Self-Harm, Affective Traits, and Psychosocial Functioning in Adults with Depressive and Bipolar Disorders

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Abstract

Self-harm refers to the purposeful destruction of bodily tissue without suicidal intention and for purposes that are not socially sanctioned. Little is known about the associations between a history of self-harm, mood symptoms, and functioning in adults with different types of mood disorders. Lifetime histories of self-harm, current mood symptoms, global functioning, and affective traits were collected on 142 adults with mood disorders. The prevalence of lifetime self-harm was higher in patients with bipolar disorder compared to patients with a unipolar depressive disorder. Self-harm was also more strongly linked to impulsivity in individuals with bipolar disorder compared to unipolar depressive disorder. Across both diagnoses, histories of self-harm were related to lower levels of current global functioning, more severe depressive symptoms, and high self-reported emotional dysregulation and neuroticism. Findings indicate that self-harm is a potent prognostic variable for symptoms, global functioning, and personality functioning in individuals with mood disorders.

INTRODUCTION

Self-harm (also known as non-suicidal self-injury/NSSI) refers to intentional destruction of bodily tissue without suicidal intention and for purposes that are not socially sanctioned (Nock and Prinstein, 2004). Common methods of self-harm include cutting, burning, scratching, skin-picking, hitting, biting, and interfering with wound healing (Nock et al., 2006). While self-harm is a diagnostic criteria of borderline personality disorder, it is associated with a range of other psychiatric conditions, including mood and anxiety disorders (Glenn & Klonsky, 2013). Self-harming behavior peaks in adolescence between ages 13 and 17, with population rates ranging from 5 – 39% (Fliege et al., 2009). Within

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adults, lifetime prevalence of self-harm is about 6% in general populations, and about 20% in psychiatric samples (Briere and Gil, 1998; Klonsky, 2011).

While lifetime rates of self-harm in youth with bipolar spectrum disorders (37%) appear to be higher than among youth with unipolar depressive disorders (13%; Esposito-Smythers et al., 2010), no study has directly compared rates of self-harm between adults with bipolar and unipolar disorders. Further, there are direct relationships between self-harm, severity of depressive symptoms and psychosocial functioning among youth with bipolar disorder (Esposito-Smythers et al., 2010), however these same relationships have received little attention in adult populations. Whereas some research has examined the prevalence of self-harm in adults with bipolar and unipolar depressive disorders (e.g., Bryan et al., 2015; Turner et al., 2015;Vaughn et al., 2015), no studies have directly compared these disorders in terms of prevalence of self-harm or examined the specific outcomes associated with self-harm in bipolar and unipolar disorders. Investigating these relationships in adults with affective disorders would clarify whether a self-harm history is a predictor of a more severe course of mood disorder across age and diagnostic groups.

Finally, individuals with recurrent mood disorders often have self-reported personality traits that may increase vulnerability to self-harm (Townsend and Altshuler, 2012). For example, affective dysregulation is a feature of mood disorders, and self-harm is associated with affective dysregulation and used is a method used to regulate negative affect (Adrian et al., 2011; Klonsky, 2009). Impulsivity is also linked to self-harm behaviors (Glenn and Klonsky, 2010). Individuals with bipolar disorder have been found to be more impulsive than healthy volunteers, even when euthymic, although no comparisons have been made between adults with bipolar disorder and unipolar depression on impulsive responding (Lombardo et al., 2012). Individuals with recurrent mood disorders also score high on measures of neuroticism – the disposition to experience psychological distress and negative affect across a wide range of situations (Clark et al., 1994). In nonclinical and clinical populations alike, neuroticism has been linked to self-harm (Claes et al., 2010; You et al., 2016). Together, impulsivity and neuroticism may increase the likelihood that thoughts of self-harm are translated into actual self-harming behaviors (O'Connor et al., 2012).

In sum, the present study tested three hypotheses. First, we predicted adults with bipolar disorder (like their younger counterparts; Esposito-Smythers et al., 2010) would have a higher rate of self-harm histories compared to adults with a unipolar depressive disorder. Second, we predicted a self-harm history would be associated with poorer functioning and greater mood symptoms across disorders. Further, considering individuals with bipolar disorder often have a greater number of mood episodes and greater mood variability compared to individuals with unipolar depressive disorders (Forty et al., 2008), we predicted that lifetime self-harm would be more closely associated with current functioning and mood symptoms in bipolar disorder compared to unipolar depressive disorder. Third, we examined whether self-harm is related to affective/personality traits commonly seen in bipolar disorder. We predicted a self-harm history would be associated with greater difficulties regulating emotion, impulsivity and neuroticism, and that these relationships would be stronger for individuals with bipolar disorder than unipolar depressive disorder.

