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ORIGINAL ARTICLE

Tolerance of Negative Affective States (TNAS): Development and Evaluation of a Novel Construct and Measure

Amit Bernstein · Hadas Brantz

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Abstract The purpose of the present research was to develop and evaluate a novel conceptual model and measure of *Tolerance of Negative Affective States* (TNAS). Exploratory factor and parallel analyses and subsequent confirmatory factor analyses supported a hierarchical multi-dimensional model of TNAS. We observed one higher-order factor, labeled Tolerance of Negative Emotions, and six lower-order factors, including, FI Tolerance of Fear-Distress, FII Tolerance of Sadness-Depression, FIII Tolerance of Anger, FIV Tolerance of Disgust, FV Tolerance of Anxious-Apprehension, and FVI Tolerance of Negative Social Emotions. A series of tests documented that TNASS sub-scale scores demonstrate internal consistency as well as convergent and discriminant validity. We discuss the findings with respect to understanding the nature of the emergent TNAS construct and its measurement.

Keywords Distress tolerance · Assessment

Introduction

Distress tolerance (DT) reflects individual differences in perceived or behavioral capacity to withstand distress related to aversive affective, cognitive, and/or physical states (e.g., negative affect, physical discomfort; Simons and Gaher 2005; Zvolensky et al. 2011). Research has increasingly focused on DT with respect to the onset and maintenance of multiple forms of psychopathology and as a therapeutic target in interventions (Leyro et al. 2010; Zvolensky et al. 2011). Accordingly, a variety of interventions have been designed to, explicitly or implicitly, therapeutically promote the capacity to tolerate various distressing states (Barlow et al. 2004; Hayes et al. 1999; Linehan 1993; Marlatt and Gordon 1985; Orsillo and Roemer 2005).

One major gap in extant DT research is the absence of a measure of individual differences in perceived tolerance of specific negatively-valenced emotions or facets of emotional distress. Measurement of tolerance for emotional or psychological distress in extant research and assessment has involved a broad conceptual and operational definition of subjective "distress", without delineating the specific negatively-valenced affective states or emotions that may be distressing and to which a person may be more or less tolerant (Simons and Gaher 2005; Zvolensky et al. 2010). The lack of this measure(s) may be largely or in part explained by a lack of a conceptual model of the construct. The lack of a conceptual model and related measure of perceived tolerance of specific negatively-valenced emotions has accordingly hindered needed development in extant clinical knowledge and theory on DT.

We thus lack foundational knowledge regarding the latent structure and nature of individual differences in tolerance of negatively-valenced emotion(s) (Bernstein et al. 2009, 2011). Specifically, we do not yet know whether perceived tolerance of affective distress is: (1) unidimensional (one factor composed of tolerance to various negatively-valenced affective states such as broad-based negative affect); (2) multi-dimensional (multiple related but distinct factors, each reflecting tolerance of specific negatively-valenced emotions such as fear, anger or disgust); (3) hierarchical and multi-dimensional (one higher-order factor reflecting tolerance to negative emotions composed of multiple related but distinct lower order

A. Bernstein (✉) · H. Brantz
Department of Psychology, University of Haifa, Mount Carmel, 31905 Haifa, Israel
e-mail: abernstein@psy.haifa.ac.il

factors each reflecting tolerance of specific negatively-valenced affective states); or (4) a set of orthogonal factors (multiple unrelated distinct factors, each reflecting tolerance of specific negatively-valenced affective states). Consequently, we do not yet know whether, nor how, perceived tolerance of various negatively-valenced affective states covary; whether individuals tolerant of one or certain affective states are also likely to be tolerant of other affective state(s); nor whether tolerance of certain negatively-valenced affective states (e.g., fear) may be orthogonal from tolerance of other affective states (e.g., anger)?

