

Big-5 Personality Traits as They Relate to Risk Behaviors:
Comparisons of Traits with Participation in and Consideration of Risk Behaviors

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Abstract

Prior research suggests there are significant correlations between an individual's personality traits and their engagement in risk behaviors such as drug use, self-harm, and gambling. Extraversion and neuroticism are often seen as core personality variables involved in different types of risk behaviors. In order to test the relationship between personality traits and risk behaviors, a survey was conducted in which participants aged 18-59 answered questions that determined their personality traits' percentages based on the Big-5 Personality Questionnaire, as well as questions regarding their engagement in and consideration of engaging in risky behaviors, adapted from the RIS-Q risk behavior questionnaire (Sadeh & Baskin-Sommers, 2016). It was hypothesized that extraversion and neuroticism would have significant positive correlations with the total amount of risk behavior committed, as well as with the motive for engaging in risk behaviors. Significant relationships between the participation in risk behaviors and traits of neuroticism, conscientiousness, and risk-behaviors were discovered, wherein high neuroticism correlated positively with self-harm behaviors, and conscientiousness correlated negatively with self-harm behaviors. Traits were additionally found to correlate significantly to a person's reason for considering such behaviors, including to reduce feeling overwhelmed and to experience stimulation and thrill. These relationships can be further discussed in order to increase clinicians' understanding of an individual's motives for their behavior, which is crucial in maintaining unconditional positive regard for clients. These relationships can also be further discussed in a forensic setting regarding criminal activity and psychological profiles. If successful, findings can provide crucial information for reducing the stigma associated with risk behaviors in at-risk individuals.

Introduction

Personality traits are multi-faceted, individualized characteristics and correlate strongly to participation in risk behaviors. The following research examines how intra-personality interactions are related to the tendency to engage in risky behaviors. Risky behaviors can include criminal activity, such as recreational drug use or physical violence, and they can predict future engagement in criminal behaviors. Thus, it is important to understand which of a person's psychological characteristics can contribute to risky or criminal behaviors in order to facilitate a culture of unconditional positive regard within the clinical psychology community when treating those in the criminal justice system. The understanding of the correlation between personality and the engagement in risk behaviors is also important in order to organize better prevention and intervention strategies for clients. Personality as a whole, as measured based on the Big-5 personality inventory, will be examined in relation to how an individual behaves, specifically regarding risk behaviors such as gambling and recreational drug use. Two aspects of personality in particular—extraversion and neuroticism—and their specific characteristics will be discussed in depth. A thorough analysis including the facets of personality traits, behavioral considerations and actions, and the correlations between these features will be conducted.

Personality Traits & Related Behaviors

According to Billstedt et al. (2014), while personality traits are seen to be relatively stable in terms of the general population, within certain individuals—especially the neurotic—variations in personality traits have been shown to occur regularly. Personality impacts how we deal with certain aspects of life, and life is largely affected by emotional stability, which has been shown to change constantly throughout each individual's lifespan (Schultz et al., 2017; Schwaba & Bleidorn, 2018). The most significant changes in personality tend to occur during adolescence, and begin to stabilize over time. Extraversion and neuroticism in particular aid in determining overall life satisfaction, and interact at an individual level (Lynn & Steel, 2006). These interactions between neuroticism and extraversion are large determinants of behavior: especially risk-taking behaviors and antisocial behaviors, such as engaging in violence towards others

or illicit drug use (Cooper, Agocha, & Sheldon, 2000; Sadeh & Baskin-Sommers, 2016). If an individual's personality remains relatively consistent over time, but neuroticism is a large indicator of the participation in antisocial behavior and empathetic processing, then the interaction between neuroticism and other personality traits might be able to indicate what antisocial behaviors an individual is at risk of attempting or performing (Hekmat, Khajavi, & Mehryar, 1974). In order to understand how individual traits and behaviors interact with each other, extraversion and neuroticism must first be considered individually.

Extraversion

Based on Carl Jung's theories in regards to personality traits and biological processes (Jung & Godwin Baynes, 1921), someone who scores on the lower end of the extraversion scale, referred to as an introvert, receives stimulation and energy from within, whereas someone on the higher end of the scale—the extravert—gets stimulation and energy from their surroundings. This idea is biologically supported by the finding that extraverts have lower resting activity within the reticular formation arousal loop, indicating that they require more external stimulation for emotional arousal (Eysenck, 1983). This may potentially explain additional findings that extraverts tend to have increased comfort in highly stimulating social situations, and therefore are perceived as more socially outgoing (Waude, 2017). Extraversion correlates positively with emotional expression (Hekmat, Khajavi, & Mehryar, 1974; Wu, Lu, Chen, & Xiang, 2018). The correlation between extraversion and emotional expression can also be explained by the finding that extraverted individuals are more physiologically adaptable to stress. This understanding is supported by a study wherein extraverted college students displayed fewer physiological reactions (such as lower heart-rate activity and better blood pressure adaptation) when exposed to controlled stressors than introverts did (Lu & Wang, 2017).