METHODS

Study Sample

A total of 142 participants with mood disorders were recruited as part of a registry database program at the UCLA Semel Institute, Los Angeles, CA. The registry database program was developed to create a roster of adults with a lifetime history of a mood disorder diagnosis for the purpose of future mood research recruitment. Participants were recruited from the Mood Disorders Clinic at UCLA as well as the greater Los Angeles community. Recruitment in the community was done via referrals from local care providers and by posting flyers in community mental health clinics, college campuses, coffee shops, and online forums. Participants were eligible if they were age 18 or older and met lifetime DSM-IV diagnosis for major depressive disorder, dysthymia (currently called persistent depressive disorder), or bipolar I, II, or not otherwise specified (NOS) disorder. Participants were ineligible if they met DSM-IV diagnostic criteria for schizophrenia, schizophreniform disorder, pervasive developmental disorder, or mental retardation.

Procedures

The study was approved by the Medical Institutional Board of Review of the UCLA School of Medicine. Participants underwent a diagnostic evaluation to determine eligibility status. Then, clinician-rated measurements of global functioning, depressive and manic symptoms, and self-report measures of emotion regulation, impulsivity and neuroticism were gathered. Each participant received financial compensation for participation.

Measures

Clinician-Rated Measurements

Diagnostic Interview for Genetic Studies, version 4.0/BP (DIGS; National Institute of Mental Health, 1995): The DIGS was developed to assess major mood and psychotic disorders and their subthreshold manifestations. The DIGS also contains a self-harm item (independent from the items pertaining to suicide attempts) to obtain lifetime self-harm history, coded as either present or absent. The DIGS demonstrated good inter-rater reliability in this study (Kappa = 0.87).

Hamilton Self-Rating Depression Scale (HRSD; Hamilton, 1960): The HRSD is a 17-item clinician-rated scale used to assess frequency, duration, and severity of depressive symptoms over the two weeks prior to intake.

Young Mania Self-Rating Scale (YMRS; Young et al., 1978): The YMRS is a clinician-rated scale used to assess the frequency, duration, and severity of 11 mania or hypomania symptoms during the week prior to intake (Interrater reliability (Intraclass r) = 0.82).

Global Assessment of Functioning (GAF; APA, 2000): The GAF is a clinician-rated dimensional scale of 1 – 100 of social, psychological, and occupational functioning. This measure had good inter-rater reliability in this study (Interrater reliability (Intraclass r) = 0.85).

Affective/Personality Traits

Difficulties in Emotion Regulation Scale (DERS; (Gratz and Roemer, 2004): The DERS is a 36-item self-report questionnaire that provides a comprehensive measure of difficulties in emotional control (Cronbach's α = .93).

Barratt Impulsiveness Scale (BIS-11; (Patton and Stanford, 1995): The BIS-11 is a 30-item self-report questionnaire designed to assess impulsive personality traits (Cronbach's α = .86).

Eysenck Personality Questionnaire-Revised, Neuroticism Scale (EPQ-N; (Eysenck et al., 1985): The neuroticism scale consists of 24 questions that are rated "yes" or "no." This measure showed excellent internal reliability (Cronbach's α = .99).

Statistical Analyses

Statistical analyses were conducted in SPSS (IBM SPSS Statistics 24). To examine the rates of self-harm histories between mood diagnoses, a logistic regression model was conducted. Diagnosis (bipolar disorder versus unipolar depressive disorder) and self-harm histories (presence versus absence) and their interaction were entered as independent variables to predict global functioning (GAF), mood symptoms (HRSD and YMRS), and affective traits (DERS, BIS-11 and EPQ-N) as outcome variables in full factorial ANOVAs.

RESULTS

Sociodemographic and control variables

As seen in Table 1, the group of participants with histories of self-harm was younger and had proportionately more females compared to the non-self-harm group. Because of these differences, age and gender were controlled in each of the following analyses. Based on HRSD clinical cut-off scores, 57.0% of the total sample exhibited at least mild current clinical depression. There were no differences between the lifetime self-harm and the no self-harm groups in the frequency of individuals who met HRSD criteria for mild depressive symptoms. There were no differences between individuals with a unipolar depressive disorder and individuals with bipolar disorder on age, gender, race, ethnicity, years of education, or current depressive symptoms.

