

The Two Facets of Narcissism: Dimensional Relations with Self-Injurious Behaviour and
Multiple Substance Use

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Running head: Narcissism, SIB, and SUDs

Acknowledgements

Declaration

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Abstract

Narcissistic Personality Disorder is no longer viewed as homogeneous; research has distinguished between vulnerable (VN) and grandiose (GN) forms. The Five-Factor Narcissism Inventory (FFNI) dimensionally assesses traits associated with the two facets of narcissism. The purpose of this research was to explore the structural relationship between traits associated with both types of narcissism, internalising pathology, self-injurious behaviour (SIB) and multiple substance misuse in a nonclinical sample. The sample consisted of 117 undergraduate psychology students who completed a battery of questionnaires assessing demographic, predictor, and outcome variables. Results demonstrated that traits associated with VN displayed relationships with emotional distress, SIB and problem alcohol use; traits associated with GN were found to correlate with drug and alcohol misuse. Regression analyses revealed problem drinking was related to grandiose traits including thrill seeking, arrogance, and entitlement. VN and SIB were fully mediated by internalising pathology; VN and alcohol intoxication displayed full mediation by self-harm motives. This research identifies associated behaviours that could be risk factors for narcissism, and therefore has practical applications in the screening and treatment of the disorder. Using the FFNI to assess narcissism enables clinicians to recognise individual traits and target them for change. This research not only adds to the body of knowledge beginning to accumulate about the heterogeneity within narcissism and its subsequent relations with maladaptive behaviour, but also demonstrates the utility of the FFNI as a dimensional measure of nonclinical narcissism.

Dimensional models are proving popular approaches to diagnosing and understanding personality disorders (PD; Clark, 2007). Newly integrated into the Diagnostic and Statistical Manual of Mental Disorders (DSM-5; American Psychiatric Association, 2013), dimensional models hold increased clinical utility over previously preferred categorical approaches. Locating individuals on a continuum, dimensional models understand PDs as variants of healthy personality rather than discrete disorders (Mullins-Sweatt & Widiger, 2011; Trull & Widiger, 2013). Superior to categorical models, dimensional models recognise disordered personality traits as extending out from just pathological disorders and are able to recognise maladaptive traits in nonclinical samples (Livesley, 2003).

The five-factor model of personality (FFM; Costa & McCrae, 1985) is a dimensional theory that organises personality traits into a hierarchical structure. Consisting of extraversion, agreeableness, neuroticism, openness, and conscientiousness, these five “big” factors describe many smaller personality traits. The FFM provides the means to integrate basic personality research with clinical psychology and has been demonstrated to have clinical utility when diagnosing PDs described in the DSM, as each disorder presents an FFM profile that is recognisable to clinicians (Blais, 1997; John & Srivastava, 1999; Saulsman & Page, 2004). For example, Antisocial PD (ASPD) manifests itself with high levels of antagonism and extraversion and low levels of conscientiousness, whereas Borderline PD (BPD) is often recognisable due to the high levels of neuroticism that an individual with the disorder may display (Trull & Widiger, 2013).

More recently, there has been growing interest in and understanding of Narcissistic PD (NPD) and nonclinical narcissism, in particular the recognition of heterogeneity within the disorder (Miller, Hoffman, Gaughan, Gentile, Maples & Campbell, 2011). Multiple studies have pointed out the distinction between grandiose (GN) and vulnerable (VN) forms of narcissism (Dickinson & Pincus, 2003; Miller & Campbell, 2008). Both types correlate

highly with FFM measures of antagonism, however GN describes traits related to extraversion, superiority and dominance, whereas individuals with VN tend to be more neurotic and display an insecure sense of grandiosity that overcompensates for low self-esteem (Miller et al., 2011). The heterogeneity within NPD is demonstrated through its relations with other cluster B PDs; GN is positively associated with ASPD (Dickinson & Pincus, 2003), whereas VN is highly correlated with BPD (Miller, Dir et al., 2010). These researchers suggest that VN, like BPD, is more strongly linked with certain addictive and maladaptive behaviours due to the neurotic and impulsive personality traits displayed by people with the disorder. For example, Pincus et al. (2009) identified a stronger relationship between VN than GN when compared with self-injurious behaviour (SIB) and suicide attempts.

In light of recent advancements in the understanding of narcissism and NPD, new measures assessing the heterogeneity within the disorder have been created. Most recently, the FFM has been adapted to measure NPD. The Five-Factor Narcissism Inventory (FFNI; Glover, Miller, Lynam, Crego & Widiger, 2012) deconstructs NPD into 15 dysfunctional lower order personality traits that are encompassed by the big five (e.g., reactive anger relates to neuroticism; see Appendix A for a breakdown of the 15 trait scales). Measuring both GN and VN, this dimensional model is beneficial to the study of narcissism and NPD as it recognises the heterogeneity within the disorder. It has also been shown to possess incremental validity over previous measures of narcissism, demonstrating its clinical utility (Miller, Lynam et al., 2016). Using the FFNI to break down narcissistic traits enables these factors to be understood in terms of their relation with internalising pathology and maladaptive traits, making targeted interventions more effective.