There are many theoretical explanations regarding the development of extraversion. These explanations often fit into two main categories: nature and nurture. Nature refers to genetic characteristics, whereas nurture explains environmental characteristics. Both are important in understanding and explaining the effects of extraversion on the individual.

Genetic and Biological Factors of Extraversion.

Prior to Eysenck, testing showed that there was no significant correlation between nervous system response and extraversion (Small, 1976). However, Eysenck claimed that extraversion has many genetic determinants after he found that identical twins had more similarities in their extraversion levels than fraternal twins (Eysenck, 1983). He also linked extraversion to higher cortisol levels, which lead to seeking external stimuli. Additional studies showed that brain structure and personality traits were correlated, specifically regarding cortical thickness (Waude, 2017). Eysenck formed a theory that sympathetic nervous system responses were positively correlated with extraversion and that parasympathetic nervous system responses were negatively correlated with extraversion, indicating that social behaviors have genetic determinants.

Environmental Factors of Extraversion. Studies have shown a strong positive correlation between extraversion and sociological environment, specifically with the mother-child interaction leading to different attachment styles wherein children with secure attachment displayed higher levels of extraversion than those displaying insecure or non-attachment styles (Waude, 2017). Changes in personality characteristics across cultures have also been documented, with significant variations in the average levels of extraversion and neuroticism, indicating that the environment in which a person is brought up in significantly determines personality characteristics, and thus behavior (Chopik & Kitayama, 2018). For example, in collectivist Asian cultures, extraversion, neuroticism, and conscientiousness were found to vary more over time than in individualistic western cultures. This type of variance across cultures suggests that environmental aspects and culturally-based behaviors aid in the formation of different personality-related aspects.

Neuroticism

Neuroticism is a partially heritable trait that includes the tendency to worry, have feelings of guilt and loneliness, and be more easily hurt, as well as a tendency to behave in insecure and temperamental manners (Rietschel et al., 2014; Speed, D., Hemani, Speed, M. S., Børglum, & Østergaard, 2019). It was found that empathy has a negative correlation with both psychotism and neuroticism, thus indicating that neuroti-

cism has a direct effect on general behavior (Hekmat, Khajavi, & Mehryar, 1974). Because of this trend, it is rational to posit that neuroticism affects the types and frequency of risky behaviors.

Genetic and Biological Factors of Neuroticism.

Neuroticism can be understood and explained through the lens of genetic and biological determinants: it was found that the factors that affect genetic determinants of neuroticism were related to the tendencies for a person with a unique set of genes to perceive stress in a specific way (Rietschel et al., 2014). One way the natural causes and effects of neuroticism can be observed is through sleep patterns. In one sleep study, neuroticism was positively correlated with variability of sleep duration and quality, indicating that neuroticism affects biological processes (Križan, Hisler, & Laceulle, 2019). Increased occurrences of sleep disruptions, potentially due to higher frequency and levels of perceived stress, correlate with higher levels of neuroticism. Because neuroticism affects us biologically, and because our behavior is influenced by biological and genetic determinants, it can be concluded that there is a bidirectional effect between neuroticism and biological processes such as sleep.

Neuroticism's natural influences can also be demonstrated through observation of brain structures of individuals rated as either neurotic or stable. In one study, it was found that neuroticism correlated negatively with the amount of cortical folding on the left dorsolateral prefrontal cortex, suggesting once again that there may be a biological explanation for the formation of particular personality traits (Schultz et al., 2017). Neuroticism was concluded to act as a biological marker for highly neurotic tendencies and the presence of common psychological disorders, such as anxiety and depression.

Environmental Factors of Neuroticism. Regarding environmental influences on neuroticism, the social identity perspective on personality states that people are both individuals and members of a group. Using this theory as a platform, researchers found that as an individual's environment changes, so does their societal role (Reynolds et al., 2012). Environmental shifts can cause aspects of personality to fluctuate, particularly neuroticism. This can be seen in that as roles vary across culture, so do levels of neuroticism, thus indicating that environmental influences such as culture and society impact a person's level of neuroticism (Chopik & Kitayama, 2018). For example, if a culture goes through a collective traumatic experience, such as the US terrorist

attack on 9/11 or the global SARS-CoV-2 pandemic, it is likely that the culture(s) will see an increase in neuroticism and/or neurotic tendencies during and after the trauma recovery period.

