neuroticism	255	21.75	7.92	21	1	46	0	48
Extraversion	255	31.84	6.67	32	4	47	0	48
Openness to Experience	255	27.62	5.68	27	13	44	0	48

[1] Minimum = less of a personality trait
[2] Maximum = more of a personality trait

The actual range of scores for the NEO Five-Factor Inventory was different from the possible scores, which could range from 0 to 48 on each of the five personality types. Conscientiousness appeared to have the highest scores, with neuroticism having the lowest mean scores. Higher scores indicated that students were more likely to

exhibit a specific personality trait, with lower scores providing evidence that students were less likely to display that personality trait.

Research Hypotheses

Six research hypotheses were developed for this study. Each of these questions were addressed using inferential statistical analyses, with all decisions on the statistical significance of the findings made using a criterion alpha level of .05.

H_{1a}: A statistically significant relationship exists among emerging adult college students between self-reported involvement in risk-taking behaviors, including illicit drug use, aggressive/illegal behaviors, risky sexual behaviors, heavy drinking, high-risk sports, and academic/work behaviors and positive cognitive appraisals of these behaviors.

Pearson product moment correlations were used to examine relationships between self-reported involvement in risk-taking behaviors and participants' cognitive appraisals of these behaviors. Table 13 presents the results of this analysis.

Table 13

Pearson Product Moment Correlations
Risk-taking Behaviors and Cognitive Appraisal of Positive Consequences

Self-reported Involvement in Risk-taking Behaviors	Cognitive Appraisal of the Positive Consequences of these Behaviors										
	Illicit Drug Use		Aggressive/ Illegal Behaviors		Risky Sexual Behaviors		Heavy Drinking		High-risk Sports		Academic/ Work Behaviors	
	r	p	R	P	r	p	R	p	r	p	r	P
Illicit Drug Use	.63	<.001										
Aggressive/Illegal behaviors			.56	<.001								
Risky sexual behaviors					.40	<.001						
Heavy drinking							.65	<.001				
High-risk sports									.42	<.001		
Academic/Work behaviors											.35	<.001

Six statistically significant correlations were found between self-reported involvement in risk-taking behaviors and cognitive appraisal of the positive consequences of these behaviors. The statistically significant correlation between self-reported involvement in illicit drug use and positive consequences of this behavior was in a positive direction, r (255) = .63, p < .001. A positive correlation was obtained between self-reported involvement in aggressive/illegal behaviors and positive consequences of this behavior, r (255) = .56, p < .001. The correlation between self-reported involvement in risky sexual behavior and positive consequences of this behavior was statistically significant, r (255) = .40, p < .001. The correlation between self-reported involvement in heavy drinking and positive consequences of this behavior was statistically significant in a positive direction, r (255) = .65, p < .001. A statistically significant correlation was obtained between self-reported involvement in high-risk sports and positive consequences of this behavior, r (255) = .42, p < .001. The correlation between self-reported involvement in academic/work behaviors and positive consequences of this behavior was statistically significant, r (255) = .35, p < .001. The positive correlations found in these analyses indicated that relationships exist between students' perceptions of risky behaviors and their likelihood of being involved in these behaviors. Based on these findings, the null hypothesis of no relationship between self-reported involvement in risk-taking behaviors and cognitive appraisal of positive consequences of these behaviors is rejected.

H_{1b}:   A statistically significant relationship exists among emerging adult college students between self-reported involvement in risk-taking behaviors, including illicit drug use, aggressive/illegal behaviors, risky sexual behaviors, heavy drinking, high-risk sports, and academic/work behaviors and negative cognitive appraisals of these behaviors.

Pearson product moment correlations were used to determine the strength and direction of the relationships between self-reported involvement in risk-taking behaviors and negative cognitive appraisals of these behaviors. Results of these analyses are presented in Table 14.

Table 14

Pearson Product Moment Correlations
Risk-taking Behaviors and Cognitive Appraisals of the Negative Consequences

| | Cognitive Appraisal of the Negative Consequences of these Behaviors | | | | | | | | | | | |
| | Illicit Drug Use | | Aggressive/ Illegal Behaviors | | Risky Sexual Behaviors | | Heavy Drinking | | High-risk Sports | | Academic/ Work Behaviors | |
Risk-taking Behaviors	r	p	r	P	r	p	r	p	r	p	r	P
Illicit Drug Use	-.37	<.001	-.09	.135	-.18	.004	-.26	<.001	-.05	.435	-.08	.222
Aggressive/Illegal behaviors	-.12	.059	-.16	.012	-.04	.565	-.16	.012	-.03	.6565	-.10	.115
Risky sexual behaviors	-.15	.015	-.06	.330	-.13	.036	-.13	.033	.01	.966	-.02	.718
Heavy drinking	-.20	.001	-.07	.303	-.12	.050	-.39	<.001	-.16	.012	-.04	.500
High-risk sports	.01	.891	.06	.367	-.01	.908	-.10	.109	-.21	.001	.05	.410
Academic/Work behaviors	-.11	.074	-.18	.005	-.13	.044	-.16	.010	-.08	.228	-.16	.010

The correlations between self-reported involvement in risk-taking behaviors and cognitive appraisals of the negative consequences of these behaviors were statistically significant in a negative direction. The correlation between self-reported involvement in illicit drug use and cognitive appraisal of the negative consequences was statistically significant, r (255) = -.37, p < .001. A statistically significant result was obtained between self-reported involvement in aggressive/illegal behaviors and cognitive appraisals of the negative consequences, r (255) = -.16, p = .012. The correlation between self-reported involvement in risky sexual behavior and cognitive appraisals of the negative consequences was statistically significant, r (255) = -.13, p = .036. The results of the correlation analysis between self-reported involvement in heavy drinking

and cognitive appraisal of the negative consequences were statistically significant, r (255) = -.39, $p < .001$. Results of the correlation analysis between self-reported involvement in high-risk sports and cognitive appraisal of the negative consequences were statistically significant, r (255) = -.21, $p < .001$. The correlation between self-reported involvement in academic/work behaviors and cognitive appraisal of the negative consequences of these behaviors was statistically significant, r (255) = -.16, p = .010. The negative direction of the correlations indicated that a relationship exists between participants' perceived consequences and likelihood to participate in risky behaviors. Based on these findings, the null hypothesis of no relationship is rejected.

H$_2$: Emerging male and female adult college students with different personality traits will self-report different use of drinking and illicit drugs.

  H$_{2a1}$: Emerging adult college students with higher scores on agreeableness will self-report higher involvement with heavy drinking and illicit drugs than emerging adult college students with lower scores on agreeableness.

  H$_{2a2}$: Emerging male adult college students with higher scores on agreeableness will self-report higher involvement with heavy drinking and illicit drugs than emerging female adult college students with higher scores on agreeableness.

The three factors measuring self-reported involvement in heavy drinking were used as the dependent variables in a 2 X 2 multivariate analysis of variance (MANOVA). The independent variables in this analysis were gender and high and low levels of agreeableness. Agreeableness was divided into the three levels, with the middle third (scores between the 33 1/3% and 66 2/3%) removed from the analysis to create distinct high and low groups. Because of the discrepancy in the number of males ($n = 51$) and females ($n = 204$) in the study, the tests for equality of covariance (Box's test, F [18, 26985.8] = 1.26, p = .204) were used. This test was not statistically significant, indicating that the assumptions of equality for the MANOVA had not been violated.

Similar results were obtained for the remaining analyses for this hypothesis. Table 15

presents results of the MANOVA.

Table 15

2 X 2 Multivariate Analysis of Variance
Self-Reported Involvement in Heavy Drinking by Agreeableness and Gender

Source	Hotelling's Trace	F Ratio	DF	Sig	Effect Size
Agreeableness	.03	1.77	3, 170	.155	.03
Gender	.01	.80	3, 170	.494	.01
Agreeableness X Gender	<.01	.10	3, 170	.961	<.01

The results of the MANOVA were not statistically significant for either main effect,

gender or agreeableness. The interaction effect between gender and agreeableness

was not statistically significant.

Descriptive statistics were obtained for each of the independent variables and the

interaction effect. Based on these findings, the null hypothesis of no difference in self-

reported involvement in heavy drinking was retained. These results are shown in Table

16.

Table 16

Descriptive Statistics

Self-Reported Involvement in Heavy Drinking by Gender and Level of Agreeableness

Independent Variables	N	Mean	SD
Agreeableness			
Drinking alcohol too quickly			
Low	81	3.16	2.14
High	95	2.41	2.00
Drinking more than 5 alcoholic beverages			
Low	81	3.05	2.02
High	95	2.28	1.74
Playing drinking games			
Low	81	2.98	1.99
High	95	2.26	1.73
Gender			
Drinking alcohol too quickly			
Male	35	3.23	2.44
Female	141	2.64	1.99
Drinking more than 5 alcoholic beverages			
Male	35	3.09	2.34
Female	141	2.52	1.78
Playing drinking games			
Male	35	2.77	2.13
Female	141	2.55	1.82
Agreeableness x Gender			
Drinking alcohol too quickly			
Male x Low Agreeableness	23	3.48	2.35
Male x High Agreeableness	12	2.75	2.63
Female x Low Agreeableness	58	3.03	2.06
Female x High Agreeableness	83	2.36	1.91
Drinking more than 5 alcoholic beverages			
Male x Low Agreeableness	23	3.39	2.29
Male x High Agreeableness	12	2.50	2.43
Female x Low Agreeableness	58	2.91	1.91
Female x High Agreeableness	83	2.25	1.63
Playing drinking games			
Male x Low Agreeableness	23	3.09	2.07
Male x High Agreeableness	12	2.17	2.21
Female x Low Agreeableness	58	2.93	1.98
Female x High Agreeableness	83	2.28	1.66

A 2 X 2 MANOVA was used to test for differences in college students' use of illicit drugs by gender and high and low scores for the personality trait, agreeableness. The personality trait, agreeableness, was divided into high and low using a three-way split. The scores in the middle third were eliminated from this analysis. The dependent variables in this analysis were self-reported use of illicit drugs, with gender and agreeableness used as the independent variables. Table 17 presents results of the MANOVA.

Table 17

2 X 2 Multivariate Analysis of Variance
Self-Reported Use of Illicit Drugs by Agreeableness and Gender

Source	Hotelling's Trace	F Ratio	DF	Sig	Effect Size
Agreeableness	.04	2.02	3, 170	.113	.03
Gender	.01	.56	3, 170	.639	.01
Agreeableness X Gender	.04	2.43	3, 170	.067	.04

The two main effects, agreeableness and gender, were not statistically significant. The interaction between agreeableness and gender was not statistically significant.

Descriptive statistics were obtained for each of the independent variables and the interaction effect. Based on these findings, the null hypothesis for illicit drug use by agreeableness was not rejected. Table 18 presents results of these analyses.

Table 18

Descriptive Statistics
Self-Reported Illicit Drug Use by Level of Agreeableness and Gender

Independent Variables	N	Mean	SD
Agreeableness			
Trying/using drugs other than alcohol or marijuana			
Low	81	1.44	1.25
High	95	1.21	.98
Smoking marijuana			
Low	81	1.99	1.80
High	95	1.49	1.37
Mixing drugs and alcohol			
Low	81	1.69	1.37
High	95	1.31	1.19
Gender			
Trying/using drugs other than alcohol or marijuana			
Male	35	1.43	1.22
Female	141	1.29	1.09
Smoking marijuana			
Male	35	2.20	2.15
Female	141	1.60	1.40
Mixing drugs and alcohol			
Male	35	1.71	1.51
Female	141	1.43	1.22
Agreeableness x Gender			
Trying/using drugs other than alcohol or marijuana			
Male x Low Agreeableness	23	1.35	.89
Male x High Agreeableness	12	1.58	1.73
Female x Low Agreeableness	58	1.48	1.37
Female x High Agreeableness	83	1.16	.82
Smoking marijuana			
Male x Low Agreeableness	23	2.61	2.37
Male x High Agreeableness	12	1.42	1.44
Female x Low Agreeableness	58	1.74	1.47
Female x High Agreeableness	83	1.51	1.36
Mixing drugs and alcohol			
Male x Low Agreeableness	23	1.83	1.40
Male x High Agreeableness	12	1.50	1.73
Female x Low Agreeableness	58	1.64	1.36
Female x High Agreeableness	83	1.28	1.10

H$_{2b1}$: Emerging adult college students with higher scores on conscientiousness will self-report lower involvement with heavy drinking and illicit drug use than emerging adult college students with lower scores on conscientiousness.

H$_{2b2}$: Emerging female adult college students with higher scores on conscientiousness will self-report lower involvement with heavy drinking and illicit drug use than emerging male adult college students with higher scores on conscientiousness.

The three factors measuring self-reported heavy drinking were used as the dependent variables in a 2 X 2 MANOVA. Gender and high and low levels of conscientiousness were used as the independent variables in this analysis. Conscientiousness was divided in the three groups based on a split at the 33 1/3% and 66 2/3%. The middle third was eliminated from this analysis. Table 19 presents results of this analysis.

Table 19

2 X 2 Multivariate Analysis of Variance
Self-Reported Involvement in Heavy Drinking by Conscientiousness and Gender

Source	Hotelling's Trace	F Ratio	DF	Sig	Effect Size
Conscientiousness	.02	1.05	3, 171	.374	.02
Gender	.03	1.46	3, 171	.227	.03
Conscientiousness X Gender	.01	.54	3, 171	.657	01

The results of the 2 X 2 MANOVA provided no evidence of statistically significant differences for either gender or high and low levels of conscientiousness. The interaction effect between gender and conscientiousness was not statistically significant.

Descriptive statistics were obtained for the main effects and interaction effect.

Based on these findings, the null hypothesis of no difference is retained. Table 20

presents results of this analysis.

Table 20

Descriptive Statistics
Self-Reported Involvement in Heavy Drinking by Level of Conscientiousness
and Gender

Independent Variables	N	Mean	SD
Conscientiousness			
Drinking alcohol too quickly			
Low	82	2.93	2.18
High	95	2.31	1.81
Drinking more than 5 alcoholic beverages			
Low	82	2.70	2.03
High	95	2.21	1.59
Playing drinking games			
Low	82	2.63	1.95
High	95	2.29	1.69
Gender			
Drinking alcohol too quickly			
Male	32	3.06	2.36
Female	145	2.49	1.92
Drinking more than 5 alcoholic beverages			
Male	32	2.84	2.17
Female	145	2.34	1.73
Playing drinking games			
Male	32	2.41	1.95
Female	145	2.46	1.80
Gender x Conscientiousness			
Drinking alcohol too quickly			
Male x Low Conscientiousness	21	3.29	2.47
Male x High Conscientiousness	11	2.64	2.16
Female x Low Conscientiousness	61	2.80	2.08
Female x High Conscientiousness	84	2.26	1.76
Drinking more than 5 alcoholic beverages			
Male x Low Conscientiousness	21	3.00	2.43
Male x High Conscientiousness	11	2.55	1.64
Female x Low Conscientiousness	61	2.59	1.88
Female x High Conscientiousness	84	2.17	1.59
Playing drinking games			
Male x Low Conscientiousness	21	2.38	2.11
Male x High Conscientiousness	11	2.45	1.70
Female x Low Conscientiousness	61	2.72	1.90
Female x High Conscientiousness	84	2.27	1.70

A 2 X 2 factorial MANOVA was used to determine if the three variables measuring involvement with illicit drug use differed by gender and high and low scores on conscientiousness. The scores on conscientiousness were divided into high and low using a three way split, with the middle third removed from the analysis. Table 21 presents results of this analysis.

Table 21

2 X 2 Multivariate Analysis of Variance
Illicit Drug Use by Conscientiousness and Gender

Source	Hotelling's Trace	F Ratio	DF	Sig	Effect Size
Conscientiousness	.02	.93	3, 171	.429	.02
Gender	.01	.58	3, 171	.628	.01
Conscientiousness X Gender	<.01	.24	3, 171	.869	<.01

The two main effects, conscientiousness and gender, did not differ significantly on the three variables measuring the use of alcohol and marijuana. The interaction effect between conscientiousness and gender also was not statistically significant.

Descriptive statistics were obtained for the main effects and interaction effect. Based on these findings, the null hypothesis of no difference in self-reported participation in illicit drugs by gender and level of conscientiousness is retained. Table 22 presents results of this analysis.

Table 22

Descriptive Statistics
Illicit Drug Use by Level of Conscientiousness and Gender

Independent Variables	N	Mean	SD
Conscientiousness			
Trying/using drugs other than alcohol or marijuana			
Low	82	1.44	1.32
High	95	1.23	.93
Smoking marijuana			
Low	82	1.78	1.62
High	95	1.49	1.30
Mixing drugs and alcohol			
Low	82	1.63	1.36
High	95	1.31	1.13
Gender			
Trying/using drugs other than alcohol or marijuana			
Male	32	1.47	1.30
Female	145	1.30	1.09
Smoking marijuana			
Male	32	2.00	1.95
Female	145	1.54	1.32
Mixing drugs and alcohol			
Male	32	1.78	1.56
Female	145	1.39	1.16
Gender x Conscientiousness			
Trying/using drugs other than alcohol or marijuana			
Male x Low Conscientiousness	21	1.62	1.53
Male x High Conscientiousness	11	1.18	.60
Female x Low Conscientiousness	61	1.38	1.24
Female x High Conscientiousness	84	1.24	.97
Smoking marijuana			
Male x Low Conscientiousness	21	2.19	2.14
Male x High Conscientiousness	11	1.64	1.57
Female x Low Conscientiousness	61	1.64	1.39
Female x High Conscientiousness	84	1.48	1.27
Mixing drugs and alcohol			
Male x Low Conscientiousness	21	2.00	1.70
Male x High Conscientiousness	11	1.36	1.21
Female x Low Conscientiousness	61	1.51	1.21
Female x High Conscientiousness	84	1.30	1.13

H$_{2c1}$: Emerging adult college students with higher scores on neuroticism will self-report higher involvement with heavy drinking and illicit drug use than emerging adult college students with lower scores on neuroticism.

H$_{2c2}$: Emerging male adult college students with higher scores on neuroticism will self-report higher involvement with heavy drinking and illicit drug use than emerging female adult college students with higher scores on neuroticism.

The mean scores for three variables measuring heavy drinking were used as the dependent variables in a 2 X 2 MANOVA, with gender and level of neuroticism used as the independent variables. Level of neuroticism was determined by dividing the scores into thirds using 33 1/3% and 66 2/3%. The middle scores were eliminated from this analysis. Table 23 presents results of this analysis.

Table 23

2 X 2 Multivariate Analysis of Variance
Heavy Drinking by Level of Neuroticism and Gender

Source	Hotelling's Trace	F Ratio	DF	Sig	Effect Size
Neuroticism	.01	.64	3, 163	.592	.01
Gender	.02	1.09	3, 163	.356	.02
Neuroticism X Gender	.02	1.07	3, 163	.363	.02

The results of the 2 X 2 MANOVA for the two main effects of neuroticism and gender on self-reported heavy drinking were not statistically significant. The interaction effect between neuroticism and gender on self-reported heavy drinking was not statistically significant.

Descriptive statistics were obtained for each of the independent variables and the interaction effect. These results provide support that the null hypothesis of no difference in self-reported involvement in heavy drinking should be retained. The results of this analysis are presented in Table 24.

Table 24

Descriptive Statistics

Self-Reported Involvement in Heavy Drinking by Level of Neuroticism and Gender

Independent Variables	N	Mean	SD
Neuroticism			
Drinking alcohol too quickly			
Low	83	2.53	2.03
High	86	2.65	1.91
Drinking more than 5 alcoholic beverages			
Low	83	2.54	1.86
High	86	2.71	1.95
Playing drinking games			
Low	83	2.29	1.69
High	86	2.77	1.93
Gender			
Drinking alcohol too quickly			
Male	36	2.67	2.07
Female	133	2.57	1.94
Drinking more than 5 alcoholic beverages			
Male	36	2.67	2.14
Female	133	2.62	1.84
Playing drinking games			
Male	36	2.25	1.68
Female	133	2.61	1.86
Neuroticism x Gender			
Drinking alcohol too quickly			
Low Neuroticism x Male	23	2.74	2.18
High Neuroticism x Male	13	2.54	1.94
Low Neuroticism x Female	60	2.45	1.99
High Neuroticism x Female	73	2.67	1.92
Drinking more than 5 alcoholic beverages			
Low Neuroticism x Male	23	2.52	2.11
High Neuroticism x Male	13	2.92	2.25
Low Neuroticism x Female	60	2.55	1.77
High Neuroticism x Female	73	2.67	1.90
Playing drinking games			
Low Neuroticism x Male	23	2.26	1.69
High Neuroticism x Male	13	2.23	1.74
Low Neuroticism x Female	60	2.30	1.70
High Neuroticism x Female	73	2.86	1.95

The scores for the three variables measuring illicit drug use were used as the dependent variables in a 2 X 2 MANOVA. Gender and low and high levels of neuroticism were used as the independent variables in this analysis. Neuroticism was

divided into low and high levels using the same three-group division as in previous analyses. Table 25 presents results of this analysis.

Table 25

2 X 2 Multivariate Analysis of Variance
Illicit Drug Use by Neuroticism and Gender

Source	Hotelling's Trace	F Ratio	DF	Sig	Effect Size
Neuroticism	.02	1.25	3, 163	.294	.02
Gender	.01	.53	3, 163	.661	.01
Neuroticism X Gender	.05	2.69	3, 163	.048	.05

The results of the 2 X 2 MANOVA for illicit drug use by the two main effects of gender and neuroticism were not statistically significant. However, the interaction effect between gender and neuroticism was statistically significant, F (3, 163) = 2.69, p = .048, D = .05. To examine the statistically significant interaction effect, the one-way analysis of variance procedures were used to determine which of the three items measuring self-reported illicit drug use were contributing to the statistically significant result. Table 26 presents results of this analysis.

