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Personality and non-suicidal deliberate self-harm: Trait differences among a non-clinical population

Seth A. Brown *

Department of Psychology, University of Northern Iowa, Baker Hall 334, Cedar Falls, IA 50614-0505, United States

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ABSTRACT

Limited information is available on understanding why particular individuals engage in non-suicidal deliberate self-harm (DSH), especially among non-clinical populations. An array of personality traits, such as those included in the five-factor model of personality, may further an understanding of DSH. The purpose of this study was to examine personality traits among non-clinical groups with or without a history of DSH. College students ($N=238$) completed self-report measures of DSH and personality. Both multivariate (MANOVA, discriminant analysis) and univariate (ANOVA) statistical procedures supported the hypothesis that those with a history of DSH ($n=59$) had significantly higher levels of neuroticism and openness to experience, and significantly lower levels of agreeableness and conscientiousness. Contrary to expectations, there were no differences in extraversion between the two groups. These results indicate personality differences among those with a history of DSH, which with additional research, may prove to be risk factors or targets of intervention for future DSH or collateral problems.

1. Introduction

Non-suicidal deliberate self-harm (DSH) has been noted to occur among numerous populations. A heightened prevalence of DSH has been documented among a number of clinical groups including those with depression (Haw et al., 2001), substance use (Haw et al., 2001; Zlotnick et al., 1999), anxiety disorders (Haw et al., 2001; Zlotnick et al., 1999), eating disorders (Favazza et al., 1989; Haw et al., 2001), and personality disorders (Haw et al., 2001; Sansone et al., 1998; Zanarini et al., 2006). DSH has also been documented among non-clinical populations. Among registered automobile owners with listed telephone numbers, 4% reported DSH in the previous 6 months (Briere and Gil, 1998). Among military recruits, a 4% prevalence rate of DSH was also noted (Klonsky et al., 2003). DSH has been documented among college students with prevalence rates ranging from 12% to 38% (Brown et al., 2007; Favazza et al., 1989; Gratz et al., 2002). In a large sample of college students ($N=2875$), a 12-month prevalence rate of 9.7% and a lifetime prevalence rate of 17.0% were recorded for DSH (Whitlock et al., 2006). In addition to the consequences of the self-harm behavior itself (e.g., cutting), those with a history of self-harm have disruptions in interpersonal relationships (Gratz et al., 2002) and an elevated lifetime risk for suicide (de Moore and Robertson, 1998; Hawton et al., 2003; Zahl and Hawton, 2004). Given the notable prevalence and consequences among both clinical and non-clinical populations, a question arises as to what factors are associated with DSH.

Personality traits appear to be associated with DSH. In recent years, the role of personality in psychological difficulties has gained more prominence. A series of studies conducted by Robert Krueger and colleagues documented an association between personality and a number of problems/behaviors (Krueger et al., 2000). When a large cohort was followed across several decades, a relationship between personality and mental disorder was demonstrated (Krueger et al., 2000; Krueger et al., 1996). Krueger et al. (2000) concluded,

> This work provides empirical support for conceiving of personality as a diathesis, a stable, underlying risk factor — for mental disorder. Personality was linked to past, present, and future mental disorder, and predicted risk for future mental disorder even when current mental disorder was controlled (p. 978).

Moreover, negative emotionality was identified as a core component of mental disorders. In regard to DSH, Chapman et al. (2006) found that individuals report high levels of negative emotions both during and outside the self-harm episode. This latter finding suggests that differences in emotional dispositions exist among those who self-harm.

In an attempt to further understand DSH, personality measures have been administered to clinical populations with DSH. The use of the Minnesota Multiphasic Personality Inventory (MMPI) on a sample of self-harming psychiatric inpatients revealed elevations on the depression, sociableness, calmness, inhibition, emotional lability, nervousness, and masculinity scales (Herpertz, 1995). However, it is not possible to conclude whether these scale elevations are due to mental disorders, DSH, or both. A comparison between non-self-mutilating and self-mutilating inpatients' MMPI scores revealed no differences on the

* Tel.: +1 319 273 6091; fax: +1 319 273 6188.
E-mail address: seth.brown@uni.edu.

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anxiety, depression, anger, social introversion, psychasthenia, psychopathic deviance, schizophrenia, and hypomania scales (Acker et al., 1995). Measures other than the MMPi also found no differences between non-self-mutilating and self-mutilating male substance-using inpatients on a number of traits measured by the Temperament and Character Inventory (Evren and Evren, 2005). However, among inpatients who completed the Eysenck Personality Questionnaire (EPQ), low extraversion, high psychoticism, and high neuroticism were associated with DSH (Williams and Hassanyeh, 1983). On a similar note, the Impulsiveness subscale of the EPQ was found to be elevated among self-mutilating inpatients (Evans et al., 2000).

Only limited research has been conducted on personality traits among non-clinical populations who engage in DSH, focusing primarily on negative and positive emotional dispositions. Among college women, Gratz (2006) found lower positive affect among those with a history of DSH, but no differences on negative affect. To the contrary, Klonsky et al. (2003) found higher levels of negative temperament among military recruits with a history of DSH, but no difference on positive temperament. Brown et al. (2007) found elevated levels on four negative emotionality scales among college students with a history of DSH, and elevated levels on one of three 3 positive emotionality scales. Finally, elevated levels of distress were documented among college students with a history of DSH (Whitlock et al., 2006).

