

Self-criticism and anxiety in the general population

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Abstract

Aim of the study: Self-criticism is the personality trait of negative self-evaluation and is a transdiagnostic feature of many psychopathologies. The research and theoretical models of self-criticism have described its central role in the development and maintenance of depression. However, the relationship between self-criticism and anxiety, a core feature of many prevalent mental disorders in the general population, has yet to be adequately explored. The present study investigated the associations between self-criticism, anxiety, and worry, after accounting for the effects of five-factor personality traits.

Methods: Adults (N=343) recruited through an online platform completed standardized questionnaires that assess for self-criticism, anxiety, and worry symptoms, as well as five-factor personality traits. Demographic data were collected using a short self-designed questionnaire.

Results: Findings revealed that self-criticism was positively and strongly associated with anxiety and worry symptoms, independent of the five-factor personality traits. Also, neuroticism was positively associated with self-criticism, anxiety, and worry, and extraversion and conscientiousness were negatively associated with anxiety and worry.

Discussion: The nature of the association between self-criticism and anxiety remains unclear. Perhaps, in response to the excessive negative emotions and self-evaluation that self-criticism generates, the individual may develop maladaptive coping behaviours that produce anxiety.

Conclusions: Overall, participants who were self-critical were more likely to be anxious, suggesting the need for further investigation into the directionality and underlying mechanisms of this relationship.

self-criticism; anxiety; worry; five-factor model of personality

INTRODUCTION

Self-criticism is a personality trait by which an individual negatively evaluates oneself, and generates feelings of guilt, shame, inadequacy, and worthlessness [1]. While appropriate self-evaluation is vital to personal growth and accurate self-definition, excessive self-criticism is harm-

ful. Indeed, self-criticism is a transdiagnostic feature of many psychopathologies, including depression, social anxiety disorder, and eating disorders [2, 3]. Several theoretical models of how self-criticism develops in individuals have been proposed. Blatt describes self-criticism as a developmental deviation of self-definition, a personality dimension that refers to the individual's autonomy and goal orientation [4]. Shahar proposes that self-criticism originates from parental criticism and the inadequate development of authenticity and accurate self-knowledge [5]. Gilbert suggests that self-criticism arises from the

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motivational system of interpersonal competition and social ranking [6]. In each model, negative self-definitional events may cause the development of excessive self-criticism, thus contributing to mental health problems and worse treatment outcomes [7].

Most previous research on self-criticism has examined its connection with depression, demonstrating that they are strongly associated [1, 8, 9]. Despite being positioned as a transdiagnostic risk factor for various psychopathologies, there has been little attention given to exploring the connection between self-criticism and anxiety, a core feature of many prevalent mental disorders in the general population, including Generalized Anxiety Disorder [10]. It has been hypothesized that excessive self-criticism may be linked to anxiety through the development of maladaptive coping behaviours and/or by the consequences of feeling inadequate when facing life challenges [7]. One study by Kopala-Sibley and colleagues explored the role of self-criticism in depressive and anxiety symptoms in early adolescence, reporting that self-criticism was associated with depressive, but not anxious symptoms [7]. However, some studies have investigated self-criticism in association with other anxiety and stress-related disorders, including Social Anxiety Disorder [11], and Post-Traumatic Stress Disorder [12], demonstrating that greater self-criticism was associated with increased pathology.

The present study was conducted to investigate the associations that self-criticism has with anxiety symptoms, as well as worry, which is a major feature across many anxiety disorders [13]. Considering that some authors have argued that psychological vulnerabilities, like self-criticism, may be redundant with higher-order personality domains like Neuroticism [14], the present study examined the associations between self-criticism, anxiety symptoms, and worry after controlling for the effects of the five-factor personality traits (i.e., Neuroticism, Agreeableness, Extraversion, Conscientiousness, and Openness).

METHODS

Participants and Procedures

Participants were 343 adults sourced through the Prolific Academic (<https://www.prolific.co/>) recruitment platform. Participants were provided with information about the study and were invited to indicate consent by completing study questionnaires using Qualtrics. Remuneration of £7.20 was provided to participants. A total of 355 individuals consented to participate, with a final sample of 343 after removal of 3 cases due to incompleteness and 9 cases due to inattentive responding (e.g., failed attention check items).

Participants' average age was 34.26 ($SD=12.67$; range=18-75). The sample included 178 men (51.2%), 152 women (44.3%), and 13 non-binary (3.5%) individuals. The majority, 76.1%, identified as heterosexual. Regarding racial identity, 54.8% identified as Caucasian, 18.4% as Asian, 7.3% as African, 4.4% as Hispanic, 4.1% as South Asian, and 3.5% as other ethnicities.