Table 26

One-way Analysis of Variance
Illicit Drug Use by Neuroticism and Gender

Source	Sum of Squares	DF	Mean Square	F Ratio	Sig	Effect Size
Trying/Using drugs other than alcohol or marijuana	.15	1, 165	.15	.18	.668	<.01
Smoking marijuana	3.52	1, 165	3.52	1.74	.189	.01
Mixing drugs or alcohol	1.05	1, 165	1.05	.72	.399	<.01

The results of the one-way analysis of variance procedures for the three items composing drug use were not statistically significant. Although statistically significant when taken together as a group, these results indicated that, the differences on the individual items were not sufficient to be statistically significant.

Descriptive statistics were obtained for the two main effects, neuroticism and gender, along with the interaction between neuroticism and gender. These results provide support that the null hypothesis of no difference in self-reported involvement in illicit drug use should be retained. Table 27 presents results of this analysis.

Table 27

Descriptive Statistics
Illicit Drug Use by Level of Neuroticism and Gender

Independent Variables	N	Mean	SD
Neuroticism			
Trying/using drugs other than alcohol or marijuana			
Low	83	1.17	.64
High	86	1.30	1.10
Smoking marijuana			
Low	83	1.54	1.40
High	86	1.59	1.45
Mixing drugs and alcohol			
Low	83	1.37	1.16
High	86	1.49	1.25
Gender			
Trying/using drugs other than alcohol or marijuana			
Male	36	1.36	1.15
Female	133	1.20	.82
Smoking marijuana			
Male	36	1.78	1.85
Female	133	1.51	1.28
Mixing drugs and alcohol			
Male	36	1.56	1.38
Female	133	1.40	1.15
Gender x Neuroticism			
Trying/using drugs other than alcohol or marijuana			
Low Neuroticism x Male	23	1.26	.75
High Neuroticism x Male	13	1.54	1.66
Low Neuroticism x Female	60	1.13	.60
High Neuroticism x Female	73	1.26	.97
Smoking marijuana			
Low Neuroticism x Male	23	1.96	1.97
High Neuroticism x Male	13	1.46	1.66
Low Neuroticism x Female	60	1.38	1.09
High Neuroticism x Female	73	1.62	1.42
Mixing drugs and alcohol			
Low Neuroticism x Male	23	1.39	.99
High Neuroticism x Male	13	1.85	1.91
Low Neuroticism x Female	60	1.37	1.22
High Neuroticism x Female	73	1.42	1.11

H$_{2d1}$: Emerging adult college students with higher scores on extraversion will self-report higher involvement with heavy drinking and illicit drug use than emerging adult college students with lower scores on extraversion.

H$_{2d2}$: Emerging male adult college students with higher scores on extraversion will self-report higher involvement with heavy drinking and illicit drug use than emerging female adult college students with higher scores on extraversion.

The mean scores for self-reported involvement with heavy drinking were compared by gender and level of extraversion using a 2 X 2 factorial MANOVA. The dependent variables were three measures of heavy drinking and the independent variables were gender and level of extraversion. The scores were divided into three groups based on 33 1/3% and 66 2/3%. These groups were used to classify the scores for extraversion into high and low, with the middle third of the scores eliminated from this analysis. Table 28 presents results of the 2 X 2 MANOVA.

Table 28

2 X 2 Multivariate Analysis of Variance
Heavy Drinking by Level of Extraversion and Gender

Source	Hotelling's Trace	F Ratio	DF	Sig	Effect Size
Extraversion	.05	2.61	3, 165	.054	.05
Gender	<.01	.09	3, 165	.964	<.01
Extraversion X Gender	<.04	.21	3, 165	.888	<.01

The results of the 2 X 2 MANOVA using self-reported involvement in heavy drinking for the main effects of gender and level of extraversion were not statistically significant. The interaction effect between gender and level of extraversion on self-reported involvement in heavy drinking was not statistically significant.

Descriptive statistics were obtained for each of the main effects and the interaction effect. Based on these findings, the null hypothesis of no difference in self-

reported involvement in heavy drinking by gender and level of extraversion was retained. Table 29 presents results of this analysis.

Table 29

Descriptive Statistics
Self-Reported Involvement in Heavy Drinking by Level of Extraversion and Gender

Independent Variables	N	Mean	SD
Extraversion			
Drinking alcohol too quickly			
Low	86	2.27	1.70
High	85	3.07	2.19
Drinking more than 5 alcoholic beverages			
Low	86	2.19	1.65
High	85	2.93	1.94
Playing drinking games			
Low	86	2.12	1.53
High	85	2.93	1.97
Gender			
Drinking alcohol too quickly			
Male	34	2.65	2.17
Female	137	2.67	1.96
Drinking more than 5 alcoholic beverages			
Male	34	2.59	2.06
Female	137	2.55	1.78
Playing drinking games			
Male	34	2.44	1.86
Female	137	2.54	1.80
Gender x Extraversion			
Drinking alcohol too quickly			
Low Extraversion x Male	21	2.19	1.75
High Extraversion x Male	13	3.38	2.63
Low Extraversion x Female	65	2.29	1.70
High Extraversion x Female	72	3.01	2.12
Drinking more than 5 alcoholic beverages			
Low Extraversion x Male	21	2.24	1.95
High Extraversion x Male	13	3.15	2.19
Low Extraversion x Female	65	2.17	1.56
High Extraversion x Female	72	2.89	1.91
Playing drinking games			
Low Extraversion x Male	21	2.00	1.45
High Extraversion x Male	13	3.15	2.27
Low Extraversion x Female	65	2.15	1.56
High Extraversion x Female	72	2.89	1.93

A 2 X 2 factorial MANOVA was used to test for differences in the three variables measuring illicit drug use by gender and low and high levels of extraversion. Extraversion was divided into high and low levels using a three-way split, with the middle third eliminated from the present analysis. Table 30 presents results of this analysis.

Table 30

2 X 2 Multivariate Analysis of Variance
Illicit Drug Use by Extraversion and Gender

Source	Hotelling's Trace	F Ratio	DF	Sig	Effect Size
Extraversion	.02	1.15	3, 165	.332	.02
Gender	.01	.43	3, 165	.733	.01
Extraversion X Gender	.01	.68	3, 165	.567	.01

The results of the 2 X 2 MANOVA provided no evidence of a statistically significant difference in the two main effects, gender and low and high scores for extraversion. The interaction effect between gender and levels of extraversion also was not statistically significant.

Descriptive statistics were obtained for each of the main effects and the interaction effect. Based on these findings, the null hypothesis of no difference in illicit drug use by gender, level of extraversion, and the interaction effect between gender and level of extraversion was retained. Table 31 presents results of this analysis.

Table 31

Descriptive Statistics
Illicit Drug Use by Level of Extraversion and Gender

Independent Variables	N	Mean	SD
Extraversion			
Trying/using drugs other than alcohol or marijuana			
Low	86	1.15	.81
High	85	1.27	1.02
Smoking marijuana			
Low	86	1.43	1.19
High	85	1.78	1.62
Mixing drugs and alcohol			
Low	86	1.30	.96
High	85	1.59	1.43
Gender			
Trying/using drugs other than alcohol or marijuana			
Male	34	1.29	1.14
Female	137	1.19	.85
Smoking marijuana			
Male	34	1.74	1.76
Female	137	1.57	1.34
Mixing drugs and alcohol			
Male	34	1.62	1.44
Female	137	1.40	1.16
Gender x Extraversion			
Trying/using drugs other than alcohol or marijuana			
Low Extraversion x Male	21	1.33	1.32
High Extraversion x Male	13	1.23	.83
Low Extraversion x Female	65	1.09	.55
High Extraversion x Female	72	1.28	1.05
Smoking marijuana			
Low Extraversion x Male	21	1.48	1.40
High Extraversion x Male	13	2.15	2.23
Low Extraversion x Female	65	1.42	1.13
High Extraversion x Female	72	1.71	1.50
Mixing drugs and alcohol			
Low Extraversion x Male	21	1.52	1.40
High Extraversion x Male	13	1.77	1.54
Low Extraversion x Female	65	1.23	.77
High Extraversion x Female	72	1.56	1.41

H_{2e1}: Emerging adult college students with higher scores on openness to experience will self-report higher involvement with heavy drinking and illicit drug use than emerging adult college students with lower scores on openness to experience.

H_{2e2}: Emerging male adult college students with higher scores on openness to experience will self-report higher involvement with heavy drinking and illicit

drug use than emerging female adult college students with higher scores on openness to experience.

The mean scores for self-reported involvement with heavy drinking were compared by gender and level of openness to experience using a 2 X 2 factorial MANOVA. Openness to experience was divided into three categories, with scores in the middle third eliminated from this analysis. The results of this analysis are presented in Table 32.

Table 32

2 X 2 Multivariate Analysis of Variance
Heavy Drinking by Level of Openness to Experience and Gender

Source	Hotelling's Trace	F Ratio	DF	Sig	Effect Size
Openness to Experience	<.01	.06	3, 165	.982	<.01
Gender	.01	.53	3, 165	.661	.01
Openness to Experience X Gender	.01	.58	3, 165	.627	.01

The comparisons of self-reported level of involvement in heavy drinking for the two main effects, gender and openness to experience, were not statistically significant. The interaction effect between gender and openness to experience was not statistically significant.

Descriptive statistics were obtained for each of the independent variables and the interaction effect. The lack of differences between the mean scores for the two main effects and the interaction between openness to experience and gender provide support that the differences were not statistically significant. Results of these analyses are presented in Table 33.

Table 33

Descriptive Statistics
Self-Reported Involvement in Heavy Drinking by
Level of Openness to Experience and Gender

Independent Variables	N	Mean	SD
Openness to Experience			
Drinking alcohol too quickly			
Low	83	2.72	1.97
High	88	2.49	2.00
Drinking more than 5 alcoholic beverages			
Low	83	2.60	1.79
High	88	2.39	1.86
Playing drinking games			
Low	83	2.57	1.73
High	88	2.51	1.99
Gender			
Drinking alcohol too quickly			
Male	36	2.58	2.10
Female	135	2.61	1.96
Drinking more than 5 alcoholic beverages			
Male	36	2.53	2.02
Female	135	2.48	1.77
Playing drinking games			
Male	36	2.50	1.99
Female	135	2.55	1.84
Openness to Experience x Gender			
Drinking alcohol too quickly			
Low Openness to Experience x Male	12	3.17	2.37
High Openness to Experience x Male	24	2.29	1.94
Low Openness to Experience x Female	71	2.65	1.90
High Openness to Experience x Female	64	2.56	2.03
Drinking more than 5 alcoholic beverages			
Low Openness to Experience x Male	12	2.83	1.95
High Openness to Experience x Male	24	2.38	2.08
Low Openness to Experience x Female	71	2.56	1.77
High Openness to Experience x Female	64	2.39	1.79
Playing drinking games			
Low Openness to Experience x Male	12	2.92	2.28
High Openness to Experience x Male	24	2.29	1.85
Low Openness to Experience x Female	71	2.51	1.63
High Openness to Experience x Female	64	2.59	2.05

A 2 X 2 factorial analysis of variance was used to test for differences in the three variables measuring illicit drug use between gender and low and high levels of the personality trait, openness to experience. Openness to experience was divided into

three levels using a 33 1/3% and 66 2/3% split. The middle third of the scores were eliminated from this analysis. Table 34 presents results of this analysis.

Table 34

2 X 2 Multivariate Analysis of Variance
Illicit Drug Use by Openness to Experience and Gender

Source	Hotelling's Trace	F Ratio	DF	Sig	Effect Size
Openness to Experience	<.01	.12	3, 165	.950	<.01
Gender	.03	1.66	3, 165	.177	.03
Openness to Experience X Gender	.02	1.25	3, 165	.293	.02

Results of the 2 X 2 MANOVA comparing the illicit drug use between the two main effects, gender and level of openness to experience, were not statistically significant. The interaction effect between gender and level of openness to experience also was not statistically significant.

Descriptive statistics were obtained for each of the main effects and the interaction effect. Based on these findings, the null hypothesis of no difference on illicit drug use by gender, levels of openness to experience, and the interaction effect between gender and levels of openness to experience was retained. Table 35 presents results of this analysis.

Table 35

Descriptive Statistics

Illicit Drug Use by Level of Openness to Experience and Gender

Independent Variables	N	Mean	SD
Openness to Experience			
Trying/using drugs other than alcohol or marijuana			
Low	83	1.19	.71
High	88	1.26	.95
Smoking marijuana			
Low	83	1.39	.96
High	88	1.73	1.65
Mixing drugs and alcohol			
Low	83	1.23	.82
High	88	1.47	1.29
Gender			
Trying/using drugs other than alcohol or marijuana			
Male	36	1.22	.64
Female	135	1.23	.89
Smoking marijuana			
Male	36	1.94	1.93
Female	135	1.46	1.16
Mixing drugs and alcohol			
Male	36	1.53	1.21
Female	135	1.30	1.05
Openness to Experience x Gender			
Trying/using drugs other than alcohol or marijuana			
Low Openness to Experience x Male	12	1.25	.62
High Openness to Experience x Male	24	1.21	.66
Low Openness to Experience x Female	71	1.18	.72
High Openness to Experience x Female	64	1.28	1.05
Smoking marijuana			
Low Openness to Experience x Male	12	2.08	1.78
High Openness to Experience x Male	24	1.87	2.03
Low Openness to Experience x Female	71	1.27	.70
High Openness to Experience x Female	64	1.67	1.49
Mixing drugs and alcohol			
Low Openness to Experience x Male	12	1.75	1.29
High Openness to Experience x Male	24	1.42	1.18
Low Openness to Experience x Female	71	1.14	.68
High Openness to Experience x Female	64	1.48	1.33

H_3: Self-reported involvement of emerging adult college students in risk-taking behaviors can be predicted from age, gender, higher scores for neuroticism and for positive appraisals, and lower scores for negative appraisals of these behaviors.

An intercorrelation matrix was developed to determine which of the predictor variables (age, gender, neuroticism, negative and positive appraisals for risky behaviors) were significantly related to the criterion variables (self-reported involvement in illicit drug use, aggressive/illegal behaviors, risky sexual behavior, heavy drinking, high-risk sports, and academic/work behaviors). The predictor variables that were significantly related to the criterion variables were used in the stepwise multiple linear regression analysis to determine which of the predictor variables were significant predictors of the criterion variables. Table 36 presents the results of the intercorrelation matrix.

Table 36

Intercorrelation Matrix
Self-Reported Involvement in Risky Behaviors (N = 255)

Criterion Variables	Predictor Variables									
	Age		Gender		Neuroticism		Negative Consequences		Positive Consequences	
	r	p	r	p	r	p	r	p	r	P
Illicit drug use	.04	.578	-.08	.191	.09	.144	-.20	.002	.36	<.001
Aggressive/Illegal behaviors	-.10	.123	-.03	.658	.12	.063	-.13	.036	.51	<.001
Risky sexual behavior	.07	.275	-.07	.285	.06	.334	-.10	.101	.27	<.001
Heavy drinking	.03	.586	-.03	.632	.06	.363	-.17	.007	.44	<.001
High-risk sports	-.13	.040	-.19	.003	-.14	.024	-.01	.862	.33	<.001
Academic/Work behaviors	-.04	.566	-.07	.262	.29	<.001	-.18	.004	.32	<.001

Two predictor variables, negative consequences, r (255) = -.20, p = .002, and positive consequences, r (255) = .36, p < .001, were significantly related to the criterion variable, illicit drug use. Two predictor variables, negative consequences, r (255) = -.13,

p = .036 and positive consequences, r (255) = .51, p < .001 were significantly related to the criterion variable, aggressive/illegal behaviors. Risky sexual behavior could be predicted from positive consequences, r (255) = .27, p < .001. Two predictor variables, negative consequences, r (255) = -.17, p = .007 and positive consequences, r (255) = .44, p < .001, were significantly related to self-reported involvement in heavy drinking. Four predictor variables, age, r (255) = -.13, p = .040, gender, r (255) = -.19, p = .003, positive consequences, r (255) = .33, p < .001, and scores for neuroticism, r (255) = -.14, p = .024 were significantly related to self-reported involvement in high-risk sports. Three predictor variables, neuroticism, r (255) = .29, p < .001, negative consequences, r (255) = -.18, p = .004, and positive consequences, r (255) = .32, p < .001, were significantly related to academic/work behaviors.

The two predictor variables, negative consequences and positive consequences, were used in a stepwise multiple linear regression analysis, with self-reported involvement in illicit drug use used as the criterion variable. The results of this analysis are presented in Table 37.

Table 37

Stepwise Multiple Linear Regression Analysis
Self-Reported Involvement in Illicit Drug Use

Predictor Variable	Constant	b-Weight	β-Weight	ΔR^2	t-Value	Sig
Included Variables						
Positive consequences	2.56	.05	.34	.13	5.72	<.001
Negative consequences		-.01	-.13	.02	-2.21	.028

Multiple R	.39
Multiple R^2	.15
F ratio	22.01
DF	2, 252
Sig of F	<.001

The two predictor variables, positive consequences and negative consequences, entered the stepwise multiple linear regression equation, accounting for 15% of the variance in self-reported involvement in illicit drug use, $F(2, 252) = 22.01$, $p < .001$. Positive consequences of illicit drug use entered the stepwise multiple linear regression equation, accounting for 13% of the variance in the criterion variable, $r^2 = .13$, $\beta = .34$, $t = 5.72$, $p < .001$. An additional 2% of the variance in self-reported involvement in illicit drug use was explained by negative consequences of illicit drug use, $r^2 = .02$, $\beta = -.13$, $t = -2.21$, $p = .028$. The positive direction of the relationship between positive consequences and self-reported involvement in illicit drug use indicated that participants who perceived that illicit drug use had positive consequences were more likely to report they were involved in this activity. Conversely, the negative relationship between negative consequences and involvement in illicit drug use provided support that participants who perceived that involvement in illicit drug use had negative consequences were more likely to report lower involvement in illicit drug use.

Scores for self-reported involvement in aggressive/illegal behaviors were used as the criterion variable in a stepwise multiple linear regression analysis. Two predictor variables, positive consequences, and negative consequences, were included in the analysis. Table 38 presents results of this analysis.

Table 38

Stepwise Multiple Linear Regression Analysis
Self-Reported Involvement in Aggressive/Illegal Behaviors

Predictor Variable	Constant	b-Weight	β-Weight	ΔR^2	t-Value	Sig
Included Variables						
Positive consequences	5.59	.13	.51	.26	9.48	<.001
Excluded Variables						
Negative consequences			-.04		-.64	.524

Multiple R	.51
Multiple R^2	.26
F ratio	89.77
DF	1, 253
Sig of F	<.001

One predictor variable, positive consequences, entered the stepwise multiple linear regression equation, accounting for 26% of the variance in self-reported involvement in aggressive/illegal behaviors, F (1, 253) = 89.77, p < .001. The positive relationship between the predictor and criterion variables, r^2 = .26, β = .51, t = 9.48, p < .001, indicated that participants who perceived that participation in aggressive/illegal behaviors had positive consequences were more likely to self-report higher levels of involvement in these types of behaviors. The remaining predictor variable, negative consequences, did not enter the stepwise multiple linear regression equation, indicating it was not a statistically significant predictor of self-reported involvement in aggressive/illegal behaviors.

The intercorrelation matrix indicated that one predictor variable, positive consequences, was significantly related to the criterion variable, self-reported involvement in risky sexual behaviors, r^2 (255) = .07, p < .001. The stepwise multiple linear regression analysis was not completed for self-reported involvement in risky sexual behaviors. This result indicated that 7% of the variance in the criterion variable was explained by positive consequences.

Two predictor variables, positive consequences and negative consequences, were used in a stepwise multiple linear regression analysis, with self-reported involvement in heavy drinking used as the criterion variable. Table 39 presents results of this analysis.

Table 39

Stepwise Multiple Linear Regression Analysis
Self-Reported Involvement in Heavy Drinking

Predictor Variable	Constant	b-Weight	β-Weight	ΔR^2	t-Value	Sig
Included Variables						
Positive consequences	.40	.12	.44	.20	7.85	<.001
Excluded Variables						
Negative consequences			-.09		-1.54	.125

Multiple R	.44
Multiple R^2	.20
F ratio	61.55
DF	1, 253
Sig of F	<.001

Positive consequences entered the stepwise multiple linear regression equation as a statistically significant predictor of the criterion variable, self-reported involvement in heavy drinking, explaining 20% of the variance F (1, 253) = 61.55, $p < .001$. The positive relationship between the predictor and criterion variables indicated that participants who perceived higher levels of positive consequences were more likely to report greater involvement in heavy drinking. The second predictor variable, negative consequences, did not enter the stepwise multiple linear regression equation, indicating it was not a statistically significant predictor of self-reported involvement in heavy drinking.

A stepwise multiple linear regression analysis was used to determine if predictor variables (age, gender, and positive consequences) could be used to predict the

criterion variable, self-reported involvement in high-risk sports. Table 40 presents the results of this analysis.