Cluster B PDs are shown to be comorbid with mental illnesses that result in an increased risk of suicide and SIB (Garno, Goldberg, Ramirez & Ritzler, 2005). However, the

relationship between narcissism and depression is one that has resulted in much controversy (Tritt, Ryder, Ring & Pincus, 2010). Certain scholars have argued that narcissism protects the individual from depression, however this most likely refers to the grandiose form (Rathvon & Holmstrom, 1996). When investigating the link between depression and VN, Dickinson and Pincus (2003) note that narcissistic vulnerability, characterized by poor emotional regulation when expectations and strong needs for admiration are not met, is a risk for depression as it conjures an awareness of the inconsistencies between fantasy and reality (Tritt et al., 2010). Individuals with VN are also thought to be at risk of developing anxiety and stress related problems due to their neurotic temperament. Striving to avoid inferiority coupled with intense feelings of shame when threatened with narcissistic injury has been suggested to lead to internalising disorders such as depression, anxiety, and stress (Gilbert, McEwan, Bellew, Mills & Gale, 2010).

Furthermore, NPD has been linked with SIB and suicide; one study identified the disorder in 23.3% of males who had committed suicide after being diagnosed with depression (Apter, Bleich, et al., 1993). Additionally, Stone (1989) found that 14% of people with NPD and depression had ended their life after a 15-year follow up. These studies support the notion that NPD becomes a risk factor for suicide and SIB when negative affect is involved. This is possibly due to the high levels of impulsivity that people with NPD possess, rendering them unable to cope with complex, highly stressful situations (Schneider et al., 2008). Impulsivity is common factor that links all four cluster B PDs, something that is measured by anger, self-enhancement and thrill-seeking items on the FFNI (Miller, Campbell et al., 2009).

Self-harm behaviour and impulsivity have been suggested to mediate the relationship between cluster B PDs and substance misuse (Casillas & Clark, 2002). In VN these traits are associated with negative affect and reactive anger. Self-harm behaviours can be seen in the defeatist lifestyle of substance misusers as well as the often neurotic and unstable behaviour

of someone with VN. According to Schulden, Thomas and Compton (2009), the prevalence of lifetime substance use disorders (SUD) in the general population is 10.3%. Stinson et al. (2008) found that in people with NPD, this figure rises to 40.6%. Levin (1987) remarked that drug and alcohol use helps the vulnerable narcissist cope with depression and negative feelings about the self. As previously discussed, individuals with VN are more likely to engage in self-injurious and suicidal behaviour, illustrating their self-defeating nature and supporting the idea that self-harm behaviour mediates the relationship between VN and substance use.

GN has also been shown to manifest a relationship with substance misuse. Buelow and Brunell (2014) suggest that narcissistic grandiosity results in individuals misusing illegal drugs, perhaps because of the unrealistic belief that no harm can come to them. Vazire and Funder (2006) hypothesised that the impulsiveness of a person with GN explains why they are more at risk of developing SUDs. As people with GN traits are highly extraverted, drugs help them relieve boredom and extend the self through providing a means to seek exciting experiences. Thrill seeking better explains why people with grandiose traits abuse alcohol and drugs, as they are heavily susceptible to boredom and feel the need to seek out new experiences.

As it stands, there is limited research examining how traits associated with VN and GN relate to internalising pathology and maladaptive behaviours. This research aims to explore the structural relationship between traits associated with both facets of narcissism, internalising pathology, SIB and multiple substance misuse. Additionally, the clinical utility of the FFNI will be examined. It is predicted that personality traits associated with VN will show a relationship with SIB that is mediated by internalising pathology. Traits associated with both VN and GN are expected to correlate with alcohol and drug misuse, however the relationship between VN and substance misuse is likely to be mediated by self-harm motives.

Method

Ethics

Ethical approval was obtained for this study from Bangor School of Psychology Ethics Committee. Participants were given an information sheet (see Appendix B) and consent form (see Appendix C) before they began the study; these forms detailed information about the nature of the research and included guidance about the participant's ethical rights such as confidentiality and the right to withdraw without penalty. Due to the delicate nature of certain items, participants were made aware that they could leave such items unanswered if they desired. Both the consent form and information sheet were kept independent of the questionnaire battery and were disposed of after data entry to guarantee participant anonymity. Participants were advised not to write their name or any identifying information on their questionnaire packs; this was to prevent association between them and their responses. Instead, each participant was given a uniquely numbered pack. Upon conclusion of the study, participants were debriefed by the researcher and were provided with the information of various organisations they could contact if affected by the study. Additionally, the debrief sheet (see Appendix D) included the contact details of the Principal Investigator (PI) to enable participants to ask additional questions or express their right to withdraw their data from the study. To ensure confidentiality, the PI stored the completed questionnaires inside a locked filing cabinet and electronic files were saved on a password-protected computer.

Participants

In total, $N=117$ participants took part in the study; all were Undergraduate Psychology students at Bangor University, and chose to participate via SONA as part of their degree (see Appendix E for SONA advertisement). All participants were either in their first year ($n = 60, 51.3\%$) or second year ($n = 57, 48.7\%$) of study. The age of participants ranged

from 18 to 54, with a median age of 19 ($SE = 0.48$), age scores were found to be abnormally distributed; with skewness of 4.34 ($SE = 0.22$) and kurtosis of 21.19 ($SE = 0.44$). In total, 38 (32.5%) males and 79 (67.5%) females took part in the study. This was divided into 19 (16.2%) males and 41 (35.1%) females in year one, and 19 (16.2%) males and 38 (32.5%) females in year two. Participants received three course credits for their participation.