Measures

General Anxiety

The Generalized Anxiety Disorder-7 scale (GAD-7) was used to assess severity of general anxiety symptoms [15]. The GAD-7 is comprised of seven items that reflect symptoms of Generalized Anxiety Disorder as experienced by the respondent over the past two weeks. Scoring uses a 4-point scale anchored by 0 (*not at all*) and 3 (*nearly every day*). Higher scores indicate greater severity of generalized anxiety symptoms. The GAD-7 evidenced good internal consistency in this sample ($\alpha=.92$).

Worry

The Penn State Worry Questionnaire (PSWQ) was used to assess worry symptoms [16]. The PSWQ contains 16 statements about worry, responded to using a scale from 1 (*not at all typical of me*) to 5 (*very typical of me*). The PSWQ had good internal consistency in this sample ($\alpha=.95$). Higher scores indicate greater severity of worry.

Self-Criticism

Self-criticism was assessed using the combined Inadequate Self and Hated Self subscales of the Forms of Self-Criticizing/Attacking & Self-Reassuring Scale (FSCRS) [17]. Multiple studies have supported the reliability of the FSCRS across various populations with these two subscales often combined to capture self-criticism [18]. The 14 items of this combined self-criticism scale assess individuals' criticizing responses toward the self in the face of setbacks or mistakes. Responses are scaled from 0 (*not at all like me*) to 4 (*extremely like me*), with higher scores indicating more severe self-critical tendencies. This measure of self-criticism had good internal consistency in the present sample ($\alpha=.94$).

Five-Factor Personality

An abbreviated version of the International Personality Item Pool Five-Factor Model Personality Scale (mini-IPIP), consisting of 20 items scored from 1 (*strongly disagree*) to 5 (*strongly agree*), was used to assess the five-factor personality traits of neuroticism ($\alpha=.72$), extraversion ($\alpha=.79$), openness ($\alpha=.77$), agreeableness (.73), and conscientiousness ($\alpha=.65$) [19].

Analytic Approach

Statistical analyses were performed using SPSS version 25. Zero-order correlations were computed to examine bivariate associations. Two separate linear regression analyses were then conducted using anxiety and worry as the dependent variables. Five-factor traits found to be significant at the level of zero-order correlations were included as co-variates in the first step, with self-criticism entered as a predictor in the second step. This allows for examining the portion of variance in anxiety and worry accounted for by self-criticism after controlling for the effects of general personality traits.

RESULTS

Correlation analyses revealed that self-criticism was strongly associated with anxiety symptoms and worry (see Table 1). Significant associations were also observed for three of the personality traits. Neuroticism was positively associated with self-criticism, anxiety, and worry. Extraversion and conscientiousness were negatively associated with anxiety and worry. Thus, neuroticism, extraversion, and conscientiousness were included in regression models to partial out their influence on the self-criticism – anxiety/worry relationships.

Table 1. Descriptive statistics and zero-order correlations for study variables; N = 343.

	M (SD)	1	2	3	4	5	6	7
1. Self-criticism	24.78 (13.89)	—						
2. Anxiety	7.33 (5.80)	.68**	—					
3. Worry	53.76 (15.47)	.71**	.70**	—				
4. Neuroticism	3.12 (.90)	.61**	.58**	.71**	—			
5. Extraversion	2.53 (.94)	-.34**	-.27**	-.36**	-.29**	—		
6. Openness	3.77 (.84)	.01	.05	.01	.05	.16*	—	
7. Agreeableness	3.70 (.76)	-.03	-.08	.05	.03	.30**	.33**	—
8. Conscientiousness	3.25 (.84)	-.46**	-.33**	-.38**	-.37**	.16*	.06	.15*

* $p < .01$; ** $p < .001$

Regression models for anxiety, $F(4, 338)=87.11$, $p<.001$, and worry, $F(4, 338)=146.15$, $p<.001$, were significant. Table 2 displays coefficients and significance tests for both models. After controlling for relevant five-factor traits, self-criticism

remained significantly associated with anxiety symptoms and worry, accounting for 15% and 9% of the variance, respectively. Moreover, the inclusion of self-criticism rendered extraversion and conscientiousness no longer significant in

the model predicting anxiety symptoms, and conscientiousness non-significant in predicting worry. The association between self-criticism and these anxiety domains thus appears to be fairly robust and largely independent of trait personality domains.