Table 40

Stepwise Multiple Linear Regression Analysis
Self-Reported Involvement in High-risk Sports

Predictor Variable	Constant	b-Weight	β-Weight	ΔR^2	t-Value	Sig
Included Variables						
Positive consequences	16.00	.07	.31	.11	5.29	<.001
Neuroticism		-.08	-.14	.02	-2.35	.020
Age		-.40	-.14	.02	-2.43	.016
Gender		-1.37	-.12	.01	-2.04	.043

Multiple R	.40
Multiple R^2	.16
F ratio	12.19
DF	4, 250
Sig of F	<.001

The four predictor variables, positive consequences, neuroticism, age, and gender, entered the stepwise multiple linear regression equation, explaining 16% of the variance in self-reported involvement in high-risk sports, $F_{(4, 250)} = 12.19$, p < .001. Positive consequences entered the stepwise multiple linear regression equation first, accounting for 11% of the variance in self-reported involvement in high-risk sports, $r^2 = .11$, $\beta = .31$, t = 5.29, p < .001. An additional 2% of the variance in the dependent variable was explained by scores for neuroticism, $r^2 = .02$, $\beta = -.14$, t = -2.35, p < .020. Two percent of the variance in self-reported involvement in high-risk sports was accounted for by age of the participant, $r^2 = .02$, $\beta = -.14$, t = -2.43, p = .016, with an additional 1% of the variance explained by gender, $r^2 = .01$, $\beta = -.12$, t = -2.04, p = .043. The positive relationship between positive consequences and self-reported involvement in high-risk sports indicated that participants who perceived greater positive consequences were more likely to be involved in high-risk sports. Scores for

neuroticism were negatively related to self-reported involvement in high-risk sports, indicating that participants with lower scores on neuroticism were more likely to be involved in high-risk sports. The negative relationship between age and the criterion variable provided evidence that participants who were younger were more likely to self-report greater involvement in high-risk sports. Gender was negatively related to self-reported involvement in high-risk sports. As males were coded as a 1 and females coded as a 2, males were more likely to self-report involvement in high-risk sports than females.

A stepwise multiple linear regression analysis was used to determine if self-reported participation in academic/work behaviors could be predicted from neuroticism, negative consequences, and positive consequences. The results of this analysis are presented in Table 41.

Table 41

Stepwise Multiple Linear Regression Analysis
Self-Reported Involvement in Academic/Work Behaviors

Predictor Variable	Constant	b-Weight	β-Weight	ΔR^2	t-Value	Sig
Included Variables						
Positive consequences	4.20	.09	.31	.10	5.50	<.001
Neuroticism		.20	.28	.08	4.88	<.001
Excluded Variable						
Negative consequences			-.10		-1.78	.077

Multiple R	.43
Multiple R^2	.18
F ratio	27.80
DF	2, 252
Sig of F	<.001

Two predictor variables, positive consequences and neuroticism, entered the stepwise multiple linear regression equation, accounting for 18% of the variance in self-

reported involvement in academic/work behaviors, $F(2, 252) = 27.80$, $p < .001$. Positive consequences entered the stepwise multiple linear regression equation, explaining 10% of the variance in self-reported involvement in academic/work behaviors, $r^2 = .10$, $\beta = .31$, $t = 5.50$, $p < .001$. An additional 8% of the variance in self-reported involvement in academic/work behaviors was explained by neuroticism, $r^2 = .08$, $\beta = .28$, $t = 4.88$, $p < .001$. The positive relationship between self-reported involvement in academic/work behaviors and positive consequences indicated that participants who perceived greater positive consequences associated with academic/work behaviors were more likely to self-report involvement in these types of risky behaviors. The positive relationship between neuroticism and self-reported involvement in academic/work behaviors indicated that participants who had higher scores for neuroticism were more likely to report greater involvement in risky behaviors associated with academic/work behaviors. Negative consequences for risky behaviors did not enter the stepwise multiple linear regression equation as a statistically significant predictor of self-reported involvement in academic/work behaviors.

H$_4$:　　The relationship between self-reported involvement of emerging adult college students in risk-taking behaviors and personality traits is mediated by scores for religiosity.

The four-step process developed by Baron and Kenny (1986) was used to test the effects of a mediating variable (religiosity) on the relationship between personality traits and self-reported involvement in risky behaviors. Each of the six types of risky behaviors; illicit drug use, aggressive/illegal behaviors, risky sexual behaviors, heavy drinking, high-risk sports, and academic/work behaviors, is analyzed separately. Only those mediation analyses that produced statistically significant results are presented in Chapter IV. The nonsignificant outcomes are included in Appendix C.

H_{4a}: The relationship between self-reported involvement of emerging adult college students in risk-taking behaviors and neuroticism scores is mediated by scores for religiosity.

The mediation analyses using each of the six risky behaviors as the criterion variable, neuroticism scores as the predictor variable, and religiosity as the mediating variable were not statistically significant on the first step. These findings indicated that religiosity was not mediating the relationships between self-reported involvement in risky behaviors and neuroticism. Based on these findings, the null hypothesis is retained.

H_{4b}: The relationship between self-reported involvement of emerging adult college students in risk-taking behaviors and extraversion scores is mediated by scores for religiosity.

A mediation analysis was completed using self-reported involvement in illicit drug use as the criterion variable, extraversion as the predictor variable, and religiosity as the mediating variable. As a result of nonsignificant findings on the first step, the mediation analysis could not be completed.

To determine if the relationship between extraversion and self-reported involvement in aggressive/illegal behaviors was mediated by religiosity, the Baron and Kenny mediation analysis was used. The results of this analysis were not statistically significant. As a result, the mediation analysis could not be continued.

The mediation analysis using risky sexual behaviors as the criterion variable and extraversion as the predictor variable was not statistically significant. Based on this finding, the mediation analysis could not be continued.

A mediation analysis was used to determine if religiosity was mediating the relationship between self-reported involvement in heavy drinking and extraversion. Self-reported involvement in heavy drinking was used as the criterion variable and

extraversion was used as the predictor variable in this analysis. Table 42 presents results of this analysis.

Table 42

Mediation Analysis – Mediating Role of Religiosity on the Relationship between Self-Reported Involvement in Heavy Drinking and Extraversion ($N = 255$)

Predictor	Outcomes	R^2	F	Standardized β
Step 1				
Extraversion	Self-reported involvement in heavy drinking	.03	8.67	.18**
Step 2				
Extraversion	Religiosity	.05	12.98	.22**
Step 3				
Religiosity	Self-reported involvement in heavy drinking	.03	8.86	-.18**
Step 4				
Religiosity	Self-reported involvement in heavy drinking	.03	8.86	-.18**
Extraversion		.05	11.85	.23**
Sobel Test = -2.32, p = .020				

*$p \leq .05$; **$p \leq .01$

Extraversion was explaining 3% of the variance in self-reported involvement in heavy drinking, $R^2 = .03$, $\beta = .18$, F = 8.67, p = .004. Five percent of the variance in religiosity was accounted for by extraversion, $R^2 = .05$, $\beta = .22$, F = 12.98, p < .001. On the third step of the mediation analysis, religiosity was accounting for 3% of the variance in self-reported involvement in heavy drinking, $R^2 = .03$, $\beta = -.18$, F = 8.86, p = .003. After holding religiosity constant, extraversion was explaining 5% of the variance in self-reported involvement in heavy drinking, $R^2 = .05$, $\beta = .23$, F = 11.85, p < .001. To determine if a partial mediation was occurring between extraversion and self-reported involvement in heavy drinking after removing the effects of religiosity, a Sobel's test was completed. The results of this analysis were statistically significant, (Sobel Test = -2.32,

p = .020), indicating that religiosity was partially mediating the relationship between extraversion and self-reported involvement in heavy drinking.

A mediation analysis was used to determine if religiosity was mediating the relationship between extraversion and self-reported involvement in high-risk sports. The mediation analysis could not be completed as the relationship between religiosity (the mediating variable) and self-reported involvement in high-risk sports was not statistically significant.

The first step of the mediation analysis using extraversion as the predictor variable, self-reported involvement in academic/work behaviors as the criterion variable, and religiosity as the mediating variable was not statistically significant. Based on the lack of significance, the mediation analysis could not be continued.

The results of the mediation analyses for this hypothesis were not statistically significant, indicating that religiosity was not mediating the relationship between risk-taking behaviors and extraversion. Based on these findings, the null hypothesis of no relationship is retained.

H_{4c}: The relationship between self-reported involvement of emerging adult college students in risk-taking behaviors and openness to experience scores is mediated by scores for religiosity.

The mediation analyses using each of the six risky behaviors as the criterion variable, openness to experience scores as the predictor variable, and religiosity as the mediating variable were not statistically significant. These findings indicated that religiosity was not mediating the relationships between self-reported involvement in risky behaviors and openness to experience. Based on these findings, the null hypothesis is retained.

H[4d]:   The relationship between self-reported involvement of emerging adult college students in risk-taking behaviors and agreeableness scores is mediated by scores for religiosity.

Mediation analyses using each of the six risky behaviors as the criterion variable, agreeableness scores as the predictor variable, and religiosity as the mediating variable were completed. Results of the analysis for self-reported illicit drug use as the dependent variable are presented in Table 43.

Table 43

Mediation Analysis – Mediating Role of Religiosity on the Relationship between Self-Reported Involvement in Illicit Drug Use and Agreeableness ($N = 255$)

Predictor	Outcomes	R^2	F	Standardized β
Step 1				
Agreeableness	Self-reported involvement in illicit drug use	.03	6.96	-.16**
Step 2				
Agreeableness	Religiosity	.08	22.07	.28**
Step 3				
Religiosity	Self-reported involvement in illicit drug use	.03	8.94	-.19**
Step 4				
Religiosity	Self-reported involvement in illicit drug use	.03	8.94	-.19**
Agreeableness		.01	6.30	-.12

*$p \leq .05$; **$p \leq .01$

Three percent of the variance in self-reported involvement in illicit drug use was explained by agreeableness, $R^2 = .03$, $\beta = -.16$, F = 6.96, p = .009. The results of the regression using religiosity as the criterion variable and agreeableness as the predictor variable was statistically significant, $R^2 = .08$, $\beta = .28$, F = 22.07, p < .001. Three percent of the variance in self-reported involvement in illicit drug use was accounted for by religiosity, $R^2 = .03$, $\beta = -.19$, F = 8.94, p = .003. After holding religiosity constant, one percent of the variance in self-reported involvement in illicit drug use was

accounted for by agreeableness, R^2 = .01, β = -.12, F = 6.30, p = .002. The amount of variance decreased from 3% on the first step of the mediation analysis to 1% on the fourth step. While the overall analysis was statistically significant, the t-value associated with agreeableness (t = -1.89, p = .060) was not statistically significant, indicating that religiosity was mediating the relationship between agreeableness and self-reported involvement in illicit drug use.

The scores for self-reported involvement in aggressive/illegal behaviors were used as the criterion variable in a mediation analysis, with agreeableness used as the predictor variable. Religiosity was the mediating variable in this analysis. Table 44 presents results of this analysis.

Table 44

Mediation Analysis – Mediating Role of Religiosity on the Relationship between Self-Reported Involvement in Aggressive/Illegal Behaviors and Agreeableness (N = 255)

Predictor	Outcomes	R^2	F	Standardized β
Step 1				
Agreeableness	Self-reported involvement in aggressive/illegal behaviors	.09	24.37	-.30**
Step 2				
Agreeableness	Religiosity	.08	22.07	.28**
Step 3				
Religiosity	Self-reported involvement in aggressive/illegal behaviors	.03	8.38	-.18**
Step 4				
Religiosity	Self-reported involvement in aggressive/illegal behaviors	.03	8.38	-.18**
Agreeableness		.07	13.64	-.27**
Sobel Test = -2.49, p =.013				

*$p \le$ .05; **$p \le$ .01

Nine percent of the variance in self-reported involvement in aggressive/illegal

behaviors was explained by agreeableness, $R^2 = .09$, $\beta = -.30$, $F = 24.37$, $p < .001$. On the second step of the mediation analysis, 8% of the variance in religiosity was accounted for by agreeableness, $R^2 = .08$, $\beta = .28$, $F = 22.07$, $p < .001$. Agreeableness was accounting for 3% of the variance in self-reported involvement in aggressive/illegal behaviors, $R^2 = .03$, $\beta = -.18$, $F = 8.38$, $p = .004$. After holding religiosity constant, agreeableness was explaining 7% of the variance in self-reported aggressive/illegal behaviors, $R^2 = .07$, $\beta = -.27$, $F = 13.64$, $p < .001$. Although the amount of variance decreased from Step 1 to Step 4, the relationship between agreeableness and self-reported involvement in aggressive/illegal behaviors remained statistically significant. To determine if religiosity was partially mediating the relationship between agreeableness and self-reported involvement in aggressive/illegal behaviors, Sobel's test was completed. The results of this analysis were statistically significant, Sobel test = -2.49, $p = .013$, providing support that religiosity was partially mediating the relationship between agreeableness and self-reported involvement in aggressive/illegal behaviors.

The mediation analysis using self-reported involvement in risky sexual behaviors as the criterion variable, agreeableness as the predictor variable, and religiosity as the mediating variable was not statistically significant. As a result the mediation analysis was not completed.

The scores for self-reported involvement in heavy drinking were used as the criterion variable in a mediation analysis. The predictor variable in this analysis was agreeableness, with religiosity used as the mediating variable. The results of this analysis are presented in Table 45.

Table 45

Mediation Analysis – Mediating Role of Religiosity on the Relationship between Self-Reported Involvement in Heavy Drinking and Agreeableness (*N* = 255)

Predictor	Outcomes	R^2	F	Standardized *β*
Step 1				
Agreeableness	Self-reported involvement in heavy drinking	.04	10.85	-.20**
Step 2				
Agreeableness	Religiosity	.08	22.07	.28**
Step 3				
Religiosity	Self-reported involvement in heavy drinking	.03	8.86	-.18**
Step 4				
Religiosity	Self-reported involvement in heavy drinking	.03	8.86	-.18**
Agreeableness		.03	7.84	-.16**
Sobel Test = -2.53, p =.011				

*$p \leq$ .05; **$p \leq$ .01

Agreeableness was accounting for 4% of the variance in self-reported involvement in heavy drinking on the first step of the mediation analysis, R^2 = .04, *β* = -.20, F = 10.85, p < .001. On the second step, agreeableness was explaining 8% of the variance in self-reported involvement in heavy drinking, R^2 = .08, *β* = .28, F = 22.07, p < .001. Three percent of the variance in self-reported involvement in heavy drinking was explained by religiosity, R^2 = .03, *β* = -.18, F = 8.86, p = .003. After holding religiosity constant, agreeableness was accounting for 3% of the variance in self-reported involvement in heavy drinking, R^2 = .03, *β* = -.16, F = 7.84, p < .001. Although the amount of explained variance decreased from the first step to the fourth step, the relationship between the criterion variable and the predictor variable remained statistically significant. To determine if religiosity was partially mediating the relationship between agreeableness and self-reported involvement in heavy drinking, Sobel's test was completed. The results of this test were statistically significant, Sobel = -2.53, p =

.011. Based on this finding, it appears that religiosity was partially mediating the relationship between agreeableness and self-reported involvement in heavy drinking.

The first step on the mediation analysis between agreeableness and self-reported involvement in high-risk sports was not statistically significant. As a result, the mediation analysis could not be continued.

Agreeableness was used as the predictor variable and self-reported involvement in academic/work behaviors was used as the criterion variable in a mediation analysis. Religiosity was used as the mediating variable in this analysis. Table 46 presents results of this analysis.

Table 46

Mediation Analysis – Mediating Role of Religiosity on the Relationship between Self-Reported Involvement in Academic/Work Behaviors and Agreeableness ($N = 255$)

Predictor	Outcomes	R^2	F	Standardized β
Step 1				
Agreeableness	Self-reported involvement in academic/work behaviors	.06	17.08	-.25**
Step 2				
Agreeableness	Religiosity	.08	22.07	.28**
Step 3				
Religiosity	Self-reported involvement in academic/work behaviors	.03	6.43	-.16*
Step 4				
Religiosity	Self-reported involvement in academic/work behaviors	.03	6.43	-.16*
Agreeableness		.03	7.87	.19**
Sobel Test = -2.23, p = .025				

*$p \leq .05$; **$p \leq .01$

On the first step of the mediation analysis, a statistically significant relationship was obtained between agreeableness and self-reported involvement in academic/work behaviors, $R^2 = .06$, $\beta = -.25$, F = 17.08, p < .001. Agreeableness was accounting for a

statistically significant amount of variance in the mediating variable, religiosity, $R^2 = .08$, $\beta = .28$, F = 22.07, p < .001. The third step of the mediation analysis found a statistically significant relationship between religiosity and self-reported involvement in academic/work behaviors, $R^2 = .03$, $\beta = -.16$, F = 6.43, p = .012. After holding religiosity constant, the amount of variance in self-reported involvement in academic/work behaviors decreased, $R^2 = .03$, $\beta = .19$, F = 7.87, p = .003, but remained statistically significant. To determine if religiosity was partially mediating the relationship between agreeableness and self-reported academic/work behaviors, a Sobel's test was performed. The results of this analysis were statistically significant, Sobel = 2.23, p = .025, indicating that religiosity was partially mediating the relationship between agreeableness and self-reported academic/work behaviors.

Four of the six mediation analyses for this hypothesis provided support that religiosity was mediating or partially mediating the relationship between the criterion variables, self-reported involvement in illicit drug use, aggressive/illegal behaviors, heavy drinking, and academic/work behaviors and the predictor variable, agreeableness. Because of the mixed findings on these analyses, the null hypothesis was rejected.

H$_{4e}$:   The relationship between self-reported involvement of emerging adult college students in risk-taking behaviors and conscientiousness scores is mediated by scores for religiosity.

Mediation analyses were completed using each of the six risky behaviors as the criterion variable, conscientiousness scores as the predictor variable, and religiosity as the mediating variable. The first analysis used self-reported involvement in illicit drug use as the criterion variable. Table 47 presents results of this analysis.

Table 47

Mediation Analysis – Mediating Role of Religiosity on the Relationship between Self-Reported Involvement in Illicit Drug Use and Conscientiousness ($N = 255$)

Predictor	Outcomes	R^2	F	Standardized $β$
Step 1				
Conscientiousness	Self-reported involvement in illicit drug use	.02	4.18	-.13*
Step 2				
Conscientiousness	Religiosity	.05	12.26	.22**
Step 3				
Religiosity	Self-reported involvement in illicit drug use	.03	8.94	-.19**
Step 4				
Religiosity	Self-reported involvement in illicit drug use	.03	8.94	-.19**
Conscientiousness		.01	5.55	-.09

*$p \le .05$; **$p \le .01$

On the first step of the mediation analysis, conscientiousness was explaining 2% of the variance in self-reported involvement in illicit drug use, $R^2 = .02$, $β = -.13$, F = 4.18, p = .042. Five percent of the variance in religiosity was accounted for by conscientiousness, $R^2 = .05$, $β = .22$, F = 12.26, p = .001. On the third step of the analysis, religiosity was accounting for 3% of the variance in self-reported involvement in illicit drug use, $R^2 = .03$, $β = -.19$, F = 8.94, p = .003. After holding religiosity constant, the amount of variance in self-reported involvement in illicit drug use that was explained by conscientiousness decreased to 1%, $R^2 = .01$, $β = -.09$, F = 5.55, p = .004. The t-value of -1.46 for conscientiousness was not statistically significant, indicating that religiosity was mediating the relationship between conscientiousness and self-reported involvement in illicit drug use.

Self-reported involvement in aggressive/illegal behaviors was used as the criterion variable in a mediation analysis. Scores for conscientiousness were used as

the predictor variable, with religiosity used as the mediating variable. Table 48 presents

results of this analysis.

Table 48

Mediation Analysis – Mediating Role of Religiosity on the Relationship between Self-Reported Involvement in Aggressive/Illegal Behaviors and Conscientiousness (*N* = 255)

Predictor	Outcomes	R^2	F	Standardized β
Step 1				
Conscientiousness	Self-reported involvement in aggressive/illegal behaviors	.04	9.53	-.19**
Step 2				
Conscientiousness	Religiosity	.05	12.26	.22**
Step 3				
Religiosity	Self-reported involvement in aggressive/illegal behaviors	.03	8.38	-.18**
Step 4				
Religiosity	Self-reported involvement in aggressive/illegal behaviors	.03	8.38	-.18**
Conscientiousness		.02	7.52	-.16*
Sobel Test = -2.24, p = .024				

*$p \leq$ .05; **$p \leq$ .01

Conscientiousness accounted for 4% of the variance in self-reported involvement in aggressive/illegal behaviors on the first step of the mediation analysis, R^2 = .04, β = -.19, F = 9.53, p = .002. On the second step of the mediation analysis, conscientiousness explained 5% of the variance in self-reported involvement in aggressive/illegal behaviors, R^2 = .05, β = .22, F = 12.26, p = .001. Religiosity accounted for 3% of the variance in self-reported involvement in aggressive/illegal behaviors on the third step of the analysis, R^2 = .03, β = -.18, F = 8.38, p = .004. On the fourth step of the mediation analysis, the amount of variance in self-reported involvement in aggressive/illegal behaviors that was explained by conscientiousness

decreased to 2%, but remained statistically significant, R^2 = .02, β = -.16, F = 7.52, p = .012. Because the relationship between conscientiousness and self-reported involvement in aggressive/illegal behaviors remained statistically significant, although the amount of variance explained decreased, a Sobel's test was used to determine if religiosity was partially mediating the relationship between the criterion and predictor variables. The results of this analysis were statistically significant, Sobel =2.24, p = .025, indicating that religiosity was partially mediating the relationship between conscientiousness and self-reported involvement in aggressive/illegal behaviors.

Self-reported involvement in risky sexual behaviors was used as the criterion variable in a mediation analysis. Conscientiousness was used as the predictor variable, with religiosity used as the mediating variable. The relationship between conscientiousness and self-reported involvement in risky sexual behavior on the first step of the mediation analysis was not statistically significant, indicating the mediation analysis could not be completed.