Tolerance of Negative Affective States

We therefore developed a novel conceptual model termed, *Tolerance of Negative Affective States* (TNAS), and corresponding measure of the construct, the *Tolerance of Negative Affective States Scale* (TNASS). Please see "Appendix 1" for the English-language TNASS. The present research was designed to study this measure and the construct it was designed to assess. The TNASS is grounded in a conceptual model of TNAS—reflecting continuous individual differences in tolerance of multiple negatively-valenced affective/emotional states based on the long-standing emotion science literature, including: *sadness, anger, fear, disgust, embarrassment, guilt,* and *shame* (Ekman 1999; Izard 1977, 1974; Keltner 1995; Larsen and Fredrickson 1999; Tangney et al. 1996).[1] Two additional affective states—*anxiety* and *distress*—were also included within the TNASS item pool. *Anxiety* was included based on extensive research documenting the importance of sensitivity to anxiety (Olatunji and Wolitzky-Taylor 2009), the role of anxiety for multiple forms of psychopathology, and differences between anxious apprehension (anxiety) and fear (Barlow 2002). *Distress* was included in the TNASS to facilitate comparison to extant emotional DT measures and past work (Simons and Gaher 2005; Gratz and Roemer 2004).

In the TNASS, each specific negatively-valenced and potentially distressing affective state is measured using 3 linguistically- and empirically-based synonyms of the identified affective state derived from the larger emotion science and emotion assessment literature (Ekman 1999; Izard 1977; Watson et al. 1988). In addition, some of the synonyms of the target emotions reflect varying levels of intensity of that emotion (e.g., "mad" and "furious" are synonyms for "angry"). This approach to item-development and sampling was intended to facilitate a comprehensive content sample of the putative construct(s) and strong face validity (Messick 1995). To assist with the iterative process of qualitative content analysis over course of measure development (Haynes et al. 1995), authors systematically elicited feedback from multiple expert scholars on distress tolerance and its assessment, with respect to: participant instructions, definition of distress tolerance presented to participants, scope of item sampling and item content, and rating scale construction. Accordingly, the measure was revised iteratively based on experts' feedback prior to data collection.

Present Study

The overarching aim of the proposed investigation was to begin to evaluate the psychometric properties, including factor structure, internal consistency, as well as convergent and discriminant validity of the recently developed TNASS; and to do so for the dual purpose of: (1) contributing to the clinical assessment literature through the development of a measure of perceived tolerance of negative affective states; and (2) addressing central gaps in theory and clinical research on DT.

Aim 1

To evaluate the conceptual model, and specifically, latent structure of and nature of individual differences in perceived TNAS, we proposed to test the latent factor structure of tolerance to multiple negative affective states, as indexed by the TNASS. We hypothesized that the TNASS will demonstrate a hierarchical multi-dimensional factor structure. Specifically, we theorized that one higher-order factor—reflecting tolerance of negative emotions would be observed; and that it would be composed of 8 or fewer covarying lower-order factors, each reflecting individual differences in degree of tolerance to a specific negatively-valenced affective state. Moreover, in the likely event that fewer than 8 lower-order factors are observed, we expected that tolerance of fear and anxiety may converge into a single lower-order factor (tolerance of fear and anxiety), and tolerance of embarrassment, guilt and shame may converge into a single lower-order factor (tolerance negative social emotions factor). *Distress* was expected to load on multiple lower-order factors. Importantly, however, due to the exploratory and novel nature of the proposed construct (TNAS) and factor analytic study of its latent structure, it is important that initial study be conducted via exploratory prior to confirmatory factor analysis in an independent sample. Finally, we tested the internal consistency of the TNASS total score (i.e., hypothesized higher-order factor TNAS) and the specific factors (i.e.,

[1] In contrast to other identified emotions and affective states, the emotion construct/term *contempt* was not included. Relative to other emotions, contempt has been identified as potentially unfamiliar and inaccessible and therefore unreliably reported upon by research subjects (Wagner 2000). Moreover, relative to other identified affective states, contempt has been scrutinized as a discrete emotion (Russell 1994).

lower-order tolerance of specific affective states factors) derived by means of exploratory and confirmatory factor analyses.

