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THE ASSOCIATION BETWEEN PERSONALITY DYSFUNCTION AND ALCOHOL AND SUBSTANCE USE PROBLEMS IN EMERGING ADULTS

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ABSTRACT

THE ASSOCIATION BETWEEN PERSONALITY DYSFUNCTION AND ALCOHOL AND SUBSTANCE USE PROBLEMS IN EMERGING ADULTS

Irma Sham

This study examined the association between dimensions of personality problems (negative affectivity, detachment, antagonism, disinhibition, and psychoticism) and alcohol and substance use problems in emerging adults. The sample of 169 participants was used for data analysis. Participants were recruited online via MTurk and a student research participant pool. We found that there is a correlation between the overall personality dysfunction and alcohol and substance use problems. However, only disinhibition, detachment, antagonism, and psychoticism were correlated with alcohol and substance use problems. Multiple regression was used to compare the relative strength of association of variables correlated with alcohol and substance use problems, and it was found that disinhibition and antagonism remained significant predictors of alcohol and substance use problems while controlling for all five personality dimensions. We also found that hostility and paranoia were correlated with alcohol and substance use problems. In our last hierarchical regression analysis, we found that only Psychoticism, Hostility, Paranoia, and Self-Depreciation remained significant predictors of alcohol and substance use.

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Introduction

In the last 75 years personality psychologists employing the lexical method (Goldberg, 1990) have achieved some level of consensus that personality can be described along five dimensional traits, often referred to as the Big Five. The Big Five model is based on empirical observations that five broad factors typically emerge in factor analyses of ratings of broad pools of personality descriptors, including both adjectives culled from dictionaries and scales from existing personality questionnaires (John, Naumann, & Soto, 2008; Markon et. al., 2005 as cited in DeYoung et al., 2016). The Big Five theory of personality posits that there are five dimensions of personality factors which consist of Openness to experience, Conscientiousness, Extraversion, Agreeableness and Neuroticism (DeYoung et al., 2016). The personality traits dimensions have impressive explanatory power and are associated with a wide range of outcomes including physical health, career choices, coping, psychosocial adjustment, and psychiatric functioning and personality disorders (McAdams & Pals, 2006: Carver & Conor-Smith, 2010).

Personality Disorders were traditionally conceptualized as categorical, but more recently, a number of research groups have extended personality trait dimensional models to personality disorders and dysfunction. For example, the DSM-5 retained the 10 personality disorders listed in the DSM-IV (paranoid, schizoid, schizotypal, antisocial, borderline, histrionic, narcissistic, avoidant, dependent, and obsessive-compulsive,). But in Section III (Emerging Measure and Models) also proposes an "Alternative DSM-5 Model for Personality Disorders" (AMPD; APA 2013) which conceptualizes personality disorder traits in a dimensional framework, consisting of five dimensions that are mostly

consistent with the Big Five model. The five dimensions of personality dysfunction that have a resemblance are Negative Affectivity (vs. Emotional Stability), Detachment (vs. Extraversion), Antagonism (vs. Agreeableness), Disinhibition (vs. Conscientiousness), and Psychoticism (vs. Lucidity). These dimensions of the AMPD reflect an extreme pole of one the dimensions of the Big Five. Although the DSM-5 is more "focuses on personality traits that are associated with psychopathology, which is the traditional interest of the DSM classification system, it also recognizes the existence of healthy polar opposites, that is, adaptive and resilient personality traits, which are usually assessed by "normal" personality inventories" (APA, 2013 as cited by Góngora, & Castro Solano, 2017, p. 1).

As the field of personality psychology continues to develop and refine models of personality, and personality dysfunction, numerous researchers have started to try to link individual differences in personality and personality dysfunction to psychiatric problems and dysfunctional behavior like alcohol and substance abuse problems. Most of this research has used the Big Five framework. However, interest in this connection dates back almost a century. Psychologist William McDougall was among the first to hypothesize differential sensitivity to alcohol-reward for individuals high in extraversion, observing that an extraverted personality is easily affected by the influence of alcohol (McDougall, 1929, as cited in Fairbairn et al. 2015). According to McDougall (Fairbairn et al., 2015), his survey study obtained the result that individuals who are high in extraversion consistently report deriving more reward from alcohol in their everyday drinking settings than those who are low in extraversion.

More contemporary research has examined the relationship between alcohol and other substance use disorders (SUDs) and The Big Five personality traits (neuroticism, extraversion, openness to experience, agreeableness, and conscientiousness) (Dash et al., 2019). According to Dash et al (2019) alcohol use disorder was associated with neuroticism, disinhibition and also low conscientiousness. SUD was also associated with neuroticism, disinhibition, low conscientiousness, low extraversion and low agreeableness (Kotov, 2010 as cited in Dash et al., 2019). Sher, Grekin & Williams (2005) also added that individuals with alcohol use disorder (AUD) tend to score higher on self-report measures of neuroticism and negative emotion than the non-alcoholic ones. Research has been able to find the relationship between alcohol and other substance use disorders (SUDs) with negative emotionality, positive emotionality, and disinhibition/low constraint, and neuroticism, extraversion, openness to experience, agreeableness, and conscientiousness (Dash et al., 2019).