A mediation analysis was used to determine if religiosity was mediating the relationship between conscientiousness and self-reported involvement in heavy drinking. Table 49 presents results of this analysis.

Table 49

Mediation Analysis – Mediating Role of Religiosity on the Relationship between Self-Reported Involvement in Heavy Drinking and Conscientiousness ($N = 255$)

Predictor	Outcomes	R^2	F	Standardized β
Step 1				
Conscientiousness	Self-reported involvement in heavy drinking	.03	6.80	-.16**
Step 2				
Conscientiousness	Religiosity	.05	12.26	.22**
Step 3				
Religiosity	Self-reported involvement in heavy drinking	.03	8.86	-.18**
Step 4				
Religiosity	Self-reported involvement in heavy drinking	.03	8.86	-.18**
Conscientiousness		.02	6.57	-.13*
Sobel Test = -2.28, p = .023				

*$p \leq .05$; **$p \leq .01$

Three percent of the variance in self-reported involvement in heavy drinking was explained by conscientiousness on the first step of the mediation analysis, R^2 = .03, β = -.16, F = 6.80, p = .010. On the second step of the analysis, conscientiousness was accounting for 5% of the variance in religiosity, R^2 = .05, β = .22, F = 12.26, p = .001. A statistically significant amount of variance in self-reported involvement in heavy drinking was explained by religiosity on the third step of the mediation analysis, R^2 = .03, β = -.18, F = 8.86, p = .003. After holding religiosity constant on the fourth step of the analysis, conscientiousness was explaining 2% of the variance in self-reported involvement in heavy drinking, R^2 = .02, β = -.13, F = 6.57, p = .002. While the amount of explained variance decreased from 3% on step 1 to 2% on step 4, the relationship between conscientiousness and self-reported involvement in heavy drinking remained statistically significant. To determine if religiosity was partially mediating the relationship

between the predictor and criterion variables, a Sobel's test was completed. The results of this test were statistically significant, Sobel = -2.28, p = .022, providing support that religiosity was partially mediating the relationship between conscientiousness and self-reported involvement in heavy drinking.

Self-reported involvement in high-risk sports was used as the criterion variable in a mediation analysis, with conscientiousness used as the predictor variable and religiosity used as the mediating variable. The relationship between conscientiousness and self-reported involvement in high-risk sports was not statistically significant. As a result, the mediation analysis could not be completed.

A mediation analysis was used to determine if religiosity was mediating the relationship between conscientiousness and self-reported involvement in academic/work behaviors. The results of this analysis are presented in Table 50.

Table 50

Mediation Analysis – Mediating Role of Religiosity on the Relationship between Self-Reported Involvement in Academic/Work Behaviors and Conscientiousness ($N = 255$)

Predictor	Outcomes	R^2	F	Standardized β
Step 1				
Conscientiousness	Self-reported involvement in academic/work behaviors	.24	81.30	-.49**
Step 2				
Conscientiousness	Religiosity	.05	12.26	.22**
Step 3				
Religiosity	Self-reported involvement in academic/work behaviors	.03	6.43	-.16*
Step 4				
Religiosity	Self-reported involvement in academic/work behaviors	.03	6.43	-.16*
Conscientiousness		.22	41.10	-.48**
Sobel Test = -2.05, p = .040				

*$p \leq$ .05; **$p \leq$ .01

On the first step of the mediation analysis, conscientiousness was explaining 24% of the variance in self-reported involvement in academic/work behaviors, $R^2 = .24$, $\beta = -.48$, $F = 81.30$, $p < .001$. Conscientiousness was accounting for 5% of the variance in religiosity on the second step of the analysis, $R^2 = .05$, $\beta = .22$, $F = 12.26$, $p = .001$. Three percent of the variance in self-reported involvement in academic/work behaviors was explained by religiosity, $R^2 = .03$, $\beta = -.16$, $F = 6.43$, $p = .012$. After holding religiosity constant, conscientiousness was accounting for 22% of the variance in self-reported academic/work behavior, $R^2 = .22$, $\beta = -.48$, $F = 41.10$, $p < .001$. Although the amount of variance in self-reported academic/work behavior decreased from the first through the fourth step of the analysis, the relationship between conscientiousness and self-reported academic/work behaviors remained statistically significant. To determine if religiosity was partially mediating the relationship between the predictor and criterion variables, a Sobel's test was completed. The results of this test were statistically significant, Sobel = -2.05, $p = .040$. This finding indicated that religiosity was partially mediating the relationship between conscientiousness and self-reported involvement in academic/work behaviors.

Four of the six mediation analysis either fully or partially mediated the relationships between the predictor and criterion variables. Based on these findings, the null hypotheses of no mediation were rejected.

H$_5$:   Emerging adult college students with a more internal locus of control and higher scores for conscientiousness and agreeableness personality traits and lower scores for neuroticism, extraversion, and openness to experience personality traits will self-report lower levels of involvement in risky behaviors.

The scores for the self-reported levels of involvement in the six types of risky behaviors were correlated with locus of control and the five personality traits to determine the significance of the zero-order correlations. The predictor variables, locus

of control and five personality traits, that were significantly related to the criterion variables, six types of risky behaviors, were used in the regression analysis to test the hypothesis. Table 51 presents results of this analysis.

Table 51

Intercorrelation Matrix
Self-Reported Involvement in Risky Behaviors, Locus of Control, and Personality Traits

	Criterion Variables											
	Illicit Drug Use		Aggressive/ Illegal Behaviors		Risky Sexual Behaviors		Heavy Drinking		High-risk Sports		Academic/ Work Behaviors	
Predictor Variables	r	p	r	p	R	p	r	p	r	p	R	P
Locus of Control	.11	.087	.21	.001	.08	.222	.20	.002	-.12	.057	.23	<.001
Neuroticism	.09	.144	.12	.063	.06	.334	.06	.363	-14	.024	.29	<.001
Extraversion	.09	.164	.06	.344	-.08	.223	.18	.004	.25	<.001	.03	.633
Openness to Experience	.11	.070	-.06	.341	.03	.621	-.07	.270	-.05	.444	-.09	.167
Agreeableness	-.16	.009	-.30	<.001	-.12	.058	-.20	.001	.07	.244	-.25	<.001
Conscientiousness	-.13	.042	-.19	.002	-.07	.239	-.16	.010	.03	.675	-.49	<.001

Two predictor variables, agreeableness, $r = -.16$, $p = .009$ and conscientiousness, $r = -.13$, $p = .042$ were significantly related to illicit drug use. Locus of control, $r = .21$, $p = .001$, agreeableness, $r = -.30$, $p < .001$ and conscientiousness, $r = -.19$, $p = .002$ were significantly related to aggressive/illegal behaviors. None of the predictor variables were significantly related to self-reported involvement in risky sexual behaviors. Four predictor variables, locus of control, $r = .20$, $p = .002$, extraversion, $r = .18$, $p = .004$, agreeableness, $r = -.20$, $p = .001$, and conscientiousness, $r = -.16$, $p = .010$ were significantly related to self-reported involvement in heavy drinking. Neuroticism, $r = -.14$, $p = .024$ and extraversion, $r = .25$, $p < .001$ were significantly related to self-reported involvement in high-risk sports. Statistically significant

correlations were obtained between academic/work behaviors and locus of control, $r = .23$, $p < .001$, neuroticism, $r = .29$, $p < .001$, agreeableness, $r = -.25$, $p < .001$, and conscientiousness, $r = -.49$, $p < .001$. These variables were used in their respective stepwise multiple linear regression analysis to determine which of these predictor variables could be used to explain the criterion variables.

Two personality traits, agreeableness and conscientiousness, were used as predictor variables in a stepwise multiple linear regression analysis. The criterion variable in this analysis was self-reported involvement in illicit drug use. Results of this analysis are presented in Table 52.

Table 52

Stepwise Multiple Linear Regression Analysis
Self-Reported Involvement in Illicit Drug Use with Personality Traits

Predictor Variable	Constant	b-Weight	β-Weight	ΔR^2	t-Value	Sig
Included Variables Agreeableness	7.06	-.09	-.16	.03	-2.64	.009
Excluded Variables Conscientiousness			-.08		-1.27	.205

Multiple R	.16
Multiple R^2	.03
F ratio	6.96
DF	1, 253
Sig of F	.009

One predictor variable, agreeableness, entered the stepwise multiple linear regression equation, accounting for 3% of the variance in self-reported involvement in illicit drug use, $F (1, 253) = 6.96$, $p = .009$. The second predictor variable, conscientiousness, did not enter the stepwise multiple linear regression equation, indicating it was not accounting for a statistically significant amount of variance in self-reported involvement in illicit drug use.

A stepwise multiple linear regression analysis was used to determine which of three predictor variables, locus of control, agreeableness, and conscientiousness, could be predictors of self-reported involvement in aggressive/illegal behaviors. Results of this analysis are presented in Table 53.

Table 53

Stepwise Multiple Linear Regression Analysis
Self-Reported Involvement in Aggressive/Illegal Behaviors with Personality Traits

Predictor Variable	Constant	b-Weight	β-Weight	ΔR^2	t-Value	Sig
Included Variables						
Agreeableness	19.36	-.23	-.26	.09	-4.19	<.001
Locus of Control		.19	.14	.02	2.20	.029
Excluded Variables						
Conscientiousness			-.08		-1.30	.195

Multiple R	.32
Multiple R^2	.11
F ratio	14.78
DF	2, 252
Sig of F	<.001

Two of the predictor variables, agreeableness and locus of control, entered the stepwise multiple linear regression equation, accounting for 11% of the variance in self-reported involvement in aggressive/illegal behaviors, F (2, 252) = 14.78, p < .001. Agreeableness entered the equation first, accounting for 9% of the variance in self-reported involvement in aggressive/illegal behaviors, r^2 = .09, β = -.26, t = -4.19, p < .001. Participants with higher scores for agreeableness were less likely to self-report involvement in aggressive/illegal behaviors. An additional 2% of the variance in the criterion variable, self-reported involvement in aggressive/illegal behaviors was explained by locus of control, r^2 = .02, β = .14, t = 2.20, p = .029. Higher scores for locus of control indicate greater beliefs that external factors are contributing to their behaviors. The third predictor variable, conscientiousness, did not enter the stepwise multiple

linear regression equation, indicating it was not explaining a statistically significant amount of variance in self-reported involvement in aggressive/illegal behaviors.

None of the predictor variables were significantly related to self-reported involvement in risky sexual behaviors. As a result, the planned stepwise multiple linear regression analysis could not be completed.

A stepwise multiple linear regression analysis was used to determine which of the predictor variables, locus of control, extraversion, agreeableness, and conscientiousness could be used to predict the criterion variable, self-reported involvement in heavy drinking. Table 54 presents results of this analysis.

Table 54

Stepwise Multiple Linear Regression Analysis
Self-Reported Involvement in Heavy Drinking with Personality Traits

Predictor Variable	Constant	b-Weight	β-Weight	ΔR^2	t-Value	Sig
Included Variables						
Agreeableness	6.92	-.17	-.19	.04	-2.90	.004
Extraversion		.24	.31	.06	4.95	<.001
Locus of Control		.24	.17	.03	2.78	.006
Conscientiousness		-.12	-.15	.02	-2.33	.021

Multiple R	.39
Multiple R^2	.15
F ratio	11.15
DF	4, 250
Sig of F	<.001

Four predictor variables, agreeableness, extraversion, locus of control, and conscientiousness entered the stepwise multiple linear regression equation, accounting for 15% of the variance in self-reported involvement in heavy drinking, $F_{(4, 250)}$ = 11.15, p < .001. Agreeableness entered the equation first, accounting for 4% of the variance in self-reported involvement in heavy drinking, r^2 = .04, β = -.19, t = -2.90, p = .004. Six percent of the variance in the criterion variable was explained by extraversion,

r^2 = .06, β = .31, t = 4.95, p < .001. Three percent of the variance in the criterion variable, self-reported involvement in heavy drinking was accounted for by locus of control, r^2 = .03, β = .17, t = 2.78, p = .006. Conscientiousness entered the stepwise multiple linear regression equation, explaining 2% of the variance in self-reported involvement in heavy drinking, r^2 = .02, β = -.15, t = -2.33, p = .021.

Self-reported involvement in high-risk sports was used as the criterion variable in a stepwise multiple linear regression analysis. The predictor variables in this analysis were neuroticism and extraversion. Table 55 presents results of this analysis.

Table 55

Stepwise Multiple Linear Regression Analysis
Self-Reported Involvement in High-risk Sports with Personality Traits

Predictor Variable	Constant	b-Weight	β-Weight	ΔR^2	t-Value	Sig
Included Variables						
Extraversion	3.13	.17	.25	.06	4.16	<.001
Excluded Variables						
Neuroticism			-.05		-.75	.455

Multiple R	.25
Multiple R^2	.06
F ratio	17.32
DF	1, 253
Sig of F	<.001

One predictor variable, extraversion, entered the stepwise multiple linear regression equation, accounting for 6% of the variance in self-reported involvement in high-risk sports, F (1, 253) = 17.32, p < .001. Neuroticism did not enter the stepwise multiple linear regression equation, indicating it was not accounting for a statistically significant amount of variance in self-reported involvement in high-risk sports.

Four predictor variables, locus of control, neuroticism, agreeableness, and conscientiousness, were used in a stepwise multiple linear regression analysis, with

self-reported involvement in academic/work behaviors used as the criterion variable.

Table 56 presents results of this analysis.

Table 56

Stepwise Multiple Linear Regression Analysis
Self-Reported Involvement in Academic/Work Behaviors with Personality Traits

Predictor Variable	Constant	b-Weight	β-Weight	ΔR^2	t-Value	Sig
Included Variables						
Conscientiousness	25.11	-.39	-.45	.24	-7.68	<.001
Neuroticism		.09	.13	.02	2.14	.033
Excluded Variables						
Locus of Control			.09		1.57	.119
Agreeableness			-.08		-1.37	.173

Multiple R	.51
Multiple R^2	.26
F ratio	43.52
DF	2, 252
Sig of F	<.001

Two predictor variables, conscientiousness and neuroticism, entered the

stepwise multiple linear regression equation, explaining 26% of the variance in self-

reported involvement in academic/work behaviors, F (2, 252) = 43.52, p < .001. The

personality trait, conscientiousness, entered the stepwise multiple linear regression

equation, accounting for 24% of the variance in the criterion variable, r^2 = .24, β = -.45,

t = -7.68, p < .001. The negative relationship between conscientiousness and self-

reported involvement in academic/work behaviors indicated that participants who had

higher scores for conscientiousness were less likely to report involvement in

academic/work behaviors. An additional 2% of the variance in self-reported involvement

in risky academic/work behaviors was accounted for by neuroticism, r^2 = .02, β = .13, t =

2.14, p =.033. Locus of control and agreeableness did not enter the stepwise multiple

linear regression equation, indicating they were not accounting for a statistically

significant amount of variance in the criterion variable, self-reported involvement in academic/work behaviors.

Based on the findings of these analyses, the null hypothesis was rejected, although some of the relationships were not statistically significant. However, 4 out of the 6 predictor variables had statistically significant relationships that were in the anticipated direction.

H_6:   Younger emerging adult male and female college students (ages 18 to 20 years) will have different scores for the five personality traits than older emerging adult male and female college students (ages 21 to 25 years).

   H_{6a}:   Younger emerging adult male and female college students (ages 18 to 20 years) will have lower scores for agreeableness than older emerging adult male and female college students (ages 21 to 25 years).

   H_{6b}:   Younger emerging adult male and female college students (ages 18 to 20 years) will have lower scores for conscientiousness than older emerging adult male and female college students (ages 21 to 25 years).

   H_{6c}:   Younger emerging adult male and female college students (ages 18 to 20 years) will have lower scores for openness to experience than older emerging adult male and female college students (ages 21 to 25 years).

   H_{6d}:   Younger emerging adult male and female college students (ages 18 to 20 years) will have higher scores for neuroticism than older emerging adult male and female college students (ages 21 to 25 years).

   H_{6e}:   Younger emerging adult male and female college students (ages 18 to 20 years) will have higher scores for extraversion than older emerging adult male and female college students (ages 21 to 25 years).

Separate Mann-Whitney U tests for two independent samples was used to determine if the five personality factors differed among people by age (18 to 20 and 21 to 25) and gender (male and female). A median split was used to divide the students into two groups by age (18 to 20 [n = 205] and 21 to 25 [n = 50]). The interaction effect between male and female participants in the two age groups was examined using a Kruskal-Wallis one-way analysis of variance. The five personality factors, neuroticism,

extraversion, openness to experience, agreeableness, and conscientiousness, were used as the dependent variables in these analyses. Table 57 provides results of Mann-Whitney U test for two independent samples for age.

Table 57

Mann-Whitney U Test for Two Independent Samples
Personality Factors by Age

Personality Factor	N	M	SD	Mean Rank	Z	Sig
Neuroticism						
18 to 20 years	205	21.87	7.78	130.20	-.96	.335
21 to 25 years	50	21.26	8.55	118.99		
Extraversion						
18 to 20 years	205	31.94	6.52	128.56	-.24	.807
21 to 25 years	50	31.44	7.28	125.72		
Openness to experience						
18 to 20 years	205	27.16	5.53	122.49	-2.42	.016
21 to 25 years	50	29.50	5.97	150.58		
Agreeableness						
18 to 20 years	205	32.39	5.38	124.28	-1.63	.102
21 to 25 years	50	33.02	6.92	143.25		
Conscientiousness						
18 to 20 years	205	33.22	6.19	127.60	-.17	.862
21 to 25 years	50	33.06	7.41	129.62		

One statistically significant difference between the two age groups was found for openness to experience, $Z = -2.42$, $p = .016$. The mean rank for older students from 21 to 25 years of age (mean rank = 150.58, m = 29.50, sd = 5.97) was significantly higher than the mean rank for younger students from 18 to 20 years of age (mean rank = 122.49, m = 27.16, sd = 5.53). The remaining personality factors did not differ significantly between younger and older students.

Mann-Whitney U tests for two independent samples were used to test for differences in the five personality factors by gender. The results of these analyses are presented in Table 58.

Table 58

Mann-Whitney U Test for Two Independent Samples
Personality Factors by Gender

Personality Factor	N	M	SD	Mean Rank	Z	Sig
Neuroticism						
Male	51	19.84	8.00	107.77	-2.19	.028
Female	204	22.23	7.85	133.06		
Extraversion						
Male	51	29.98	7.19	109.51	-2.00	.045
Female	204	32.31	6.46	132.62		
Openness to experience						
Male	51	29.37	5.89	147.72	-2.14	.033
Female	204	27.18	5.56	123.07		
Agreeableness						
Male	51	30.63	5.76	103.84	-2.62	.009
Female	204	32.99	5.61	134.04		
Conscientiousness						
Male	51	30.96	6.73	105.29	-2.46	.014
Female	204	33.75	6.25	133.68		

The male and female students differed significantly on the five personality factors. Male students (mean rank = 107.77, m = 19.84, sd = 8.00) had significantly lower scores for neuroticism than female students (mean rank = 133.06, m = 22.23, sd = 7.85); Z = -2.19, p = .028. The comparison on the mean ranks for extraversion between male (mean rank = 109.51, m = 29.98, sd = 7.19) and female (mean rank = 132.62, m = 32.31, sd = 6.46) was statistically significant, with females having significantly higher scores than males. Male students (mean rank 147.72, m = 29.37, sd = 5.89) had significantly higher scores for openness to experience than female students (mean rank = 123.07, m = 27.18, sd = 5.56); Z = -2.14, p = .033. The results of the comparison for agreeableness was statistically significant, Z = -2.62, p = .009, with female students (mean rank = 134.04, m = 32.99, sd = 5.61) having significantly higher scores than male students (mean rank = 103.84, m = 30.63, sd = 5.76). The difference in conscientiousness between male (mean rank = 105.29, m = 30.96, sd = 6.73) and

female (mean rank = 133.68, m = 33.75, sd = 6.25) was statistically significant, Z = -2.46, p = .014. Female students had significantly higher scores for four personality factors, neuroticism, extraversion, agreeableness, and conscientiousness than male students, while male students had significantly higher scores for openness to experience than female students.

The four groups, male and female students from 18 to 20 years of age and 21 to 25 years of age were used as independent variables in separate Kruskal-Wallis one-way analysis of variance procedures. The dependent variables in these analyses were the five personality factors: neuroticism, extraversion, openness to experience, agreeableness, and conscientiousness. Table 59 presents the results of this analysis.