Self-harm and diagnosis

Approximately 43% of the sample had lifetime self-harm history. Individuals with bipolar disorder were significantly more likely to engage in self-harm compared to individuals with a unipolar depressive disorder (Wald $\chi^2(1)$ = 4.00, p < .05). Approximately 52% of individuals diagnosed with bipolar disorder had at least one episode of self-harm, compared to 37% of individuals with a unipolar depressive disorder (adjusted odds ratio = 2.13; 95% CI: 1.02–4.45).

Global functioning and mood symptoms

Lifetime history of self-harm was related to lower GAF scores at study entry ($F(1, 135)$=11.42, p=.001, η^2=.08). Diagnosis did not relate to GAF, nor was there a significant

interaction between self-harm history and diagnosis on GAF scores. Self-harm history also related to greater HRSD scores at study entry ($F(1,136)=7.93$, $p=.006$, $\eta^2=.06$). Diagnosis did not relate to HRSD scores for the two weeks prior to study intake, nor was there a significant interaction between self-harm history and diagnosis on HRSD scores. Self-harm history did not relate to YMRS scores; however, diagnosis significantly related to greater YMRS scores ($F(1, 136) = 11.06$, $p = .001$, $\eta^2 = .08$), and there was a marginally significant interaction between a self-harm history and diagnosis on YMRS scores ($F(1,136)=3.91$, $p=.05$, $\eta^2=.03$). Beyond the expected main effect - which indicates that individuals with bipolar disorder have greater YMRS symptoms compared to individuals with major depressive disorder - the simple effects revealed that individuals with bipolar disorder who had a history of self-harm had significantly higher YMRS scores ($ps < .05$) than all other groups of participants.

Affective traits

History of self-harm related to greater BIS impulsivity ($F(1, 126) = 4.87$, $p = .03$, $\eta^2 = .04$). Diagnosis did not relate to BIS scores; however, there was a significant interaction between diagnosis and self-harm ($F(1,126)=4.47$, $p=.04$, $\eta^2=.03$). The simple effects revealed that individuals with bipolar disorder who had history of self-harm had greater levels of impulsivity than individuals with bipolar disorder without self-harm history ($t(41)=2.30$, $p=.03$) or individuals with unipolar depressive disorder who had history of self-harm ($t(49)=1.92$, $p=.06$).

History of self-harm was also related to higher EPQ-N (neuroticism) scores ($F(1,104)=19.27$, $p <.001$, $\eta^2=.16$). Diagnosis was not associated with EPQ-N scores, nor was there a significant interaction between self-harm history and diagnosis on EPQ-N scores. Finally, self-harm history was associated with greater DERS scores ($F(1,129)=8.32$, p=.005, η^2=.06). Individuals with a unipolar depressive disorder had marginally higher DERS scores than individuals with bipolar disorder ($F(1, 129) = 4.02$, $p = .05$, $\eta^2 = .03$). There was no interaction between diagnosis and self-harm history on DERS scores.

DISCUSSION

Previous research has found that individuals with mood disorders engage in self-harm at a higher rate than individuals with other DSM diagnoses (Selby et al., 2012). We found that individuals with bipolar disorder engage in self-harm at higher rates than individuals with a unipolar depressive disorder (52% versus 37%, respectively). This finding expands previous research showing that suicide and suicidal attempts (in addition to self-harm found in this study) are greater in individuals with bipolar disorder compared to unipolar depressive disorders (Rihmer and Kiss, 2002).

While we expected that certain personality traits would more strongly relate to self-harm in individuals with bipolar disorder compared to unipolar depressive disorder, this was only the case for impulsivity. While impulsive behaviors are an element of diagnostic criteria for (hypo)mania, the present study suggests that trait-level impulsivity across episodes and outside of mood episodes may play a greater role in self-harm behaviors for individuals with bipolar disorder compared to unipolar depressive disorder. Neuroticism and difficulties

regulating emotion appear to play an equal role in self-harm behaviors among individuals with bipolar vs. unipolar disorders.

In line with our hypotheses, history of self-harm in adults with a mood disorder was related to more severe illness indicators, poorer global functioning, greater depressive symptoms, and (for individuals with bipolar disorder) greater manic symptoms at baseline assessment. The relationships between self-harm history and clinical severity indicators are consistent with previous findings that individuals with self-harm history have more severe presentations of mood disorder (Esposito-Smythers et al., 2010). The current study supports the position that individuals with a mood disorder and a self-harm history have a more severe, and potentially distinct, form of mood disorder. In clinical settings, brief assessment of self-harm can be a useful predictor of the patient's current level of functioning, mood state, and potentially, future suicide risk (Nock et al., 2006).