According to Ball (2005) one of the indicators of disinhibition such as low conscientiousness is related to multiple measures of substance use, including severity of substance dependence, polysubstance use, earlier age of use, and also poor treatment response. Impulsivity and disinhibition have consistently been associated with alcohol use disorder as many studies concluded (Sher, Grekin & Williams, 2005). Thus, individuals with AUD tend to exhibit high rates of cluster B (dramatic/impulsive) personality disorders (Sher, Grekin & Williams, 2005). Other study from Wills, Vaccaro, and McNamara in 1994 (Flory, et al., 2002, p. 425) found that substance use was particularly elevated for individuals who were high in “novelty seeking, a trait typically thought to be associated with poor behavioral control, risk taking, impulsivity, anger, and

sensation seeking." Flory et al (2002), added two other studies that also found a relationship between personality and substance use: Zuckerman in 1994, where he found the importance of sensation seeking as a personality trait that predisposes the individual to experiment with alcohol or drugs. Another study from Finn, Sharkansky, Brandt, and Turcotte (2000, as cited by Flory, et al., 2002) was able to find the relationship of pleasure seeking and social deviance proneness to alcohol use among young adult offspring of alcoholics. Many other studies have also identified behavioral disinhibition and emotional dysregulation as important factors in the etiology of substance use disorder, and that different personality traits predict distinct patterns of substance use (Baker et al., 2004; Iacono, Malone & McGue, 2008; Tarter et al., 2003 as cited by Magallón-Neri et al., 2015).

Hakulinen et al (2015) conducted a meta-analysis of association between the Big Five personality traits and alcohol consumption across 20 studies (7886 participants); alcohol consumption was higher in individuals with low conscientiousness, low agreeableness, and high neuroticism (Malouff et al., 2007 as cited in Hakulinen, et al., 2015, p. 111). Another meta-analysis study described those individuals with alcohol use disorder had higher levels of neuroticism and lower levels of conscientiousness (Kotov et al., 2010 as cited in Hakulinen, et al., 2015). Additionally, a meta-analysis investigating the associations between conscientiousness and health behaviors in a total sample of 32,137 participants from 65 studies found low conscientiousness to be associated with excessive alcohol use (Hakulinen, et al., 2015).

In this study, we will focus on the association between personality dysfunction (Negative Affectivity, Detachment, Antagonism, Psychoticism, Disinhibition) and

alcohol and substance abuse problems in emerging adults, which is the period from the late teenage years extending to the mid-twenties in which people are still sorting out their options for the future (Feldman, 2020). “The socio-developmental notion of emerging adulthood is a helpful conceptual framework through which to understand risky drinking during the college years” (Arnett 2000, 2005, as cited in Merrill & Carey, 2016, p. 103). During this time, they start to go to college, gain different kinds of independence from their parents, and have more social concerns to fit in with the group. Based on a study from Hustad, et al (2004), college students escalated their drinking at a faster rate after high school, as compared to their non-college attending peers. Merrill and Carey (2016) added that as college students experience living in a residence with their peers—such as a dorm—they often drink heavily and experience a greater number of associated negative consequences. One study that was conducted in 2009 by Park, Sher and Krull found that extraverted students who were selected into Greek societies (college fraternities/sororities) are the individuals who are high on impulsivity/novelty seeking due to the heavy drinking environment that is associated with the organizations (Littlefield & Sher, 2010). The findings of the study suggested that personality contributes to alcohol use disorder through self-selection of a risky group membership that increases problematic drinking behavior through socialization processes (Littlefield & Sher, 2010). American Addiction Centers (AAC), 2021, reported that nearly half of college students met at least one criteria of SUD and according to a 2019 survey, it was found that the highest rate of marijuana and other illicit drugs such as amphetamines, cocaine, hallucinogens and MDMA were found in college student population.

Arnett (2005, as cited in Merrill & Carey, 2016) described five features that characterize the emerging adult (identity exploration, instability, self-focus, feeling in between, and possibilities) that may make emerging adulthood a developmental phase in which emerging adults are particularly vulnerable to using or abusing alcohol or drugs. Identity exploration refers to exploring different kinds of lifestyle options before adopting roles and identity, and it might provoke their anxiety that might lead to alcohol and substance use. Instability refers to changes in friends, educational status, or employment. Alcohol and illicit substances may be used to cope with the anxiety during this transition. The aspect of self-focus refers to increasing independence from their family and starting to make their own decision. In addition, their friends can have more influence on them, and they may be inclined to use alcohol or illicit substances like marijuana, most likely in order to establish friendships (Merrill & Carey, 2016). Then comes feelings in between, where individuals of this age may feel "neither adolescent nor fully adult, and therefore may feel a sense of responsibility in some domains but not others" (Merrill & Carey, 2016, p. 103); they may feel capable of deciding whether or not to use alcohol or other illicit substances but may not feel that they need to conform with adult's behavior. Lastly, "possibilities" refers to the fact that individuals at this stage are neither adolescence nor fully adult, they have such higher positive expectations for the future that might cloud their judgment about how their drinking/substance use habits could bring various negative consequences (Merrill & Carey, 2016). All of the above developmental factors may make emerging adults especially vulnerable to engaging in substance abuse.

