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Short Communication

The influence of trait anger, trait anxiety and negative urgency on disordered eating

Kendra R. Davis *, Sarah Fischer

Department of Psychology, University of Georgia, Athens, GA 30606, United States

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ABSTRACT

Negative affectivity and impulsivity are potential risk factors for eating pathology. Both are heterogeneous constructs, yielding varied effect sizes in the prediction of pathology. The use of a specific construct, negative urgency, the tendency to act impulsively while distressed, improves the predictive utility of 'impulsivity' in eating pathology. The use of specifically defined affectivity constructs may similarly improve theories of risk. Anger and anxiety both represent high arousal, negatively valenced emotions, but promote different interactions with the environment; approach vs. avoidance. Undergraduate women completed measures of negative urgency, trait anger, trait anxiety, and eating pathology 3 months apart. Negative urgency and trait anxiety prospectively accounted for unique variance in increases in global eating pathology, while negative urgency prospectively accounted for unique variance in binge eating. Anger was not a significant predictor. Results suggest that the use of both specifically defined impulsivity and affectivity constructs improves predictive utility of traits in eating pathology.

1. Introduction

Individuals with disordered eating (DE) engage in restriction, binges, and inappropriate compensatory behaviors (American Psychiatric Association, 2000). Impulsivity is a well-established correlate of some types of DE, and recent longitudinal studies indicate that it may confer risk for later DE (Bodell, Joiner, & Ialongo, 2012; Fischer, Smith, & Cyders, 2008; Pearson, Combs, Zapolski, & Smith, in press). Past prospective studies of impulsivity and risk for DE yielded small and variable effect sizes (Stice, 2002). These variations may be due to the multi-faceted nature of impulsivity, which historically has contributed to the use of imprecise self-report assessments of this construct (Smith, Fischer, Cyders, Annus, & Spillane, 2007). In contrast, a precisely defined facet of impulsivity, negative urgency (NU) (the tendency to act rashly when distressed) is associated with DE with moderate to large effect sizes (Fischer et al., 2008; Whiteside & Lynam, 2001). Other impulsivity related traits, such as sensation seeking, (the tendency to seek out thrilling experiences) (Whiteside & Lynam, 2001) have demonstrated small effects (e.g. Claes, Vandereycken, & Vertommen, 2005). Thus, individuals who engage in rash actions during negative affect (NA) states appear to have heightened vulnerability to DE.

1.1. NA and DE

State and trait NA is associated with increases in DE (Stice, 2002). Consistent with an emotion regulation hypothesis, ecological momentary assessment (EMA) studies have demonstrated increases in NA before binge and purge events (Smyth et al., 2007). Trait neuroticism, the tendency to experience NA, is also positively associated with DE (e.g. MacLaren & Best, 2009).

Similar to 'impulsivity', NA is not consistently defined across studies. Many use the construct of NA to encompass all negatively valenced emotions, whether they are approach or avoidance related. Further, many studies utilize measures of trait neuroticism to assess NA. Facet level traits of this broad construct include anger/hostility, depression, or anxiety, which differ on arousal and avoidance dimensions (Costa & McCrae, 1992).

1.2. Emotional valence

NA can be conceptualized along dimensions of arousal and approach/avoidance. Approach emotions promote environmental interactions, while avoidance-related emotions promote withdrawal. Anger is an approach-related affect, despite its negative valence (Carver & Harmon-Jones, 2009; Harmon-Jones & Harmon-Jones, 2010). Anger is classified this way, in part, because it elicits various biological responses representative of approach emotions (Carver & Harmon-Jones, 2009).

Although correlated with anger because both are negatively valenced and highly arousing, anxiety represents a withdrawal emotion because it promotes avoidance of aversive stimuli (Carver & Harmon-Jones, 2009). Thus, anxiety and anger influence behavior and decisions in differentiated ways (Carver & Harmon-Jones, 2009). The distinctions between approach and avoidance suggest that it is useful to investigate specific emotional constructs rather than broadly defined NA. Similar to impulsivity, broad definitions

* Corresponding author. Tel.: +1 501 283 2116; fax: +1 706 542 3275.
E-mail address: kdavi205@uga.edu (K.R. Davis).

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may aggregate discrete emotions based on valence and obscure motivational influences specific to each state.

Both trait anger and anxiety are associated with DE (Miotto, Pollini, Restaneo, Favaretto, & Preti, 2008; Waller et al., 2003; Zehr, Culbert, Sisk, & Klump, 2007). Maladaptive behaviors, such as DE, may function to reduce the high arousal component of NA (Claes, Klonsky, Muehlenkamp, Kuppens, & Vandereycken, 2010). A meta-analysis of EMA findings suggest that binge eating does not reduce overall NA (Haedt-Matt & Keel, 2011). DE may relieve distress associated with negatively valenced high arousal, rather than all negatively valenced states. DE may be motivated by an emotional urge to reduce arousal, frequently present in individuals with high levels of trait anger or anxiety, by either engagement in the environment or avoidance of aversive stimuli.

