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The Differential Roles of Perceived Criticism and Self-Criticism in the Functions of Non-Suicidal Self-Injury

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Abstract

Perceived criticism (how critical an individual perceives a loved one to be of them) and self-criticism have both been linked to the presence and frequency of non-suicidal self-injury (NSSI). However, they may not be linked through the same mechanisms, as they reflect different sources, or types, of criticism. Here, we explore the relationships among perceived criticism, self-criticism, and the functions of NSSI – that is, the reasons for which individuals engage in this behavior. In a sample of 251 adult participants with and without a history of NSSI both perceived criticism and self-criticism were associated with a history of NSSI. However, they were associated with *different functions* of NSSI. Perceived criticism was more closely associated with interpersonal (related to others) functions of NSSI (e.g., to communicate or connect with loved ones). In contrast, self-criticism was more closely associated with intrapersonal (related to the self) functions of NSSI (e.g., emotion regulation, self-punishment). These findings suggest that perceived criticism from emotionally significant others (e.g., family, close friends) and self-criticism are related to NSSI through distinct and different mechanisms.

Keywords: self-injury, NSSI, perceived criticism, self-criticism, psychopathology.

Introduction

Non-suicidal self-injury (NSSI) is defined as the intentional damage to one's body tissue without suicidal intent (Nock, 2009). Common examples include cutting, burning, hair pulling, excoriation, and head banging. NSSI is a transdiagnostic behavior (Nock et al., 2006) that has been linked to both external factors (e.g., interpersonal relationships) and internal factors (e.g., shame, guilt, emotion regulation; Klonsky & Glenn, 2009). Though suicide (by definition) is not the intent behind this behavior, engaging in NSSI is one of the strongest predictors of the transition from suicidal ideation to suicide attempts among adolescents (Mars et al., 2019), highlighting the importance of studying this behavior.

Why do individuals engage in behavior that is directly harmful and physically painful? Explanations range from psychodynamic theories of controlling unconscious urges, to self-punishment and gaining influence over others (Edmondson et al., 2016; Klonsky, 2007; Nock, 2009). As Nock (2009) points out, the field of psychology has successfully utilized a functional perspective to understand and treat a range of psychiatric disorders and this approach can also be helpful for understanding why people engage in NSSI. Based on this idea, Klonsky and Glenn (2009) developed and validated the Inventory for Statements about Self-Injury (ISAS) to assess motivations for NSSI across individuals. These motivations can be grouped into functions that are more intrapersonal and related to the self (e.g., using NSSI for emotion regulation or for self-punishment), and functions that are more interpersonal and related to others (e.g., using NSSI to communicate to loved ones). Recent work has revealed that

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intrapersonal functions of NSSI are much more common and more closely linked to NSSI severity than are interpersonal functions (Reinhardt et al., 2022; Taylor et al., 2018). This is consistent with the important role that emotion regulation plays for many individuals who engage in NSSI. Prior work has also shown that certain individual functions of NSSI are more closely predictive of suicidal thoughts and behaviors (STBs) than others; for example, feeling generation (i.e., anti-dissociation), self-hatred, avoiding suicide, self-punishment, and communicating distress to others have been shown to be most highly related to STBs (Brausch & Muehlenkamp, 2018; Paul et al., 2015). These differential associations with severity and STBs further highlight the importance of studying the specific motivations behind NSSI engagement.

To summarize, based on the current literature it appears that the functions served by engaging in self-injurious behavior are complex and may vary from individual to individual. Greater clarity about the reasons for this variability has the potential to facilitate more individualized treatment. With this in mind, we focus on the explanatory potential of two key variables – self-criticism and perceived criticism.

