

# Personality Characteristics as Predictors of Health Risk Behaviors

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## Abstract

*This study examines personality characteristics as predictors of risky behavior, utilizing the widely accepted Big Five personality dimensions as indicators. The Big Five dimensions include: extraversion, agreeableness, conscientiousness, neuroticism, and openness. Researchers utilized a 2005 Youth Risk Behavior Survey that investigates different types of risky behavior and for our purposes we utilized: delinquency, smoking & drinking, disorderly eating, and engagement in risky sexual behavior. Previous research has shown varying relationships between personality dimensions and risky health behavior. In addition, some problem behaviors have been investigated more thoroughly than others. Utilizing anonymous questionnaires, researchers surveyed 272 college undergraduates. For each risky behavior we predicted specific outcomes on each personality dimension. Some predictions are in line with previous research whereas others aimed to clarify those dimensions marked by the most variation. Researchers found agreeableness to be correlated with most delinquent behavior. Researchers also found gender differences in extraversion, agreeableness, and emotional stability, as well as various health risk behaviors.*

## Introduction

Language provides us with a tool that allows us to describe differences in people and further, these adjectives have allowed researchers to take a lexical approach in identifying personality dimensions (McCrae & John, 1992). It is hypothesized that traits that describe individual differences of personality would have become encoded in our language as adjectives (McCrae & John, 1992). These adjectives were clustered and analyzed to form what researchers have adopted as the Big Five or also known as Five-Factor Model (FFM) as the main representation of personality. These personality dimensions are extraversion (E), agreeableness (A), conscientiousness (C), neuroticism or lack of emotional-stability (N), and openness to experience (O). Research in identifying personality dimensions started in the 1960s, but seemed to disappear until the 1980s, when many researchers agreed that these were fundamental dimensions of personality (McCrae & Costa, 1986; McCrae & John, 1992). The following descriptions of the Big Five are in terms of higher scores: extraversion is characterized as being energetic, talkative, sociable; agreeableness is characterized as being friendly, trusting, generous, and tolerant; conscientiousness is considered as being cautious, orderly, dependable, graceful, and responsible; neuroticism is characterized as being terse, anxious, and emotionally-unstable; openness is considered to be imaginative, and focused on wisdom, art, knowledge, and objectivity (Friedman & Schustack, 2003; Goldberg, 1990; McCrae & John, 1992).

There are many implications for the use of this personality taxonomy. It could be extremely helpful in its application in a clinical setting when concerning psychopathology. It would also be helpful to administer a personality assessment to find out how one varies in agreeableness before hiring them as an employee to work in a group setting. More importantly, it could be useful in predicting risky behavior such as, smoking, drinking, unprotected sex, counterproductive behavior, delinquency, eating disorders, and other aberrant behavior. According to McCrae and John (1992), the FFM can predict external phenomena with notable validity.

The rest of the paper will be a review of the literature that investigates various problem behaviors such as delinquency, smoking and drinking, disordered eating, and risky sexual behavior in relation to the

Big Five. From this literature, hypotheses will be made for each of the Big Five dimensions and each of the problem behaviors.

## Delinquency

There are many factors that can contribute to delinquency, but most interesting was that less shyness and higher levels of emotional instability displayed at an early age was a predictor of an increased frequency of delinquent behavior (Leech, Day, Richardson, & Goldschmidt, 2003). Leech et al. used the Emotionality-Activity-Sociability and Shyness scale to find those attributes, which seem similar to extraversion and neuroticism of the Big Five. In addition, one study found support for neuroticism as being the best predictor of risky behavior (Lauriola & Levin, 2001). However, another study found that extraversion and neuroticism displayed little correlation with delinquency, whereas agreeableness showed the most support for this type of behavior (Heaven, 1996). In a study of school absenteeism, researchers found that openness, conscientiousness, and emotional stability were all negatively correlated to absences (Lounsbury, Steel, Loveland, & Gibson, 2004), and increased absences were correlated with increased drop-out rates, gang membership, and lower IQ scores. Another study found conscientiousness to be a valid predictor of counterproductive behavior (Salgado, 2002) like absenteeism. In addition to these findings about conscientiousness, one study found that it negatively correlated with the number of times inmates had been arrested, showing that people involved in repeated criminal activity go about it in uncontrolled ways (Clower & Bothwell, 2001). Identifying students, by way of the Big Five, who have frequent absences or early signs of involvement in delinquent behavior could help school counselors be more successful in their intervention (Lounsbury, Steel, Loveland, & Gibson, 2004). Unfortunately, there seems to be some consensus on only one or two dimensions of the Big Five, indicating that more research is needed in this area.