Risk Behaviors

Genetics influence the likelihood of engaging in risky behavior; however, positive peer pressure may repress those genetic influences when it comes to antisocial or criminal behaviors (Burt & Klump, 2014), which indicates that environment impacts actions. While this impact can be positive, it can also be negative in the sense that a person's environment may increase their willingness to engage in risky behaviors such as substance abuse, reckless driving, or overly-dangerous athletic activities like skydiving, as well as acting aggressively toward others, engaging in self harm, practicing unsafe sex, gambling, binge-eating, and other behaviors (Sadeh & Baskin-Sommers, 2016; Taubman, Ben-Ari, & Skvirsky, 2019).

While environmental factors have a large impact on whether or not people engage in risky behavior, they do not necessarily account for what type of risk-behaviors an individual might encounter. In one study, researchers used proactive (seeking) and reactive (responding with) aggressive behaviors as categorical descriptors in a collection of data in order to identify the type of aggressive behavior children exhibited (Kaat et al., 2015). The study showed that proactive and reactive antisocial behavioral factors were distinct but moderately related to each other, which suggests that there can be different categorical types of antisocial behavior, thus making it important to understand how different people can act aggressively in unique ways.

Personality and Risk Behaviors

Based on the findings that risk behaviors are associated with certain categories of personalities, it is likely that personality traits can influence the type of risk someone engages in. This may be due to the fact that differences in extraversion and neuroticism are related to outlook on certain situations, which can thereby affect the coping mechanism (Gomez, R., Gomez, A., & Cooper, 2002). Extraversion is directly related to broad-minded affective responses such as flexibility with one's point of view, whereas neuroticism is direct-

ly related to narrow-minded affective responses such as withdrawing into oneself and drug use, both of which show increased rates of neuroticism (Pavani, Le Vigou-roux, Kop, Congard, Dauvier, & Denissen, 2017).

Neuroticism and extraversion each correlate to many types of risky behavior. Neuroticism is positively correlated to impulsive antisociality, a predictor of violent behavior, as well as with general antisocial behavior (Allsopp & Feldman, 1974; Nigel et al., 2018). Neuroticism was further found to be linked to emotional inhibition and emotions that promote aggression, which validates the finding of an increased likelihood of engaging in rebellious and/or aggressive behavior in a male-smoker population, as smoking may serve as an indicator of possible neuroses that are more common in individuals with high neuroticism traits (Brook, Whitman, & Gordon, 1981; Delgado, Carrasco, González-Peña, & Holgado-Tello, 2018). It was found that people with high levels of neuroticism engaged in risky behaviors such as drug use or gambling as a means of coping with unpleasant emotions, as it is positively associated with stress-perceptions, and negatively associated with perceived health and life satisfaction (Cooper, Agocha, & Sheldon, 2000; Otonari et al., 2012).

Extraversion positively correlates to financial risk-taking (Oehler, Wendt, Wedlich, & Horn, 2018); general antisocial behaviors (Allsopp & Feldman, 1974); alcohol use and risky sexual behaviors (Cooper, Agocha, & Sheldon, 2000); an unhealthy body mass index (BMI), smoking, and alcohol use (Otonari et al., 2012); and engagement in risky athletic activities such as using excessive force in an athletic play or disregarding one's own safety or the safety of other people (Tok, 2011). Individuals with high levels of extraversion reportedly engaged in risk behaviors in order to enhance experience values, providing insight into the mental processes behind the personality/behavior interaction (Cooper, Agocha, & Sheldon, 2000).

Prior research provided significant findings regarding an individual's personality traits and their engagement in different types of behaviors. Neuroticism and extraversion both have significant correlations with an individual's stress levels, which have been found to increase the likelihood of engaging in unhealthy and/or risky behaviors. Thus, the Big 5 personality traits require additional evaluation in reference to understanding participation in risky behavior.

Hypotheses

It was hypothesized that people with lower levels of extraversion and higher levels of neuroticism would score higher in the total participation in risky behaviors. Regarding the type of behaviors, it was expected that: (1) Participants with higher scores of extraversion and neuroticism would score higher in reckless behaviors, risky sexual behaviors, gambling, and aggression; and (2) People with lower levels of extraversion and higher levels of neuroticism would score higher in self-harm and drug behaviors. Regarding the motive for an individual to engage in risky behaviors, it was expected that: (1) People who score higher in extraversion and neuroticism would score higher in the motivation of feeling pleasure, excitement, and/or thrill; and (2) People who score lower in extraversion and higher in neuroticism would score higher in the motivation of inhibiting feelings of upset, distress, and/or overwhelm. In regards to neuroticism, it was expected that those who scored lower in neuroticism would score lower in all other categories of engagement in risk behaviors, reason for engagement, and consideration of participating in risky behaviors.