Self-criticism, or the extent to which an individual holds beliefs about their lack of value as a person, is a construct that has been linked to negative outcomes in depression, social anxiety, disordered eating, and interpersonal conflict in both clinical and non-clinical populations (Ehret et al., 2015; Iancu et al., 2015; Zelkowitz & Cole, 2019; for a review see Werner et al., 2019). Higher levels of self-criticism have also been linked to the presence and frequency of NSSI (Claes et al., 2012; Gilbert et al., 2010; Glassman et al., 2007; Zelkowitz & Cole, 2019). Path model analyses have shown that self-criticism is a mediating factor in the relationship between parental expressed emotion and NSSI frequency (Baetens et al., 2015). In other words, internal or intrapersonal criticism may be a mechanism through which criticism from family members impacts self-injurious behavior. Similarly, Glassman and colleagues (2007) have demonstrated a mediating role of self-criticism in the link between childhood abuse and NSSI. Not surprisingly, self-criticism plays a key role in current models of NSSI (Hooley & Franklin, 2018).

Perceived criticism, in contrast, is a measure of how critical a person views family members (often a parent) or close others (often a spouse) to be of them. Perceived criticism has been shown to be a reliable predictor of distress and poor outcomes across multiple psychological disorders, including psychosis, mood and anxiety disorders, obsessive-compulsive disorder, agoraphobia, and substance use (Chambless & Steketee, 1999; Hooley & Teasdale, 1989; Lee et al., 2014; Schlosser et al., 2010; Scott et al., 2012). Further, perceived criticism seems to reflect perceived levels of *destructive* criticism, rather than constructive criticism or criticism in general (Peterson & Smith, 2010). Importantly, perceived criticism has been demonstrated to be an independent construct rather than simply reflecting aspects of psychopathology or personality (Masland et al., 2019). In other words, evidence suggests that perceived criticism provides valuable prognostic information that is not attributable to a third variable or a more familiar construct such as depression or neuroticism. Importantly, perceived criticism and self-criticism are not significantly correlated (Masland et al., 2019). This raises questions about the nature of the associations that these two variables have with NSSI.

Though previous research has established that both self-criticism and perceived criticism are linked with NSSI, there are reasons to believe that they may not be linked in the same way. Both assess criticism, but perceived criticism is a more *interpersonal* construct whereas self-criticism is much more *intrapersonal* in nature. This suggests that their relationship with NSSI may differ according to the type of criticism they measure. Here, we examine the relationships among self-criticism, perceived criticism, and the functions (or motivations) for NSSI engagement. More specifically, we consider how perceived criticism and self-criticism are differentially related to the intrapersonal functions of NSSI (those related to the self, such as emotion regulation, self-punishment), and interpersonal functions of NSSI (those related to others, such a means of communication or way of connecting with others).

In conducting this work we acknowledge that general interpersonal difficulties (e.g., conflict, bullying, thwarted belongingness, rejection) have already been found to be associated with NSSI

engagement (Baetens et al., 2015; Hepp et al., 2021; Sorgi-Wilson et al., 2023; Turner et al., 2015). That said, perceived criticism is a distinct type of interpersonal dysfunction that has been little-studied in the NSSI literature despite being highly predictive of poor clinical outcomes. For this reason, it was a primary predictor in the present work. To our knowledge, this is the first study to-date to explore both self-criticism and perceived criticism in relation to the different functions of NSSI in the same sample, comparing the magnitude of these associations to better understand the ways in which different types of criticism are linked to the individual functions of NSSI.

We predicted that, in line with prior work, perceived criticism and self-criticism would both be related to NSSI but associated with different functions of NSSI. We further predicted that perceived criticism, an interpersonal source of criticism, would be more strongly associated with interpersonal functions of NSSI and that self-criticism, an intrapersonal source of criticism, would be more strongly associated with intrapersonal functions of NSSI.