## Smoking and Drinking

Another health risk behavior that researchers have investigated are that of smoking and drinking. The research that has been done investigating neuroticism, extraversion, and smoking have had inconclusive findings (Shadel, Niaura, Goldstein, & Abrams, 2000) and requires more research. An interesting finding is that of openness and nicotine dependence, which notes that smokers who view themselves as being more independent or original are less dependent on nicotine (Shadel, Niaura, Goldstein, & Abrams, 2000). Additionally, high extraversion scores are also related to smoking (Wilkinson & Abraham, 2004) along with high self-esteem which is usually a characteristic of high extraversion scores (Robins, Tracy, Trzesniewski, Potter, & Gosling, 2001). Different types of drinking, like average daily consumption, are also correlated with extraversion (Kubicka, Matejcek, Dytrych, & Roth, 2001), whereas low conscientiousness is the best predictor of the most drinking per episode according to the same study. High extraversion scores are also linked to lower parental control and support (Wilkinson & Abraham, 2004), making it difficult to attribute drinking to the extraversion or the lack of parental influence.

## Eating Disorders

There has been little research using the Big Five to investigate anorexia and the studies that have been conducted show mixed results concerning one or two of the Big Five factors (Bollen & Wojciechowski, 2004; Ghaderi & Scott, 2000). One study had a control group containing more elderly people than the eating disorder sample, which makes it difficult to generalize their findings (Bollen & Wojciechowski, 2004). Another study differentiated between the subtypes of anorexia (anorexia nervosa restricting subtype and anorexia nervosa binge-eating/purging subtype) and the Big Five, where they found anorexia nervosa-restricting (AN-R) participants to have higher conscientiousness scores when compared to those in the anorexia nervosa-binge-eating/purging (AN-BP), while both subtypes had higher levels of neuroticism compared to the control group (Bollen & Wojciechowski, 2004). Ghaderi and Scott (2000) found similar results in regards to neuroticism, but opposite findings for conscientiousness; in addition the researchers found lower levels of agreeableness and openness in their eating disorder group when compared to the control group. It is clear that personality is a factor in those who partake in disordered

eating and it is evident that both neuroticism and conscientiousness are factors, but more research is needed to examine the effects of agreeableness and openness in relation to eating disorders.

## Risky Sexual Behavior

Risky sexual behavior (RSB) has been attributed to sensation seeking (Gullette & Lyons, 2005; Shafer, 2001), which is related to high levels of extraversion. RSB can be unprotected sex (Gil, 2005) that would increase the risk of HIV and other sexually transmitted diseases; furthermore RSB can be sexual encounters that draw from impulsivity. This is also one area where gender is consistently investigated and one study found that males more than females report involvement in RSB at a higher frequency (Gil, 2005). Despite the support for sensation seeking being correlated with RSB (Gullette & Lyons, 2005), Bryan and Stallings (2002) hypothesized there to be a relationship between novelty seeking and RSB because of the correlation between novelty seeking and substance abuse, but to their surprise they found no relationship between novelty seeking and unprotected sexual activity. Bryan and Stallings (2002) also found the individuals who displayed lower levels of reward dependence (which they describe as warm, sensitive, and dependent) engaged in higher rates of RSB. Warmth, sensitivity, and dependence seem similar to the dimensions of agreeableness and conscientiousness according to the trait descriptive adjectives in Goldberg (1990); in addition it makes sense that lower levels of agreeableness and conscientiousness would cause problems because a higher conscientiousness score would be conducive to functioning well in society (Hayes & Joseph, 2003).