1.3. Current study

Both impulsivity and NA may increase vulnerability to DE (Pearson et al., in press; Stice, 2002). However, the use of a specific measure of impulsivity, NU, improves the predictive utility of this construct (Smith et al., 2007). The use of broadly defined NA measures may also obscure significant relationships between facets of neuroticism and risk for DE. Both anger and anxiety are negatively valenced, high on the arousal dimension, and associated with DE (Carver & Harmon-Jones, 2009). However, they differ on approach and avoidance dimensions. We examined the influence of NU, trait anger, and trait anxiety on increases in DE in college women over their first semester. Because both traits are associated with DE but may have opposite influences on behavior, we did not make specific hypotheses regarding which trait would account for the most variance in symptoms. Rather, we explored the influence of these traits on increases in DE over time when examined simultaneously with NU.

2. Method

2.1. Participants

Participants were 460 introductory psychology female first year students at a large Southeastern university. Their mean age was 18.04 years, and 75.9% of the sample self-identified as Caucasian, 7.4% as Asian–American, 10.7% as African American, 1.7% as Hispanic, 3.0% as biracial, and 1.3% as another ethnicity.

2.2. Measures

2.2.1. NEO-PI-R: neuroticism scale (Costa & McCrae, 1992)

The NEO-PI-R (Revised NEO Personality Inventory) is a self-report measure of the five-factor model of personality. The Neuroticism scale assesses six facets of neuroticism including: depression, anger/hostility, self-consciousness, low self-esteem, and craving. For the purpose of this report, we used the anger-hostility and anxiety facets of the Neuroticism domain. In this sample, Cronbach's α = .86 for anger, and .91 for anxiety.

2.2.2. UPPS-R: negative urgency scale (Whiteside & Lynam, 2001)

The UPPS-R is a Likert scale that assesses 4 facets of impulsivity: urgency, lack of planning, lack of perseverance, and sensation seeking. Facets were developed from a factor analysis of impulsivity measures. Multi-trait multi-method analysis indicated that each facet accounts for unique variance in impulsive behaviors and that these estimations are not reflective of measurement method (Smith et al., 2007). In this sample α = .84 for the NU scale.

2.2.3. Ede-q (EDE-Q: Fairburn & Béglin, 1994)

The Eating Disorder Examination-Questionnaire (EDE-Q) is a self-report measure that reliably assesses the frequency of DE symptoms over the past 28 days (Luce & Crowther, 1999). We used the Global score, and combined items to create two additional variables: total purging behaviors and total binge episodes. In this sample, the Global score Cronbach's α at Time 1(T1) = .95 and .94 at Time 2 (T2). Purging behaviors included all compensatory behaviors (Keel, 2007) and binge episodes included subjective and objective binge eating (Mond, Latner, Hay, Owen, & Rodgers, 2010). Studies in community and clinical samples have demonstrated few differences in eating disorder severity and comorbid psychopathology between individuals with subjective versus objective binge eating (e.g. Latner, Hildebrandt, Rosewall, Chisholm, & Hayashi, 2007).

2.3. Procedure

Participants completed measures in groups of up to 30 individuals. There were no exclusion criteria for this study. Participants were informed of additional credit for completion of the measures again towards the end of the semester, and provided contact information if they wished to complete the survey again. Participants completed questionnaires at T2, on average, 3 months following T1.

3. Results

3.1. Attrition

A total of 460 participants completed the first wave of the study. In this sample, 17 did not complete all questionnaires, and so were dropped from analyses. A total of 299 provided complete responses (67.5% of the original sample) at T2. Independent samples *t*-tests comparing individuals who completed the study versus those who dropped out indicated no significant differences between them on any baseline variables (*t* values ranged from .27 to 1.8).

3.2. Sample characteristics

Mean EDE-Q Global scale scores were 1.56 at T1, (SD = 1.19), and 1.95 (SD = 1.18) at T2. Twenty-one percent of the sample endorsed at least one binge episode in the past 28 days. A smaller number, 5.4%, endorsed purging. These findings are consistent with longitudinal studies of DE onset (Stice, Marti, Shaw, & Jaconis, 2009). Because all outcome variables were significantly skewed, we created log transformed variables representing Global EDE-Q scores at T1 and T2. We created four dichotomous variables indicating whether or not a participant reported any binge eating at T1, reported binge eating at T2, reported any purging at T1, and reported purging at T2. All of the following analyses utilize these transformed variables.

A paired samples t-test indicated that EDE-Q Global scores significantly increased from T1 to T2 (t = 9.88, p < .001). NU and trait anxiety were positively associated with all disordered eating variables at T1 and T2, with the exception of purging. Trait anger was associated with all variables at T1.

3.3. Test of hypotheses

To examine the prospective influence of baseline trait anger, anxiety, and NU on increases in DE, while controlling for baseline symptoms, we conducted a hierarchical linear regression with EDE-Q Global scores at T2 as the dependent variable (see Table 1).