Methods

Participants

Based on an expected moderate effect size and a confidence interval of 95%, we estimated that a total sample size of about 250 participants were needed in order to obtain significance with a Power level of $P=0.80$. This was estimated according to a relatively homogeneous population of adults between 18-64 years of age (approximately 81% of the US population), utilizing retrospective self-report measures. The following standard formula for sample size calculation was utilized:

$$Effect\ size = \frac{[Mean\ difference]}{Pooled\ Sample}$$

Participants of ages ranging from 18-59 were surveyed. Demographic information including race, gender, age, and mental health were considered in order to account for crossover effects. The exclusion criteria were as follows: a participant does not complete all questions, a participant invalidates results on their questionnaire

(e.g., selects multiple contradictory statements and/or fails to check the signature box), and a participant is not within the given age range. There were no racial or gender exclusions in this study. A total of 44 participants were included in data analysis, the demographics for which are shown in Figure 1.

Testing

Behaviors were separated into six categories for analysis: drug/alcohol use, gambling, aggression, sexual activity, self-harm, and reckless behaviors. Pearson's R correlation tests were performed in order to test the intra-relational nature of personality variables, behavioral variables, and the inter-relational nature of personality and behavioral variables.

Single-variable correlations regarding personality and antisocial behavior have been criticized, due to a substantial lack of conclusive evidence supporting a correlation in previous studies (Penner, Summers, Brookmire, & Dertke, 1976). For this reason, the present study evaluated the combined extraversion and neuroticism levels in regards to antisocial behaviors. Participants completed personality tests adapted from the McCrae & Costa Five Factor Model of personality (1987), as well as completing a risk-behavior questionnaire. The personality questionnaire, accessed through the Big-5 Project Personality Test (Potter, 2017), consists of 61 questions in which the participant marks a position on Likert scales to indicate their level of agreement to the statement. How the participant answers each question determines their percentage score in Openness, Conscientiousness, Extraversion, Agreeableness, and Neuroticism (Appendix C). The risk-behavior questionnaire was adapted from the RIS-Q questionnaire through Yale University, which consists of 38 risk-behavior related scenarios (Sadeh & Baskin-Sommers, 2016). A few questions that were deemed repetitive were omitted, and questions about the consideration of participating in risk behaviors were added (Appendix D).

Independent variables included extraversion and neuroticism levels as well as demographic variables, and dependent variables included risk-behavior engagement and risk-behavior consideration (Table 1). The independent variables of neuroticism and extraversion were analyzed using percentage value. The risk-behaviors were grouped together with like-behaviors in cells of drug behaviors, aggressive behaviors,

gambling, risky sexual behavior, heavy alcohol use, self-harm, impulsive eating, and reckless behaviors (as determined by the survey).

Procedures

Participants were given a link to a survey. They were asked to read and sign the consent form and then take a Big-5 personality test portion, provided through a separate link, after which they received their results regarding their percentage score for each personality trait. They were then asked to enter their scores and proceeded to answer questions regarding the type of risk behaviors they have (a) engaged in and (b) considered engaging in. They then read the disclosure statement and gave confirmation of informed consent. Final submission of the form was completed without the inclusion of identifying characteristics, such as email addresses, in order to protect the privacy of participants and ensure honesty in reporting.

Results

Frequency of Behaviors

Conscientiousness showed a negative correlation with the frequency of overall risk behaviors ($r=-0.34$, $p<0.05$) as well as self-harm ($r=-0.476$, $p<0.01$). Agreeableness showed a negative correlation with drug/alcohol use ($r=-0.306$, $p<0.05$) and sexual activity ($r=-0.4183$, $p<0.01$). Neuroticism had a strong positive correlation with self-harm behaviors ($r=0.456$, $p<0.01$) (Table 2).

Consideration of Behaviors: Feeling Overwhelmed

Conscientiousness ($r = -0.4195$, $p<0.01$) had a strong negative correlation with the total amount of risk behaviors considered in order to stop feeling overwhelmed, as well as drug/alcohol use ($r=-0.4046$, $p<0.01$) and self-harm ($r=-0.4465$, $p<0.01$) in order to stop feeling overwhelmed. Neuroticism ($r=0.333$, $p<0.05$) had a positive correlation with the total amount of risk behaviors considered in order to stop feeling overwhelmed. Neuroticism had a strong positive correlation with self-harm consideration in order to stop feeling overwhelmed ($r=0.456$, $p<0.01$) (Table 3). There were no significant

relationships found regarding the consideration of behaviors in order to feel a thrill (Table 4).