The prevalence data on alcohol and substance abuse supports the notion that emerging adulthood is a particularly vulnerable period. According to a national survey,

almost 53 percent of full-time college students ages 18 to 22 drank alcohol in the past month and about 33 percent engaged in binge drinking during that same time frame (Substance Abuse and Mental Health Services Administration [SAMHSA], 2019). Drinking becomes something that is accessible, common at social events and encouraged—sometimes detrimentally—by their peers. Some students come to college with established drinking habits, and the college environment can lead to a problem (National Institute on Alcohol Abuse and Alcoholism [NIAAA], 2021). The prevalence of alcohol use disorder (AUD) among college students from the past year is estimated to be around 30% (Arterberry et al., 2020 as cited in Helle, et al., 2021). During the 21st birthday celebrations or other events like spring break or 4th of July, college students are commonly drinking heavier at this time (Helle, et al., 2021). Helle, et al (2021) also reported that this pattern of drinking is related to structural changes in the maturing brain that may increase future risk of alcohol use disorder. Heavy drinking habits come with various negative consequences for not only the students but also the people around them. The most recent statistics from the NIAAA estimate that about 1,519 college students ages 18 to 24 die from alcohol-related unintentional injuries, including motor vehicle crashes (National Institute of Health [NIH], 2021). Heavy drinking behavior can also lead to assault/sexual assault, academic problems, alcohol use disorder, and other consequences such as health problems, unsafe sexual practices, driving under the influence of alcohol, vandalism, and involvement with the law enforcement (NIAAA, 2021). Meanwhile, on the substance use side, NIH reported that marijuana use on college students has continued to increase over the past five years and has been reaching the highest level in over three and a half decades in 2020. NIH also added that in 2020, about

9% college students reported that they have been using hallucinogens in the past year compared to 2019 where the statistic showed only 5%.

Overall, previous studies revealed that alcohol use disorder was associated with neuroticism, disinhibition, and low conscientiousness. While SUD was associated with neuroticism, disinhibition, low conscientiousness, low extraversion and low agreeableness (Dash et al., 2019). William McDougall concluded that individuals who are high in extraversion consistently report deriving more reward from alcohol in their everyday drinking settings than those who are low in extraversion (Fairbairn et al., 2015). Sher, Grekin & Williams in 2005, found that individuals with (AUD) tend to score higher on self-report measures of neuroticism and negative emotion.

While most previous research has looked at the Big Five (which are dimensions of "normal" or "general" personality) this study will focus further on the AMPD's dimensions of personality dysfunction (negative affect, detachment, antagonism, disinhibition, and psychoticism) and their association with alcohol and substance use problems in emerging adults' population. This study's main outcome variable will be self-reported alcohol and substance use problems.

Hypotheses

1. We predict that personality dimensions such as negative affect, detachment, antagonism, disinhibition, and psychoticism will have a positive correlation to alcohol and substance use problems in college-aged students (emerging adults). Multiple regression will be used to compare the relative strength of association between the five dimensions of personality dysfunction and alcohol and substance use problems.
2. In secondary, exploratory analyses, we will use correlation analyses and multiple regression analyses to examine the strength of association of other aspects of emotional functioning such as hostility, personality such as paranoia, and irrational beliefs, and alcohol and substance use problems.

METHODS

Participants

The total sample of the study included 400 Amazon Mechanical Turk (MTurk) workers and 53 St. John's University undergraduate students. The previously collected data was part of a study approved by the University' Institutional Review Board (IRB) (Protocol #: 0418-20; Original date of approval: 4/20/18). Participants were recruited online via MTurk and a student pool ("SONA") was used to recruit undergraduate participants. From the sample, we extracted the number of emerging adults (ages range from 18-25) as participants for this particular study. The final sample of 169 participants was used for data analysis. Based on the data analysis, it was shown that there were 50 participants who identified as male, 118 were identified as female, and 1 participant was identified as other gender. Mean age for the sample is 20.485, with standard deviation 2.503.

Measures

Alcohol and substance use problems. The alcohol and substance use scale were a modified version of the Psychiatric Diagnostic Screening Questionnaire (PDSQ) alcohol abuse and substance abuse scales which were collapsed together to create one scale. PDSQ is a diagnostic screening developed by Mark Zimmerman and Jill Mattia in 2001. The PDSQ is a brief self-report instrument consisting of 125 yes-or-no items measuring psychiatric symptoms typically seen in outpatient settings. The PDSQ has 13 subscales, Major Depressive Disorder, Generalized Anxiety Disorder, Panic Disorder, Posttraumatic Stress Disorder, Alcohol Abuse/Dependence, Drug Abuse/Dependence, Psychosis, Bulimia/Binge-Eating Disorder, Somatization Disorder, Obsessive–Compulsive Disorder,

Social Phobia, Hypochondriasis and Agoraphobia (Zimmerman and Mattia, 2001). Each PDSQ question was rated on a binary (absent versus present) scale. However, in this study we only used one PDSQ subscale; the internal consistency result was .887 for modified alcohol and drug abuse scale.