Measures

The measures used in this study comprised of 10 questionnaires and a demographics form that was designed explicitly for this study by the PI. The demographics form (see Appendix F) asked participants to state their: Age; gender; year of Study; and the age (if applicable) that they first decided to drink alcohol, take drugs, and engage in self-injurious behaviour (SIB).

Personality aspects

The Five Factor Model Narcissism Inventory (FFNI; see Appendix G) was used to measure personality traits at a dimensional level that may predict Narcissistic Personality Disorder (NPD; Glover, Miller, Lynam, Crego & Widiger, 2011). This self-report questionnaire consists of 148 items that are scored on a five point Likert scale, ranging from 1 (strongly disagree) to 5 (strongly agree). The questionnaire included aspects of both grandiose (GN) and vulnerable narcissism (VN). The internal consistency of this measure was found to be good in this study ($\alpha = .94$).

Internalising aspects

The Depression, Anxiety, and Stress Scale (DASS-42; see Appendix H) measures the symptoms of depression, anxiety, and stress experienced by participants over the past week (Lovibond & Lovibond, 1993). It was found to have good internal consistency in this study ($\alpha = .92 - .96$) and consists of 42 items that are rated on a four point Likert scale, ranging from 0 (did not apply to me at all) to 3 (applied to me very much, or most of the time).

Self-Injurious Behaviour (SIB) aspects

The Self Harm Inventory (SHI; Sansone & Sansone, 2010) identifies 16 types of SIB, which participants scored on a Likert type scale measuring how often they engaged in the behaviour, ranging from never to many times.

The Deliberate Self Harm Inventory Short Version (DSHIS; Lundh, Karim & Quilisch, 2007) was also used to assess 23 types of SIB. Participants answered either “Yes or No”, depending on whether they had engaged in the behaviour.

The Inventory of Statements about Self-Injury (ISAS1; Klonsky, 2007) was used to assess the functions of self-harm. It contains 39 statements about reasons for engaging in SIB that are scored on a Likert scale ranging from 0 (statement is not relevant) to 2 (statement is very relevant). Participants also answered questions relating to behaviours engaged in when experiencing anger or upset (ISAS2). This includes eight statements that are rated on a Likert scale to assess how often the behaviours are performed, ranging from “Never to Often”.

The SHI, DSHIS and the ISAS were merged into one measure to form the Self Harm Screener (SHS; see Appendix I), which all together consisted of 86 items. The internal consistency was found to be good in this study ($\alpha = .96$).

Outcome measures

The Michigan Alcohol Screening Test (MAST; Selzer, 1971) was used to measure participants' alcohol consumption over the past 12 months. Participants decided whether they agreed or disagreed with the 25 statements and responded by circling “Yes” or “No”. This problematic alcohol use scale includes both negatively and positively phrased items. The MAST was found to have internal consistency of $\alpha = .64$.

The Drug Abuse Screening Test (DAST; Skinner, 1982) was employed to measure participants' drug use over the previous 12 months. Participants circled “Yes” or “No”, depending on whether they agreed with any of the 28 statements. Some items on the DAST

were negatively phrased and others were positive. The internal consistency of the DAST was found to be good in this study ($\alpha = .88$).

The Modified European School Survey Project on Alcohol and Other Drugs (ESPAD; Hibell, Andersson, Bjarnason, Kokkevi, Morgan & Narusk, 1997) assessed participants' alcohol and drug use. It included questions about the incidence, frequency, background of, and health problems attributed to substance use.

The ESPAD, MAST and DAST were grouped into one measure to form the Substance Abuse Screener (see Appendix J).

Design

A cross-sectional design was used for this particular study, whereby participants completed all measures on a solitary occasion. The predictor variables comprised of demographic factors (age first engaged in alcohol/ drug use and self-injurious behaviour) as well as personality factors obtained from the FFNI and depression, anxiety, and stress scores from the DASS-42. The outcome variables measured from the MAST, DAST, ESPAD and SHS consisted of alcohol and drug use, as well as self-harm behaviour.

Procedure

Participants met outside the study room and were registered by the experimenter before entering. Upon arrival into the room, participants sat at a table where spaces between them were large in order to minimise distractions. Placed on the tables were the information sheet, consent form and questionnaire pack. Participants were asked to read the information sheet before signing the consent form. The researcher then collected the signed consent forms and participants were instructed to begin filling in the questionnaires. Participants were given up to 90 minutes to complete the pack; this allowed slower respondents enough time to complete all measures. Upon completion, packs were given back to the experimenter and participants were taken outside to be verbally debriefed and given a debrief sheet.

Participants were also able to take this opportunity to ask any questions they had regarding the study. After each session, course credits were awarded to all participants for taking part. Once data collection was completed, researchers entered all participants' responses into SPSS and merged the raw data into a master file.