## The Present Study

For each risky behavior we predicted specific outcomes on each personality dimension. Some predictions are in line with previous research, whereas others aimed to clarify those dimensions marked by the most variation. Concerning delinquency, we expected high scores for extraversion and neuroticism and low scores for agreeableness, conscientiousness and openness. For smoking and drinking we expected high scores in extraversion, neuroticism, and openness, and a low score in conscientiousness, while expecting little or no correlation with agreeableness. As for eating disorders, we expected high scores in conscientiousness and neuroticism, and low scores in extraversion, agreeableness, and openness. Lastly, for risky sexual behavior, we expect high scores in extraversion and openness, and low scores for agreeableness and conscientiousness, while expecting little or no correlation with neuroticism.

## Method

### Sample

Participants were (males = 95, females = 177) freshman college students from a large western state university who participated for points toward their Psychology 101 grades. The majority of participants were freshmen level students (freshmen = 203, sophomores = 48, juniors = 18, seniors = 3) and Caucasian (Caucasian = 227, African-American = 5, Hispanic = 21, Asian = 5, other = 11). All participants were treated in accordance with the “Ethical Principles of Psychologist and Code of Conduct,” publication manual (American Psychological Association., 2001).

### Materials

*Personality.* The participants were given BFI-54 personality inventory for measuring the Big Five personality dimensions: Extraversion, Agreeableness, Conscientiousness, Neuroticism, and Openness (John & Srivastava, 1999). Students answered items about how they perceived themselves being, such as, ‘I see myself as someone who is original, comes up with new ideas.’ Each item was rated on a five-point Likert scale, which ranged from disagree strongly (A) to agree strongly (E).

*Health risk behavior.* Students were given the 2005 State and Local Youth Risk Behavior Survey to measure how frequently and what types of delinquent acts the participants had been involved in. This survey covers many different health risk behaviors, but for this study researchers used questions concerning behaviors of interest. We used questions concerning violence-related behaviors, suicide behaviors, tobacco use, alcohol use, marijuana use, other drug use, sexual behavior, and body weight dissatisfaction.

## Procedure

Participants were asked to complete the survey anonymously while under supervision. They were asked to answer each question as they are and not how they would like to be and were informed that the results would be used for research purposes. Survey took about 15-20 minutes to complete. Students were informed that if at any time they felt uncomfortable due to the questions they could stop and would not be penalized.

## Results

To examine the relationship between personality dimensions and health risk behaviors we ran Pearson's *r* correlations between each personality dimension and all health risk behaviors. These correlations are shown in Table 1. Within delinquency, we found violence was significantly negatively correlated with agreeableness, but not with extraversion, conscientiousness, emotional stability, or openness. Suicide was found to have a strong negative correlation with emotional stability, but not with extraversion, agreeableness, conscientiousness, or openness. Marijuana use displayed a significant negative correlation with agreeableness and a positive correlation with openness, but no correlation was found concerning extraversion, conscientiousness, or emotional stability. Other drug use was found to have a strong negative correlation with agreeableness, but not with extraversion, conscientiousness, emotional stability, or openness. Within smoking and drinking, tobacco displayed a negative correlation with agreeableness and conscientiousness, but no correlation with extraversion, emotional stability, or openness. Alcohol was significantly positively correlated with extraversion, but no significance was found between alcohol use and agreeableness, conscientiousness, and openness. It should be noted that the relationship between emotional stability and alcohol approached statistical significance. There were no statistically significant relationships found between risky sexual behavior and personality. Body weight satisfaction was significantly positively correlated with agreeableness and significantly negatively correlated with emotional stability, but no significant correlations were found concerning extraversion, conscientiousness, or openness.

