

Factor Structure of the Distress Tolerance Scale in a Community Sample

Self-Reporting Anxiety Symptoms

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Introduction

- ◆ Distress tolerance—the ability to withstand negative psychological experiences—is a newly emerging, possibly transdiagnostic, construct in anxiety disorders literature.
- ◆ The Distress Tolerance Scale (DTS) is one of the most widely utilized measure to assess distress tolerance.
 - ◆ Distress tolerance, as measured by the DTS, has been negatively associated with agoraphobia, worry, social anxiety, panic, and obsessive-compulsive disorder symptoms in a plethora of diverse samples.
- ◆ Initial psychometric evaluations of DTS were conducted with a student sample and a cigarette smoker sample.
 - ◆ Both studies found a single second-order factor of general distress tolerance and four lower-order factors (Tolerance, Appraisal, Absorption, and Regulation).
 - ◆ The DTS factor structure has yet to be replicated in a community sample and/or in a sample with anxiety.
- ◆ The present study addressed this gap by evaluating the factor structure of the DTS in a large community sample self-selected as part of a study on anxiety.
- ◆ Clarifying the factor structure of the DTS in a community sample with self-reported anxiety will further facilitate understanding of the relationship between different dimensions of distress tolerance within affect, behavior, and psychopathology.

Methods

- ◆ North American participants ($n = 445$; 74% women; $M_{age} = 30.23$ years; $SD = 14.04$) completed measures online as part of a larger study investigating anxiety and its disorders.
- ◆ Measures
 - ◆ *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 (ASI-3)*. A 18-item scale assessing an individual's fear of arousal-related sensations.
 - ◆ *Brief Fear of Negative Evaluation Scale—Straightforward Items (BFNE-S)*. An 8-item scale assessing an individual's fear of negative evaluation.
- ◆ Analyses
 - ◆ A confirmatory factor analysis (CFA) was performed to calculate fit indices for DTS 4-factor structure relative to a unitary factor structure.
 - ◆ Pearson correlations were used to assess convergent validity using established measures of cognitive vulnerabilities (i.e., IUS-12, ASI-3, BFNE-S) which have been found to relate strongly to distress tolerance.

Results

- ◆ A total of 151 participants were assessed for anxiety symptoms, 98 (65%) of whom reported symptoms consistent with generalized anxiety disorder or social anxiety disorder.
- ◆ The 4-factor DTS model (i.e., Tolerance, Appraisal, Absorption, and Regulation) demonstrated superior fit than the unitary model in each fit index (see Tables).
 - ◆ The DTS subscales inter-factor correlations were high: *Tolerance and Appraisal* ($r = .85$); *Tolerance and Absorption* ($r = .95$); *Tolerance and Regulation* ($r = .64$); *Appraisal and Absorption* ($r = .92$); *Appraisal and Regulation* ($r = .77$); *Absorption and Regulation* ($r = .68$).
- ◆ Statistically significant ($p < .01$) negative correlations were found between the IUS-12, ASI-3, and BFNE-S and the DTS (i.e., subscale scores and total score) in the current sample.
 - ◆ IUS-12: *Tolerance* ($r = -.50$), *Appraisal* ($r = -.51$), *Absorption* ($r = -.53$), *Regulation* ($r = -.36$), and *Total* ($r = -.55$).
 - ◆ ASI-3: *Tolerance* ($r = -.43$), *Appraisal* ($r = -.51$), *Absorption* ($r = -.46$), *Regulation* ($r = -.41$), and *Total* ($r = -.53$).
 - ◆ BFNE-S: *Tolerance* ($r = -.36$), *Appraisal* ($r = -.43$), *Absorption* ($r = -.45$), *Regulation* ($r = -.28$), and *Total* ($r = -.45$).