Table 59

Kruskal-Wallis One-way Analysis of Variance
Personality Factors by Gender and Age

Personality Factor	N	M	SD	Mean Rank	X^2	Sig
Neuroticism						
Male18 to 20 years	40	19.28	6.56	104.70	6.88	.076
Female 18 to 20 years	165	22.50	7.94	136.38		
Male 21 to 25 years	11	21.91	12.11	118.95		
Female 21 to 25 years	39	21.08	7.45	119.00		
Extraversion						
Male18 to 20 years	40	30.25	6.32	109.55	4.06	.255
Female 18 to 20 years	165	32.35	6.52	133.16		
Male 21 to 25 years	11	29.00	10.07	109.36		
Female 21 to 25 years	39	32.13	6.28	130.33		
Openness to experience						
Male18 to 20 years	40	29.25	5.70	147.38	11.53	.009
Female 18 to 20 years	165	26.65	5.38	116.46		
Male 21 to 25 years	11	29.82	6.81	148.95		
Female 21 to 25 years	39	29.41	5.80	151.04		
Agreeableness						
Male18 to 20 years	40	30.03	5.61	96.43	10.19	.017
Female 18 to 20 years	165	32.96	5.18	131.03		
Male 21 to 25 years	11	32.82	6.03	130.82		
Female 21 to 25 years	39	33.08	7.22	146.76		
Conscientiousness						
Male18 to 20 years	40	31.68	5.25	106.75	6.29	.098
Female 18 to 20 years	165	33.60	6.35	165.66		
Male 21 to 25 years	11	28.36	10.48	100.00		
Female 21 to 25 years	39	34.38	5.80	137.97		

Two of five personality factors, openness to experience and agreeableness, differed by age and gender. The results of the comparison of openness to experience provided evidence of a statistically significant difference by age and gender, χ^2 (3) = 11.53, p = .009. This result indicated that female students from 18 to 20 years of age (mean rank = 116.46, m = 26.65, sd = 5.38) had the lowest scores on this personality factor, while females from 21 to 25 years of age (mean rank = 151.04, m = 29.41, sd = 5.80) had the highest scores. The males from 18 to 20 years of age (mean rank = 147.38, m = 29.25, sd = 5.70) and males from 21 to 25 years (mean rank = 148.95, m = 29.82, sd = 6.81) had similar scores.

The comparison between the four groups on agreeableness produced a statistically significant result, χ^2 (3) = 10.19, p = .017. The males from 18 to 20 years of age (mean rank = 96.43, m = 30.03, sd = 5.81) had the lowest scores on agreeableness, with females from 21 to 25 years of age (mean rank = 146.76, m = 33.08, sd = 7.22) having the highest scores. Females from 18 to 20 years (mean rank = 131.03, m = 32.96, sd = 5.18) and males from 21 to 25 years of age (mean rank = 130.82, m = 32.82, sd = 6.03) had scores that were similar.

Although some findings on these analyses were statistically significant, a decision on the null hypotheses could not be made. The differences were either not in the anticipated direction or the findings were not statistically significant.

Summary

Chapter IV has presented the results of the statistical analyses that were used to describe the sample and address the research questions and hypotheses. A discussion of the findings can be found in Chapter V.

CHAPTER V

DISCUSSION, CONCLUSION, AND RECOMMENDATIONS

The purpose of this research was to explore the role of personality and its contribution to risk-taking behaviors during emerging adulthood. Further, the contribution of cognitive appraisals to risk-taking was explored. The roles of religion and locus of control were also considered variables contributing to the relationship between personality and risky behaviors. This study explored whether certain personality traits contribute to involvement in risk-taking behaviors, whether cognitive appraisals that emerging adults hold about particular risky behaviors affect the degree to which they engage in those behaviors, and if factors such as religiosity and locus of control affect the degree to which certain personality types engage in risky behaviors.

A review of the literature has shown that certain personality traits are associated with a higher propensity to engage in risky behaviors. The perception of the risks and benefits of risky behaviors also plays a role in the likelihood that an individual will engage in risk. However, a sense of religiosity or identification with certain religious beliefs, has been found to decrease risk-taking behaviors. In contrast, an external locus of control, or belief that other factors rather than one's actions are responsible for outcomes, has been associated with increased risk-taking behaviors.

A total of 255 college-aged students between the ages of 18 and 25 returned completed questionnaires. The questionnaires assessed personality traits, beliefs about risk-taking and actual risk-taking behaviors, religious beliefs, locus of control, and demographic factors. Gender and age group comparisons were made in relation to personality traits.

Each of the hypotheses will be reviewed individually and in combination with the existing literature. Similarities and differences between the results of this study and other research will be discussed along with possible implications for these findings. Additionally, a review of the limitations of this study and directions for future research along with clinical implications will also be addressed.

Hypotheses

Risk-taking Behaviors and Cognitive Appraisals

The first research question focused on identifying whether a significant relationship exists between the perception of risk and the actual involvement in risky behaviors. This study found a relationship between students' beliefs with regard to the positive outcomes from engaging in illicit drug use, aggressive/illegal behaviors, risky sexual behaviors, heavy drinking, high-risk sports, and risky academic/work behaviors and students' likelihood to engage in the risky behaviors. A relationship was also found between those individuals perceiving negative outcomes from the risky behaviors and their decreased likelihood to engage in those behaviors.

These findings are similar to previous literature holding the position that the likelihood of individuals engaging in risky behaviors is related to the cognitive appraisals, or perceived consequences of the behaviors (Benthin, Slovic, & Severson, 1993; Stacy, Bentler, & Flay, 1994). It is noteworthy that in this study, heavy drinking and illicit drug use received the highest correlations for the positive appraisals, $r(255) = .65$; $r(255) = .63$. These same risky behaviors received the highest correlations for the negative appraisals of reported involvement in risky behaviors, $r(255) = -.39$; $r(255) = -.37$. These findings may be due to the population studied as alcohol and marijuana use has been associated with relaxation among emerging adults (Schafer & Brown,

1991). These findings may also relate to the college age lifestyle which includes the use of such substances. The substance use in emerging adulthood may be due to the respondents being just old enough and independent enough to be able to acquire these substances, even if illegally.

Personality and Gender Differences in Heavy Drinking and Illicit Drug Use

The second research question focused on whether students with different personality traits would report differences in heavy drinking and illicit drug use. No significant differences were found for individuals' agreeableness scores when comparing their likelihood to engage in heavy drinking or illicit drug use. No gender differences were found for heavy drinking or illicit drug use. This finding is contradictory to past research proposing that agreeable individuals are less likely to engage in inappropriate behaviors, while males show the tendency to use alcohol and marijuana more than females (Labouvie & McGee, 1986). However, research also suggests that agreeableness appears to be the least understood trait with regard to social behavior (Jensen-Campbell & Graziano, 2001). When examining the defining facets of agreeableness, Piedmont (1998) used the following adjectives; altruism, compliance, modesty, and tender-mindedness. These adjectives are generally used to describe older adults and it is possible that a sample of 18 to 25 year olds is too young to have developed such characteristics in a stage of life where identity exploration is still taking place and individuals are still exploring with different identity roles (Arnett, 2005).

The individuals with high and low scores on the personality trait of conscientiousness did not differ significantly on self-reports of heavy drinking or illicit drug use. Also, no differences were found by gender and drinking or drug use. The same was true for the personality trait of neuroticism. A study by Flory, Lynam, Milich,

Leukefeld, and Clayton (2002) found that there was no association between neuroticism and the abuse of substances. However, the findings in this study are unexpected as past research by Walton and Roberts (2004) indicated that individuals who were identified as heavy users of drugs and alcohol were more neurotic and had lower scores on conscientiousness. The criteria defining what constitutes heavy, moderate, and abstaining users as well as the specific questionnaires used could have had an affect on the results produced. Studies on neuroticism vary and some appear contradictory. This may indicate that in some, neuroticism may cause increased stress and cause individuals to resort to alcohol or drugs for self-medication. In others, neuroticism may serve to contribute to fear of negative consequences of substance use and, in turn, may decrease use.

No differences were found for self-reports of heavy drinking and illicit drug use by extraversion and gender, or by openness to experience and gender. These results were contrary to expected findings as in research by Flory, Lynam, Milich, Leukefeld, and Clayton (2002) alcohol abuse symptoms were associated with increased scores on extraversion. The authors also found that marijuana abuse symptoms were related to increased scores on openness to experience. In their study, the authors stated that a substantial amount of substance use was found in their sample and that there was some oversampling of heavy users which may have accounted for the significant results.

Age, Gender, Neuroticism, and Cognitive Appraisals as Predictors of Risky Behaviors

The third research question focused on predicting risk-taking behaviors by age, gender, neuroticism and cognitive appraisals. Results showed that there was a relationship between participants who perceived that illicit drug use had positive results

and their likelihood to engage in the behavior. A relationship was also found for those who believed negative results would occur and less likelihood to engage in illicit drug use. Positive and negative consequences accounted for 15% of the variance in illicit drug use. Also, those individuals who perceived positive consequences would result from aggressive/illegal behaviors were more likely to report engaging in these behaviors, accounting for 26% of the variance. Further, a relationship was found between the individuals who perceived positive results from participating in risky sexual behaviors and reporting they were more likely to engage in these behaviors, accounting for 7% of the variance. Twenty percent of the variance indicated that there was a relationship between positive consequences and greater likelihood for heavy drinking. These findings once again support the research of Benthin, Slovic, and Severson, (1993) and Stacy, Bentler, and Flay (1994), suggesting that perceived likelihood of positive consequences from risky behaviors predicts greater involvement in the behaviors. Age, gender, or neuroticism were not significant predictors of the risky behaviors identified.

As expected, when examining high-risk sports, a relationship was found between participants who perceived positive consequences of these behaviors and greater likelihood to engage in them. Sixteen percent of the total variance was accounted for by positive consequences, neuroticism, age, and gender. Participants who scored lower on neuroticism were more likely to engage in high-risk sports. This finding may be due to the fact that lower neuroticism in this sample may have represented individuals who had lower anxiety, as this adjective has been used to describe the personality trait (Piedmont, 1998). Further, this study found that younger participants were significantly more likely to engage in risky sports. Finally, regarding gender, males were significantly

more likely to engage in these activities. Many studies have shown that males engage in various risky behaviors more often then females (Williams, Van Dorn, Hawkins, Abbott, & Catalano, 2001). In addition younger individuals have been known to be greater sensation seekers and more likely to engage in risk (Zuckerman, 1992).

Participants who perceived greater positive consequences from participating in risky academic/work behaviors were more likely to report involvement in these behaviors. Also, those who scored higher on neuroticism were more likely to report involvement in risky academic/work behaviors. Eighteen percent of the variance was accounted for by positive consequences and neuroticism. Perhaps the features associated with neuroticism; such as emotional instability, anxiety, and depression, contribute to missing class or work and leaving tasks until the last minute due to the negative, and perhaps incapacitating feelings and emotions related to the personality trait.

Religiosity as a Mediator between Personality Traits and Risky Behaviors

The fourth hypothesis focused on the mediating role of religiosity between the five identified personality traits and the six identified risk-taking behaviors. Findings showed that religiosity did not mediate the relationship between the personality traits of neuroticism and openness to experience or the risky behaviors of illicit drug use, aggressive/illegal behaviors, risky sexual behaviors, heavy drinking, high-risk sports, and academic/work behaviors.

Religion did not mediate the relationship between extraversion and the risky behaviors of illicit drug use, aggressive/illegal behaviors, risky sexual behaviors, high-risk sports, and academic/work behaviors. Although, religiosity partially mediated the

relationship between extraversion and heavy drinking the amount of variance ($R^2 = .05$) explained in this analysis was too small to be considered substantial.

Religion did not mediate the relationship between agreeableness and risky sexual behaviors or self-reported high-risk sports. Although religion was found to have a mediating effect between agreeableness and illicit drug use, the amount of variance was small ($R^2 = .01$). Religion also partially mediated the relationship between agreeableness and self-reported involvement in aggressive/illegal behaviors and academic/work behaviors, as well as the relationship between the identified personality trait and heavy drinking. Again, the amount of variance accounted for in this analysis was too small to be considered of any practical significance.

Religion did not mediate the relationship between conscientiousness and self-reported risky sexual behavior or high-risk sports. However, religiosity did mediate the relationship between the personality trait of conscientiousness and self-reported involvement in illicit drug use. Religiosity also partially mediated the relationship between conscientiousness and self-reported involvement in aggressive/illegal behaviors ($R^2 = .02$), heavy drinking ($R^2 = .02$), and academic/work behaviors ($R^2 = .22$). As in the previous analyses, the amount of variance explained was small to serve of any practical significance.

Research has found religiosity associated with lower levels of alcohol and drug use (Miller, Davies, & Greenwald, 2000) and prosocial features (Saroglou, Pichon, Trompette, Verschueren, & Dernelle, 2005). Past research also shows that agreeable and conscientious individuals are less likely to engage in risky behaviors (Flory, Lynam, Milich, Leukefeld, & Clayton, 2002; Jensen-Campbell & Graziano, 2001). Although the amount of variance accounted for by these analyses provided little support for the

importance of the results, they should be further replicated to determine how other findings compare to the findings in this study. One must also consider that the small amount of variance may be explained by the target population's stage of exploration, where religion takes a back seat as emerging adulthood is a time of instability, and intimate relationships as well as careers are the main focus (Arnett, 2005).

Relationship between Locus of Control and Personality Traits in Predicting Risky Behaviors

The fifth hypothesis focused on determining whether locus of control or the five personality traits could predict self-reported involvement in risk-taking behaviors. As expected, the participants with higher locus of control scores, indicating an external locus of control, were more involved in aggressive/illegal behaviors and heavy drinking. Also, as expected, this study indicated that individuals who scored higher on agreeableness reported decreased involvement in illicit drug use, aggressive/illegal behaviors, and heavy drinking. These findings give further support to Flory, Lynam, Milich, Leukefeld, and Clayton (2002) who found that alcohol abuse and drug use were associated with decreased agreeableness. However, as reported by Jensen-Campbell and Graziano (2001) agreeableness appears to be the least understood personality trait when it comes to social behavior. Additionally, the participants who had indicated higher scores on extraversion were more likely to participate in heavy drinking and high-risk sports. Participants with higher scores on the personality trait of conscientiousness were less likely to report involvement in heavy drinking or risky academic/work behaviors. As anticipated, higher scores on neuroticism were indicative of greater involvement in risky academic/work behaviors. The anxiety associated with neurotic individuals may produce the need to engage in the behaviors to succeed in the academic/work environment. The findings relating to this hypothesis have little practical relevance due to the small

amount of explained variance. There were no relationships found between openness to experience and the six risky behaviors. It may be that students who choose to commute to college rather than go to a residential college are not very open to new experiences and choose to stay close to home in familiar surroundings.

Personality Differences by Age and Gender

The sixth hypothesis focused on identifying whether personality traits will differ by age or gender. Originally the age groups were divided into the following; 18 to 22-year-olds and 23 to 25-year-olds. Due to the frequencies of participants in the younger group (234) vs. in the older group (21), the groups were divided into 18 to 20-year-olds and 21 to 25-year-olds to provide for less skewed data while still maintaining a reasonable older and younger group. The younger age group is considered to have less autonomy as these individuals are likely to live with their parents and have started college while the older age group is legally able to consume alcohol, more likely live away from parents, and in the process of finishing college.

The older age group scored significantly higher on the personality of openness to experience compared to the younger group. Male students had significantly higher scores for openness to experience than female students. This may be due to the descriptive characteristic of the personality trait, namely, imaginative, high in novelty seeking, and exhibiting a wide range of interests (McCrae & John, 1992; Piedmont, 1998). Males tend to be more curious and more interested in seeking new experiences. Females scored significantly higher on neuroticism, extraversion, agreeableness, and conscientiousness compared to males. Female students in the younger age group (18 to 20) had the lowest scores for openness to experience while females in the older age group (21 to 25) had the highest scores. One possibility for this finding is likely due to

older females having more autonomy to engage in new experiences. With regard to agreeableness, males in the 18 to 20-year-old age group had the lowest scores, while females in the 21 to 25 age group had the highest scores. This supports the research reporting that agreeableness increases with age, particularly from age 18 to 30 (McCrae et al., 2000).

The lack of statistically significant findings on some of the personality traits with regard to age and gender was unexpected. The current findings may reflect the age of the sample studied and the possibility that even though 18 to 20-year-olds may differ from 21 to 25-year-olds on factors such as autonomy, these groups may still be too similar to account for statistically significant differences. As McCrae et al., (2000) stated, after age 30 fairly small changes are seen in personality traits, therefore a sample of individuals past the age of 30 may have produced statistically significant results.

Conclusions

An extensive review of the literature indicated that cognitions predict behaviors and that people with certain personality traits are more prone to engage in risky behaviors. Similarly, this research study found that perceptions of risk-taking behaviors have an effect on the performance of those respective behaviors. Therefore, those risky behaviors perceived favorably by emerging adults are more likely to be performed. No significant age or gender differences were found. Personality factors appear to play only a small role in risk-taking behaviors in this sample. Further, factors such as religion and internal control appear to provide minimal influence in decreasing certain risky behaviors. Despite research presented supporting the hypothesis in this research, the variance in the findings reported was small and of little practical significance. Therefore,

the limitations of this study are discussed as well as suggestions for future studies using similar variables.

Limitations and Suggestions for Future Research

Understanding the contributors of risk-taking behaviors is complex. The study of personality is an even more complicated endeavor. Therefore, limitations of this study are considered that may have accounted for the less than expected number of practically significant results. It is important to note that this study focused on a small number of factors (personality, cognitions, religion, and locus of control) in the plethora of contributors to risk-taking. Other factors contributing to risk-taking behaviors need to be explored such as single as opposed to dual parent homes, influence of peers, gateway drugs, etc.

The amount of explained variance in this study was small and indicates a need to replicate this study with a more diversified sample in terms of colleges, ethnicity, and religion. One of the major limitations in this research was the homogeneous sample, which consisted of mostly younger Caucasian, Christian females residing at home with parents, from a commuter suburban university in Michigan. This sample is not representative of other ethnicities and geographical areas. Also, replication of this study with a sample of students from a residential instead of a commuter university would likely produce a different level of involvement in risk-taking activities, which may be of practical significance.

The researcher approached two other colleges in order to conduct this research. However, one college declined permission to conduct the research while the second college contact person failed to return e-mails regarding completing the research. It may be that the college sampled in this study is not fully representative of other populations

as the staff at the university sampled may have had higher morale with regard to conducting research and less fear of the results that this study would produce (Campbell & Stanley, 1963). Staff research attitudes and teaching practices are likely to influence that of students and the professors at the university surveyed may have reminded students to turn in their questionnaires, considering the importance of the research, and indirectly affecting the sample.

The study used a cross-sectional design. The use of a longitudinal analysis of personality and risk-taking behaviors may be better suited for identifying the influence of personality on risky behaviors. Additionally, a measure of cognitive perceptions over time could provide information on how evaluations of risk-taking behaviors change as individuals get older. Further, it would be of interest to explore how engaging in risk-taking behaviors changes the nature of cognitions of those behaviors. Also, cut-off scores were not used to identify a dominant personality trait in each participant and doing so would likely have produced greater personality distinctions as relevant to risky behavior practices.

Although self-report inventories are one of the best ways to collect data, the way in which data were collected in this study could have affected the results. Although 400 questionnaire packets were distributed, 302 were collected. And from those, 255 were completed fully. Students were allowed to take the questionnaires home and return them about a week later. Perhaps students with certain characteristics, such as responsibility and conscientiousness about school, returned the questionnaire packets. Also, as students were able to complete the questionnaires at home, the extent to which they may have been distracted could not be determined. For example, watching television or talking on the phone while attempting to complete the questionnaires may

have impeded their concentration. Upon examination of the incomplete questionnaires, some confusion resulted from the three CARE questionnaires as they had the same item format and essentially the same items but differed only in their headings. Some students may have overlooked the headings as only one of the three questionnaires was completed in some of the incomplete packets. A handful of students indicated that the questionnaires were "duplicates" without realizing that different time frames were assessed. In regard to time frames, one must also consider memory as a limiting factor in correctly identifying past risk-taking behaviors. Although questionnaires were anonymous and confidential, the subject of the questionnaires is a sensitive one and one cannot underestimate the fact that students may have answered questions according to socially acceptable norms. Further, distributing the questionnaires to a sample of individuals in a non-academic setting may have produced different results. It would be valuable to replicate this study with students who have not gone to college after high school and examine their potential for risky behaviors. Additionally, measures and data from sources such as parents or friends would have provided more objective information on personality factors and risk-taking behaviors.

New knowledge acquired contributing to the answers on the questionnaires must also be considered. For example, students in the psychology classes may have been learning about risky behaviors during the time these questionnaires were given. The knowledge acquired could have affected their cognitions and future behaviors which, in turn, could have had an effect on the results in this study and the way that participants answered the questions assessing future degree of engaging in risky behaviors. Examining the English and Psychology classes individually may have produced

interesting results regarding how the students in these classes differ on the variables studied.

Implications for Clinical Practice

This study attempted to gain a greater understanding of how personality factors contribute to risk-taking behaviors. Understanding the role of personality is important as it may help shape clinical and school-based interventions in early school settings such as elementary or high schools in order to deter adolescents from faulty perceptions about risky behaviors. Cognitions appear to be a crucial factor to risk-taking behaviors and intervention programs need to focus on changing the way adolescents think about risky behaviors. One of the ways this could be initiated is to explore the role of media in shaping positive images of risky behaviors and targeting this venue in order to foster change. Also, other roots of adolescents' faulty cognitions about the benefits of risky behaviors need to be explored so that intervention programs can target these.

Further, more research is needed on personality factors contributing to risk and prevention programs tailored to the different personality traits. For example, as extraversion is known to be related to more involvement in risky activities, schools could design programs tailored to meeting the needs for sensation seekers. Sports programs or other activities in the schools that promote higher sensations may be able to satisfy the needs for risk in safe and controlled settings.

Finally, colleges will need to employ reminders of the consequences of risky behaviors. Scheduled seminars on safety related topics as well as organized community outreach projects promoting prosocial behaviors may be helpful to preventing risk. Nationally known figures speaking out against risky behaviors on college campuses may also be beneficial. These prevention strategies may prove to be successful in

preventing not only the risk-taking behaviors identified in this study, but other risky behaviors that are of significant concern such as college dropout, unemployment, prison time, and even death.