Data Analysis

Data analysis consisted of calculating descriptive statistics (means, standard deviations and assessments of normality), performing independent samples *t*-tests to assess any effects of demographics on major outcome variables, and conducting Pearson's *r* correlations to measure the relationship between predictor (PV) and outcome variables (OV). Regression analyses were also conducted to examine the nature and direction of the relationship between these variables. Effects of mediation were analysed to determine whether the PVs and OVs were being mediated by another variable. As the age of the sample, and some of the responses to other variables were skewed and kurtosed (above +/- 2; Miles & Shevlin, 2001), these variables were transformed using the Rankit function in SPSS, this provided normalised scores for regression analysis. It is worth noting that the scores obtained from the individual DASS-42 factors were transformed into one global score, in order to investigate the total effect of depression, anxiety, and stress on outcome variables. Additionally, the SHI was removed from further investigation, after correlational analysis demonstrated that it displayed weak and few relationships with other variables. Exhibitionism and grandiose fantasies, FFNI extraversion and openness traits related to GN, displayed no significant relationships with any of the outcome variables, so were excluded from further analysis. One question from the ESPAD was included in data analysis; it asked participants how drunk they were on their last drinking occasion (HDWY, an index of binge drinking). For all statistical analyses, a significance level of $p < .05$ was employed alongside effect size and post-hoc power calculations.

Results

The unadjusted means and standard deviations for the main outcome variables are shown in the table below (Table 1).

Table 1

Descriptive statistics for the main study variables

Measure	Variable	<i>M</i>	<i>SD</i>
DASS-42	Depression	7.85	9.75
	Anxiety	7.70	8.54
	Stress	11.58	9.54
SHS	SHI	3.03	5.31
	DSHIS	3.53	3.75
	ISAS1	7.01	10.31
	ISAS2	5.43	4.62
MAST		6.27	5.37
DAST		1.70	3.07
ESPAD	HDWY	4.16	2.87

The descriptive statistics for the age participants first engaged in specific behaviours are detailed in Table 2. It is evident that much less people in this sample engaged in self-harm behaviour and drug use compared to the amount that drank alcohol.

Table 2

Descriptive statistics for age first engaged in alcohol and drug use and self harm behaviour

	Median	<i>SE</i>	<i>n</i>
Age first decided to drink alcohol	15	0.36	109
Age first decided to take drugs	17	0.40	47
Age first decided to self-harm	14	0.39	34

Independent samples *t*-tests were carried out to determine whether the scores on the OVs differed by gender or year of study. For both factors no significant differences were found for SIB, alcohol or drug use. However, year of study seemed to influence one item on the FFNI; students in year two ($M = 26.42$, $SD = 6.17$) were reported as being more manipulative than year one students ($M = 23.61$, $SD = 8.45$), $t(117) = 2.04$, $p < .001$, $d = 0.38$.

A Pearson bivariate correlation was conducted to examine the relationship between the study measures. As evidenced in Table 3, age first decided to drink alcohol displayed a significant positive correlation with age first decided to take drugs ($r = .56$, $p < .001$) and self-harm ($r = .50$, $p = .003$). All other significant demographic age factors displayed negative correlations with the outcome variables and FFNI factors, suggesting that participants who began these behaviours at a younger age were likely to display higher levels of internalising pathology in addition to engaging in more SIB and multiple substance use.

The variable VN was calculated from items measuring vulnerable narcissistic traits on the FFNI (Reactive Anger, Shame, Need for Admiration, Distrust). VN displayed significant relationships with the DASS-42 global score ($r = .64$, $p < .001$) and the total SHS ($r = .49$, $p < .001$), indicating that participants who scored highly on VN also displayed internalising pathology and engaged in SIB. As the traits associated with VN display stronger relationships with the outcome variables, further analysis will concentrate primarily on this. It is worth noting that some of the FFNI items associated with Grandiose Narcissism (GN; manipulateness, entitlement and thrill seeking) show positive correlations with problem drug and alcohol use. FFNI traits associated with VN showed no correlations with drug use specifically.

The correlational analysis revealed that acclaim seeking and indifference seem to be protective factors against internalising pathology on the DASS-42 and SHS. Acclaim seeking

also displays a protective influence over problematic alcohol use ($r = -.25, p = .007$). Many of the additional FFNI items were identified as being risk factors for internalising and externalising behaviours. However, some items seem to be both protective and risk factors for specific behaviours, for example shame protects against problematic alcohol use ($r = -.18, p = .049$) but seems to be a risk factor for self-reported alcohol intoxication ($r = .21, p = .023$).