Personality Dysfunction. To measure dimensions of personality dysfunction we used a modified 10-item version of the Personality Inventory for DSM-5-Brief Form (PID-5-BF). According to the study from DeYoung and colleagues (2016) the Personality Inventory for the Diagnostic and Statistical Manual of Mental Disorders (5th edition; DSM-V; American Psychiatric Association [APA], 2013) (PID-5) was not intentionally developed to be consistent with the Big Five theory concept. PID-5 consists of 25 scales that were developed to "operationalize experts' understanding of the important symptoms or manifestations of personality disorders as represented in DSM-IV—without attempting to constrain them to any particular higher-order structure" (DeYoung, 2016). PID-5 shows a five-factor structure that has resemblance to the Big Five labeled with: Negative Affectivity (vs. Emotional Stability), Detachment (vs. Extraversion), Antagonism (vs. Agreeableness), Disinhibition (vs. Conscientiousness), and Psychoticism (vs. Lucidity) (DeYoung, 2016). The PID-5-BF is a 25-item self-rated personality trait assessment for adults over 18 years old. This instrument assesses 5 personality traits that include negative affect, detachment, antagonism, disinhibition, and psychoticism (Krueger, et al., 2013). In this study, we used an abbreviated 10-items version. The 10 PID-5-BF items were identified by Falkowski, McDermut, and Walton (2016) as having the highest corrected item-total scale correlations. Participants were instructed to read each item and circle the number that best describes how much they are bothered by those problems

during the past week. Response options for each question ranged from “very false or often false” (0), “sometimes or somewhat false” (1), “sometimes or somewhat true” (2), and “very true or often true” (3). Each personality dysfunction sub-scale consisted of two questions. The possible range for each two-item subscale was 0 to 6. Finally, all ten items were summed to create a “PID-5-BF Total Score,” with a possible maximum score of 30. The internal consistency result was .899 for the 10 PID-5 BF items.

Hostility and Paranoia. We used the 6-item Hostility scale from the Symptom Checklist-90-Revised (SCL-90-R). The SCL-90-R is a 90 item self-report scale developed by Leonard Derogatis in 1994. SCL-90-R was designed to evaluate a broad range of psychological problems and symptoms of psychopathology, such as somatization, obsessive compulsive disorder, interpersonal sensitivity, depression, anxiety, hostility, phobic anxiety, paranoid ideation, and psychoticism. Each question was rated on a scale from zero to four, with zero being “not at all,” one being “a little,” two being “somewhat,” three being “quite a bit,” and four being “extremely. However, in this study we only focus on the hostility and paranoid ideation. Internal consistency reliability for hostility in this dataset is .940, while the internal consistency reliability for paranoid ideation is .927.

Irrational beliefs. To measure irrational beliefs, we used an abbreviated 12-tem version of Attitudes and Beliefs Scale 2 (ABS-2). The ABS-2 is a self-administered measure of rational and irrational beliefs widely used in Rational Emotive Behavior Therapy research (DiGiuseppe et al., 2020). We did not use the rational belief items from the ABS-2. The subscales we used are demandingness, awfulizing, low frustration tolerance, and self-depreciation. Participants rated the questions on a four-point scale

ranging from zero (“Strongly Disagree”) to four (“Strongly Agree”). Total scores on each ABS subscale could range from 0 to 12. Total ABS subscales scores were summed to create a “Total Irrationality” score. The maximum total score possible was 48. Internal consistency reliability for the ABS subscale is .900.

As explained above, this study utilized data that was previously collected as part of another study approved by the University's IRB in 2018. MTurk participants were Amazon Marketplace workers recruited through Amazon Marketplace. In exchange for their participation, MTurk workers were provided with a small monetary reward. The St John’s University undergraduates were taking psychology classes and participated in the study in exchange for course credit. Participants were provided with written informed consent for their involvement in the study. After providing informed consent participants who agreed to be in the study were then asked to answer questions (described above) about their personality, irrational beliefs, and psychological problems (depression, anxiety, substance abuse).

Data Analysis

Descriptive and inferential statistics were calculated using JASP. Data analyses consisted of correlational analysis examining the association between dimensions of personality dysfunction and alcohol and substance use problems. Hierarchical multiple regression was used to determine which dimensions of personality dysfunction are the best predictors of alcohol and substance abuse. Secondary analyses will use correlation and multiple regression analyses to explore the degree of which other measures of

emotional functioning (hostility), psychopathology (paranoia) and irrational beliefs are associated with alcohol and substance use problems.