APPENDIX A

ASSESSMENT BATTERY

NEO- FFI

NEO-FFI
NEO Five-Factor Inventory

Test Booklet-Form S (Adult)

Paul T. Costa, Jr., PhD, and Robert R. McCrae, PhD

PAR Psychological Assessment Resources, Inc. 16204 N. Florida Avenue Lutz, FL 33549 1.800.331.8378 www.parinc.com

Cognitive Appraisal of Risky Events Questionnaire – Expected Risk

On a scale of 1 (not at all likely) to 7 (extremely likely) HOW LIKELY IS IT THAT YOU WOULD EXPERIENCE SOME NEGATIVE CONSEQUENCE (e.g., become sick, be injured, embarrassed, lose money, suffer legal consequences, fail a class, or feel bad about yourself) if you engaged in these activities?

<u>NEGATIVE CONSEQUENCES</u>

	Not at all Likely			Moderately Likely			Extremely Likely
1. Trying/using drugs other than alcohol or marijuana	1	2	3	4	5	6	7
2. Missing class or work	1	2	3	4	5	6	7
3. Grabbing, pushing, or shoving someone	1	2	3	4	5	6	7
4. Leaving a social event with someone I have just met	1	2	3	4	5	6	7
5. Driving after drinking alcohol	1	2	3	4	5	6	7
6. Making a scene in public	1	2	3	4	5	6	7
7. Drinking more than 5 alcoholic drinks	1	2	3	4	5	6	7
8. Not studying for exam or quiz	1	2	3	4	5	6	7
9. Drinking alcohol too quickly	1	2	3	4	5	6	7
10. Disturbing the peace	1	2	3	4	5	6	7
11. Damaging/destroying public property	1	2	3	4	5	6	7
12. Sex without protection against pregnancy	1	2	3	4	5	6	7
13. Leaving tasks or assignments for the last minute	1	2	3	4	5	6	7
14. Hitting someone with a weapon or object	1	2	3	4	5	6	7
15. Rock or mountain climbing	1	2	3	4	5	6	7
16. Sex without protection against sexually transmitted diseases	1	2	3	4	5	6	7
17. Playing non-contact team sports	1	2	3	4	5	6	7

www.manaraa.com

18. Failing to do assignments	1	2	3	4	5	6	7
19. Slapping someone	1	2	3	4	5	6	7
20. Not studying or working hard enough	1	2	3	4	5	6	7
21. Punching or hitting someone with fist	1	2	3	4	5	6	7
22. Smoking marijuana	1	2	3	4	5	6	7
23. Sex with a variety of partners	1	2	3	4	5	6	7
24. Snow or water skiing	1	2	3	4	5	6	7
25. Mixing drugs and alcohol	1	2	3	4	5	6	7
26. Getting into a fight or argument	1	2	3	4	5	6	7
27. Involvement in sexual activities without my consent	1	2	3	4	5	6	7
28. Playing drinking games	1	2	3	4	5	6	7
29. Sex with someone I have just met or don't know well	1	2	3	4	5	6	7
30. Playing individual sports	1	2	3	4	5	6	7

Cognitive Appraisal of Risky Events Questionnaire – Expected Benefit

On a scale of 1 (not at all likely) to 7 (extremely likely) HOW LIKELY IS IT THAT YOU WOULD EXPERIENCE SOME POSITIVE CONSEQUENCE (e.g., pleasure, win money, feel good about yourself, etc.) if you engaged in these activities?

POSITIVE CONSEQUENCES

	Not at all Likely			Moderately Likely			Extremely Likely
1. Trying/using drugs other than alcohol or marijuana	1	2	3	4	5	6	7
2. Missing class or work	1	2	3	4	5	6	7
3. Grabbing, pushing, or shoving someone	1	2	3	4	5	6	7
4. Leaving a social event with someone I have just met	1	2	3	4	5	6	7
5. Driving after drinking alcohol	1	2	3	4	5	6	7
6. Making a scene in public	1	2	3	4	5	6	7
7. Drinking more than 5 alcoholic drinks	1	2	3	4	5	6	7
8. Not studying for exam or quiz	1	2	3	4	5	6	7
9. Drinking alcohol too quickly	1	2	3	4	5	6	7
10. Disturbing the peace	1	2	3	4	5	6	7
11. Damaging/destroying public property	1	2	3	4	5	6	7
12. Sex without protection against pregnancy	1	2	3	4	5	6	7
13. Leaving tasks or assignments for the last minute	1	2	3	4	5	6	7
14. Hitting someone with a weapon or object	1	2	3	4	5	6	7
15. Rock or mountain climbing	1	2	3	4	5	6	7
16. Sex without protection against sexually transmitted diseases	1	2	3	4	5	6	7
17. Playing non-contact team sports	1	2	3	4	5	6	7
18. Failing to do assignments	1	2	3	4	5	6	7

	19.	Slapping someone	1	2	3	4	5	6	7
	20.	Not studying or working hard enough	1	2	3	4	5	6	7
	21.	Punching or hitting someone with fist	1	2	3	4	5	6	7
	22.	Smoking marijuana	1	2	3	4	5	6	7
	23.	Sex with a variety of partners	1	2	3	4	5	6	7
	24.	Snow or water skiing	1	2	3	4	5	6	7
	25.	Mixing drugs and alcohol	1	2	3	4	5	6	7
	26.	Getting into a fight or argument	1	2	3	4	5	6	7
	27.	Involvement in sexual activities without my consent	1	2	3	4	5	6	7
	28.	Playing drinking games	1	2	3	4	5	6	7
	29.	Sex with someone I have just met or don't know well	1	2	3	4	5	6	7
	30.	Playing individual sports	1	2	3	4	5	6	7

Cognitive Appraisal of Risky Events Questionnaire – Actual Involvement

On a scale of 1 (not at all) to 7 (a lot) TO WHAT DEGREE HAVE YOU ENGAGED IN THESE ACTIVITIES WITHIN THE LAST 6 MONTHS?

ACTUAL INVOLVEMENT

	Not at all Likely		Moderately Likely			Extremely Likely	
1. Trying/using drugs other than alcohol or marijuana	1	2	3	4	5	6	7
2. Missing class or work	1	2	3	4	5	6	7
3. Grabbing, pushing, or shoving someone	1	2	3	4	5	6	7
4. Leaving a social event with someone I have just met	1	2	3	4	5	6	7
5. Driving after drinking alcohol	1	2	3	4	5	6	7
6. Making a scene in public	1	2	3	4	5	6	7
7. Drinking more than 5 alcoholic drinks	1	2	3	4	5	6	7
8. Not studying for exam or quiz	1	2	3	4	5	6	7
9. Drinking alcohol too quickly	1	2	3	4	5	6	7
10. Disturbing the peace	1	2	3	4	5	6	7
11. Damaging/destroying public property	1	2	3	4	5	6	7
12. Sex without protection against pregnancy	1	2	3	4	5	6	7
13. Leaving tasks or assignments for the last minute	1	2	3	4	5	6	7
14. Hitting someone with a weapon or object	1	2	3	4	5	6	7
15. Rock or mountain climbing	1	2	3	4	5	6	7
16. Sex without protection against sexually transmitted diseases	1	2	3	4	5	6	7
17. Playing non-contact team sports	1	2	3	4	5	6	7
18. Failing to do assignments	1	2	3	4	5	6	7
19. Slapping someone	1	2	3	4	5	6	7

154

20. Not studying or working hard enough	1	2	3	4	5	6	7
21. Punching or hitting someone with fist	1	2	3	4	5	6	7
22. Smoking marijuana	1	2	3	4	5	6	7
23. Sex with a variety of partners	1	2	3	4	5	6	7
24. Snow or water skiing	1	2	3	4	5	6	7
25. Mixing drugs and alcohol	1	2	3	4	5	6	7
26. Getting into a fight or argument	1	2	3	4	5	6	7
27. Involvement in sexual activities without my consent	1	2	3	4	5	6	7
28. Playing drinking games	1	2	3	4	5	6	7
29. Sex with someone I have just met or don't know well	1	2	3	4	5	6	7
30. Playing individual sports	1	2	3	4	5	6	7

Internal-External Locus of Control Scale

Rotter, J. B. (1966). Generalized expectancies for internal versus external control of reinforcement. *Psychological Monographs, 80*, 1-28. Copyright 1966 by the American Psychological Association. Instrument used with permission of the publisher and author.

Religiosity Measures Questionnaire

The following questionnaire consists of seven multiple choice items with one fill-in-the-blank item. Please answer the following questions by *circling* the appropriate letter for the multiple-choice items and providing the most accurate number for the fill-in-the-blank question.

1. How many times have you attended religious service during the past year? _____ times.

2. Which of the following best describes your practice of prayer or religious meditation?
   a. Prayer is a regular part of my daily life.
   b. I usually pray in times of stress or need but rarely at any other time.
   c. I pray only during formal ceremonies.
   d. Prayer has little importance in my life.
   e. I never pray.

3. When you have a serious personal problem how often do you take religious advice or teaching into consideration?
   a. Almost always
   b. Usually
   c. Sometimes
   d. Rarely
   e. Never

4. How much of an influence would you say that religion has on the way that you choose to act and the way that you choose to spend your time each day?
   a. No influence
   b. A small influence
   c. Some influence
   d. A fair amount of influence
   e. A large influence

5. Which of the following statements comes closest to your belief about God?
   a. I am sure that God really exists and that He is active in my life.
   b. Although I sometimes question His existence, I do believe in God and believe He knows of me as a person.
   c. I don't know if there is a personal God, but I do believe in a higher power of some kind.
   d. I don't know if there is a personal God or a higher power of some kind, and I don't know if I will ever know.
   e. I don't believe in a personal God or in a higher power.

6. Which of the following statements comes closest to your belief about life after death (immortality)?
   a. I believe in a personal life after death, a soul existing as a specific individual.
   b. I believe in a soul existing after death as a part of a universal spirit.
   c. I believe in a life after death of some kind, but I really don't know what it would be like.
   d. I don't know whether there is any kind of life after death, and I don't know if I will ever know.
   e. I don't believe in any kind of life after death.

7. During the past year, how often have you experienced a feeling of religious reverence or devotion?
   a. Almost daily
   b. Frequently
   c. Sometimes
   d. Rarely
   e. Never

8. Do you agree with the following statement? "Religion gives me a great amount of comfort and security in life."
   a. Strongly disagree
   b. Disagree
   c. Uncertain
   d. Agree
   e. Strongly Agree

Demographic Questionnaire

Please answer each of the following questions by circling the number that best applies to you. There are no right or wrong answers and all responses will be confidential. No person will be identifiable from these findings.

Age _____

Sex _____

Ethnicity:
1. Asian
2. Black/African American
3. Native American
4. Pacific Islander
5. Spanish/Hispanic/Latino
6. White/Caucasian
7. Other

Marital status:
1. Single never married
2. Engaged
3. Married
4. Living with Partner
5. Separated
6. Divorced
7. Widowed

Employment status:
1. Full time employed
2. Employed part time
3. Self-employed
4. Not Employed but looking for work
5. Not Employed and not looking for work
6. Student
7. Homemaker

Educational level:
1. 1st year in college
2. 2nd year in college
3. 3rd year in college
4. 4th year in college
5. 5th year or more in college

Residential status:
1. Reside alone
2. Reside with roommate(s)
3. Reside with partner/spouse
4. Reside with parent(s)

Religious affiliation:
1. Agnostic
2. Atheist
3. Buddhist
4. Christian
5. Hindu
6. Jewish
7. Muslim
8. Other

APPENDIX B

INFORMED CONSENT

Research Information Sheet

Title of Study: *Personality and Risk-taking Behaviors in Emerging Adulthood*

Principal Investigator (PI):   Agnes Dmochowski
                                 Theoretical and Behavioral Foundations
                                 ████████████

Purpose:
You are being asked to participate in a research study involving 200 individuals because you meet stud criteria: between the ages of 18 and 21, and unmarried. This study is being conducted at Wayne State University.

Study Procedures:
If you take part in the study, you will be asked to complete six questionnaires that will take approximately 30 minutes. Questions asked will include your age, gender, personality style, religiosity, perception of control over life events, perceptions of risk-taking behaviors, and actual involvement in risk-taking behaviors. Religiosity refers to an individual's strength of religious beliefs, regardless of the content of their beliefs. Locus of control refers to an individual's perception over their control of live events. risk-taking behaviors are actions that can produce negative outcomes.

Benefits:
As a participant in this research study, there will be no direct benefit for you; however, information from this study may benefit other people now or in the future.

Risks:
By taking part in this study, you may experience feelings of discomfort. If you experience any discomfort while answering the questions, you are free to discontinue at any time. In the event that you experience discomfort, you can call Wayne State University Counseling and Psychological Services at (313) 577-3398 or Wayne County's Guidance Center at (734) 785-7700.

Costs:
There will be no costs to you for participation in this research study.

Compensation:
You will not be paid for taking part in this study.

Confidentiality:
All information collected about you during the course of this study will be kept without any identifiers. Additionally, information gathered will be presented in aggregate, with no individual participant identifiable in the study.

Voluntary Participation/Withdrawal:
Taking part in this study is voluntary. You are free to withdraw at any time. Your decision to participate will have no impact on your grade in this course.

Questions:
If you have any questions about this study now or in the future, you may contact Agnes Dmochowski, MA, LLP at the following phone number ████████████. If you have questions or concerns about your rights as a research participant, the Chair of the Human Investigation Committee can be contacted at (313) 577-1628. If you are unable to contact the research staff, or if you want to talk to someone other than the research staff, you may also call (313) 577-1628 to ask questions or voice concerns or complaints.

Participation:
By completing this questionnaire, you are agreeing to participate in this study.

APPENDIX C

MEDIATION ANALYSIS

The results of the mediation analyses using self-reported involvement in risky behaviors as the criterion variables, the five personality traits as the predictor variables, and religiosity as the mediating variable that were not statistically significant are presented in this appendix. Multiple linear regression analyses were used in these analyses.

Neuroticism

The first set of analyses used neuroticism as the predictor variable, with self-reported involvement in the six risky behaviors as the criterion variables. Neuroticism did not enter as a statistically significant predictor of self-reported involvement in illicit drug use. Therefore the mediation analysis was not continued.

Table C-1 presents results of the mediation for self-reported involvement in illicit drug use as the criterion variable and neuroticism as the predictor variable.

Table C-1

Mediation Analysis – Mediating Role of Religiosity on the Relationship between Self-reported Involvement in Illicit Drug Use and Neuroticism ($N = 255$)

Predictor	Outcomes	R^2	F	Standardized β
Step 1				
Neuroticism	Self-reported involvement in illicit drug use	.01	2.15	.09

*$p \leq .05$; **$p \leq .01$

The results of the stepwise multiple linear regression equation on the first step were not statistically significant, $R^2 = .01$, $\beta = .09$, F = 2.15, p = .144. At this point, the mediation analysis could not be continued.

Aggressive/illegal behaviors was used as the criterion variable, with neuroticism used as the predictor variable in a mediation analysis. Religiosity was the mediating variable in this analysis. Table C-2 presents results of this analysis.

Table C-2

Mediation Analysis – Mediating Role of Religiosity on the Relationship between Self-reported Involvement in Aggressive/Illegal Behaviors and Neuroticism (N = 255)

Predictor	Outcomes	R^2	F	Standardized β
Step 1				
Neuroticism	Self-reported involvement in aggressive/illegal behaviors	.01	3.50	.12

*$p \leq$ .05; **$p \leq$ .01

The relationship between neuroticism and self-reported involvement in aggressive/illegal behaviors was not statistically significant, R^2 = .01, β = .12, F = 3.50, p = .063. Because of the nonsignificant findings on the first step of the mediation analysis, the remaining steps could not be completed.

A mediation analysis was performed using self-reported risky sexual behaviors as the criterion variable, neuroticism as the predictor variable, and religiosity as the mediating variable. The results of the analysis are presented in Table C-3.

Table C-3

Mediation Analysis – Mediating Role of Religiosity on the Relationship between Self-reported Involvement in Risky Sexual Behaviors and Neuroticism (N = 255)

Predictor	Outcomes	R^2	F	Standardized β
Step 1				
Neuroticism	Self-reported involvement in risky sexual behaviors	<.01	.94	.06

*$p \leq$ .05; **$p \leq$ .01

The results of stepwise multiple linear regression equation using self-reported involvement in risky sexual behaviors as the criterion variable and neuroticism as the predictor variable on the first step of the mediation analysis was not statistically significant, $R^2 < .01$, $\beta = .06$, $F = .94$, $p = .334$. Based on this finding, the mediation analysis could not be continued.

A stepwise multiple linear regression analysis was used to test the first step of the mediation analysis, using self-reported involvement in heavy drinking as the criterion variable and neuroticism as the predictor variable. Table C-4 presents results of this analysis.

Table C-4

Mediation Analysis – Mediating Role of Religiosity on the Relationship between Self-reported Involvement in Heavy Drinking and Neuroticism ($N = 255$)

Predictor	Outcomes	R^2	F	Standardized β
Step 1				
Neuroticism	Self-reported involvement in heavy drinking	<.01	.83	.06

*$p \le .05$; **$p \le .01$

The results of this analysis were not statistically significant, $R^2 < .01$, $\beta = .06$, $F = .83$, $p = .363$. This lack of a statistically significant relationship provides support that the mediation analysis could not be continued.

The mediation analysis using self-reported involvement in high-risk sports as the criterion variable and neuroticism as the predictor variable was tested using a stepwise multiple linear regression analysis. Table C-5 presents results of this analysis.

Table C-5

Mediation Analysis – Mediating Role of Religiosity on the Relationship between Self-reported Involvement in High-risk Sports and Neuroticism (*N* = 255)

Predictor	Outcomes	R^2	F	Standardized β
Step 1				
Neuroticism	Self-reported involvement in high-risk sports	.02	5.13	-.14*
Step 2				
Neuroticism	Religiosity	.01	2.82	-.11

*$p \leq$ .05; **$p \leq$ .01

Neuroticism entered as a statistically significant predictor of self-reported involvement in high-risk sports on the first step of the mediation analysis, R^2 = .02, β = -.14, F = 5.13, p = .024. On the second step of the analysis, neuroticism was not a significant predictor of religiosity, R^2 = .01, β = -.11, F = 2.82, p = .094. As a result, the mediation analysis could not be continued.

A mediation analysis was used to determine if religiosity was mediating the relationship between self-reported involvement in academic/work behaviors and neuroticism. The results of this analysis are presented in Table C-6.

Table C-6

Mediation Analysis – Mediating Role of Religiosity on the Relationship between Self-reported Involvement in Academic/Work behaviors and Neuroticism (*N* = 255)

Predictor	Outcomes	R^2	F	Standardized β
Step 1				
Neuroticism	Self-reported involvement in academic/work behaviors	.08	22.77	.29**
Step 2				
Neuroticism	Religiosity	.01	2.82	-.11

*$p \leq$ .05; **$p \leq$ .01

On the first step of the mediation analysis, a statistically significant relationship was found between neuroticism and self-reported involvement in academic/work behaviors, R^2 = .08, β = .29, F = 22.27, p < .001. On the second step of the mediation analysis, the results obtained for the relationship between neuroticism and religiosity were not statistically significant, R^2 = .01, β = -.11, F = 2.82, p = .094. Because of this nonsignificant finding, the mediation analysis could not be continued.

Extraversion

A mediation analysis was used to determine if religiosity was mediating the relationship between self-reported involvement in risky sexual behaviors and extraversion. Table C-7 presents results of this analysis.

Table C-7

Mediation Analysis – Mediating Role of Religiosity on the Relationship between Self-reported Involvement in Illicit Drug Use and Extraversion (*N* = 255)

Predictor	Outcomes	R^2	F	Standardized β
Step 1				
Extraversion	Self-reported involvement in illicit drug use	.01	1.95	.09

*$p \leq$ .05; **$p \leq$ .01

Extraversion did not enter the stepwise multiple linear regression equation as a statistically significant predictor of self-reported involvement in illicit drug use, R^2 = .01, β = .09, F = 1.95, p = .164. As a result, the mediation analysis could not be continued.

Mediation analysis was used to test religiosity as a mediator between extraversion and self-reported involvement in aggressive/illegal behaviors. Results of this analysis are presented in Table C-8.

Table C-8

Mediation Analysis – Mediating Role of Religiosity on the Relationship between Self-reported Involvement in Aggressive/Illegal behaviors and Extraversion (N = 255)

Predictor	Outcomes	R^2	F	Standardized β
Step 1				
Extraversion	Self-reported involvement in aggressive/illegal behaviors	<.01	.90	.06

*$p \leq$ .05; **$p \leq$ .01

The results of the first step of the mediation analysis were not statistically significant, R^2 < .01, β = .06, F = .90, p = .344. Based on these nonsignificant results, the mediation analysis could not be continued.

Multiple linear regression analysis was used to test the relationship between self-reported involvement in risky sexual behaviors and the personality factor, extraversion. Scores for religiosity were used as the mediating variables in these analyses. Table C-9 presents results of these analyses.

Table C-9

Mediation Analysis – Mediating Role of Religiosity on the Relationship between Self-reported Involvement in Risky Sexual Behaviors and Extraversion (N = 255)

Predictor	Outcomes	R^2	F	Standardized β
Step 1				
Extraversion	Self-reported involvement in risky sexual behaviors	<.01	1.50	-.08

*$p \leq$ .05; **$p \leq$ .01

The first step of the mediation analysis provided evidence that extraversion was not a statistically significant predictor of self-reported involvement in risky sexual behaviors, R^2 < .01, β = -.08, F = 1.50, p = .223. Based on this finding, the mediation analysis could not be continued.

Multiple linear regression analysis was used to test the relationship between self-reported involvement in high-risk sports as the criterion variable and extraversion as the predictor variable. Results of the mediation analysis are presented in Table C-10.