Table 3

Pearson's r correlation matrix to show relationship between personality factors, demographics, internalising aspects and outcome measures

Meas	Var	RA	Sh	In	NFA	Au	Ma	Ex	En	LE	Ar	AS	TS	Di	Vu	AgeSI	AgeD	AgeA
Demo	AgeSI	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	.50**
	AgeD	-	-.32*	-	-	-	-	-	-	-.39**	-	-	-.46***	-	-	-	-	.56***
	AgeA	-	-	-	-	-	-	-	-.20*	-	-	-	-.23*	-	-	-	-	-
DASS-42	Dep	.34***	.38***	-.26**	.43***	-	-	-	-	-	-	-.21*	-	.35***	.52***	-.37*	-	-
	Anx	.34***	.43***	-.26**	.50***	-	.22*	-	-	-	-	-	.19*	.37***	.57***	-	-	-.27**
	Stress	.48***	.43***	-.30***	.50***	-	-	-	-	-	-	-	-	.43***	.63***	-.50**	-	-.24*
	Global	.45***	.46***	-.31***	.53***	-	.22*	.19*	-	-	-	-	.19*	.41***	.64***	-	-.41**	-.19*
SHS	DSHIS	-	-	-	-	-	-	-	-	-	-	-	.26**	.37***	.28**	-	-.44**	-.21*
	ISAS1	.25*	.26**	-	.30***	-	-	-	-	-	-	-	-	.28**	.37***	-	-	-
	ISAS2	.37***	.43***	-.41***	.49***	-	-	-	-	-	-	-.20*	-	.31***	.55***	-	-	-
	Global	.32***	.33***	-.24**	.39***	-	-	-	-	-	-	-	-	.38***	.49***	-	-	-
DAST		-	-	-	-	.21*	.21**	-	.23*	-	-	-	.32***	-	-	-	-.41**	-.19*
MAST		.38***	-.18*	-	-	-	.22*	.24**	.38***	.34***	.36***	-.25**	.42***	-	-	-	-.33*	-.30**
ESPAD	HDWY	-	.21*	-	-.22*	-	-	-	-	-	-	-	-	-	.19*	-	-.50***	-.29**

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

Key: Meas = Measure; Var = Variable, Demo = Demographics, AgeSI = Age first engaged in self injurious behaviour, AgeD = Age first took drugs, AgeA = Age first drank alcohol, Dep = Depression, Anx = Anxiety, RA = Reactive Anger, Sh = Shame, In = Indifference, NFA = Need for Admiration, Au = Authoritativeness, Ma = Manipulativeness, Ex = Exploitativeness, En = Entitlement, LE = Lack of Empathy, Ar = Arrogance, AS = Acclaim Seeking, TS = Thrill Seeking, Di = Distrust, Vu = Vulnerable (covert) Narcissism, and HDWY – How drunk would you say you were the last time you drank?

Regression analysis for the SHS.

The effects of VN and the global DASS-42 were examined in relation to a subsample of participants who disclosed that they have engaged in SIB ($n = 34$). This demographic factor was entered into the model at step one, and was shown to account for 8% of the variance in SHS scores, $F(1, 32) = 2.77, p = .106$. It is worth noting that the age participants began self-harming was negatively correlated with their scores on the SHS. The variable entered at step two (VN) accounted for an additional 44.8% of the variance in self-injurious scores, $F(1, 31) = 29.42, p < .001$. Introducing the third variable (Global DASS-42) at step three explained a further 15.8% of the variance and this change in R^2 was statistically significant, $F(1, 30) = 15.14, p < .001$. The final model accounted for 68.6% of the variance, $F(3,30) = 21.90, p < .001, f^2 = 2.18, power = 0.99$. This large f^2 value suggests that in this sub-sample of participants, VN and internalising pathology scores account for a sizeable proportion of the variance in SHS scores. R^2 change and β values can be found in Table 4 below.

Table 4

Regression analysis for the SHS in a self-injurious subsample

Variable	ΔR^2	β
Step 1	.080	
Age first SI		-.282
Step 2	.528	
Age first SI		-.152
Vulnerable Narcissism		.682***
Step 3	.158	
Age first SI		.027
Vulnerable Narcissism		.352*
Global DASS-42		.567***
Total score	.686	

Note. * = $p < .05$, *** = $p < .001$

Collinearity was tested by examining the Tolerance and VIF values for the model. A strong linear relationship between the predictors indicates multicollinearity, which ultimately compromises the validity of the model. This model remained uncompromised and no further investigation was needed (Tolerance = .49 - .81, VIF = 1.24 – 2.05).

Regression analysis for HDWY.

The multiple regression analysis revealed that at step one, age first drank contributed significantly to the model, $F(1, 104) = 9.49, p = .003, n = 109$, explaining 8.4% of the variance. Introducing VN into the model at step two, accounted for an additional 2.2% of the variance, $F(1, 103) = 2.53, p = .115$. Finally, the addition of SHS scores integrated at step three, accounted for a further 5.6% of the variance and a significant R^2 change, $F(1,102) = 6.83, p = .010$. Overall, the final model accounted for 16.2% of the variance in alcohol intoxication scores $F(3,102) = 6.56, p < .001, f^2 = 0.19, \text{power} = 1.00$, indicating that age first drank, VN, and SIB have a small effect on how intoxicated participants reported being on their last drinking occasion. It also demonstrates that self-harm behaviours may to some degree underpin drinking behaviours. R^2 change and β values can be found in Table 5 below.

Table 5

Regression analysis for self-reported alcohol intoxication on last drinking occasion

Variable	ΔR^2	β
Step 1	.084	
Age first drank		-.289**
Step 2	.022	
Age first drank		-.268**
Vulnerable Narcissism		.150
Step 3	.056	
Age first drank		-.262**
Vulnerable Narcissism		.014
Updated SHS		.274**
Total score	.162	

Note. ** = $p < .01$

The Tolerance and VIF were examined and again, no violations were found (Tolerance = .74 - .98, VIF = 1.02 – 1.34).