Aim 2

First, we planned to evaluate the *convergent validity* of the TNASS by testing the cross-sectional associations between TNASS factor scores with respect to theoretically-relevant constructs, including: (a) perceived tolerance of emotional distress (Distress Tolerance Scale (DTS); Simons and Gaher 2005); (b) non-acceptance of emotion (Difficulties in Emotion Regulation sub-scale (DERS); Gratz and Roemer 2004); and (c) experiential avoidance or psychological flexibility (The Acceptance and Action Questionnaire (AAQ); Hayes et al. 2004). Moderately sized associations were expected between TNASS scores and the putative convergent factors as may be expected between related though distinct latent variables (Campbell and Fiske 1959; Messick 1995). To test *discriminant validity*, we evaluated the putative orthogonality between TNAS and the degree to which participants reported experiencing each respective affective state. Indeed, it is important to verify that individual differences in TNAS are not alternatively explained by the degree to which a person experiences each respective affective state. In addition, we evaluated the putative orthogonality between TNAS and present moment attention and awareness. Indeed, conceptually, it is important to evaluate whether individual differences in TNAS are not alternatively accounted for by individual differences in attention and awareness of emotional experience.

Method

Participants

Sample A consisted of 200 adult participants (M_{age} = 23.7 years, SD_{age} = 3.2 years; 75.3 % women), recruited at the University of Haifa. In terms of ethnic-religious identification, 75.9 % identified as Jewish, 9.7 % Muslim, 9.3 % Christian, 0.9 % Druze, and 4.2 % other. The sample size was guided by recommendations and simulation study of exploratory factor analysis (MacCallum et al. 1999). Participants were recruited by means of University email invitations and public flyers. The study through which the proposed data were collected received human subjects research ethics approval through a University IRB committee.

Sample B consisted of 158 adult participants (M_{age} = 31.3 years, SD_{age} = 10.8 years; 64 % women). 89.5 % the sample were Jewish, 5.9 % Muslim Arabs, 2 % Christian Arabs, and 2.6 % Druze. The study through which the proposed data were collected received human subjects research ethics approval through a University IRB committee.

Measures

Translation and Back-Translation Process

The measures were translated from English to Hebrew and then back-translated by a separate party using structured guidelines (Geisinger 1994) by International Research Collaborative on Anxiety laboratory staff fluent in Hebrew and English (Brislin 1970; Van de Vijver and Hambleton 1996; Zvolensky et al. 2003). All measures used in the present investigation may be accessed in the Hebrew language by contacting the corresponding author.

Descriptive Demographic Measures

Participants provided demographic and related personal background information.

The Tolerance of Negative Affective States Scale (*TNASS*) is a novel self-report measure designed to assess the extent to which individuals are tolerant of multiple negatively-valenced affective states. The 25-items reflect 3 synonymns for the following affective states—*sadness, anger, fear, disgust, embarrassment, guilt, shame, and anxiety*—as well as the nonspecific state of *distress.* Participants rate each emotion item using a 5-point Likert-type scale (*1 = very intolerant* to *5 = very tolerant*). The measure provides participants with a working definition of tolerance and intolerance of emotion ["Tolerance is the ability to withstand or endure an emotion. For example, a person who is tolerant of an emotion is able to feel that emotion without trying to avoid, stop, or replace it." "In contrast, intolerance is the inability to withstand or endure feeling an emotion. For example, a person who is intolerant of an emotion may try to avoid, stop, or replace it."].

Negative Affective States Scale (*NASS*) is a permutation of the TNASS developed for the purpose of the present investigation so as to test the putative discriminant validity between tolerance of and frequency of the same set of negative affective states. It consists of the identical 25 emotion items composing the TNASS, but rather than evaluating tolerance to those emotions, it asks participants to rate "how often you have felt each of the following emotions in the past year", on a 5-point Likert-type scale of (*1 = "never"* to *5 "very often").*

Distress Tolerance Scale (DTS; Simons and Gaher 2005) is a 15-item self-report measure in which respondents indicate, on a 5-point Likert-type scale, the extent to which they can experience and withstand distressing psychological states (Simons and Gaher 2005). The DTS

entails four putative facets of DT, including perceived ability to tolerate emotional distress (e.g., "I can't handle feeling distressed or upset"), subjective appraisal of distress (e.g., "My feelings of distress or being upset are not acceptable"), attention absorbed by negative emotions (e.g., "When I feel distressed or upset, I cannot help but concentrate on how bad the distress actually feels"), and regulation efforts to alleviate distress (e.g., "When I feel distressed or upset I must do something about it immediately"). The DTS has demonstrated multiple forms of reliability and validity (e.g., Simons and Gaher 2005).