Personality Relationships

The relationship between neuroticism and extraversion was calculated using a Pearson's R correlation test. There was no significant correlation found between extraversion and neuroticism. There was a strong positive correlation between extraversion and openness ($r=0.406$) (Table 5).

Demographic Analysis with Personality

The relationships between the Big-5 personality traits and demographic information were calculated using a Pearson's correlation test. Openness had a significant positive correlation with an individual's experience of personal trauma ($r = 0.369$, $p<0.05$). This suggests that the more an individual experienced trauma, the more openness they displayed. For conscientiousness, there was a significant positive correlation with socioeconomic status ($r = 0.314$, $p<0.05$), and a negative correlation with gender identity ($r = -0.342$, $p<0.05$). For neuroticism, there was a significant positive correlation with psychological/neurological conditions ($r = 0.382$, $p<0.05$) and a strong negative correlation with age ($r = -0.468$, $p<0.01$). Regarding psychological/neurological conditions, the higher the number of conditions an individual reported, the more neuroticism they displayed. Regarding age, the older the individual, the lower the neuroticism score (Table 6).

Discussion

Prior research has suggested that there is a significant relationship between an individual's personality and their engagement in risky behaviors. Extraversion and neuroticism were seen as core personality variables in this relation. In order to test the relationship between personality traits and risk behaviors, a survey was conducted in which participants aged 18-59 were asked questions that determined their personality traits' percentages, as well as questions regarding their engagement in and consideration of engaging in risky behaviors. It was hypothesized that: (1) Participants with higher scores of extraversion and neuroticism would score higher in reckless behaviors, risky sexual behaviors, gambling,

and aggression; and (2) People with lower levels of extraversion and higher levels of neuroticism would score higher in self-harm and drug behaviors.

Contrary to the hypotheses regarding total risk-behavior engagement, it was found that extraversion did not have a statistically significant relationship to one's engagement in risk behaviors. However, neuroticism was found to have a positive relationship with self-harming behaviors, indicating that people with higher levels of neuroticism are more likely to self-harm. This is crucial information for the psychological field in suicide prevention in that it provides insight as to what might decrease the national suicide rate. It was found that conscientiousness significantly deterred one's engagement in risky behaviors; the higher people scored in conscientiousness, the less likely they were to engage in risky behaviors. This result could indicate that a greater understanding of the self provides less of a need to find solace in external behaviors and thus increases an individual's inhibition.

In relation to the consideration of risky behaviors, it was hypothesized that: (1) People who scored higher in extraversion and neuroticism would score higher in the motivation of feeling pleasure, excitement, and/or thrill; and (2) People who scored lower in extraversion and higher in neuroticism would score higher in the motivation of inhibiting feelings of upset, distress, and/or overwhelm. Extraversion was found to have a positive relationship with an individual's likelihood of considering engaging in reckless behaviors in order to relieve stress. Neuroticism had significant relationships with the total likelihood of considering risk-behaviors in order to stop feeling overwhelmed, as well as with self-harm. This makes neuroticism a key variable in assessing the motives behind risky behavior. Conscientiousness is another noteworthy factor, though it appears to have the opposite effect on drug/alcohol use and self-harm. While neuroticism suggests that risk-behavior consideration increases, conscientiousness suggests that risk-behavior consideration decreases, specifically with regard to drug/alcohol use and self-harm. Despite not confirming the initial hypothesis of the importance of extraversion, notable discoveries were made regarding conscientiousness and risk-behavior. For future research, the relationships between conscientiousness and risk behaviors should be studied in-depth, as it may be a helpful tool in the therapeutic setting.

Limitations

The limitations of this study are largely centered around a lack of resources. Funding for the present research was limited, and thus the study was not able to reach a wider array of the population. Time was also a limiting factor, as results were collected during the first year of the COVID-19 pandemic. Replication of this study is recommended with a more diverse sample, and it is recommended to include people who have been convicted of crimes of varying natures so that the broader application of this study can be specialized for a forensic setting.

Conclusions

Neuroticism and conscientiousness were found to have significant effects on an individual's behavior. By studying how conscientiousness decreases an individual's likelihood of engaging in risk behaviors, the negative side effects of high neuroticism levels can be better prevented. This is important information to utilize in reference to at-risk communities and populations, as it could help protect against external factors affecting neuroticism such as sociological negligence and/or oppression. In terms of research on behavioral issues in adults, the notion that people who engage in risky behaviors tend to score lower in conscientiousness is crucial to the maintenance of unconditional positive regard in the therapeutic setting. The idea that conscientiousness could counteract the maladjustment brought about by neuroticism provides a framework for reform and rehabilitation, and thus can prevent the system from becoming one of apathy and psychological negligence.