Regression analysis for the MAST.

Age first drank was controlled for and entered into the model at step one, it was shown to account for 9% of the variance in MAST scores, $F(1, 107) = 10.56, p = .002, n = 109$. Thrill seeking was entered at step two, and accounted for 13% of the variance and a significant R^2 change, $F(1, 106) = 17.59, p < .001$. The addition of arrogance at step three accounted for a further 2.7% of the variance, $F(1, 105) = 3.80, p = .054$. The final variable, entitlement, added at step four, accounted for 1.2% of the variance, $F(1, 104) = 1.72, p = .192$. Overall, the final model accounted for 25.9% of the variance in MAST scores, $F(4, 104) = 9.08, p < .001, f^2 = 0.35, \text{power} = 0.99$, identifying a small, but significant effect of grandiose traits on levels of drinking identified by the MAST. R^2 change and β values can be found in Table 6 below.

Table 6

Regression analysis for the MAST

Variable	ΔR^2	β
Step 1	.090	
Age first drank		-.300**
Step 2	.130	
Age first drank		-.214*
Thrill Seeking		.370***
Step 3	.027	
Age first drank		-.213*
Thrill Seeking		.275**
Arrogance		.191
Step 4	.012	
Age first drank		-.197*
Thrill Seeking		.266**
Arrogance		.082
Entitlement		.161
Total score	.259	

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

Again, after examining the collinearity of the model, no violations were found (Tolerance = .47 - .93, VIF = 1.40 – 2.30).

Depression, Anxiety, and Stress as a Mediator of SIB.

Mediation analyses were carried out using a website which can be found in the references section (Jose, 2013). After performing a regression analysis to investigate VN, the DASS-42, and SIB, a mediation analysis was conducted to examine the relationship between VN (PV), the DASS-42 global score (mediator variable; MV), and self-harm behaviour (OV).

Step one was to determine the effect of the PV on the OV, in order to do this VN was correlated with SHS ($r = .49, p < .001$). Step two of the mediation model establishes the effect

of the PV on the MV ($r = .64, p < .001$). Additionally, the MV was found to correlate with the OV ($r = .63, p < .001$).

Scores on the global DASS-42 were regressed onto VN, indicating a significant relationship (unstandardised $\beta = .03, SE = .003, Beta = .64, R^2 = .40, p < .001$). Furthermore, SHS was regressed onto the DASS-42, where it became evident that internalising aspects predicted SIB (unstandardised $\beta = 1.27, SE = .22, Beta = .55, p < .001, R^2 = .41, p < .001$). After taking these steps, it appeared that VN scores were no longer significantly related to SHS scores, corresponding to a full mediation. Figure 1 illustrates a path diagram showing these relationships.

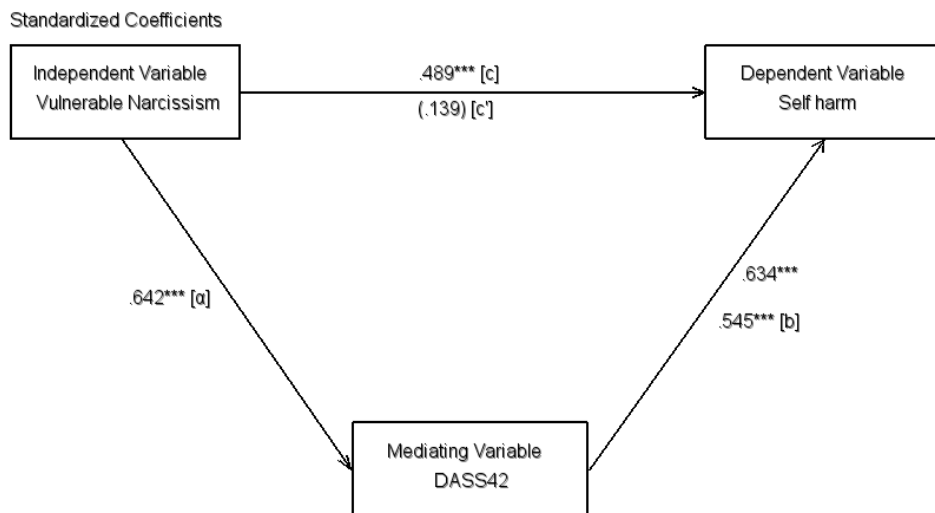


Figure 1. Path diagram demonstrating the relationship between VN, scores on the DASS-42, and self-harm behaviour.

The Sobel Z-value was reported as 5.03 ($p < .001$), which clearly exceeded the ± 1.96 criterion for a significant mediation. The direct effect of the PV on the OV was .139 and the indirect effect was .320. This illustrates a full mediation of self-harm behaviour, indicating that the effects of VN are reduced to a non-significant relationship when the DASS-42 global score is incorporated (Baron & Kenny, 1986). The MV accounted for 71% of the effect of VN on self-harm behaviour.

SIB as a Mediator Variable of self-reported alcohol intoxication.