The *Difficulties in Emotion Regulation Scale (DERS*; Gratz and Roemer 2004) is a 36-item self-report measure on which respondents indicate, using a 5-point Likert-style scale (*1 = almost never* to *5 = almost always*), how often each item applies to them. The DERS has shown multiple forms of reliability and validity (Gratz and Roemer 2004). Analyses focused on the Non-Acceptance of Emotional Responses sub-scale due to the theoretical relevance of this aspect of emotion regulation to the present study (Leyro et al. 2010).

The *Acceptance and Action Questionnaire* (*AAQ*; Hayes et al. 2004) is a 9-item self-report measure designed to assess experiential avoidance or the tendency to avoid unwanted internal experiences (such as emotions and thoughts), negative evaluations of internal experience, and the extent to which distress prompts behavioral avoidance. Items are rated on a 7-point Likert-type scale (*1 = never true* to *7 = always true*). The AAQ has demonstrated multiple forms of reliability and validity (Hayes et al., 2004).

Procedure

Sample A participants were recruited through public postings and electronic postings within the University of Haifa community. Interested individuals were provided with an internet address through which they logged-on to a secure, web-based software program (Survey Monkey) to complete the assessment battery. Participants were able to call and speak with laboratory staff, or visit the laboratory, with any questions regarding the consent form or assessment battery. In exchange for participation, students received either course credit or a modest honorarium ($6.00).

Sample B participants were recruited from the city of Haifa general community using advertisements on public boards, higher education institutes' websites and general community websites. Interested individuals were provided with an internet address through which they logged-on to a secure, web-based software program (Survey Monkey) through which participants completed the assessment battery. Participants were able to call and speak with laboratory staff, or visit the laboratory, with any questions regarding the consent form or assessment battery. In exchange for participation, students received a modest honorarium ($6.00).

Results

Exploratory Factor Analysis

We conducted a two-stage exploratory factor analysis of TNASS item scores among Sample A (Matthews et al. 2003). First, a principal axis factor analysis (PAF) was used to test the factor structure of TNASS items. Second, lower-order factors were examined in a hierarchical principal axis factor analysis with an orthogonal rotation to examine the possible higher-order factor structure of these (lower-order) factors. We conducted a parallel analysis based on the random permutation of the raw data (matched to the item/variable distributions) of the unrotated solutions. Specifically, factors were extracted among the research data factor scores that were greater than the 95th percentile random data eigenvalue, indicating that any extracted factor(s) represented a substantive, nonspurious latent variables/factors (Fabrigar et al. 1999; Horn 1965; O'Connor 2000). Principal Component Analysis (PCA)—often used in the early stages of assessment development to eliminate items—was not used in light of the nature of the item content of the TNASS (single emotion word synonyms) and the psychometric importance of ensuring at least 3 items per emotion.

A principal axis factor analysis (PAF) with an oblique rotation (to permit covarying multi-dimensional factors) was conducted to identify the factor structure of tolerance of negative affective states, as measured by the TNASS items. Parallel analysis based on the random permutation of the raw data (matched to the item/variable distributions) of the unrotated solution, indicated that 6 factors among the research data were greater than the 95th percentile random data eigenvalues, and therefore up to 6 nonspurious factors may be extracted (O'Connor 2000). Due to the risk, albeit limited, of factor overextraction in parallel analysis, we also compared and contrasted the 6-factor with 5-factor and 4-factor solutions (Fabrigar et al. 1999). The final 6-factor solution demonstrated better performance than these alternative solutions. First, all 6 factors were theoretically interpretable and consistent with hypotheses as the latent structure of the theorized TNAS construct and a priori measure construction. Second, the 6 factors accounted for a robust percent of variance in item scores (61 %) and all item communalities were large. Third, all retained factor eigenvalues were greater than or approaching 1 (Kaiser 1960). Fourth, a clear pattern of item-factor loadings was

Table 1 Exploratory factor analysis: loadings and extraction communalities for the six lower-order factor solution

