



The relationship between anxiety sensitivity and disordered eating: The mediating role of experiential avoidance

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ABSTRACT

This study examined the role of experiential avoidance in the association between dimensions of anxiety sensitivity (AS) and disordered eating. A sample of 395 undergraduate students completed a series of questionnaires assessing the constructs of interest. Results indicate that the AS dimension of fear of cognitive dyscontrol was significantly uniquely associated with disordered eating. Furthermore, results provide support for a model in which experiential avoidance mediates the association between fear of cognitive dyscontrol and disordered eating. Findings of the present study highlight one potential mechanism underlying the association between AS and disordered eating, suggesting that efforts to avoid internal experiences may play a role in eating pathology. Clinical implications of these findings are discussed.

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1. Introduction

Anxiety sensitivity (AS), an individual difference characteristic involving the fear of anxiety-related bodily sensations due to beliefs that these sensations will have harmful physical, cognitive, or social consequences (Reiss, 1991), has received increasing attention as a potential transdiagnostic risk factor. Although originally conceptualized as a risk factor for anxiety-related pathology (particularly panic disorder; Cox, Borger, & Enns, 1999), recent research suggests that AS may underlie numerous forms of psychopathology, including substance use (Lejuez, Paulson, Daughters, Bornoalova, & Zvolensky, 2006), depression (Tull, Gratz, & Lacroce, 2006), and borderline personality disorder (Gratz, Tull, & Gunderson, 2008). Studies have also begun to examine the association between AS and disordered eating, finding elevated AS among undergraduates and outpatients with (vs. without) bulimic symptoms and highlighting the mediating role of maladaptive responses to internal experiences (including distress intolerance and a lack of interoceptive awareness) in the association between AS and bulimic symptoms (Anestis, Holm-Denoma, Gordon, Schmidt, & Joiner, 2008; Anestis, Selby, Fink, & Joiner, 2007).

Another maladaptive response to internal experiences that may explain the association between AS and disordered eating is experiential avoidance (EA), defined as the unwillingness to remain in contact with unwanted internal experiences (e.g., thoughts, emotions, physical sensations; Hayes, Wilson, Gifford, Follette, & Strosahl, 1996). Specifically, individuals high in AS may be unwilling to remain in contact with anxiety-related bodily sensations and thus, may be motivated to engage in strategies that function to escape or lessen these sensations and their associated distress. Consistent with this suggestion, research indicates an association between AS and both EA (Stewart, Zvolensky, & Eifert, 2002; Tull & Gratz, 2008; Zvolensky & Forsyth, 2002) and several experientially-avoidant behaviors (e.g., substance use; DeHaas, Calamari, Blair, & Martin, 2001; Stewart et al., 2002). Further, EA has been found to mediate the association between AS and other forms of psychopathology, such as borderline personality disorder (Gratz et al., 2008) and depression (Tull & Gratz, 2008). Given evidence that disordered eating may also serve an experientially-avoidant function (e.g., Heatherton & Baumeister, 1991; Polivy & Herman, 1993), and consistent with research demonstrating an association between bulimic symptoms and EA (Hayaki, 2009; Lavender, Jardin, & Anderson, 2009), EA may likewise underlie the association between AS and disordered eating.

The current study sought to examine associations between AS, EA, and disordered eating. Given the focus within past research on the

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association between global AS and bulimic symptoms only, we examined associations between specific AS dimensions and disordered eating in general. We hypothesized that: (a) AS dimensions would be uniquely associated with disordered eating after controlling for relevant covariates, (b) EA would be uniquely associated with disordered eating after controlling for AS and covariates, and (c) EA would fully mediate the associations between the AS dimensions and disordered eating.

2. Method

2.1. Participants

Participants were 395 undergraduates (292 women) from a large public university in the eastern United States. Participants ranged in age from 18 to 42 ($M = 20.26 \pm 2.45$), with 62.3% self-identifying as White, 11.6% as Black/African-American, 8.9% as Asian/Pacific Islander, 6% as multiracial, 5.1% as Latino/Latina, and 6.1% as another racial/ethnic background.

2.2. Measures

The Anxiety Sensitivity Index (ASI; Peterson and Reiss, 1993) is a 16-item self-report measure that asks participants to rate the extent to which they expect negative consequences from anxiety-related experiences. Participants rate items on a 5-point Likert-type scale, with higher scores indicating greater AS. The ASI assesses both a single higher-order factor and three lower-order factors: fear of physical symptoms, fear of cognitive dyscontrol, and fear of publicly observable symptoms (Zinbarg, Barlow, & Brown, 1997). The ASI has been found to demonstrate good test-retest reliability and validity (Antony, 2001).