After regressing self-reported alcohol intoxication onto VN and self-harm behaviour, a mediation analysis was carried out to determine whether self-harm behaviour (MV) mediates the relationship between VN (PV) and self-reported alcohol intoxication (OV).

Step one identified a significant correlation between the PV and the OV ($r = .19, p = .041$), as well as between the PV and the MV ($r = .49, p < .001$). Additionally, self-reported alcohol intoxication also correlated significantly with self-harm behaviour ($r = .33, p < .001$).

Scores on the SHS were regressed onto VN in step two (unstandardised $\beta = .05, SE = .009, Beta = .49, R^2 = .239, p < .001$). Secondly self-reported alcohol intoxication was regressed onto the SHS (unstandardised $\beta = .38, SE = .13, Beta = .31, R^2 = .108, p = .002$). After doing this, VN scores were no longer significantly related to self-reported alcohol intoxication scores; this indicates that self-harm behaviour fully mediates the relationship between the PV and the OV. The mediation model generated is shown in Figure 2.

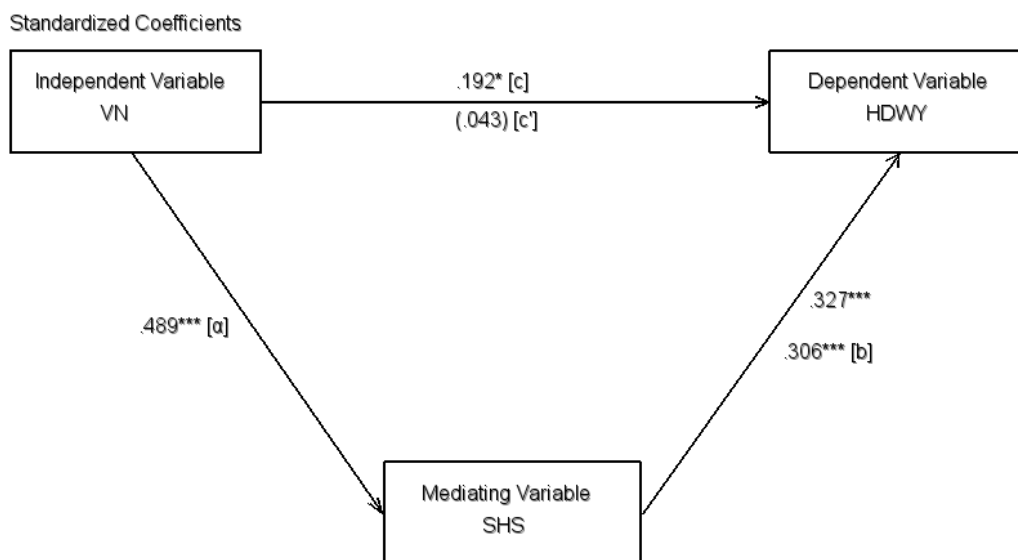


Figure 2. Path diagram demonstrating the relationships between VN, self-harm behaviour, and self-reported alcohol intoxication.

The Sobel Z-value for the path diagram was reported as 2.66 ($p = .007$), again indicating a significant mediation. The direct effect of VN influencing self-reported alcohol

intoxication was noted as .043, and the indirect effect was .150. The final model suggests that self-harm behaviour mediates all effects of VN on self-reported alcohol intoxication, accounting for 78% of the relationship.

Discussion

The current study examined the extent to which vulnerable narcissism (VN) and grandiose narcissism (GN) display relationships with internalising pathology, self-injurious behaviour (SIB), and problematic alcohol and drug use. Supporting the first hypothesis, the results show that VN is positively correlated with SIB. These findings occurred as expected, due to the high levels of neuroticism and negative affectivity that is seen in self-injurious and vulnerable narcissistic individuals (Miller et al., 2011). Traits associated with GN however, did not correlate with SIB except in the case of thrill seeking. This suggests that impulsivity is also involved in self-harm behaviour and offers support for Schneider's (2008) findings. The current study suggests that individuals identifying with VN are more at risk of self-harm than individuals with grandiose traits. These initial findings support the work of Ronningstam and Maltzberger (1998), suggesting that VN can be a risk factor for SIB even in the absence of maladaptive internalising pathology. The results from the correlation and theoretical models enabled further exploration of results in the regression analysis; in addition to VN, depression, anxiety, and stress were found to account for a proportion of the variance of SIB. As evidenced by the path diagram, these factors were found to fully mediate the relationship between VN and SIB. This supports the hypothesis that internalising pathology mediates SIB, confirming the work of Stone (1989) who established that NPD becomes a risk factor for SIB when depression is apparent.

VN was also found to possess a positive relationship with self-reported alcohol intoxication. The regression analysis demonstrated that VN and self-harm motives accounted for a small effect of how intoxicated participants reported being. Further analysis revealed full

mediation of VN and alcohol intoxication by the Self-Harm Screener (SHS). This suggests that, in line with the predicted results, traits associated with VN lead individuals to exhibit self-harm motives for alcohol use. The findings are consistent with those from previous research (Casillas & Clark, 2002; Levin, 1987), which suggest that individuals identifying with VN use alcohol to cope with low self-esteem and negative feelings about the self.