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Figures

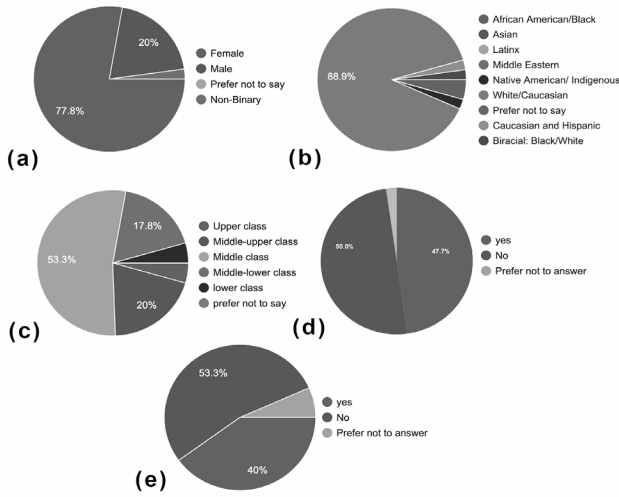


Figure 1. Demographics of Participants. (a) Gender distribution showed a female majority of participants, where 2.2% preferred not to disclose their gender identity; (b) Ethnic distribution of participants were predominantly Caucasian/White, as well as 4.4% as African American/Black, 2.2% as Biracial Caucasian/Hispanic, 2.2% as Biracial Black/White, and 2.2% as Native American/Indigenous; (c) Socioeconomic status (SES) of participants was most often middle class, as well as 4.4% of lower class, and 4.4% of upper class; (d) Participants willing to disclose neurological status stated that 47.7% had some form of diagnosable psychological and/or neurological conditions, while 2.3% preferred not to answer; (e) Participants willing to disclose traumatic experiences stated that 40% of participants did experience significant physical and/or mental trauma, while 6.7% preferred not to answer.

Tables

Table 1. Variables of interest to be included in statistical analysis.

Personality Traits	Risky Behaviors - Engagement	Risky Behaviors - Contemplation
Openness	Drug/Alcohol use	Drug/Alcohol use
Conscientiousness	Gambling	Gambling
Extraversion	Aggression	Aggression
Agreeableness	Sexual activity	Sexual activity
Neuroticism	Self-harm	Self-harm
	Recklessness	Recklessness

Table 2. Correlations between personality and behavior variables.

Pearson's r Correlation	Total	Gambling	Drug/Alcohol Use	Aggression	Sexual Activity	Self-Harm	Reckless
Openness	-0.1590	-0.2871	-0.1196	-0.1021	-0.2154	0.06787	-0.0261
Conscientiousness	-0.3405*	-0.0227	-0.1986	-0.2334	-0.2033	-0.476**	-0.2744
Extraversion	-0.1204	-0.0981	-0.0835	0.0003	-0.1958	-0.0721	-0.0842
Agreeableness	-0.2895	-0.1194	-0.306*	0.0396	-0.4183**	-0.0373	-0.2175
Neuroticism	0.2010	0.1052	-0.0106	0.1669	-0.0019	0.4563**	0.2619

* $p < 0.05$; ** $p < 0.01$; † $p < 0.001$

Table 3. Correlations: personality and consideration of behavior from feeling overwhelmed

Pearson's r Correlation	Total	Gambling	Drug/Alcohol Use	Aggression	Sexual Activity	Self-Harm	Reckless
Openness	-0.0330	-0.1513928713	0.01825000171	-0.04499431	-0.1720525	0.16651449	-0.1315842
Conscientiousness	-0.4195**	-0.0956381175	-0.4046**	-0.26199071	0.02648350	-0.4465**	-0.2889937
Extraversion	-0.19731	-0.2217741163	-0.1727349889	-0.11529004	-0.0264510	-0.0049337	-0.2338308
Agreeableness	0.0542	-0.00649	-0.1026791251	0.154037041	-0.1078179	0.14875908	0.16903298
Neuroticism	0.333*	0.13359478	0.2419354921	0.220682112	-0.1174779	0.456**	0.26180582

* $p < 0.05$; ** $p < 0.01$; † $p < 0.001$

Table 4. Correlations: personality and consideration of behaviors to feel a thrill

