Distress Tolerance, Negative Affect, Anxiety Sensitivity, and Intolerance of Uncertainty in Relation to Depressive Symptoms

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Introduction

- Distress tolerance is related to depressive symptoms among those with substance abuse and eating disorders.
- Distress tolerance is also related to negative affect, anxiety sensitivity, and intolerance of uncertainty, which relate differentially to depressive symptoms.
- Despite independent investigations of the interrelationships between these variables, no research has synthesized the unique contributions of each variable to depressive symptoms and several questions remain:
  - Is the additive contribution of distress tolerance to depressive symptoms significant above and beyond negative affect?
  - Can established cognitive vulnerabilities such as anxiety sensitivity and intolerance of uncertainty contribute to depressive severity above and beyond distress tolerance and negative affect?
  - Does the relationship between distress tolerance and depressive symptoms remain in a community sample?
- The present study addressed these gaps by assessing the independent relationships between depressive symptoms and negative affect, distress tolerance, the cognitive dimension of anxiety sensitivity, and intolerance of uncertainty and among a community sample.
- Such delineations are necessary to extrapolate the integral components contributing to depressive severity and, thereafter, to streamline treatment processes.

Methods

- North American participants (n=323; 74% women; M_{age} = 30 years; SD = 14) were recruited to complete a battery of measures online as part of a larger study investigating anxiety and its disorders.
- Measures
  - *Center for Epidemiological Studies – Depression Scale* (CESD). A 17-item scale assessing depressive symptoms.
  - *Positive and Negative Affect Schedule-NA* – (PANAS-NA). A 10-item scale assessing negative affect.
  - *Distress Tolerance Scale* (DTS). A 15-item scale assessing individual abilities to experience and withstand negative emotional states.
  - *Intolerance of Uncertainty Scale–Short Form* (IUS-12). A 12-item questionnaire assessing an individual's tendency to consider the possibility of a negative event occurring as unacceptable.
  - *Anxiety Sensitivity Index-3, Cognitive Concerns Subscale* (ASI-3-CC). A 6-item subscale assessing an individual's cognitive concerns in relation to the fear of anxiety.
- Hierarchical linear regression analyses were performed utilizing CESD scores as the dependent variable, with the independent variables PANAS-NA in model 1, DTS in model 2, and IUS-SF and ASI-3 in model 3.
  - Order of independent variable placement in models was based on theoretical postulations that higher-order constructs should be inputted in higher model steps.

Results

- A total of 159 (49%) participants reported symptoms consistent with clinically significant depression.
- Model 1 accounted for 43% of the variance in CESD total score.
  - PANAS-NA scale score accounted for significant variance in CESD total score (p < .01, part r = .66)
- Model 2 accounted for 48% of the variance in CESD total score.
  - PANAS-NA scale score accounted for significant variance in CESD total total (p < .01, part r = .42).
  - DTS total score also accounted for significant variance in CESD total score (p < .01, part r = -.29).
- Model 3 accounted for 49% of the variance in CESD total score.
  - PANAS-NA scale score accounted for significant variance in CESD total score (p < .01, part r = .35).
  - DTS total score accounted for significant variance in CESD total score (p < .01, part r = -.14)
  - IUS-SF total score accounted for significant variance in CESD total score (p < .05, part r = .10)
- ASI-3 Cognitive Concerns subscale score did not account for significant variance in CESD total score.

Discussion

- Negative affect was significantly and uniquely associated with depressive symptoms.
  - Individuals high on negative affect may endorse internal, stable, and global causes for negative events, resulting in hopelessness, guilt, and low self-esteem.
- Distress tolerance was significantly and uniquely associated with depressive symptoms.
  - Low distress tolerance may precipitate the use of affect regulation strategies in an effort to escape or avoid depressive cognitions.
- Intolerance of uncertainty was significantly and uniquely associated with depressive symptoms.
  - Difficulty tolerating uncertainty may result in recent negative life events being used as a basis to accept future events as likely to be negative and, therein, increase an individual's sense of hopelessness.
- The cognitive dimension of anxiety sensitivity was not a significant predictor of depressive symptoms.
  - Appraisal and beliefs about anxious cognitions (e.g., fear of cognitive dyscontrol) may already be accounted for by individual levels of distress tolerance.
- Including targeted interventions for negative affectivity (e.g., behavioural activation), intolerance of uncertainty (e.g., uncertainty exposure), and distress tolerance (e.g., dialectical behavior therapy) as part of treatment may

Table 1: Descriptive statistics

Measures	M(SD)
CESD	28.36(13.38)
PANAS-NA	30.58(9.27)
DTS	43.08(15.31)
IUS-SF	36.40(12.35)
ASI-3-CC	15.18(7.00)

Note: CESD – Center for Epidemiological Studies – Depression Scale; PANAS-NA – Positive and Negative Affect Schedule – Negative Affect scale; DTS – Distress Tolerance Scale; IUS-SF – Intolerance of Uncertainty Scale – Short Form; ASI-3-CC – Anxiety Sensitivity Index-3 – Cognitive Concerns subscale.

Table 2: Correlations

Measures	CESD	PANAS-NA	DTS	IUS-SF	ASI-3-CC
CESD	-				
PANAS-NA	.66**	-			
DTS	-.55**	-.57**	-		
IUS-SF	.50**	.54**	-.57**	-	
ASI-3-CC	.44**	.52**	-.55**	.46**	-

Note: **p < .01; CESD – Center for Epidemiological Studies – Depression Scale total; PANAS-NA – Positive and Negative Affect Schedule – Negative Affect scale; DTS – Distress Tolerance Scale; IUS-SF – Intolerance of Uncertainty Scale – Short Form; ASI-3-CC – Anxiety Sensitivity Index-3 – Cognitive Concerns subscale.

Table 3: Hierarchal linear regression: CESD score dependent variable

Model	Independent variable	Coefficients β	t	p	Correlations Part r	r	Model Statistics ΔR^2	ΔF	p
1	PANAS-NA	.66	15.50	<.00	.66	.66	.43	240.33	<.00
2	PANAS-NA	.51	10.28	<.00	.42	.50	.05	28.15	<.00
	DTS	-.26	-5.31	<.00	-.22	-.29			
3	PANAS-NA	.46	8.53	<.00	.35	.44	.01	3.55	.03
	DTS	-.20	-3.53	<.00	-.14	-.20			
	IUS-SF	.12	2.34	.02	.10	.13			
	ASI-3-CC	.05	.95	.34	.04	.05			

Note: CESD – Center for Epidemiological Studies – Depression Scale; PANAS-NA – Positive and Negative Affect Schedule – Negative Affect scale; DTS – Distress Tolerance Scale; IUS-SF – Intolerance of Uncertainty Scale – Short Form; ASI-3-CC – Anxiety Sensitivity Index-3 – Cognitive Concerns subscale.

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