In the current study, problematic alcohol use was associated with traits related to GN including thrill seeking, arrogance, and entitlement. Thrill seeking alone accounted for 13% of the variance in MAST scores, suggesting that these extraverted and grandiose individuals use alcohol, at least partly, for sensation seeking. Kleber and Gawin (1984) suggested that grandiose narcissists use substances to relieve boredom and emptiness, therefore explaining the relationship seen in the current study with thrill seeking. Traits associated with narcissistic denial were also shown to account for a small proportion of the variance in MAST scores. Previous research has suggested that individuals scoring highly in GN traits may arrogantly believe that they are above addiction; so continue to abuse alcohol despite having knowledge of the risks (Wallace, 1989). GN is manifested by traits encompassed by antagonism and extraversion; the relationships observed in this study between GN traits and problem drinking support the hypothesis that individuals high in GN traits use substances for thrill seeking purposes. In addition to this, narcissistic denial and failure to acknowledge a problem may contribute to dangerous drinking identified by the MAST.

An additional finding from this study that merits discussion is the observation of differing relationships between the facets of narcissism and drug use. Lower order traits associated with GN correlated with an increased risk of drug misuse, however vulnerable narcissistic traits did not. This can be explained by examining these traits in relation to the FFM. Butler (2004) established that individuals who selected an illegal substance as their drug of choice were more extraverted and open to experience than individuals who preferred

alcohol; extraversion and openness are factors related to GN. In the current study, individuals who reported traits associated with VN displayed relationships with problematic alcohol use and self-reported intoxication. Butler (2004) suggested that preference of alcohol over drugs was related to higher levels of neuroticism, something that is seen in vulnerable narcissists.

Previous research suggests that narcissism and substance use disorders are more prevalent in males than females (Stinson et al., 2008), however in the current study, no gender differences were found for either aspect. Therefore the use of a primarily female sample can be considered a limitation of this study. Future research should seek to obtain an equal number of male and female participants to effectively measure any gender differences in the prevalence of grandiose and vulnerable narcissism. A further limitation that merits discussion is the use of a cross-sectional design, which prevented temporal effects of narcissism from being studied. A suggestion for an extension of this current research would be to conduct a longitudinal study to examine whether individuals fluctuate between VN and GN as suggested in recent research (Gore & Widiger, 2016). It would be adaptive to investigate the effects that this fluctuation may have on the outcome variables investigated in the current study. As the present study was conducted within a student sample, the results cannot be generalised to people diagnosed with clinical NPD. However, the study was successful in recognising lower order traits that are risk factors for the disorder. Additionally, the study was able to distinguish between VN and GN, plus identify internalising and externalising behaviours that are associated with both. The current research was an exploratory study within a nonclinical sample and has the potential to be replicated among people with NPD.

The traits associated with VN and GN display observable relationships with differing internalising and outcome variables that relate to the higher order factors of the FFM, therefore offering support for the Five-Factor Narcissism Inventory and its distinction between VN and GN. The mediation and regression models provided the structural

framework needed for future modelling such as full path analysis and structural equation modelling. This study looked at developing the preliminary pathways involved in the mediation of alcohol intoxication and SIB in relation to VN, further development of the mediation analysis may lead to the finding of additional pathways that integrate further aspects into the model.

This research has clinical implications in the assessment and treatment of NPD and narcissism. It is rare that people with NPD will present at a clinic for concerns about their personality, it is much more likely that the client will present with a mood disorder, or concerns about their maladaptive coping strategies (Leahy & McGinn, 2012). In order to identify VN, clinicians should look for symptoms of depression, anxiety, and stress, evidence of SIB and problem alcohol use. Individuals with GN may present with concerns about excessive drinking or drug use. Using dimensional models, such as the FFNI, to diagnose NPD is advantageous as it enables clinicians to recognise individual dysfunctional traits and target them for change. This is especially beneficial as interventions can then be tailored specifically to the individual. For example, a behavioural management intervention could be an effective course of treatment for someone with VN presenting with SIB and problematic alcohol use due to negative affect caused by high levels of reactive anger. The intervention would aim to address their anger by reducing hostile attributional bias and increasing social problem solving (Fernandez, 2013). Their maladaptive coping behaviours could be managed with Dialectical Behavioural Therapy (Linehan, 1993) by creating a validating environment in which new, more adaptive coping strategies could be employed.

This study has confirmed the FFNI to be a flexible instrument, allowing assessment of individual narcissism traits, higher order factors, and aspects of GN and VN. In addition to this it displays convergent validity through its vulnerable and grandiose composites that observably relate to one another and to the outcome measures (Miller, Lynam et al., 2016).

The construing of VN and GN into lower order traits encourages understanding of the heterogeneity within narcissism and its relationship with internalising pathology and behavioural outcomes such as SIB and alcohol misuse. The FFNI, a dimensional model, has enabled narcissism to be understood in terms of clinical and nonclinical populations (John & Srivastava, 1999), and therefore proved a superior measure to use when investigating narcissism in a student sample.

The current study adds theoretical value to the research of NPD using dimensional models. Not only does it inform the body of knowledge that is beginning to accumulate about the heterogeneity within the disorder and its relations with maladaptive behaviour, but it also validates the clinical utility of the FFNI, a relatively new measure in narcissism research.

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