	Openness	Conscientiousness	Extraversion	Agreeableness	Neuroticism
Openness	1	-0.184	0.406**	-0.101	-0.083
Conscientiousness	-0.184	1	0.140	0.218	-0.276
Extraversion	0.406**	0.140	1	0.148	-0.208
Agreeableness	-0.10	0.218	0.148	1	-0.00
Neuroticism	-0.083	-0.276	-0.208	-0.00	1

* $p < 0.05$; ** $p < 0.01$; † $p < 0.001$

Table 5. Personality correlations

	Birth Gender	Gender Identity	Ethnicity	Age	SES	Psych/ Neuro	Trauma
Openness	0.013	0.075	0.052	-0.048	0.003	0.188	0.369*
Conscientiousness	0.198	-0.342*	0.084	0.2989	0.314*	-0.262	-0.07
Extraversion	-0.023	-0.187	0.123	-0.003	0.2595	0.0903	0.23
Agreeableness	-0.193	-0.08	-0.118	-0.0133	0.132	0.0399	-0.062
Neuroticism	-0.1382	0.24	-0.022	-0.468**	-0.261	0.382*	0.059

* $p < 0.05$; ** $p < 0.01$; † $p < 0.001$

Table 6. Personality and demographics

	Birth Gender	Gender Identity	Ethnicity	Age	SES	Psych/ Neuro	Trauma
Openness	0.013	0.075	0.052	-0.048	0.003	0.188	0.369*
Conscientiousness	0.198	-0.342*	0.084	0.2989	0.314*	-0.262	-0.07
Extraversion	-0.023	-0.187	0.123	-0.003	0.2595	0.0903	0.23
Agreeableness	-0.193	-0.08	-0.118	-0.0133	0.132	0.0399	-0.062
Neuroticism	-0.1382	0.24	-0.022	-0.468**	-0.261	0.382*	0.059

* $p < 0.05$; ** $p < 0.01$; † $p < 0.001$

Appendix A

Informed Consent Form

CONSENT TO PARTICIPATE IN RESEARCH

- ❖ Purpose

This is a study being conducted by Grace Freeman, an undergraduate student at Rochester University in Rochester Hills, Michigan. The purpose of this research is to study different personality types and risk-behaviors.
- ❖ Procedures

You will first take the Big-Five Personality Test. Then, you will be asked to complete survey questions regarding your demographics, risk-behaviors you have participated in, and risk-behaviors you have considered participating in. Any information you provide here will remain confidential and anonymous; no identifying characteristics will be connected to your responses. You will be issued a number to assure confidentiality in the statistics and written publication, as well as in any presentation of findings.
- ❖ Conditions of Participation
 - I understand that I am free to withdraw my consent and discontinue my participation at any time without negative consequences.
 - I understand that my participation in this study is voluntary.
 - I understand that my participation is confidential.
- ❖ Risks and Benefits
 - Risks:
 - Participant may feel discomfort, frustrated or disappointment at survey questions
 - Benefits:
 - Assisting a college student in completing the project may result in positive feelings.
 - Participants will help answer questions of research.
- ❖ Statement of Consent: I have carefully studied the above and understand this agreement. I freely consent and voluntarily agree to participate in this study.

Your Signature _____ Date _____
 Your Name (printed) _____

If at any time you have questions about this study or about your rights as a research participant, please contact Grace Freeman by telephone at 248-224-2709 or by email at gfreeman@rochesteru.edu or Faculty Sponsor, Dr. Matyas, by telephone at 248-218-2157 or by email at jmatyas@rochesteru.edu

Appendix B

Demographics

You will be asked a series of demographic questions.

I was assigned _____ at birth:

__Male __Female

I identify as:

__Female __Male __Prefer not to say __Non-Binary __Other...

What is your ethnicity?

__African American/Black __Asian __Latinx __Middle Eastern __Native American/ Indigenous

__White/Caucasian __Prefer not to say __Other...

How old are you?

What is your Socioeconomic Status?

__Upper class __Middle-upper class __Middle class __Middle-lower class __lower class __prefer not to say

__Other...

Do you have any existing mental or neurological conditions? If you prefer not to answer, type "prefer not to answer"

Have you undergone any significant physical trauma or mental trauma? If you prefer not to answer, type "prefer not to answer"

__yes __No __Prefer not to answer

Do you have any physiological (physical) medical conditions? If you prefer not to answer, type "prefer not to answer"

Appendix C

Big Five Questionnaire

Please Take the Big 5 Personality test here, you will be asked to input your scores later in this survey: <https://www.outofservice.com/bigfive/>

What was your percentage for openness?

What was your percentage for conscientiousness?

What was your percentage for extraversion?

What was your percentage for agreeableness?

What was your percentage for neuroticism?