Results

Table 1 shows Means and Standard Deviations for the alcohol and substance use problems (dependent variable) and all independent variables including dimensions of personality dysfunction, hostility, paranoia, and irrational beliefs, broken down by gender and for the entire sample.

Table 1.

Descriptive Statistics of Total Score on Alcohol and Substance Use and Dimensions of Personality

	Male (n=50)		Female (n=118)		Total (n=168)	
Measure	M	SD	M	SD	M	SD
PDSQAlcSub_Total_Sx	2.14	2.22	0.55	1.26	1.03	1.76
PID5BFDisinhibition	2.22	1.56	0.98	1.38	1.35	1.53
PID5BFNegativeAffect	3.00	1.66	3.64	1.68	3.46	1.70
PID5BFDetachment	2.46	1.79	1.93	1.53	2.08	1.63
PID5BFAntagonism	2.16	1.88	0.75	1.26	1.18	1.60
PID5BFPsychoticism	2.90	1.79	1.86	1.70	2.78	1.79
PID5BF_Total	12.74	6.76	9.16	5.01	10.25	5.79
SCL90Hostility	15.24	6.61	11.03	5.23	12.27	5.97
SCL90Paranoia	9.20	5.81	6.16	5.66	7.03	5.86
ABSDemandingness	6.88	2.39	8.06	3.07	7.71	2.92
ABSAwfulizing	6.50	2.70	5.89	3.22	6.08	3.07
ABSLowFrustation	6.36	2.49	6.53	3.23	6.49	3.01
ABSDepreciation	5.60	2.94	2.74	3.40	3.61	3.51
IrrationalityTotal	24.58	8.12	19.42	10.59	21.01	10.16

Note. PDSQAlcSub_Total_Sx = Total score on Alcohol and Substance Use items from modified version of the Psychiatric Diagnostic Screening Questionnaire, PID5BFDisinhibition = Disinhibition, PID5BFNegativeAffect = Negative Affect, PID5BFDetachment = Detachment, PID5BFAntagonism = Antagonism, PID5BFPsychoticism = Psychoticism, PID5BF_Total = Total score on PID5BF items, SCL90Hostility = Hostility, SCL90Paranoia = Paranoia, ABS = Attitude and Beliefs

Scale, ABSDemandingness = ABS Subscale Demandingness, ABSAwfulizing = ABS Subscale Awfulizing, ABSLowFrustation = ABS Subscale Low Frustation Tolerance, ABSDepreciation = ABS Subscale Self-Depreciation, IrrationalityTotal = Total of Attitude and Beliefs Scale

Table 2 shows Pearson correlations between alcohol and substance use problems and each personality dimension and total personality disfunction. Pearson correlations showed a significant positive, medium to large association, between disinhibition and alcohol and substance use problems was $r(168) = .48$, $p < .001$. Meanwhile, the correlation between negative affectivity and alcohol and substance use problems was low and not statistically significant, ($r = .07$, $p = .384$). Detachment and alcohol and substance use problems had a small to medium, positive significant correlation ($r = .22$, $p = .004$). There was a high correlation ($r = .51$) between antagonism and alcohol and substance use problems. Lastly, the Pearson correlation between psychoticism and alcohol and substance use problems showed a small to medium correlation ($r = .24$). Based on the total personality dysfunction and alcohol and substance abuse problems, it is shown that there is medium to large correlation ($r = .43$).

Table 2.

Pearson correlations between dimensions of personality and alcohol and substance use.

Variables	PDSQAlcSub_Total_SX
PID5BFDisinhibition	0.48***
PID5BFNegativeAffect	0.07
PID5BFDetachment	0.22**
PID5BFAntagonism	0.51***
PID5BFPsychotism	0.24***
PID5BF_Total	0.43***

Note. *p < .05, **p < .01, ***p < .001

PDSQAlcSub_Total_Sx = Total score on Alcohol and Substance Use items from modified version of the Psychiatric Diagnostic Screening Questionnaire, PID5BFDisinhibition = Disinhibition, PID5BFNegativeAffect = Negative Affect, PID5BFDetachment = Detachment, PID5BFAntagonism = Antagonism, PID5BFPsychotism = Psychoticism, PID5BF_Total = Total score on PID5BF items.

Hierarchical multiple regression analysis was used to test which dimensions of personality are the best predictors of alcohol and substance problems. The result of the regression indicated the overall model is significant, $R^2 = .34$, ($F(5,162) = 16.51$, $p < .001$), with the independent variables accounting for 34% of the variance in alcohol and substance use problems. However, we found that of the five dimensions of personality dysfunction only disinhibition, ($\beta = .32$, $t(162) = 4.20$, $p < .001$); and antagonism, ($\beta = .38$, $t(162) = 4.89$, $p < .001$) were significant predictors of alcohol and substance use problems. This result can be interpreted when the value of disinhibition and or antagonism increases, the value of alcohol and substance use problems are also increases.

Table 3.