Methods

Participants

The initial sample size included 272 valid responses; of these, 11 participants were removed due to inconsistent responses regarding NSSI frequency, and 9 more were removed because they failed attention checks, which were used to confirm that participants were real people (Finch et al., 2023). The final sample consisted of two hundred and fifty-two participants between the ages of 18 and 30 years ($M = 22.14$, $SD = 3.04$; See Table 1 for more detailed demographics) with and without a history of NSSI who were recruited from a university study pool ($n = 194$) and online forums (e.g., Reddit) ($n = 58$) to complete an online survey as part of a larger study exploring self-injurious behaviors and personality (Finch et al., 2023; note that, to determine the final sample size, a power analysis was conducted regarding the main outcomes of this larger study, and this work is a separate, secondary analysis). We used Reddit in addition to a university study pool to ensure that a substantial portion of the sample had a lifetime history of NSSI. Study advertisements describing the study as exploring "How we Treat Ourselves and Others" were posted on NSSI-related Reddit forums following approval from the forum moderator (in line with previous recruitment methods for NSSI research; e.g., Hooley et al., 2018, Finch et al., 2023). Participants were either compensated with $15 or via academic SONA credit (see Finch et al., 2023 for further details). Data from one participant were excluded due to missing responses for key measures used for the current analyses. Ultimately, 146 participants were included who reported no history of NSSI engagement; a further 105 participants reported a history of NSSI.

Measures

Perceived Criticism

Perceived criticism was assessed using the Perceived Criticism Measure (Hooley & Teasdale, 1989). This single-item measure, which has been shown to be reliable and valid across many studies, asks participants to rate how much criticism they think that they receive from the person who is most emotionally significant to them (e.g., after spouse, for example, is identified, they are asked, "how critical do you think this person [your spouse] is of you?"), on a 1-10 scale (Hooley & Teasdale, 1989; Hunsley & Mash, 2005; Masland et al., 2019; Masland & Hooley, 2015).

Self-Criticism

Self-criticism was assessed using the Self-Rating Scale (Hooley et al., 2010). This eight-item self-report measure assesses the extent to which an individual generally endorses self-critical beliefs (example item: "I am deserving of pain and punishment"), from "strongly disagree" to "strongly agree." The internal reliability for this measure was high in our sample ($\alpha = .91$).

Table 1. Demographics of study sample

	No NSSI (%)	NSSI (%)	Total (%)
Gender			
Cisgender Woman	49.66	48.57	49.09
Cisgender Man	48.30	42.86	45.76
Nonbinary/Genderqueer	< 1.00	5.71	3.64
Transgender Woman	0.00	1.90	0.91
Transgender Man	< 1.00	0.00	0.45
Prefer not to say	0.00	< 1.00	0.45
Race			
White	45.95	41.35	43.83
Asian	37.16	37.50	37.30
Black or African American	6.76	16.45	10.71
Black or African American and White	0.00	1.92	0.91
Asian and White	6.76	< 1.00	3.64
Not listed	3.38	2.88	3.18
Ethnicity			
Hispanic, Latino, or Spanish	4.73	7.69	5.95
Not Hispanic, Latino or Spanish	95.27	92.31	94.05
Employment			
Students	75.67	42.31	62.55
Employed full-time	11.48	25.00	17.13
Employed part-time	8.11	25.00	15.25
Unemployed; Looking for Work	1.35	5.77	3.40
Unemployed; Not Looking for Work	1.35	1.92	1.62

Functions of NSSI.

Frequency and functions of NSSI were assessed using the Inventory for Statements about Self-Injury (ISAS; Klonsky & Glenn, 2009). The ISAS asks about lifetime frequency of different types of NSSI (e.g., cutting, burning, excoriation), as well as different individual functions of NSSI (i.e., reasons for engaging in NSSI). These are combined into more global intrapersonal and interpersonal function subscales. The intrapersonal subscale includes functions such as: affect regulation, anti-dissociation, anti-suicide, marking distress, and self-punishment. The interpersonal subscale includes functions such as: autonomy, interpersonal boundaries, interpersonal influence, peer bonding, revenge, self-care, sensation-seeking, and toughness. As is customary for this measure, these function subscales were averaged to produce an intrapersonal and interpersonal factor score.

Analyses

The relationships among perceived criticism, self-criticism, and history of NSSI were analyzed in the full participant sample (n=251), while the relationships among perceived criticism, self-criticism, and the *functions* of NSSI were conducted within those who reported a history of NSSI (n=105).