Appendix D

Risky Behavior Participation and Consideration

Frequency of Risky Behavior

You will now be asked to fill out a grid regarding your participation in and consideration of participating in risky behaviors. All responses will be confidential. Select "3" if you have done this in the last month, "2" if you have done this in the last year, "1" if you have not done this within the last year, and "0" if you have never done this. ONLY SELECT ONE ANSWER PER ROW.

	3	2	1	0
Classified Online				
Shoplifting				
Driving 10 mph Over Speed Limit				
Spree Gambling				
Used Crack Cocaine				
Purchased Drugs				
High-Risk Sexual Encounters				
Irregularly Shopped				
Engaged in Physical Violence				
Performed Sex for Money or Drugs				
Attempted Suicide				
Used Black-out Drugs				
Used Hallucinogens, LSD, Mushrooms				
Used Marijuana				
Came to Work Intoxicated				
Attacked Someone with a Weapon				
Threatened Sex for Money or Drugs				
Threatened Someone with a Weapon				
Used Heroin				
Vandalism				
2+ Alcoholic Drinks in 2 hrs or Less				
Used Hot Sex				
Used Drugs				
Robbed Someone				
Overeating or Excessive Eating				
Multiple Drugs at Once				
Legal Gambling/Lottery				
Illegal Gambling				
Abused Prescription Medications				
Impulsive Eating				
Ran Red Lights/Stop Signs				
Stole Money				

Please select based on the following number equivalencies:

0= I did not do this, 1= "I have done this to stop feeling overwhelmed, 2= I have done this to feel a thrill, 3= I am not sure why I did this.

I did this because...

	3	2	1	0
Gunshot Online				
Shoplifting				
Driving 10 mph Over Speed Limit				
Sports Gambling				
Used Crack/Cocaine				
Purchased Drugs				
High-Risk Sexual Encounters				
Impulsively Shopped				
Engaged in Physical Violence				
Performed Sex for Money or Drugs				
Attempted Suicide				
Gotter Black-out Drink				
Used Stimulants (e.g., ADHD Medication)				
Used Marijuana				
Got to Work Intoxicated				
Attacked Someone with a Weapon				
Threw Something in Anger/Frustration				
Non-Suicidal Self-Harm				
Gunshot More Money than You Had				
Threatened to Physically Harm Someone				
Threatened Someone with a Weapon				
Used Heroin				
Vandalism				
1+ Alcoholic Drinks in 1 hr or Less				
Paid for Sex				
Sold Drugs				
Rolled Someone				
Overeating or Excessive Eating				
Multiple Drugs at Once				
Legal Gambling Lottery				
Illegal Gambling				
Abused Prescription Medication				
Impulsive Eating				
Eye Red Lighter/Stop Signs				
Spoke Money				

Risky Behavior Consideration

Please select based on the following number equivalencies:

2= I have considered doing this to feel a thrill, 1 = I have considered this to stop feeling overwhelmed, 0= I have not considered doing this.

I have CONSIDERED doing this because...

	2	1	0
Gunshot Online			
Shoplifting			
Driving 10 mph Over Speed Limit			
Sports Gambling			
Used Crack/Cocaine			
Purchased Drugs			
High-Risk Sexual Encounters			
Impulsively Shopped			
Engaged in Physical Violence			
Performed Sex for Money or Drugs			
Attempted Suicide			
Gotter Black-out Drink			
Used Stimulants (e.g., ADHD Medication)			
Used Marijuana			
Got to Work Intoxicated			
Attacked Someone with a Weapon			
Threw Something in Anger/Frustration			
Non-Suicidal Self-Harm			
Gunshot More Money than You Had			
Threatened to Physically Harm Someone			
Threatened Someone with a Weapon			
Used Heroin			
Vandalism			
1+ Alcoholic Drinks in 1 hr or Less			
Paid for Sex			
Sold Drugs			
Rolled Someone			
Overeating or Excessive Eating			
Multiple Drugs at Once			
Legal Gambling Lottery			
Illegal Gambling			
Abused Prescription Medication			
Impulsive Eating			
Eye Red Lighter/Stop Signs			
Spoke Money			

Appendix E

Disclosure Statement

This study's goal is to study the relationship between personality traits and risk behaviors in order to produce a framework for future research. By acquiring information about people's internal and external processes and how they relate to behavior, we can help the psychological and legal community better understand the individual and their qualities behind the action(s) performed.

All of your information will remain confidential. When the study is published, your name will not be linked to any response.

By checking the box below, you agree to allow the researchers to use your anonymous information, and you agree that the information provided was truthful and accurate to the best of your knowledge/ability.

If you choose to inquire about any results later on, please contact Grace Freeman at gfreeman@rochesteru.edu.