Multiple regression analyses showing how personality dimensions can predict alcohol and substance use problems.

	PDSQAlcSub_Total_SX				
Predictor	*B*	*SE B*	β	*t*	*p*
PID5BFDisinhibition	0.37	0.08	0.32	4.20	< .001
PID5BFNegativeAffect	-0.04	0.07	-0.04	-0.56	0.57
PID5Detachment	-0.06	0.09	-0.06	-0.72	0.47
PID5BFAntagonism	0.43	0.09	0.39	4.89	< .001
PID5BFPsychoticism	-0.01	0.08	-0.01	-0.15	0.88

Note. PDSQAlcSub_Total_Sx = Total score on Alcohol and Substance Use items from modified version of the Psychiatric Diagnostic Screening Questionnaire, PID5BFDisinhibition = Disinhibition, PID5BFNegativeAffect = Negative Affect,

PID5BFDetachment = Detachment, PID5BFAntagonism = Antagonism, PID5BFPsychotism = Psychoticism.

We then examined the correlations between alcohol and substance use and hostility and paranoia. Pearson correlations showed a positive and significant, medium to large correlation between hostility and alcohol and substance use problems, (r = .44). Paranoia was also significantly positively correlated (r = .34) with alcohol and substance use problems.

Table 4 shows the correlation between total irrational beliefs and types of irrational beliefs with alcohol and substance use problems. The only irrational belief subtype that was significant is depreciation (r = .31).

Table 4.

Pearson correlations between irrational beliefs and alcohol and substance use.

Variables	PDSQAlcSub_Total_Sx
ABSDemandingness	-0.04
ABSAwfulizing	0.14
ABSLowFrustation	-0.02
ABSDepreciation	0.31***
Irrationality_Total	0.25**

Note. *p < .05, **p < .01, ***p < .001

ABSDemandingness = Demandingness, ABSAwfulizing = Awfulizing, ABSLowFrustation = Low Frustration, ABSDepreciation = Self-Depreciation, IrrationalityTotal = Total of Attitude and Beliefs Scale.

The last hierarchical regression analysis included as independent variables all the variables that previously shown to have significant bivariate correlations with alcohol and substance use problems. By conducting a regression analysis, we will be able to re-

examine all the variables that correlated with alcohol and substance use problems while controlling the presence of the other significant variables. Independent variables were dimensions of personality dysfunction (disinhibition, detachment, antagonism, psychoticism), hostility and paranoia, and self-depreciation. The result show that the overall model was significant (F (7,160) = 11.26, $p < .001$). with $R^2 = .33$. Psychoticism (β = .17), hostility (β = .27), paranoia (β = .19), and self-depreciation (β = .17) remained significant predictors of alcohol and substance use problems. Disinhibition, Detachment, and Antagonism were no longer significant predictors of alcohol and substance use problems while controlling for Psychoticism, Hostility, Paranoia, and Self-Depreciation.

Table 5.

Multiple regression analyses showing how alcohol and substance use can be predicted with disinhibition, detachment, antagonism, psychoticism, hostility, paranoia, and self-depreciation

	PDSQAlcSub_Total_SX				
Predictor	*B*	*SE B*	β	*t*	*p*
PID5BFDisinhibition	-0.21	0.22	-0.08	-0.10	0.34
PID5Detachment	0.12	0.20	0.05	0.62	0.54
PID5BFAntagonism	-0.20	0.21	-0.08	-0.90	0.40
PID5BFPsychoticism	0.38	0.19	0.17	2.05	0.04
SCL90Hostility	0.18	0.06	0.27	2.82	0.01
SCL90Paranoia	0.13	0.06	0.19	2.10	0.04
ABSDepreciation	0.19	0.09	0.19	2.15	0.03
R^2			0.33		
F			11.26		

Note. PID5BFDisinhibition = Disinhibition, PID5BFDetachment = Detachment, PID5BFAntagonism = Antagonism, PID5BFPsychotism = Psychoticism, SCL90Hostility = Hostility, SCL90Paranoia = Paranoia, ABSDepreciation = Self-Depreciation.

Discussions

The study demonstrates that there are correlations between most dimensions of personality dysfunction and alcohol and substance use problems. Specifically, the personality dimensions that were correlated with alcohol and substance use problems were disinhibition, detachment, antagonism, and psychoticism. Like prior research, we found a positive correlation between disinhibition and alcohol and substance use problems. This result was aligned with the founding of Dash et al. (2019) who found that alcohol and substance use disorder was associated with neuroticism, disinhibition, low conscientiousness (similar to disinhibition), low extraversion (similar to detachment) and low agreeableness (similar to antagonism).

Unlike Dash et al (2019), the entirely unexpected result came from how negative affectivity was not correlated with alcohol and substance use problems. This result was also inconsistent with the findings obtained by (Witkiewitz & Villarroel, 2009). Who found a reciprocal relationship between negative affect and alcohol use. Another research group (Measelle, Stice, & Springer, 2006) found that adolescents who are at risk for substance use problems are prone to experience certain aspects of negative affect. We are unsure of why we did not find an association between Negative Affectivity and alcohol and substance use problems, but our sample and/or our assessment method.