Table C-10

Mediation Analysis – Mediating Role of Religiosity on the Relationship between Self-reported Involvement in High-risk Sports and Extraversion ($N = 255$)

Predictor	Outcomes	R^2	F	Standardized β
Step 1				
Extraversion	Self-reported involvement in high-risk sports	.06	17.32	.25**
Step 2				
Extraversion	Religiosity	.05	12.98	.22**
Step 3				
Religiosity	Self-reported involvement in high-risk sports	<.01	.53	.05

*$p \leq .05$; **$p \leq .01$

The relationship between extraversion and self-reported involvement in high-risk sports on the first step of the mediation analysis was statistically significant, $R^2 = .06$, $\beta = .25$, $F = 17.32$, $p < .001$. The second step of the mediation analysis produced a statistically significant relationship between extraversion and religiosity, $R^2 = .05$, $\beta = .22$, $F = 12.98$, $p < .001$. However, no statistically significant relationship was found between religiosity and self-reported involvement in high-risk sports on the third step of the mediation analysis, $R^2 < .01$, $\beta = .05$, $F = .53$, $p = .466$. As a result of these findings, the mediation analysis could not be continued.

A mediation analysis was used to determine if religiosity was mediating the relationship between self-reported involvement in academic/work behaviors and extraversion. Table C-11 presents results of this analysis.

Table C-11

Mediation Analysis – Mediating Role of Religiosity on the Relationship between Self-reported Involvement in Academic/Work Behaviors and Extraversion (*N* = 255)

Predictor	Outcomes	R^2	F	Standardized β
Step 1				
Extraversion	Self-reported involvement in academic/work behaviors	<.01	.23	.03

*$p \leq$ .05; **$p \leq$ .01

On the first step of the mediation analysis, extraversion was not a statistically significant predictor of self-reported involvement in academic/work behaviors, R^2 < .01, β = .03, F = .23, p = .633. This nonsignificant result provided support that the mediation analysis could not be continued.

Openness to Experience

The scores for openness to experience were used as the predictor variable in a mediation analysis, with self-reported use of illicit drugs used as the criterion variable. Religiosity was the mediating variable in this analysis. Table C-12 presents results of this analysis.

Table C-12

Mediation Analysis – Mediating Role of Religiosity on the Relationship between Self-reported Involvement in Illicit Drug Use and Openness to Experience (*N* = 255)

Predictor	Outcomes	R^2	F	Standardized β
Step 1				
Openness to experience	Self-reported involvement in illicit drug use	.01	3.30	.11

*$p \leq$ .05; **$p \leq$ .01

The results of the regression analysis examining the relationship between openness to experience and self-reported involvement in illicit drug use were not

statistically significant. As a result of this finding, the mediation analysis could not be continued.

The self-reported involvement in aggressive/illegal behaviors was used as the criterion variable in a mediation analysis, with openness to experience used as the predictor variable. The scores for religiosity were used as the mediating variable. Table C=13 provides the results of this analysis.

Table C-13

Mediation Analysis – Mediating Role of Religiosity on the Relationship between Self-reported Involvement in Aggressive/Illegal Behaviors and Openness to Experience ($N = 255$)

Predictor	Outcomes	R^2	F	Standardized β
Step 1				
Openness to experience	Self-reported involvement in aggressive/illegal behaviors	>.01	.91	-.06

*$p \leq .05$; **$p \leq .01$

The results of the regression analysis on the first step of the mediating analysis provided no evidence of a statistically significant relationship between openness to experience and self-reported involvement in aggressive/illegal behaviors. Due to the nonsignificant findings, the mediation analysis could not be continued.

The mediation analysis using self-reported involvement in risky sexual behaviors as the criterion variable, openness to experience as the predictor variable, and religiosity as the mediating variable are presented in Table C-14.

Table C-14

Mediation Analysis – Mediating Role of Religiosity on the Relationship between Self-reported Involvement in Risky Sexual Behavior and Openness to Experience ($N = 255$)

Predictor	Outcomes	R^2	F	Standardized β
Step 1				
Openness to experience	Self-reported involvement in risky sexual behavior	>.01	.25	.03

*$p \leq$ .05; **$p \leq$ .01

The regression analysis used on the first step of the mediation analysis was not statistically significant. Because of the lack of significant findings on this step, the mediation analysis could not be continued.

A mediation analysis was attempted using openness to experience as the predictor variable and self-reported involvement in heavy drinking as the criterion variable. The mediating variable in this analysis was religiosity. Table C-15 presents results of this analysis.

Table C-15

Mediation Analysis – Mediating Role of Religiosity on the Relationship between Self-reported Involvement in Heavy Drinking and Openness to Experience ($N = 255$)

Predictor	Outcomes	R^2	F	Standardized β
Step 1				
Openness to experience	Self-reported involvement in heavy drinking	.01	1.22	-.07

*$p \leq$ .05; **$p \leq$ .01

The results of the regression analysis used to regress openness to experience on self-reported involvement in heavy drinking were not statistically significant. As a result of this lack of significant findings, the mediation analysis could not be continued.

A mediation analysis was used to determine if religiosity was mediating the relationship between self-reported involvement in high-risk sports as the criterion

variable and openness to experience as the predictor variable. The results of this analysis are presented in Table C-16.

Table C-16

Mediation Analysis – Mediating Role of Religiosity on the Relationship between Self-reported Involvement in High-risk Sports and Openness to Experience (N = 255)

Predictor	Outcomes	R^2	F	Standardized β
Step 1				
Openness to experience	Self-reported involvement in high-risk sports	>.01	.59	-.05

*$p \leq$ .05; **$p \leq$ .01

The relationship between openness to experience and self-reported involvement in high-risk sports was not statistically significant. Based on the lack of significant findings on the first step of the mediation analysis, the analysis could not be continued.

Scores for religiosity were used as the mediating variable in a mediation analysis used to test the relationship between openness to experience and self-reported involvement in academic/work behaviors. The results of this analysis are presented in Table C-17.

Table C-17

Mediation Analysis – Mediating Role of Religiosity on the Relationship between Self-reported Involvement in Academic/Work Behaviors and Openness to Experience (N = 255)

Predictor	Outcomes	R^2	F	Standardized β
Step 1				
Openness to experience	Self-reported involvement in academic/work behaviors	.01	1.92	-.09

*$p \leq$ .05; **$p \leq$ .01

The results of the first step of the mediation analysis that investigated the relationship between openness to experience and self-reported involvement in academic/work behaviors were not statistically significant. Due to these findings, the mediation analysis could not be continued.

Agreeableness

A mediation analysis was used to determine if religiosity was mediating the relationship between agreeableness and self-reported involvement in risky sexual behaviors. Table C-18 presents results of this analysis.

Table C-18

Mediation Analysis – Mediating Role of Religiosity on the Relationship between Self-reported Involvement in Risky Sexual Behaviors and Agreeableness (*N* = 255)

Predictor	Outcomes	R^2	F	Standardized β
Step 1				
Agreeableness	Self-reported involvement in risky sexual behaviors	.01	3.64	-.12

*$p \leq$ .05; **$p \leq$ .01

The results of the regression analysis on the first step of the mediation analysis were not statistically significant. Because of the lack of a statistically significant result on this step, the mediation analysis could not be continued.

Agreeableness was used as the predictor variable and self-reported involvement in high-risk sports was used as a criterion variable in a mediation analysis. The scores for religiosity were used as the mediating variable in this analysis. The results of this analysis are presented in Table C-19.

Table C-19

Mediation Analysis – Mediating Role of Religiosity on the Relationship between Self-reported Involvement in High-risk Sports and Agreeableness ($N = 255$)

Predictor	Outcomes	R^2	F	Standardized β
Step 1				
Agreeableness	Self-reported involvement in high-risk sports	.01	1.36	.07

*$p \leq$ .05; **$p \leq$ .01

The results of the first step of the mediation analysis were not statistically significant. Because of the lack of statistical significance on this step, the mediation analysis could not be continued.

Conscientiousness

A mediation analysis was used to determine if religiosity was mediating the relationship between conscientiousness and self-reported involvement in risky sexual behaviors. Results of this analysis are presented in Table C-20.

Table C-20

Mediation Analysis – Mediating Role of Religiosity on the Relationship between Self-reported Involvement in Risky Sexual Behaviors and Conscientiousness ($N = 255$)

Predictor	Outcomes	R^2	F	Standardized β
Step 1				
Conscientiousness	Self-reported involvement in risky sexual behaviors	.01	1.39	-.07**

*$p \leq$ .05; **$p \leq$ .01

The results of the regression analysis on the first step of the mediation analysis were not statistically significant. Based on this finding, the mediation analysis could not be continued.

The results of the mediation analysis used to determine if religiosity was mediating the relationship between conscientiousness and self-reported involvement in high-risk sports are presented in Table C-21.

Table C-21

Mediation Analysis – Mediating Role of Religiosity on the Relationship between Self-reported Involvement in High-risk Sports and Conscientiousness ($N = 255$)

Predictor	Outcomes	R^2	F	Standardized β
Step 1				
Conscientiousness	Self-reported involvement in high-risk sports	>.01	.18	.03

*$p \leq .05$; **$p \leq .01$

The relationship between conscientiousness and self-reported involvement in high-risk sports examined on the first step of the mediation analysis was not statistically significant. Due to the lack of significant findings, the mediation analysis was discontinued.

APPENDIX D

HUMAN INVESTIGATION COMMITTEE APPROVAL

WAYNE STATE UNIVERSITY

HUMAN INVESTIGATION COMMITTEE
101 East Alexandrine Building
Detroit, Michigan 48201
Phone: (313) 577-1628
FAX: (313) 993-7122
http://hic.wayne.edu

NOTICE OF FULL BOARD APPROVAL

To: Agnes Dmochowski
Theoretical & Behavior Foundations
31629 Wixson

From: Ellen Barton, Ph.D.
Chairperson, Behavioral Institutional Review Board (B3)

Date: April 15, 2008

RE: HIC #: 034008B3F

Protocol Title: Personality and Risk-Taking Behaviors in Emerging Adulthood

Sponsor:

Coeus #: 0803005826

Expiration Date: March 19, 2009

Risk Level/Category: No greater than minimal risk.

The above-referenced protocol and items listed below (if applicable) were **APPROVED** following *Full Board Review* by the Wayne State University Institutional Review Board (B3) for the period of 04/15/2008 through 03/19/2009. This approval does not replace any departmental or other approvals that may be required.

○ Information Sheet (dated 4/6/08)

- Federal regulations require that all research be reviewed at least annually. You *may* receive a *"Continuation Renewal Reminder"* approximately two months prior to the expiration date; however, it is the Principal Investigator's responsibility to obtain review and continued approval ***before*** the expiration date. Data collected during a period of lapsed approval is unapproved research and can never be reported or published as research data.
- All changes or amendments to the above-referenced protocol require review and approval by the HIC **BEFORE** implementation.
- Adverse Reactions/Unexpected Events (AR/UE) must be submitted on the appropriate form within the timeframe specified in the HIC Policy (http://www.hic.wayne.edu/hicpol.html).

NOTE:

1. Upon notification of an impending regulatory site visit, hold notification, and/or external audit the HIC office must be contacted immediately.
2. Forms should be downloaded from the HIC website at **each** use.

APPENDIX E

PERMISSION TO USE COPYRIGHTED MATERIAL

PERMISSION TO USE THE COGNITIVE APPRAISAL OF RISKY EVENTS
QUESTIONNAIRE

Saturday, April 21, 2007 8:55 AM
Re: **Dissertation Measure**
From: "Kim Fromme" <fromme@psy.utexas.edu>
To: "agnes dmochowski" <agnes1234_2000@yahoo.com>

Agnes,
   The CARE and CARE-R are attached. I do not have further psychometrics than were published in the Fromme, Katz, & Rivet paper. Best wishes with your project.
kim

Kim Fromme, Ph.D.☐
Professor☐
Department of Psychology☐
The University of Texas at Austin☐
1 University Station, A8000☐
Austin, TX 78712

At 09:12 PM 4/20/2007, you wrote:
Dr. Fromme,

I am a doctoral student at Wayne State University in Michigan. I am currently in the process of my dissertation on risk-taking behaviors in emerging adulthood. I came across your Cognitive Appraisal of Risky Events questionnaire (1997). I am considering using this questionnaire in my dissertation. I am hoping to receive your permission to use and reproduce this questionnaire. If granted, I am hoping you can e-mail or send me the questionnaire and psychometrics.

Thank you for your time.

Agnes Dmochowski, MA, LLP

PERMISSION TO USE THE INTERNAL-EXTERNAL LOCUS OF CONTROL SCALE

Tuesday, September 11, 2007 2:28 PM
Re: **Dissertation Research**
From: "agnes dmochowski"
To: "Lindy" <eleanor.coldwell@uconn.edu>

Dr. Coldwell,

Thank you very much for your quick response. I agree to all of Dr. Rotter's requests regarding using the scale. You can either send me the scale by mail (Wixson is the correct name of the street) or by e-mail, if that is more convenient. Also, could you send me the psychometrics of the sale?

Thank you,

Agnes Dmochowski, MA, LLP

███████████

Lindy <eleanor.coldwell@uconn.edu> wrote:
Agnes,
Dr. Rotter will grant you permission to use his "I-E Scale" providing you agree to the following requests:

He asks that you
1) collect all copies of the scale from participants
2) do not publish the scale anywhere
3) use the scale for research purposes only
4) get assistance from someone with previous experience administering and interpreting personality scales if you have none yourself.

If you agree to this, I will send you a copy of the original 1966 article, with scale and key included.
I will assume I should send it to the address in your email below. Please confirm the name of your street. (It looks like WIxson?)

Lindy

Eleanor (Lindy) Coldwell, Ph.D.
Academic Advisor
Psych Dept (100 BOUSFIELD) 860-486-2183
CLAS Academic Services Center (ASC) 860-486-2822

PERMISSION TO USE THE RELIGIOSITY MEASURES QUESTIONNAIRE

Friday, June 1, 2007 12:25 PM

Re: **Religiosity Measure for Dissertation Research**

From: "Richard Jessor" <Jessor@Colorado.EDU>

To: "agnes dmochowski"

Dear Agnes,

You have my permission to use our religiosity measure. You'll find all the relevant information in the 1975 article itself, and there is further information in our 1977 Jessor & Jessor book. Good luck with your research.

R.Jessor

Distinguished Professor of Behavioral Science
Director, Health and Society Program
Professor of Psychology
Institute of Behavioral
University of Colorado at Boulder
483 UCB
Boulder CO 80309-0483
http://www.colorado.edu/ibs/jessor/

REFERENCES

Adams, G. R., Munro, B., Munro, G., Doherty-Poirer, M., & Edwards, J. (2004). Identity processing styles and Canadian adolescents' self-reported delinquency. *Identity*, 5, 57-65.

Arnett, J. J. (1992). Socialization and adolescent reckless behavior: A reply to Jessor. *Developmental Review*, 12, 339-373.

Arnett, J. J. (1998). Learning to stand alone: The contemporary American transition to adulthood in cultural and historical context. *Human Development*, 41, 295-315.

Arnett, J. J. (2000a). Emerging adulthood: A theory of development from the late teens through the twenties. *American Psychologist*, 55(5), 469-480.

Arnett, J. J. (2000b). High hopes in a grim world: Emerging adults' views of their futures and "generation X". *Youth and Society*, 31(3), 267-286.

Arnett, J. J. (2005). The developmental context of substance use in emerging adulthood [Special issue: Still at Risk for Substance Abuse: Transitions, Risks, and Opportunities for Prevention of Drug Abuse During Emerging Adulthood]. *Journal of Drug Issues*, 35(2), 235-254.

Arnett, J. J. (2007). *Adolescence and emerging adulthood: A cultural approach* (3rd ed.). Upper Saddle River, New Jersey: Pearson Education.

Arnett, J. J. & Taber, S. (1994). Adolescence terminable and interminable: When does adolescence end? *Journal of Youth and Adolescence*, 23(5), 517-537.

Ashton, M. C., Lee, K., & Paunonen, S. V. (2002). What is the central feature of extraversion? Social attention versus reward sensitivity. *Journal of Personality and Social Psychology*, 83(1), 245-252.

Barkan, S. E. (2006). Religiosity and premarital sex in adulthood. *Journal for the Scientific Study of Religion*, 45(3), 407-417.

Baron, R. M., & Kenny, D. A. (1986). The moderator-mediator variable distinction in social psychological research: Conceptual, strategic and statistical considerations. *Journal of Personality and Social Psychology*, 51, 1173-1182.

Baumrind, D. (1991). The influence of parenting style on adolescent competence and substance use. *Journal of Early Adolescence*, 11, 56-95.

Benthin, A., Slovic, P., & Severson, H. (1993). A psychometric study of adolescent risk perception. *Journal of Adolescence*, 16, 153-168.

Beyth-Marom, R., Austin, L., Fischhoff, B., Palmgren, C., & Jacobs-Quadrel, M. (1993). Perceived consequences of risky behaviors: Adults and adolescents. *Developmental Psychology*, 29(3), 549-563.

Bing, M. N., Stewart, S. M., Davison, H. K., Green, P. D., McIntyre, M. D., & James, L. R. (2007). An integrative typology of personality assessment for aggression: Implications for predicting counterproductive workplace behavior. *Journal of Applied Psychology*, 92(3), 722-744.

Bingham, C. R., Elliott, M. R., & Shope, J. T. (2007). Social and behavioral characteristics of young adult drink/drivers adjusted for level of alcohol use, *Alcoholism: Clinical and Experimental Research*, 31(4), 655-664.

Boivin, M. J. (1999). Religiosity measure. In P. C. Hill & R. W. Hood, Jr. (Eds.), *Measures of religiosity* (pp. 307-310). Birmingham, AL: Religious Education Press.

Bouchard, T. J., & Loehlin, J. C. (2001). Genes, evolution, and personality. *Behavioral Genetics*, 31, 243-273.

Bouchard, T. J.,Jr., & McGue, M. (1990). Genetic and rearing environmental influence on adult personality: An analysis of adopted twins reared apart. *Journal of Personality*, 58, 263-292.

Brown, K. W., & Moskowitz, D. S. (1998). Dynamic stability of behavior: The rhythms of our interpersonal lives. *Journal of Personality*, 66(1), 105-134.

Brown, S. A., Goldman, M. S., Inn, A., & Anderson, L. R. (1980). Expectations of reinforcement from alcohol: Their domain and relation to drinking patterns. *Journal of Consulting and Clinical Psychology*, 48(4), 419-426.

Brown, T. L., Parks, G. S., Zimmerman, R. S., & Phillips, C. M. (2001). The role of religion in predicting adolescent alcohol use and problem drinking. *Journal of Studies on Alcohol*, 62(5), 696-705.

Burns, P. C. & Wilde, G. J. S. (1995). Risk-taking in male taxi drivers: Relationships among personality, observational data and driver records. *Personality and Individual Differences*, 18, 267-278.

Carey, G. (2003). *Human genetics for the social sciences*. Thousand Oaks, CA: Sage.

Caspi, A., Roberts, B. W., & Shiner, R. L. (2005). Personality development: Stability and change. *Annual Review of Psychology*, 56, 453-484.

Chen, Z., & Kaplan, H. B. (2003). School failure in early adolescence and status attainment in middle adulthood: A longitudinal study. *Sociology of Education*, 76, 110-127.

Clancy, S. M., & Dollinger, S. J. (1993). Identity, self, and personality: identity status and the five-factor model of personality. *Journal of Research on Adolescence*, 3(3), 227-245.

Cook, M., Young, A., Taylor, D., & Bedford, A. P. (1998). Personality correlates of alcohol consumption. *Personality and Individual Differences*, 24(5), 641-647.

Costa, P. T., Jr., & McCrae, R. R. (1985). Concurrent validation after 20 years: The implications of personality stability for assessment. In J.N. Butcher & C.D.Spielberger (Eds.), *Advances in personality assessment* (pp. 31-54). Hillsdale, NJ: Erlbaum.

Costa, P. T., Jr., & McCrae, R. R. (1985). *NEO PI-R Professional Manual.* Lutz, FL: Psychological Assessment Resources.

Costa, P. T., Jr., & McCrae, R. R. (1994). Set like plaster: Evidence for the stability of adult personality. In T.F. Heatherton & J.L. Weinberger (Eds.), *Can personality change?* (pp. 21-40). Washington, DC: American Psychological Association.

Costa, P. T., Jr., & McCrae, R. R. (2003). NEO five-factor inventory [Test Booklet-Form S (Adult)]. Retrieved from http://www.parinc.com/

Costa, P. T., Jr., & McCrae, R. R., & Dye, D. A. (1991). Facet scales for Agreeableness and Conscientiousness: A revision of the NEO Personality Inventory. *Personality and Individual Differences*, 12, 887-898.

Crisp, B. R., & Barber, J. G. (1995). The effect of locus of control on the association between risk perception and sexual risk-taking. *Personality and Individual Differences*, 19(6), 841-845.

Diehm, R., & Armatas, C. (2004). Surfing: an avenue for socially acceptable risk-taking, satisfying needs for sensation seeking and experience seeking. *Personality and Individual Difference*, 36, 663-677.

Digman, J. M. (1990). Personality structure: Emergence of the five-factor model. *Annual Review of Psychology*, 41, 417-440.

Donovan, J., & Jessor, R. (1985). Structure of problem behavior in adolescence and young adulthood. *Journal of Consulting and Clinical Psychology*, 53, 890-904.

Donovan, J. E., Jessor, R., & Costa, F. M. (1991). Adolescent health behavior and conventionality-unconventionality: An extension of problem-behavior theory. *Health Psychology*, 10, 52-61.