The 13 subscale scores were entered as outcomes into separate ordinal logistic regressions using the "polr" function from the "MASS" package (Venables & Ripley, 2002), predicted by both perceived criticism and self-criticism. In each model, the effect of one predictor was estimated while controlling for the effects of the other variable (example syntax: interpersonal boundaries ~ perceived criticism + self-criticism). All inferential statistical values (i.e., p values) were adjusted for multiple comparisons using the False Discovery Rate correction, using the p.adjust function from the "stats" package in R (R Core Team, 2023). All analyses were conducted using R version 4.2.2.

Results

Participants

There were no significant differences between the those reporting a history of NSSI and those who had never engaged in NSSI with regard to variables such as gender (t= -0.436, p=.663), race (t= -0.834, p=.405), or ethnicity (t= -0.787, p=.432); the NSSI group was slightly older (M = 22.84) than the non-NSSI group (M = 21.63; t= 3.156, p=.002).

Perceived Criticism, Self-Criticism, and NSSI Presence

Perceived criticism and self-criticism were both associated with NSSI. Across all participants, t-tests revealed that those reporting a history of NSSI scored significantly higher than those who had never engaged in NSSI on both perceived criticism (NSSI group mean=6.20, non-NSSI group mean=5.48; t(249)=2.015, p=.045) and self-criticism (NSSI group mean=23.91, non-NSSI group mean=17.44; t(249)=6.713, p<.001). As expected based on prior work (Masland et al., 2019), perceived criticism and self-criticism were not significantly correlated (r=.05, p=.476). Figure 1 provides full correlation output.

Perceived Criticism and NSSI Functions

For those with a history of NSSI, and consistent with prediction, perceived criticism was strongly associated with engaging in NSSI for interpersonal reasons. After correcting for multiple comparisons, perceived criticism was associated with using NSSI to set interpersonal boundaries (β=.430, p=.040), influence others (β=.654, p=.002), bond with peers (β=.904, p=.003), exact revenge (β=.786, p=.003), and exhibit toughness (β=.455, p=.032). There were also nonsignificant trends for perceived criticism to be associated with a greater tendency to use NSSI as a means to practice self-care (β=.380, p=.062), or as a sensation-seeking mechanism (β=.381, p=.062). These associations were statistically significant before adjusting for multiple comparisons. Establishing self-autonomy was the only interpersonal function not predicted by perceived criticism (β=.331, p=.105). Perceived criticism did significantly predict the intrapersonal function of marking distress (β=.432, p=.032), perhaps due to the potential of NSSI to signal distress to others. However, perceived criticism was unrelated to any other intrapersonal functions of NSSI, suggesting that self-criticism has a much stronger relationship with intrapersonal functions when compared to perceived criticism.

Self-Criticism and NSSI Functions

As hypothesized, self-criticism strongly predicted engaging in NSSI for intrapersonal reasons when controlling for perceived criticism. Self-criticism was predictive of all individual intrapersonal functions, including to regulate affect (β=.506, p=.032), prevent dissociation (β=.536, p=.015) and suicide (β=.827, p<.001), mark distress (β=.426, p=.047), and self-punish (β=.785, p<.001). Self-criticism was slightly more predictive of self-care (β=.451, p=.042) than was perceived criticism (β=.380, p=.062), perhaps because self-care can often be seen as intrapersonal in nature (i.e., creating a wound to more easily care for than one's own emotional distress (Klonsky & Glenn, 2009). Lastly, self-criticism predicted interpersonal influence (β=.451, p=.042), though to a lesser degree than perceived criticism did (β=.654, p=.002).

Table 2. Model output of perceived criticism, self-criticism, and individual functions of NSSI.