We also found that detachment had a positive correlation with alcohol and substance use problems. This result is aligned with previous research which found that there was an increase in psychoticism, neuroticism and introversion (detachment) among drug users (Teasdale et al., 1971: Kirkcaldy et al., 2004). In our sample, Antagonism was found to be positively correlated with alcohol and substance use problems. Similarly,

Dash et al (2019) found that alcohol and substance use disorder was associated with low agreeableness (Antagonism). Lastly, this study found a positive correlation between psychoticism and alcohol and substance use problems. This finding is also consistent with results obtained by other researchers (Barkus, 2007).

Multiple regression used to compare the relative strength of association between the five dimensions of personality dysfunction and alcohol and substance use problems. It was found that disinhibition and antagonism are significant predictors of alcohol and substance use problems, while controlling for all dimensions of personality dysfunction. Previous research has found that disinhibition has consistently been associated with alcohol use disorder (Sher, Grekin & Williams, 2005). Antagonism, which is the polar opposite of agreeableness, reflects behaviors that put individuals at odds with others (e.g., callous antipathy, unawareness of others' feelings and needs, and using others for self-enhancement, APA, 2013). Lynam & Miller (2019) also found that Antagonism was also associated with substance use.

We also found that hostility and paranoia were strongly, positively correlated with alcohol and substance use problems. Our findings related to hostility, are consistent with prior longitudinal studies indicating that changes in hostility predict changes in substance use severity over time (Putt et al., 2001: Stover & Kiselica, 2015). According to SAMHSA's 2021 Treatment Improvement Protocols, drugs and alcohol are mind-altering substances and they can cause paranoia during intoxication or withdrawal. The result means that paranoia can result from the excessive consumption of mind-altering substances. Thus, the direction of causality is unclear. Paranoia may lead to alcohol and substance abuse, or alcohol and substance abuse might lead to paranoia. But our study is

unable to determine if paranoia is a distinct construct associated with alcohol and substance abuse, or if paranoia is a proxy for Psychoticism.

Self-depreciation also showed a positive correlation with alcohol and substance use problems. Self-depreciation is a form of self-talk that reflects a cognitive state of negative self-regard (Speer, 2019). This result fits with self-derogation theory (Kaplan et al., 1982: Yockey et al., 2020), which postulates that adolescents and young adults who experience low-self-esteem might engage in risky health behaviors. Again, the direction of causality is unknown. Self-depreciation is a painful emotional state which may lead to self-medication with alcohol and substances, or alcohol and substance use may lead to feelings of failure or loss of control that might lead to self-depreciation (Greenberg et al., 1999). Another possibility is that self-depreciation is a marker for negative affectivity which previous research has found to be associated with alcohol and substance abuse problems.

In our last hierarchical regression analysis, we entered as independent variables only those variables that had significant bivariate correlations with alcohol and substance use problems. We found that only Psychoticism, Hostility, Paranoia, and Self-Depreciation remained significant predictors of alcohol and substance use, whereas the other three personality variables (disinhibition, detachment, antagonism) were no longer significant. The result provides an insight into the relationship between personality dimensions, hostility, paranoia and irrational beliefs with alcohol and substance use problems. Although not all traits of the personality dimensions correlated with alcohol and substance use problems, psychoticism remained correlated and a significant predictor of alcohol and substance use. As noted above, psychoticism could precede alcohol and

substance use problems (National Institute of Drug Abuse [NIDA], 2020), or could be a consequence of alcohol and substance use problems.

This current study was not without limitations. We used a convenience sample. The results only reflect the responses of emerging adults attending undergraduate study at St. John's University combined with an MTurk sample falling in the age range from 18 to 25 years old. As such, the findings cannot necessarily be generalized to the population of all emerging adults. Some of our findings may be sample dependent. Our dependent variable was a compound variable that combined both alcohol and substance use problems. Thus, the variable may mask distinct patterns of association that are specific to alcohol and personality dysfunction or specific to substance use problems and personality dysfunction. Also, relying on self-report measurement of alcohol and substance use problems, personality dimensions, and irrational beliefs can be biased depending on the individual. According to Funder (1991) self-report might be wrong because of failure of recalling memories and insight. Funder (1991) also added how self-report is also becoming a subject of self-representation effect, which is a desire to portray oneself in the most favorable position. Finally, this is a cross-sectional, correlational study and while we can detect associations between variables, we cannot determine the direction of causality.

Future research focusing on emerging adults ideally should recruit randomly sampled participants, to enhance generalizability. Future research should also collect personality data based on clinician ratings or peer- or informant (e.g., family) ratings to bypass some of the problems associated with self-report measures. To determine the direction of causality, a prospective longitudinal study may be more appropriate.

APPENDIX A

12 -item Attitudes and Beliefs Scale II

Please select the response that best describes how much you agree with each of the following statements. Use the following scale to choose your responses.