This study had several limitations. First, we did not measure symptoms of borderline personality disorder or other personality disorders, which commonly co-occur with mood disorders and are associated with self-harm and other symptomatic and functional outcomes. Thus, it is possible that outcomes in this study are in part attributable to comorbid personality disorder symptoms. Additionally, self-report personality trait measures may be subject to information processing biases (e.g., attending to negative over positive stimuli), lack of insight into one's interpersonal behavior, and/or socially desirable responses. The measurement of self-harm, which was dichotomous and rated over the lifetime prohibited a more nuanced examination of self-harm behaviors, including whether self-harm was recent and done within the context of a mood episode. Further, the cross-sectional nature of the study precluded us from making causal associations between variables. Strengths of this study include a relatively large sample size for a clinical mood population and reliable measurements of psychiatric symptoms and global functioning.

Study findings have implications for estimating prevalence of self-harm behaviors in adults with mood disorders, as well as associations between self-harm histories and negative affective personality traits and clinical severity indicators. Future research should examine more closely the temporal order in which negative affective traits, mood symptoms, and self-harm affect one another, as well as how they interact with each other (and how interactions may change) over time. Longitudinal study of these cause and effect relationships in the developmental course of mood disorders may suggest innovative treatment strategies for individuals with major affective disorders and self-harm. Additionally, psychosocial factors (such as loneliness or social stressors) have been linked to self-harm behaviors as well as functional and clinical outcomes in individuals who self-harm (e.g., Turner et al., 2017). Future research should examine the impact that specific psychosocial factors have on self-harm, functioning and clinical outcomes to more clearly delineate what makes self-harm such a potent indicator of poor prognosis in individuals with mood disorders who self-harm.

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Table 1

Demographic and Illness History Characteristics of Sample

	Total $N = 142$	Self-Harm History $n = 61$	No Self-Harm History $n = 81$	Contrast: Self-Harm History vs. No Self-Harm History Groups
Mean Age, yrs.	34.2 ($SD = 14.8$)	28.8 ($SD = 11.5$)	38.3 ($SD = 15.7$)	$F(1,140) = 15.78$, $p<.001$
Sex				$\chi^2(1)=5.04$, $p=.03$
Male	42 (29.6%)	12 (8.5%)	30 (21.1%)	
Female	100 (70.4%)	49 (34.5%)	51 (35.9%)	
Racial Group				$\chi^2(6)=5.38$, $p=.25$
Caucasian	96 (68.2%)	47 (33.1%)	49 (34.5%)	
Black or African-American	7 (4.7%)	0 (0.0%)	7 (4.9%)	
Asian	21 (14.9%)	7 (4.9%)	14 (9.9%)	
Pacific Islander	1 (0.7%)	1 (0.7%)	0 (0.0%)	
American/Alaskan Indian	1 (0.7%)	0 (0.0%)	1 (0.7%)	
More than one race	15 (10.1%)	6 (4.2%)	9 (6.3%)	
Decline to Answer/Missing	1 (0.7%)	0 (0.0%)	1 (0.7%)	
Hispanic Ethnicity	32 (22.5%)	17 (12.0%)	15 (10.5%)	$\chi^2(1)=1.74$, $p=.19$
Met for at least mild clinical depression (based on HRSD scores)	81 (57.0%)	39 (27.5%)	42 (29.6%)	$\chi^2(1)=2.07$, $p=.15$
Diagnosis				$\chi^2(2)=3.41$, $p=.18$
Depressive Disorder	82 (57.7%)	30 (21.1%)	52 (36.6%)	
Major Depression	$n = 79$	$n = 28$	$n = 51$	
Persistent Depressive Disorder	$n = 2$	$n = 1$	$n = 1$	
Depressive Disorder NOS	$n = 1$	$n = 1$	$n = 0$	
Bipolar Disorder	60 (42.3%)	31 (21.8%)	29 (20.4%)	
Bipolar I	$n = 28$	$n = 14$	$n = 14$	
Bipolar II	$n = 29$	$n = 15$	$n = 14$	
Bipolar NOS	$n = 3$	$n = 2$	$n = 1$	

Note: Percentages are calculated based on number within each cell divided by the sample size.