Dulin, P. L., Hill, R. D., & Ellingson, K. (2006). Relationships among religious factors, social support and alcohol abuse in a Western U.S. college sample. (Letter to the editor). *Journal of Alcohol and Drug Education*, 50(1), 5-14.

Duriez, B., Soenens, B., & Beyers, W. (2004). Personality, identity styles, and religiosity: An integrative study among late adolescents in Flanders (Belgium). *Journal of Personality*, 72, 877-908.

Elkind, D. (1967). Egocentrism in adolescence. *Child Development*, 38, 1025-1034.

Elkind, D. (1985). Elkind on egocentrism. *Developmental Review*, 5(3), 227-236.

Erikson, E. H. (1973). Growth and crisis of the healthy personality. In S. G. Sapir & A. C. Nitzburg (Eds.), *Children with learning problems*. New York: Brunner/Mazel.

Everett, S. A., Lowry, R., Cohen, L. R., & Dellinger, A. M. (1999). Unsafe motor vehicle practices among substance-using college students. *Accident Analysis and Prevention*, 31, 667-673.

Flory, K., Lynam, D., Milich, R., Leukefeld, C., & Clayton, R. (2002). The relations among personality, symptoms of alcohol and marijuana abuse, and symptoms of comorbid psychopathology: Results from a community sample. *Experimental and Clinical Psychopharmacology*, 10(4), 425-434.

Friedman, R. S., McCarthy, D. M., Bartholow, B. D., & Hicks, J. A. (2007). Interactive effects of alcohol outcome expectancies and alcohol cues on noncompulsive behavior. *Experimental and Clinical Psychopharmacology*, 15(1), 102-114.

Fromme, K., Katz, E. C., & Rivet, K., (1997). Outcome expectancies and risk-taking behavior. *Cognitive Therapy and Research*, 21(4), 421-442.

Furnham, A., & Saipe, J. (1993). Personality correlates of convicted drivers. *Personality and Individual Differences*, 14, 329-336.

Ge, X., & Conger, R. D. (1999). Adjustment problems and emerging personality characteristics from early to late adolescence. *American Journal of Community Psychology*, 27(3), 429-459.

Goggin, K., Malcarne, V. L., Murray, T. S., Metcalf, K. A., & Wallston, K. A. (2007). Do religious and control cognitions predict risky behavior? II. Development and validation of the Sexual Risk Behavior-related God Locus of Control Scale for Adolescents (SexGLOC-A). *Cognitive Theory and Research*, 31, 123-139.

Goldberg, L.R. (1992). The development of markers for the big-five factor structure. *Psychological Assessment*, 4, 26-42.

Greene, K., Krcmar, M., Walters, L. H., Rubin, D. L., Hale, J., & Hale, L. (2000). Targeting adolescent risk-taking behaviors: the contributions of egocentrism and sensation-seeking. *Journal of Adolescence*, 23, 439-461.

Gullone, E., & Moore, S. (2000). Adolescent risk-taking and the five-factor model of personality. *Journal of Adolescence*, 23, 393-407.

Halpern, C. T., Waller, M. W., Spriggs, A., Hallfors, D. D. (2006). Adolescent predictors of emerging adult sexual patterns, *Journal of Adolescent Health*, 39(6), e1-e10.

Helson, R., & Srivastava, S. (2001). Three paths of adult development: conservers, seekers, and achievers. *Journal of Personality and Social Psychology*, 80, 995-1010.

Hollingshead, A. B. (1975). *Four factor index of social status*. Unpublished manuscript.

Hoyle, R. H., Fejfar, M. C., & Miller, J. D. (2000). Personality and sexual risk-taking: A quantitative review. *Journal of Personality*, 68(6), 1203-1231.

Irwin, C. E., Jr., & Millstein, S. G. (1986). Biopsychosocial correlates of risk-taking behaviors during adolescence: Can the physician intervene? *Journal of Adolescent Health Care*, 7, 82S-96S.

Jensen-Campbell, L. A., & Graziano, W. G. (2001). Agreeableness as a moderator of interpersonal conflict. *Journal of Personality*, 69(2), 323-362.

Jessor, R., & Jessor, S. L. (1977). Problem behavior and psychosocial development: A longitudinal study of youth. New York: Academic Press.

John, O. P., & Srivastava, S. (1999). The big five trait taxonomy: History, measurement, and theoretical perspectives. In L. A. Pervin & O. P. John (Eds.), *Handbook of personality: Theory and Research* (2nd ed., pp. 102-138). New York: Guilford Press.

Johnstone, R. L. (2004). *Religion and society: A sociology of religion*. Upper Saddle River, NJ: Prentice Hall.

Jonah, B. A. (1997). Sensation seeking and risky driving: A review and synthesis of the literature. *Accidental Analysis and Prevention*, 5, 651-665.

Kajtna, T., Tusak, M., Baric, R., & Burnik, S. (2004). Personality in high-risk sports athletes. *Kinesiology*, 36(1), 24-34.

Kandel, D. B., Kessler, R. C. & Margulies, R. Z. (1978). Antecedents of adolescent initiation into stages of drug use: A developmental analysis. *Journal of Youth and Adolescence*, 7(1), 13-40.

Kashdan, T. B., Collins, R. L. & Elhai, J. D. (2006). Social anxiety and positive outcome expectancies on risk-taking behaviors. *Cognitive Therapy and Research,* 30(6), 749-761.

Katz, E. C., Fromme, K., & D'Amico, E. J. (2000). Effects of outcome expectancies and personality on young adults' illicit drug use, heavy drinking, and risky sexual behavior. *Cognitive Therapy and Research*, 24(1), 1-22.

Kutter, C. J., & McDermott, D. S. (1997). The role of the church in adolescent drug education. *Journal of Drug Education*, 27, 293-305.

Labouvie, E. W. & McGee, C. R. (1986). Relation of personality to alcohol and drug use in adolescence. *Journal of Consulting and Clinical Psychology*, 54(3), 289-293.

Lavery, B., Siegel, A. W., Cousins, J. H., & Rubovits, D. S. (1993). Adolescent risk-taking: An analysis of problem behaviors in problem children. *Journal of Experimental Child Psychology*, 55, 277-294.

Lefkowitz, E. S. (2005). "Things have gotten better": Developmental changes among emerging adults after the transition to university. *Journal of Adolescent Research*, 20(1), 40-63.

Lefkowitz, E. S., Boone, T. L., & Shearer, C. L. (2004). Communication with best friends about sex-related topics during emerging adulthood. *Journal of Youth and Adolescence*, 33(4), 339-351.

Levitt, M. Z., Selman, R. L., & Richmond, J. B. (1991). The psychological foundations of

early adolescents' high-risk behavior: Implications for research and practice. *Journal of Research on Adolescence*, 1(4), 349-378.

Lindley, P., & Walker, S. N. (1993). Theoretical and methodological differentiation of moderation and mediation. *Nursing Research*, 42(5), 276-279.

Loehlin, J. C. (1992). *Genes and environment in personality development.* Newbury CA: Sage.

Lucas, R. E., Diener, E., Grob, A., Suh, E. M., & Shao, L., (2000). Cross-cultural evidence for the fundamental features of Extraversion. *Journal of Personality and Social Psychology*, 79, 452-468.

Marcia, J. E. (1966). Development and validation of ego-identity status. *Journal of Personality and Social Psychology*, 3, 551-558.

McCrae, R. R., & Costa, P. T., Jr. (1990). *Personality in adulthood*. New York: Guilford.

McCrae, R. R., & Costa, P. T., Jr. (1997). Personality trait structure as a human universal. *American Psychologist*, 52(5), 509-516.

McCrae, R. R., Costa, P. T., Jr., de Lima, M. P., Simoes, A., Ostendorf, F., Angleitner, A., et al. (1999). Age differences in personality across the adult life span: Parallels in five cultures. *Developmental Psychology*, 35(2). 466-477.

McCrae, R. R., Costa, P. T., Jr., Martin, T. A., Oryol, V. E., Rukavishnikov, A. A., Senin, I. G., et al. (2004). Consensual validation of personality traits across cultures. *Journal of Research in Psychology*, 38, 179-201.

McCrae, R. R., & Costa, P. T., Jr., Ostendorf, F., Angleitner, A., Hrebickova, M., Avia, M.D., et al. (2000). Nature over nurture: temperament, personality, and life span development. *Journal of Social Psychology*, 78, 173-186.

McCrae, R. R., & John, O. P. (1992). An introduction to the five-factor model and its applications. *Journal of Personality*, 60(2), 175-215.

McGee, L., & Newcomb, M. D. (1992). General deviance syndrome: Expanded hierarchal evaluations at four ages from early adolescence to adulthood. *Journal of Consulting and Clinical Psychology*, 60, 766-776.

McGue, M., Bacon, S., & Lykken, D. T. (1993). Personality stability and change in early adulthood: a behavioral genetic analysis. *Developmental Psychology*, 29, 96-109.

McIntyre, A., Saudargas, R. A., & Howard, R. (1991). Attribution of control and teenage pregnancy. *Journal of Applied Developmental Psychology*, 12(1), 55-61.

McNamara, P.M., Burns, J.P., Johnson, P., & McCorkle, B. H. (2010). Personal religious practice, risky behavior, and implementation intentions among adolescents. *Psychology of Religion and Spiritulity*, 2(1), 30-34.

Miller, J. D., Lynam, D., Zimmerman, R. S., Logan, T. K., Leukefeld, C., & Clayton, R. (2004). The utility of the five factor model in understanding risky sexual behavior. *Personality and Individual Differences*, 36, 1611-1626.

Miller, L., Davies, M., & Greenwald, S. (2000). Religiosity and substance use and abuse among adolescents in the National Comorbidity Survey. *Journal of the American Academy of Child and Adolescent Psychiatry*, 39, 1190-1197.

Miller, R. L., & Mulligan, R. D. (2002). Terror management: the effects of mortality salience and locus of control on risk-taking behaviors. *Personality and Individual Differences*, 33(7), 1203-1214.

Newcomb, M. D. & Bentler, P. M. (1987). The impact of late adolescent substance use on young adult health status and utilization of health services: A structural equation model over four years. *Social Science and Medicine*, 24, 71-82.

Ortiz, F. A., Church, A. T., Vargas-Flores, J., Ibanez-Reyes, J., Flores-Galaz, M., Iuit-Briceno, J. I., et al. (2007). Are indigenous personality dimensions culture-specific? Mexican inventories and the five-factor model. *Journal of Research in Psychology*, 41, 618-649.

Ozer, D. J. & Benet-Martinez, V. (2006). Personality and the prediction of consequential outcomes. *Annual Review of Psychology*, 57, 401-421.

Ozkan, T., & Lajunen, T. (2005). Multidimensional Traffic Locus of Control Scale (T-LOC): Factor structure and relationship to risky driving. *Personality and Individual Differences*, 38, 533-545.

Papalia, D. E., & Olds, S. W. (1995). *Human development*. New York: McGraw-Hill.

Peterson, J. B., Morey, J., & Higgins, D. M. (2005). You drink, I drink: Alcohol consumption, social context and personality. *Individual Differences Research*, 3(1), 50-58.

Piedmont, R. L. (1998). *The revised NEO personality inventory: Clinical and research applications*. New York: Plenum Press.

Piko, B. F., & Fitzpatrick, K. M. (2004). Substance use, religiosity, and other protective factors among Hungarian adolescents. *Addictive Behaviors*, 29, 1095-1107.

Plomin, R., & Caspi, A. (1999). Behavioral genetics and personality. In L. A. Pervin & O. P. John (Eds.), *Handbook of personality: Theory and research* (2nd ed, pp. 251-276). New York: Guilford Press.

Price-Greathouse, J., & Trice, A. D. (1986). Chance health-orientation and AIDS information seeking. *Psychological Reports*, 59, 10.

Pullmann, H., Raudsepp, L., & Allik, J. (2006). Stability and change in adolescents' personality: A longitudinal study. *European Journal of Personality*, 20, 447-459.

Rakovski, C., & Levy, E. S. (2007). Academic dishonesty: Perceptions of business students. *College Student Journal*, 41(2), 466-481.

Ric, G., Steele, B. S., Forehand, R., Armistead, L., & Brody, G. (1995). Predicting alcohol and drug use in early adulthood: The role of internalizing and externalizing behavior problems in early adolescence. *American Journal of Orthopsychiatry*, 65(3), 380-388.

Roberts, B. W., Bogg, T., Walton, K. E., Chernyshenko, O. S., & Stark, S.E. (2004). A lexical investigation of the lower-order structure of conscientiousness. *Journal of Research in Personality*, 38(2), 164-178.

Roberts, B. W., & Caspi, A. (2003). The cumulative continuity model of personality development: striking a balance between continuity and change. In U. Staudinger & U. Lindenberger (Eds.), *Understanding human development: Life span psychology in exchange with other disciplines* (pp. 183-214). Dordrecht, The Netherlands: Kluwer Academy.

Roberts, B. W., Caspi, A., & Moffitt, T. E. (2001). The kids are alright: Growth and stability in personality development from adolescence to adulthood. *Journal of Personality and Social Psychology*, 81(4), 670-683.

Robins, R. W., Fraley, R. C., Roberts, B. W., Trzesniewski, K. H. (2001). A longitudinal study of personality change in young adulthood. *Journal of Personality*, 69(4), 617-640.

Rohrbaugh, J., & Jessor, R. (1975). Religiosity in youth: A personal control against deviant behavior? *Journal of Personality*, 43(1), 136-155.

Rosenbloom, T. (2003). Risk evaluation and risky behavior of high and low sensation seekers. *Social Behavior and Personality*, 31(4), 375-386.

Rosenbloom, T., & Wolf, Y. (2002). Signal detection in conditions of everyday life traffic dilemmas. *Accident Analysis and Prevention*, 34, 763-772.

Rotter, J. B. (1966). Generalized expectancies for internal versus external control of reinforcement. *Psychological Monographs*, 80, 1-28.

Rotter, J. B. (1975). Some problems and misconceptions related to the construct of internal versus external control of reinforcement. *Journal of Consulting and Clinical Psychology*, 43(1), 56-67.

Saroglou, V., Pichon, I., Trompette, L., Verschueren, M., & Dernelle, R. (2005). Prosocial behavior and religion: New evidence based on projective measures and peer ratings. *Journal for the Scientific Study of Religion*, 44(3), 323-348.

Schafer, J., & Brown, S. A. (1991). Marijuana and cocaine effect expectancies and drug use patterns. *Journal of Consulting ad Clinical Psychology*, 59(4), 558-565.

Schmitt, D. P. (2004). The big five related to risky sexual behavior across 10 world regions: Differential personality associations of sexual promiscuity and relationship infidelity. *European Journal of Personality*, 18, 301-319.

Shedler, J., & Block, J. (1990). Adolescent drug use and psychological health: A longitudinal inquiry. *American Psychologist*, 45(5), 612-630.

Sher, K. J., & Trull, T. (1994). Personality and disinhibitory psychopathology: Alcoholism and antisocial personality disorder. *Journal of Abnormal Psychology*, 103, 92-102.

Slanger, E., & Rudestam, K. E. (1997). Motivation and disinhibition in high-risk sports: Sensation seeking and self-efficacy. *Journal of Research in Personality*, 31, 355-374.

Srivastava, S., John, O. P., Gosling, S. D., & Potter, J. (2003). Development of personality in early and middle adulthood: Set like plaster or persistent change? *Journal of Personality and Social Psychology*, 84(5), 1041-1053.

Stacy, A. W., Bentler, P. M., Flay, B. R. (1994). Attitudes and health behavior in diverse populations: Drunk driving, alcohol use, binge eating, marijuana use, and cigarette use. *Health Psychology*, 13(1), 73-85.

Tong, J., & Wang, L. (2006). Validation of locus of control scale in Chinese organizations. *Personality and Individual Differences*, 41(5), 941-950.

Trimpop, R. M. (1994). *The psychology of risk-taking behavior*. Amsterdam, The Netherlands: Elsevier Science B.V.

Trobst, K. K., Herbst, J. H., Masters, H. L., & Costa, P. T., Jr. (2002). Personality pathways to unsafe sex: Personality, condom use, and HIV risk behaviors. *Journal of Research in Personality*, 36, 117-133.

Trobst, K. K., Wiggins, J. S., Costa, P. T., Jr., Herbst, J. H., McCrae, R. R., & Masters, H. L. (2000). Personality psychology and problem behaviors: HIV risk and the five-factor model. *Journal of Personality*, 68(6), 1233-1252.

Van Heck, G. L., Perugini, M., Caprara, G., & Froger, J. (1994). The big five as tendencies in situations. *Personality and Individual Differences*, 16(5), 715-731.

Walton, K. E., & Roberts, B. W. (2004). On the relationship between substance use and personality traits: Abstainers are not maladjusted. *Journal of Research in Personality*, 38, 515-535.

Watson, D., Clark, L. A., & Harkness, A. R. (1994). Structures of personality and their relevance to psychopathology. *Journal of Abnormal Psychology*, 103(1), 18-31.

Welte, J. W., & Barnes, G. M. (1987). Youthful smoking: patterns and relationships to alcohol and other drug use. *Journal of Adolescence*, 10, 327-340.

Williams, J. H., Van Horn, R. A., Hawkins, J. D., Abbott, R., & Catalano, R. E. (2001). Correlates contributing to involvement in violent behaviors among young adults. *Violence and Victims*, 16(4), 371-388.

Wills, T. A., Sandy, J. M., & Yaeger, A. (2000). Temperament and adolescent substance use: An epigenetic approach to risk and protection. *Journal of Personality*, 68(6), 1127-1151.

Wink, P., Ciciolla, L., Dillon, M., & Tracy, A. (2007). Religiousness, spiritual seeking, and personality: Findings from a longitudinal study. *Journal of Personality*, 75(5), 1051-1070.

Zaleski, E. H., & Schiaffino, K. M. (2000). Religiosity and sexual risk-taking behavior during the transition to college. *Journal of Adolescence*, 23, 223-227.

Zerega, W.D., Tseng, M.S., & Greever, K.B. (1976). Stability and concurrent validity of the Rotter Internal-External Locus of Control Scale. *Educational and Psychological Measurement*, 36, 473-475.

Zuckerman, M. (1971). Dimensions of sensation seeking. *Journal of Consulting and Clinical Psychology*, 36(1), 45-52.

Zuckerman, M. (1979). *Sensation Seeking: Beyond the optimal level of arousal*. Hillsdale: Lawrence Erlbaum.

Zuckerman, M. (1992). What is the basic factor and which factors are basic? Turtles all the way down. *Personality and Individual Difference*, 13, 675-681.

Zuckerman, M. (1994). *Behavioral expressions ad biosocial bases of sensation seeking*. Cambridge: Cambridge University Press.

Zuckerman, M., & Kuhlman, D. M., (2000). Personality and risk-taking: Common biosocial factors. *Journal of Personality*, 68(6), 999-1029.

Zuckerman, M., Kuhlman, D. M., Joireman, J., Teta, P., & Kraft, M. (1993). A comparison of three structural models for personality: The big three, the big five, and the alternative five. *Journal of Personality and Social Psychology*, 65(4), 757-768.

ABSTRACT

PERSONALITY AND RISK-TAKING BEHAVIORS IN EMERGING ADULTHOOD

by

AGNES WARD

December 2010

Advisor: Dr. Stephen B. Hillman

Major: Educational Psychology

Degree: Doctor of Philosophy

Much theory and research has focused on adolescent risk-taking behavior. Common theories include Zuckerman's (1971) perspective on sensation seeking, the problem behavior perspective identified by Jessor and Jessor (1977), and the causal model of risk-taking behavior by Irwin and Millstein (1986). While beneficial to understanding risky behaviors, these perspectives do not take into account specific personality traits that contribute to risk-taking or cognitive appraisals of risky behaviors. Further, most research has focused on the adolescent population with regard to risk. Studies on emerging adulthood are less abundant. Therefore, the purpose of this study was to examine the role of personality as a contributor to risk-taking behaviors in emerging adulthood. Emerging adults' cognitive appraisals about risky behaviors were also explored. Religiosity and locus of control were considered variables contributing to the relationship between personality and risky behaviors.

Data were collected from a sample of 255 participants, ages 18 to 25, from a large university in Southeast Michigan. The participants completed self-report

questionnaires which were distributed toward the beginning or end of their class period. Participants could take the questionnaires home to complete and return the following week in class.

Findings showed that cognitive appraisals of risk-taking behaviors were related to the degree of involvement in those behaviors. No significant age or gender differences were found. Personality factors were found to play a small role in risk-taking behaviors. Factors such as religion and internal locus of control appear to be minimal in decreasing certain risky behaviors. Despite studies presented supporting the hypotheses in this research, the variance accounted for in the regression analyses was small and of little practical significance. Replication of the current study is needed with consideration to the limitations presented in examining the role of personality to the contribution of risky behaviors, along with a study of variables that may serve as protective factors.

AUTOBIOGRAPHICAL STATEMENT

Agnes Ward

Education	2010 – Doctor of Philosophy Wayne State University, Detroit, Michigan Major: Educational Psychology
	2003 – Master of Arts Wayne State University, Detroit, Michigan Major: Marriage and Family Therapy
	2001 – Bachelor of Arts University of Michigan, Dearborn, Michigan Major: Communications
Licensure	Limited License Psychologist – State of Michigan
Professional Experience	2005 to Present Eastwood Clinics Therapist
	2008 to Present Community Mental Health – Access Center Access Manager/Children's Specialist
	2006 to 2008 First Resources and Treatment North Case Manager
Professional Affiliations	American Psychological Association