0. If you STRONGLY DISAGREE
1. If you SOMEWHAT DISAGREE
2. If you are NEUTRAL
3. If you SOMEWHAT AGREE
4. If you STRONGLY AGREE

1	I must do well at important things, and I will not accept it if I do not do well	⓪①②③④
2	It's essential to do well at important jobs; so I must do well at these things.	⓪①②③④
3	I must be successful at things that I believe are important, and I will not accept anything less than success.	⓪①②③④
4	It's awful to be disliked by people who are important to me, and it is a catastrophe if they don't like me.	⓪①②③④
5	Sometimes I think the hassles and frustrations of everyday life are awful and the worst part of my life.	⓪①②③④
6	If loved ones or friends reject me, it is not only bad, but the worst possible thing that could happen to me.	⓪①②③④
7	It's unbearable being uncomfortable, tense or nervous and I can't stand it when I am.	⓪①②③④
8	It's unbearable to fail at important things, and I can't stand not succeeding at them.	⓪①②③④
9	I can't stand being tense or nervous and I think tension is unbearable.	⓪①②③④
10	If important people dislike me, it is because I am an unlikable bad person.	⓪①②③④
11	If I do not perform well at tasks that are very important to me, it is because I am a worthless bad person.	⓪①②③④
12	When people I like reject me or dislike me, it is because I am a bad or worthless person.	⓪①②③④

APPENDIX B

PDSQ ALCOHOL AND SUBSTANCE ABUSE SCALE

For each question, check the box in the *Yes* column if it describes how, you have been acting, feeling, or thinking. If the item does not apply to you, check the box in the *No* column.

Yes	No		DURING THE PAST 6 MONTHS...
☐	☐	1.	Did you think that you were using alcohol or drugs too much?
☐	☐	2.	Did anyone in your family think or say that you were using alcohol or drugs too much, or that you had a drug problem?
☐	☐	3.	Did friends, a doctor, or anyone else think or say that you were using alcohol or drugs too much?
☐	☐	4.	Did you think about cutting down or limiting your alcohol or drug use?
☐	☐	5.	Did you think that you had a alcohol or drug problem?
☐	☐	6.	Because of your alcohol or drug use did you have problems in your relationship or marriage; at your job; with your friends or family; doing household chores; or in any other important area of your life?

APPENDIX C

PID5-BF (10 Items)

Please read each one carefully and circle the number that best describes how much you were bothered by that problem during the past week.

	Item	Very False or Often False	Sometimes or somewhat false	Sometimes or Somewhat True	Very True or Often True
1	People would describe me as reckless.	**0**	**1**	**2**	**3**
2	Even though I know better, I can't stop making rash decisions.	**0**	**1**	**2**	**3**
3	I worry about almost everything.	**0**	**1**	**2**	**3**
4	I get emotional easily, often for very little reason.	**0**	**1**	**2**	**3**
5	I don't like to get too close to people.	**0**	**1**	**2**	**3**
6	I rarely get enthusiastic about anything.	**0**	**1**	**2**	**3**
7	I use people to get what I want.	**0**	**1**	**2**	**3**
8	It is easy for me to take advantage of others.	**0**	**1**	**2**	**3**
9	I often "zone out" and then suddenly come to and realize that a lot of time has passed.	**0**	**1**	**2**	**3**
10	Things around me often feel unreal, or more real than usual.	**0**	**1**	**2**	**3**

Scoring

Disinhibition = 1 + 2

Negative Affect = 3 + 4

Detachment = 5 + 6

Antagonism = 7 + 8

Psychoticism = 9 + 1

APPENDIX D

SCL-90-R Hostility

Please read each one carefully and circle the number that best describes how much you were bothered by that problem during the past week.

	Item	Not at all	A little	Some-what	Quite a bit	Extremely
1	Feeling easily annoyed or irritated	**0**	**1**	**2**	**3**	**4**
2	Temper outbursts that you could not control	**0**	**1**	**2**	**3**	**4**
3	Having urges to beat, injure, or harm someone	**0**	**1**	**2**	**3**	**4**
4	Having urges to break or smash things	**0**	**1**	**2**	**3**	**4**
5	Getting into frequent arguments	**0**	**1**	**2**	**3**	**4**
6	Shouting or throwing things	**0**	**1**	**2**	**3**	**4**

APPENDIX E

SCL-90-R Paranoid Ideation

	In the past week, how much were you bothered by...	**Not At All**	**A Little Bit**	**Moderately**	**Quite A Bit**	**Extremely**
1.	...Feeling others are to blame for most of your troubles	0	1	2	3	4
2.	...Feeling that most people cannot be trusted	0	1	2	3	4
3.	...Feeling that you are watched or talked about by others	0	1	2	3	4
4	...Having ideas or beliefs that others do not share	0	1	2	3	4
5	...Others not giving you proper credit for your achievements	0	1	2	3	4
6	...Feeling that people will take advantage of you	0	1	2	3	4

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