Table 1. Correlations Between Personality and Various Health Risk Behaviors

	Extraversion	Agreeableness	Conscientiousness	Emotional Stability	Openness
Violence	-.06	-.23**	-.08	.04	-.05
Suicide	-.01	-.02	-.00	-.27**	.09
Tobacco	-.10	-.24**	-.19**	-.08	.04
Alcohol	.13*	-.06	-.05	.11	.06
Marijuana	-.03	-.13*	-.07	.09	.13*
Other Drugs	-.11	-.18**	-.09	-.06	.10
Bodyweight Dissatisfaction	.10	.13*	-.02	-.24**	.02

Note: \* $p < .05$ , \*\* $p < .01$

We examined gender differences in personality, as well as health risk behaviors by utilizing a two-tailed t-test. Many statistically significant differences were found. A significant difference was found concerning extraversion, with females ( $M = 23.27, SD = 6.86$ ) tending to be more extraverted than males ( $M = 20.73, SD = 6.19$ ),  $t(270) = 3.01, p < .003$ . Agreeableness also displayed statistically significant differences between females ( $M = 25.01, SD = 5.81$ ) and males ( $M = 22.99, SD = 5.00$ ) showing that females tend to be more agreeable than do males,  $t(270) = 3.00, p < .003$ . Another statistically significant finding is that of emotional stability, with males ( $M = 19.85, SD = 6.49$ ) tending to be more emotionally stable when compared to females ( $M = 15.86, SD = 5.57$ ),  $t(270) = -5.32, p < .00$ . Significant differences in participation in violence displayed a drastic difference between males ( $M = 4.08, SD = 5.84$ ) and females ( $M = 1.74, SD = 2.52$ ),  $t(270) = -4.60, p < .00$ . Also, males ( $M = 10.66, SD = 6.69$ ) tend to participate in the consumption of alcohol significantly more when compared to females ( $M = 8.72, SD = 4.98$ ),  $t(270) = -2.72, p < .007$ , also males ( $M = 5.74, SD = 5.45$ ) tend to participate in marijuana usage more than females ( $M = 3.14, SD = 3.70$ ),  $t(270) = -4.66, p < .00$ . Males ( $M = 2.59, SD = 4.46$ ) also displayed significantly higher levels of other drug use compared to females ( $M = 1.10, SD = 2.60$ ),  $t(270) = -3.46, p < .001$ . Body weight dissatisfaction was significantly higher in females ( $M = 6.07, SD = 2.33$ ) compared to males ( $M = 4.62, SD = 2.14$ ),  $t(270) = 5.04, p < .00$ .

There were virtually no differences between males ( $M = 21.78, SD = 5.63$ ) and females ( $M = 23.03, SD = 5.07$ ) in respect to conscientiousness,  $t(270) = 1.86, p = .06$ , same is true concerning openness  $t(270) = -.34, p = .734$ . There was no statistical significance found between females ( $M = .93, SD = 1.32$ ) and males ( $M = .65, SD = 1.10$ ) when concerning suicide,  $t(270) = 1.74, p = .08$ . There was no statistical significance found between females ( $M = 8.93, SD = 5.84$ ) and males ( $M = 9.26, SD = 5.66$ ) concerning risky sexual behavior  $t(270) = -.46, p = .65$ .

Table 2. Means and Standard deviations in Gender Differences Displayed between Personality Dimensions and Various Health Risk Behaviors

		Mean	SD	t
Extraversion	Female	23.27	6.86	3.01**
	Male	20.73	6.19	
Agreeableness	Female	25.11	5.81	3.00**
	Male	22.99	5.00	
Emotional Stability	Female	15.86	5.57	-5.32***
	Male	19.85	6.49	
Violence	Female	1.74	2.52	-4.60***
	Male	4.08	5.84	
Tobacco	Female	5.24	6.59	-2.33*
	Male	7.41	8.53	
Alcohol	Female	8.72	4.98	-2.72**
	Male	10.66	6.69	
Marijuana	Female	3.14	3.70	-4.66***
	Male	5.74	5.45	
Other Drugs	Female	1.11	2.60	-3.46***
	Male	2.59	4.46	
Bodyweight Dissatisfaction	Female	6.07	2.33	5.04***
	Male	4.62	2.14	

Note: \* $p < .05$ , \*\* $p < .01$ , \*\*\* $p < .001$

## Discussion

Research concerning the predictive power of personality and its dimensions has been of great interest, and we have set out to contribute to the body of literature. Examining personality characteristics as predictors of risky health behaviors was the goal of this study. Some of our hypotheses were confirmed, whereas other correlations failed to reach statistical significance.