The Acceptance and Action Questionnaire (AAQ; Hayes et al., 2004) is a 9-item self-report measure of EA. Participants rate items on a 7-point Likert-type scale, with higher scores indicating greater EA. Research supports the measure's reliability and validity, finding strong correlations between the AAQ and both self-report measures of avoidance and experientially-avoidant behaviors (Hayes et al., 2004) and a behavioral measure of emotional unwillingness (Gratz, Rosenthal, Tull, Lejuez, & Gunderson, 2006).

The Eating Attitudes Test-26 (EAT-26; Garner, Olmsted, Bohr, & Garfinkel, 1982) is a 26-item self-report measure of disordered eating attitudes and behaviors. Items are rated on a 6-point Likert-type scale. Items are recoded and then summed to create a total score ranging from 0 to 78, with higher scores indicating greater disordered eating. The EAT-26 has been found to have good reliability and construct validity (Garner et al., 1982; Koslowsky, Scheinberg, Bleich, & Mark, 1992).

The Depression Anxiety Stress Scales (DASS; Lovibond & Lovibond, 1995) is a 21-item self-report questionnaire designed to differentiate between core symptoms of depression, anxiety, and stress. Participants rate items on a 4-point Likert-type scale, with higher scores indicating greater symptom severity. The DASS has demonstrated adequate test-retest reliability and construct and discriminant validity (Roemer, 2001). The anxiety subscale was included as a covariate in this study.

2.3. Procedure

Participants were recruited through undergraduate psychology courses. After providing written informed consent, participants completed self-report questionnaires. Participants received course credit as compensation for participation.

3. Results

3.1. Preliminary analyses

See Table 1 for the internal consistency reliabilities of all measures, as well as descriptive data and intercorrelations for primary study variables. Preliminary analyses were conducted to identify covariates for subsequent analyses. Results revealed significant differences in EAT-26 scores across gender and race/ethnicity ($t_s > 2.40, p_s < .05$), with women (vs. men) and White (vs. non-White) participants reporting higher scores. Neither EAT-26 nor AAQ scores were significantly associated with age ($r_s < .06, p_s > .05$), and there were no gender or racial/ethnic differences in AAQ scores ($t_s < 1.10, p_s > .05$). Finally, although DASS-anxiety was not significantly correlated with EAT-26 scores, it was significantly associated with all ASI subscales.

3.2. Unique associations between AS, EA, and disordered eating

A hierarchical multiple regression analysis predicting EAT-26 scores was conducted with gender, race/ethnicity, and DASS-anxiety entered as covariates in step 1, the three ASI subscales in step 2, and AAQ scores in step 3 (Table 2). The addition of the ASI subscales in step 2 accounted for an additional 4% of the variance in disordered eating; however, only fear of cognitive dyscontrol was uniquely associated with disordered eating. The addition of the AAQ in the third step significantly improved the model, accounting for unique variance in disordered eating and causing the ASI fear of cognitive dyscontrol subscale to lose statistical significance. These findings provide initial support for the mediating role of EA in the association between fear of cognitive dyscontrol and disordered eating.

3.3. Mediating role of EA in the association between fear of cognitive dyscontrol and disordered eating

Given that only fear of cognitive dyscontrol was uniquely associated with disordered eating in the regression analysis, only this subscale was examined as an independent variable in the mediation analyses (with DASS-anxiety, gender, race/ethnicity, and the remaining ASI subscales included as covariates). Mediation analyses utilized a bootstrapping approach to test the significance of the indirect effect of the independent variable (IV; fear of cognitive dyscontrol) on the dependent variable (DV; disordered eating) through the proposed mediator (M; EA), calculated as the product of the effect of the IV on the M (a) and the effect of the M on the DV (b). An estimate of the indirect effect was derived from the mean of 5000 bootstrap samples, and bias corrected and accelerated 95% confidence intervals were calculated (Preacher & Hayes, 2004).

Consistent with the aforementioned findings, the total effect (c) of the IV on the DV was significant ($c = .48, p < .05$), as was the association between the IV and the mediator ($a = .46, p < .01$) and the mediator and the DV ($b = .22, p < .05$). Furthermore, EA was found to fully mediate the association between fear of cognitive dyscontrol and disordered eating.

Table 1
Descriptive data and intercorrelations for primary variables of interest.

	1	2	3	4	5	6
1. Anxiety symptoms	.74					
2. Fear of physical symptoms	.46**	.86				
3. Fear of cognitive dyscontrol	.45**	.57**	.81			
4. Fear of publicly observable symptoms	.35**	.51**	.47**	.48		
5. Experiential avoidance	.40**	.33**	.39**	.36**	.65	
6. Disordered eating	.10	.23**	.22**	.16*	.23**	.89
Mean	6.38	10.08	2.78	7.48	33.80	7.95
SD	6.61	6.08	2.90	2.61	6.97	9.32

Note. Cronbach's alpha for each measure is presented on the diagonal.
* $p < .01$; ** $p < .001$.

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