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Table 2. Results of regression models examining the association between self-criticism, anxiety symptoms, and worry, controlling for five-factor personality traits.

	Anxiety (GAD-7)				Worry (PSQ)			
	R ²	Beta	t	p	R ²	Beta	t	p
Step 1	.36				.54			
Neuroticism		.50	10.39	<.001		.62	15.25	<.001
Extraversion		-.10	-2.18	.03		-.16	-4.29	<.001
Conscientiousness		-.13	-2.74	.006		-.12	-3.10	.002
Step 2	.51				.63			
Neuroticism		.26	5.36	<.001		.44	10.37	<.001
Extraversion		-.01	-.26	.80		-.10	-2.73	.007
Conscientiousness		.01	.18	.86		-.02	-.48	.63
Self-criticism		.52	10.10	<.001		.40	8.95	<.001

DISCUSSION

The present study is the first to directly assess the relationships between self-criticism and anxiety symptoms and worry. After controlling for five-factor personality traits, self-criticism was found to be strongly associated with anxiety symptoms and worry, thereby adding to the extant literature on the role of self-criticism in anxiety and anxiety-related psychopathologies [11, 12, 20]. However, the nature of the association between self-criticism and anxiety remains unclear. Perhaps, in response to the excessive negative emotions and self-evaluation that self-criticism generates, the individual may develop maladaptive coping behaviours that produce anxiety. Namely, self-criticism may reflect and/or reinforce a sense of self that is deficient or unworthy. As a result, an individual may be more likely to perceive life challenges as beyond their abilities or deservedness, thereby giving rise to anxiety and worry. Blatt and Zuroff's [21] diathesis-stress or personality-vulnerability model explains this by describing that negative self-definitional events in combination with maladaptive personality factors, such as excessive self-criticism, trigger the development of depressive and anxious psychopathology. Koppala-Sibley and colleagues [7] build on this mod-

el by suggesting that negative self-definitional events may also increase self-criticism over time. The self-criticism assessed in the present study assumes the form of an inner dialogue in the context of a setback. This may reflect an intolerance for mistakes, inducing worry that corresponds to the desire to regain control and reduce the likelihood of future failures. In support of this, Robillard and colleagues [22] found that self-criticism strengthened the association between stress and anxiety. Future study should explore the directionality between self-criticism and anxiety, and the mechanisms underlying the relationship.

The present study identified that neuroticism was positively associated with self-criticism, anxiety, and worry, whereas extraversion and conscientiousness were found to be negatively associated with anxiety and worry, which has been identified in other studies [23, 24]. These results highlight the importance of including these personality factors in studies that explore the relationship between self-criticism and anxiety and worry. However, since self-criticism is independently associated with anxiety and worry, this suggests that self-criticism is not a redundant factor of higher-order personality traits and requires consideration as a distinct construct [14].

The association between self-criticism and anxiety may have implications for the treatment of their related psychopathologies. For example, the use of self-compassion related interventions has been proposed as an effective way to treat excessive self-criticism and numerous other psychiatric symptoms. Self-compassion related interventions attempt to address the inner critics and overwhelming emotions with a compassionate inner self. A pilot study and randomized controlled trial of mindful self-compassion (MSC) by Neff and Germer found that an MSC program significantly increased various well-being outcomes at 6 months and 1-year follow-ups [25]. Furthermore, meta-analyses identified that self-compassion related interventions produced a significant, moderate reduction in self-criticism, an effect that was proportional to the length of the treatment course, and improved a range of psychological outcomes, including anxiety, rumination, depression, and eating behaviour [26, 27]. Clinicians may seek to implement self-compassion related interventions into their treatment of patients suffering with self-criticism and its related psychopathologies.

Limitations of the present study should be considered when interpreting these findings. The cross-sectional design does not provide temporal information between self-criticism and anxiety, so directionality cannot be inferred. Furthermore, while the five-factor model of personality is broad and well-researched, it does not encompass all aspects of personality. Thus, the present study cannot rule out other aspects of personality that may have confounded the relationship between self-criticism and anxiety and worry. Another possible limitation could be that participants self-selected for the study by actively engaging with the online recruitment platform.

Anxiety and its related disorders are common and cause significant burden on individuals and society. Therefore, addressing factors that may contribute to the development and maintenance of anxiety, such as self-criticism, is crucial. More research must be done to explore the causality of the association between self-criticism and anxiety, as well as the underlying mechanisms.

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