Our results suggest there are correlations between personality dimensions and all risky behaviors investigated in this study, except risky sexual behavior. Our hypothesis of higher scores in extraversion and neuroticism was not found, but lower scores for agreeableness were found to be significant concerning delinquency. Participants who scored lower on agreeableness typically scored higher in the rate of violent acts they participated in, a finding in line with Heaven's study (1996). Also, those who scored higher in agreeableness were typically female, thus engaging in fewer acts of violence. This was also confirmed by our data with significant differences between men and women in violence and agreeableness, females scoring higher in agreeableness and lower in violence. This makes sense considering the dimension of agreeableness. Those who score low are likely to be argumentative, uncooperative, or unsympathetic, thus engaging in violent acts with increasing frequency. To our surprise, although we expected those involved in more acts of violence to have scored significantly higher in neuroticism as proposed by Lauriola and Levin (2001), statistical significance was not reached. One possible reason for neuroticism not being significantly correlated to violence is possibly because of our finding of neuroticism and gender. Our study demonstrated that females tend to be more neurotic than males, yet engage in fewer acts of violence. We found support only for agreeableness when correlating the Big Five to violence. Identifying those individuals who score low in agreeableness, specifically in school settings, would allow school counselors to better help students.

Drug use, more specifically marijuana use, was negatively correlated with agreeableness, as it was with violence. Also measured were a variety of other drugs, such as cocaine and methamphetamines, which were also negatively correlated with agreeableness. It seems that most socially unacceptable behaviors (e.g., violence, marijuana use, other drug use) are negatively correlated with agreeableness, making it a better predictor of delinquency. It is no surprise that violence, marijuana use, and other drug use are all negatively correlated with agreeableness due to the anti-social nature of these behaviors.

Second, openness was not positively correlated with smoking or drinking as suggested by the literature. Agreeableness displayed the strongest negative correlation with smoking, which was predicted to have little effect. Considering how previous literature supports the correlation between smoking and openness, we now can see how people who consider themselves as original and different, could be considered argumentative, uncooperative, or less agreeable. As predicted, low levels of conscientiousness were related to higher participation in smoking behaviors. Also found were gender differences in smoking, where males engaged in smoking behaviors more often than females. In our study, males were less agreeable than were females, indicating that males should engage in smoking behaviors more than females, which was supported by the results. As for drinking, extraversion displayed the strongest correlation, which is in line with previous research (Robins, Tracy, Trzesniewski, Potter, & Gosling, 2001) and seems to be the most agreed upon relationship. One relationship that is difficult to understand is gender differences found in extraversion. Because females tend to be more extraverted, they ought to engage in more drinking, yet males tend to engage in drinking more frequently. This relationship needs further investigation.

Third, neuroticism seemed to be the best indicator of individuals engaged in disordered eating, which was in line with our hypothesis and previous research. It seems that those individuals who are emotionally reactive tend to engage in disordered eating more frequently. Females also engaged in disordered eating more frequently than males, which was supported by previous research. We hypothesized that agreeableness would have little or no effect, yet agreeableness was positively correlated with disordered eating. This could be because individuals who tend to be agreeable tend to be cooperative and stress blending in socially, thus trying to associate themselves with their peers or the media. This relationship needs more investigation, specifically the peer relationships of those who engage in disordered eating.

Fourth, sexual behavior was not significantly correlated with any of the Big Five dimensions. It could be possible that there were too few questions concerning sexual behaviors and more information about sexual behaviors would result a correlation with personality. There was a lack of gender differences as well, despite males being more involved in sexual behavior, the relationship was not significant. Perhaps, the lack of finding is due to the conservative nature of the environment in which they live. Also,

the majority of the participants were freshmen and it could be that many of them are now just starting to explore their sexuality.

It is evident that there are indeed relationships between personality and risky health behaviors. In this study, agreeableness seems to be the best predictor for delinquent behavior, but only in males. Males tended to be less agreeable than females, thus males tended to be involved in more violent acts, more tobacco use, and more illegal drug use in general. Whereas females compared to males, would participate in less violent acts, tobacco use, and illegal drug use. The predictive power of agreeableness should be investigated in future research specifically examining gender differences. It could be that males and females view agreeableness differently.

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