	Perceived Criticism			*Self-Criticism*		
	β	*SE*	*p*	*β*	*SE*	*p*
Intrapersonal Functions						
Affect Regulation	-0.247	0.180	0.197	**0.506**	**0.202**	**0.031***
Anti-Dissociation	0.019	0.172	0.913	**0.536**	**0.184**	**0.014***
Anti-Suicide	0.280	0.173	0.133	**0.827**	**0.201**	**0.000***
Marking Distress	**0.425**	**0.170**	**0.032***	**0.426**	**0.190**	**0.042***
Self-Punishment	0.178	0.169	0.314	**0.785**	**0.189**	**0.000***
Interpersonal Functions						
Interpersonal Boundaries	**0.430**	**0.182**	**0.040***	0.375	0.203	0.089
Interpersonal Influence	**0.654**	**0.184**	**0.003***	**0.519**	**0.203**	**0.031***
Peer Bonding	**0.904**	**0.270**	**0.004***	0.288	0.275	0.339
Revenge	**0.786**	**0.211**	**0.003***	0.187	0.215	0.415
Self-Care	**0.380**	**0.179**	**0.062**†	0.451	0.193	**0.042***
Sensation-Seeking	**0.381**	**0.184**	**0.064**†	0.116	0.201	0.563
Toughness	**0.455**	**0.176**	**0.030***	0.244	0.188	0.243
Autonomy	0.331	0.184	0.109	0.400	0.203	0.074

Note. *Statistically significant at or below an alpha level of .05 after correcting for multiple comparisons.† Non-significant trend (below an alpha value of .07) after correcting for multiple comparisons.