Discussion

- ◆ The previously identified 4-factor solution (encompassing *Tolerance, Appraisal, Absorption, and Regulation*) for the DTS scale was replicated in a community sample who self-reported clinically-significant anxiety symptoms.
- ◆ Strong factor loadings were found for each item.
 - ◆ The exception to this was item 6; removing this item helped improve the fit of the 4-factor structure.
- ◆ The DTS related similarly to already established cognitive vulnerabilities for anxiety disorders, suggesting that the DTS converges with other transdiagnostic vulnerabilities for anxiety.
- ◆ Current findings may be beneficial for therapists working with clients presenting with an anxiety disorder.
 - ◆ Adding an intervention for distress tolerance (e.g., dialectical behavior therapy) to already established interventions for generalized anxiety (i.e., exposure to uncertainty), panic (i.e., interoceptive exposure), and social anxiety (i.e., exposure to social situations) may help improve treatment.
- ◆ Future research should seek to replicate the existing 4-factor solution for the DTS in a clinical sample. Using a clinical sample, research may also benefit from exploring whether specific dimensions of distress tolerance (e.g., Absorption) relate more strongly to certain anxiety disorders (e.g., generalized anxiety disorder).

Table 1: CFA Factor Loading and Descriptive statistics

DTS Items	Factor	M (SD)	S (SE = .12)	K (SE = .23)	DTS Items	Factor	M (SD)	S (SE = .12)	K (SE = .23)
1. Feeling distressed or upset is unbearable to me	1 (.83)	2.67 (1.27)	.35	-.95	9. Other people seem to be able to tolerate feeling distressed or upset better than I can.	3 (.77)	2.60 (1.38)	.42	-1.07
2. When I feel distressed or upset, all I can think about is how bad I feel.	2 (.82)	2.37 (1.25)	.68	-.60	10. Being distressed or upset is always a major ordeal for me.	3 (.89)	2.84 (1.42)	.23	-1.27
3. I can't handle feeling distressed or upset.	1 (.88)	2.74 (1.34)	.28	-1.11	11. I am ashamed of myself when I feel distressed or upset.	3 (.73)	2.76 (1.48)	.27	-1.37
4. My feelings of distress are so intense that they completely take over.	2 (.86)	2.69 (1.44)	.37	-1.24	12. My feelings of distress or being upset scare me.	3 (.84)	3.04 (1.49)	.04	-1.43
5. There's nothing worse than feeling distressed or upset.	1 (.77)	2.74 (1.45)	.29	-1.31	13. I'll do anything to stop feeling distressed or upset.	4 (.92)	2.96 (1.40)	.05	-1.26
6. I can tolerate being distressed or upset as well as most people.	3 (.37)	2.88 (1.30)	.20	-1.07	14. When I feel distressed or upset, I must do something about it immediately.	4 (.69)	2.96 (1.37)	.03	-1.21
7. My feelings of distress or being upset are not acceptable.	3 (.72)	2.97 (1.36)	.05	-1.20	15. When I feel distressed or upset, I cannot help but concentrate on how bad the distress actually feels.	2 (.86)	2.75 (1.44)	.27	-1.30
8. I'll do anything to avoid feeling distressed or upset.	4 (.80)	2.91 (1.30)	.10	-1.08	DTS Total		41.80 (15.49)	.27	-.88

Note: DTS – Distress Tolerance Scale; M – Mean; SD – Standard Deviation; S – Skew; K – Kurtosis.

Table 2: Confirmatory Factor Analysis Fit Indices

	Model		
	1-Factor	4-Factor	4-Factor (without item 6)
X ² /df	857.18/93	383.16/84	316.619/71
CFI	.84	.94	.95
RMSEA (90% CI)	.14 (.13-.15)	.09 (.08-.10)	.09 (.08-.10)
ECVI (90% CI)	2.17 (1.95-2.40)	1.09 (.95-1.24)	.92 (.79-1.06)

Note: CFI – Comparative Fit Indices; SRMR – Standardized Root Mean Square Residual; RMSEA – Root Mean Square Error of Approximation; ECVI – Expected Cross-Validation Index. Higher CFI values indicate better fit, whereas lower values on all other indices indicate better fit.