As noted above, heightened neuroticism (or negative emotionality) appears to be a fairly reliable finding among those engaging in DSH. However, a large proportion of variance remains unaccounted for in predicting DSH. A range of other personality factors have not been investigated among non-clinical populations, which could be particularly helpful in understanding DSH, given that psychopathology is a diminished confound in these populations. One comprehensive model that taps important facets of personality is the five-factor model, which has been referred to as the "Big Five." In factorial analyses of large numbers of personality traits, a five-factor model captures most of the variance, which typically includes: 1) neuroticism, 2) extraversion, 3) openness to experience, 4) agreeableness, and 5) conscientiousness (Costa and McCrae, 1992; Funder, 2001). Investigations of five-factor measures have documented strong reliability and support for validity of the five-factor model (Mount et al., 1994; Paunonen, 2003).

Personality has been proposed to have up to three relationships to psychological difficulties, which are as follows: 1) predispose an individual to future mental disorders, 2) be a component of a current mental disorder, and 3) be the residual effect of a past mental disorder (Costa and McCrae, 1992). As personality is theorized to represent stable dispositions, it is important to examine personality among those with or without a history of DSH. Many who engage in DSH will discontinue across time (Muehlenkamp, 2005). For example, among college students who engaged in DSH, 40% discontinued across a 1-year period (Whitlock et al., 2006). At this time, little is known about various personality traits among non-clinical groups with a history of DSH.

The purpose of this study was to examine the "Big Five" personality traits among a non-clinical population (college students) including those with or without a history of DSH. Speculating that "adverse" personality traits would be associated with DSH, it was hypothesized that higher levels of neuroticism and lower levels of the four remaining personality traits (extraversion, openness to experience, agreeableness, and conscientiousness) would be found among those with a history of DSH. This pattern would be supportive of the idea that detrimental personality traits are associated with DSH, and these differences exist outside active self-harm episodes.

2. Methods

2.1. Participants

Following Institutional Board approval, 238 participants between the ages of 18 and 24 years were recruited from introductory psychology courses at a Midwestern university and offered course credit for their participation. Participants were given the opportunity to select from a number of unrelated research studies. Of those who signed up and appeared for this study, all participants consented and completed the study. No demographic differences were present between those with and without a history of DSH ($P>0.01$). The average age of these participants was 19.2 years (S.D. = 1.3). A majority of the participants were female (57.6%), Caucasian (95.4%), and never married (99.2%). As participants were intended to represent a typical college population (which usually encompasses a certain level of psychological disorders), participants were not screened or excluded for psychopathology. The most popular major areas were business (25.2%), education (15.5%), and biology (7.6%), with only a small percentage of psychology majors (6.3%).

2.2. Measures

2.2.1. Self-harm behavior

The Deliberate Self-harm Inventory (DSHI; Gratz, 2001) was designed to measure non-suicidal deliberate self-harm behavior. The author operationalized self-harm behavior as the destruction of body tissue which is non-suicidal, deliberate and direct, and may be severe enough to cause physical damage. The DSHI is a self-report questionnaire that measures the frequency, age of onset, duration, date of last occurrence, and severity (hospitalized) of 17 types of self-harm behavior. The DSHI has adequate internal consistency ($\alpha=0.82$), temporal reliability ($r=0.92$), and support for validity (Gratz, 2001). For purposes of this study, any past deliberate self-harm behavior was utilized to classify participants into those with a history (Yes) or those without a history (No).

2.2.2. Personality traits

To measure personality constructs from the five-factor model, five scales from the International Personality Item Pool (IPIP; Goldberg et al., 2006) were utilized. The 10-item scales represented the following factors: 1) neuroticism, 2) extraversion, 3) openness to experience, 4) agreeableness, and 5) conscientiousness. The participants were asked to rate the degree to which each item (e.g., "Make friends easily") describes them on a 5-point Likert scale ("Very Inaccurate" to "Very Accurate"). These five IPIP scales have been found to have acceptable internal consistency and temporal reliability, as well as strong support for validity (Donnellan et al., 2006; Goldberg et al., 2006; Gow et al., 2005). In this study, internal consistency was also acceptable ($\alpha=0.78$ to 0.89) for the five scales, and the scale scores were not redundant with one another ($r\leq0.47$). A summed score for each of the five scales was used to represent its respective personality trait.

2.3. Data analyses

Given the number of statistical procedures employed, a conservative alpha criterion ($P<0.01$) was adopted to minimize Type I errors. A one-way multivariate analysis of variance (MANOVA) was initially conducted to ascertain whether a statistically significant linear

Table 1
Group comparisons on personality scale scores.

History of deliberate self-harm behavior					
Personality trait	Yes ($n=59$)	No ($n=179$)	F	P	d
Neuroticism	28.36 (8.21)	22.40 (6.79)	30.66	0.001	0.79
Extraversion	35.34 (7.26)	35.63 (6.27)	0.09	0.763	−0.04
Openness	37.61 (7.13)	34.32 (5.44)	13.77	0.001	0.52
Agreeableness	35.69 (5.67)	39.02 (5.05)	18.10	0.001	−0.62
Conscientiousness	35.19 (6.09)	37.86 (5.49)	9.82	0.002	−0.46

Note. Means (Standard Deviations); within subject $df=235$–236; $d=$ Cohen's d.