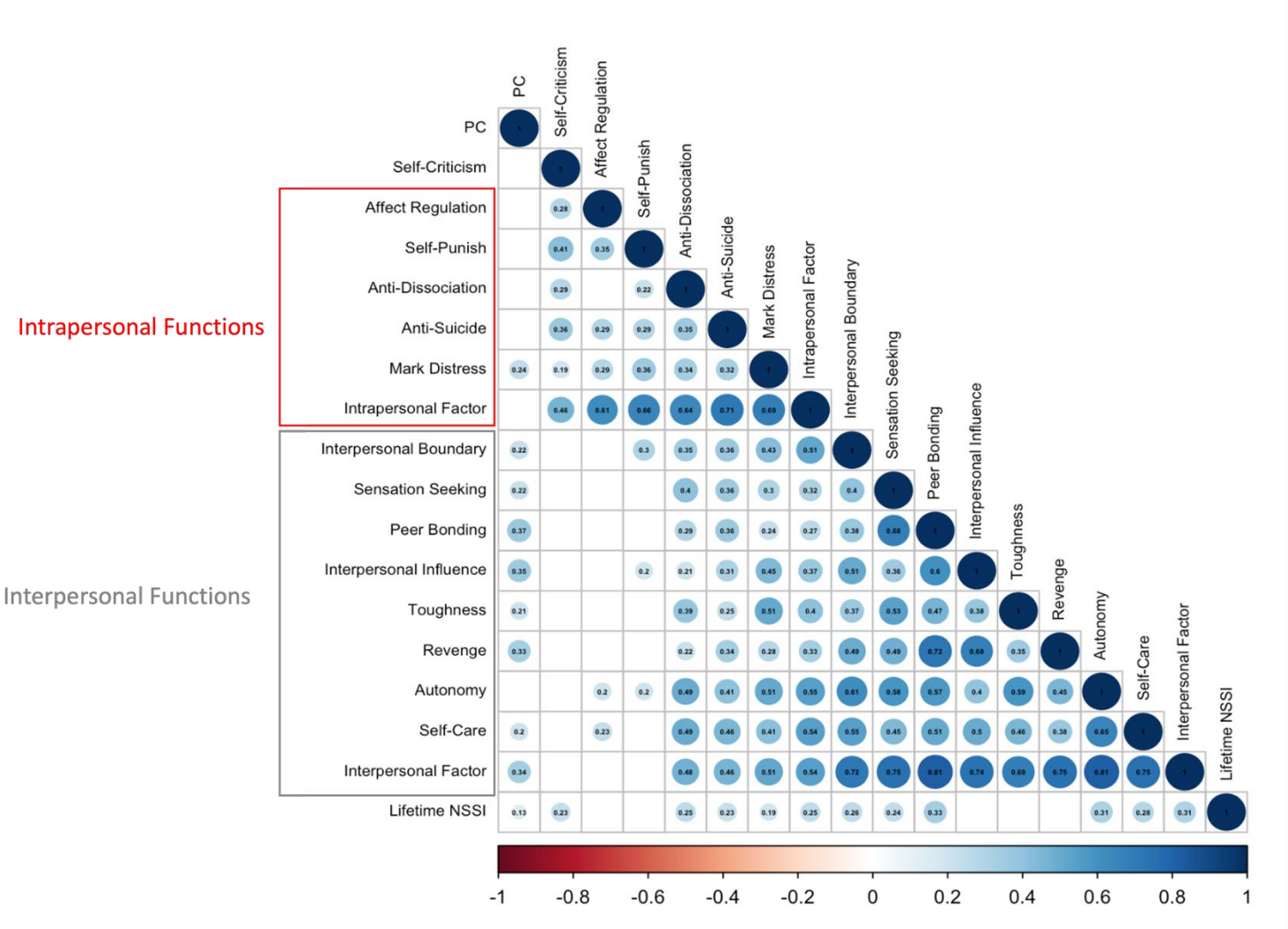

Figure 1. Correlation matrix of perceived criticism, self-criticism, and individual functions of NSSI.

Discussion

NSSI is a significant predictor of suicidal thoughts and behaviors, affecting a substantial portion of the U.S. population, with the highest risk among adolescents and young adults (De Luca et al., 2023; Gillies et al., 2018). Transdiagnostic in nature, NSSI is driven by complex, multifaceted functions, both intrapersonal (e.g., affect regulation, self-punishment) and interpersonal (e.g., influencing others, establishing autonomy). Although intrapersonal functions are more prevalent and predictive of severity, understanding the full spectrum of motivations behind NSSI is crucial for effective treatment.

Previous research links NSSI with both interpersonal difficulties and intrapersonal dysfunction, consistent with respective theoretical models. In this study, we examined the differential roles (i.e., comparing the magnitude of associations) of perceived criticism (interpersonal) and self-criticism (intrapersonal) in NSSI, hypothesizing that perceived criticism would be more predictive of interpersonal functions, while self-criticism would predict intrapersonal functions. Our findings

confirm these hypotheses: self-criticism is more closely associated with intrapersonal functions of NSSI, whereas perceived criticism aligns more with interpersonal functions.

It is important to acknowledge that this was a cross-sectional, self-report study with a relatively small sample size. Additionally, a large percentage of the sample were students, and, as such, not representative of the US population overall. However, this age group is generally at higher risk of NSSI relative to older groups and is therefore a critical population to study. Future work may recruit community or clinical samples for longitudinal studies to examine time-linked associations among the severity of these different types of criticism, urges to engage in NSSI, and individual functions of this behavior.

Despite these limitations, the finding that perceived criticism and self-criticism are associated with different functions of NSSI is important. Clinically, this differentiation is valuable insofar as it allows practitioners to understand and target the motivational roots of NSSI behaviors, rather than focusing solely on the behaviors themselves. By addressing these underlying motivations therapists can tailor interventions to the specific needs of the individual, potentially leading to more effective and sustainable outcomes. Furthermore, both perceived and self-criticism can be efficiently assessed using single-item or brief self-report measures, facilitating their integration into clinical practice and enabling more targeted, function-based interventions.

Additional Information

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Conflict of Interest

The authors have no conflicts of interest to disclose.

Ethical approval

All study procedures were approved by the Committee on the Use of Human Subjects at Harvard University and all participants provided informed consent prior to completing the study.

Data Availability

Unavailable.

Author CRediT Statement

Jordan Zimmerman: Writing - review and editing, Writing - original draft, Methodology, Investigation, Formal analysis, Conceptualization. Jill M. Hooley: Writing - review and editing, Methodology, Investigation, Conceptualization, Data curation, Funding acquisition.

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