	Lower-order factor loadings						H^2
	Factor I Tolerance of Fear-Distress	Factor II Tolerance of Sadness-Depression	Factor III Tolerance of Anger	Factor IV Tolerance of Disgust	Factor V Tolerance of Anxious-Apprehension	Factor VI Tolerance of Negative Social Emotions	
8. Anxious	.90						.82
9. Distressed	.66						.66
3. Fearful	.63						.62
24. Afraid	.41						.53
17. Depressed		−.58					.65
1. Sad		−.48					.51
22. Feeling down		−.45			.44		.70
18. Regret		−.37				.60	.54
2. Angry			.80				.75
16. Mad			.80				.73
23. Furious			.74				.71
12. Grossed out				−.83			.71
25. Repulsed				−.83			.8
4. Disgusted				−.68			.56
10. Nervous					.58		.43
11. Socially awkward					.57		.43
21. Tense					.55		.50
5. Guilty						.65	.53
6. Ashamed						.60	.67
13. Feeling at fault						.53	.46
19. Feeling disgraced						.48	.51
7. Embarrassed						.44	.53

observed such that few hyperplane item-factor loadings and limited multivocality were found. Finally, specifying too few factors early in the development of a construct and measure—such as retraining a 4- or 5-factor solution rather than the 6-factor solution, may be imprudent relative to potential factor over-extraction (Hayton et al. 2004).

In evaluation of the 6-factor solution, 3 items were omitted empirically. The omitted items included, *item 14* ("*Scared*"), *item 15* ("*Humiliated*") and *item 20* ("*Feeling Self-Conscious*"). These items were omitted because: of hyperplane item-factor loadings, they did not demonstrate a primary factor loading, nor a (multivocal) pattern of item-factor loadings that was theoretically interpretable; they did not load on factors linked to the a priori emotion synonyms which they were designed to measure, nor did they demonstrate a loading that was theoretically interpretable on another factor; and their exclusion did not result in removal of potentially clinically or theoretically important variance or a unique facet of the latent factor—as in all instances at least 3 emotion words comprised each extracted factor.

In addition, two items (*item 22* "*feeling down*", *item 18* "*regret*") demonstrated multivocal item-factor loadings (see Table 1). Both items, however, were tentatively retained because the observed pattern of multivocality was theoretically interpretable. All other items demonstrated statistically robust and univocal item-factor loadings (>.40) and large communalities (range .43–.82), and therefore retained in the factor solution. The remaining 22 items were then reanalyzed using parallel analysis and PAF; the 6-factor solution was similarly retained.

We labeled the 6 factors based on the a priori emotions used to construct the TNASS and the pattern of observed item-factor loadings: FI Tolerance of Fear-Distress (*fearful, anxious, distress, afraid*), FII Tolerance of Sadness-Depression (*sad, depressed, regret, feeling down*), FIII Tolerance of Anger (*angry, mad, furious*), FIV Tolerance of Disgust (*disgusted, grossed out, repulsed*), FV Tolerance of Anxious-Apprehension (*nervous, socially awkward, tense, feeling down*), and FVI Tolerance of Negative Social Emotions (*guilty, ashamed, embarrassed, feeling at fault, regret, feeling disgraced*). See Table 1 for item-factor loadings.

As expected and consistent with multi-dimensionality, scores on the extracted factors demonstrated a robust

Table 2 Exploratory factor analysis: TNASS lower-order factor correlation matrix and internal reliability

	FI	FII	FIII	FIV	FV	FVI	Cronbach's α
FI Tolerance of Fear-Distress	1	−.24	.31	−.40	.47	.38	.85
FII Tolerance of Sadness-Depression		1	−.36	−.01	−.26	−.11	.80
FIII Tolerance of Anger			1	−.32	.46	.30	.86
FIV Tolerance of Disgust				1	−.37	−.50	.85
FV Tolerance of Anxious-Apprehension					1	.44	.76
FVI Tolerance of Negative Social Emotions						1	.83

pattern of associations with one another (see Table 2). Indeed, all lower-order factors were significantly correlated with one another, with exception of only two (of 15 possible) pair-wise associations. Specifically, FII Sadness-Depression and FIV Disgust, and FII Sadness-Depression and FVI Negative Social Emotions did not correlate significantly.

Consistent with this pattern of associations between observed factors and theory, we evaluated the putative hierarchical structure of the model using a second-order PAF with an orthogonal rotation of the 6 PAF-extracted factors (Gorsuch 1983). A parallel analysis was conducted to evaluate whether any nonrandom second-order factors are observed, and if indicated, the number of possible factors that may be extracted nonrandomly. The parallel analysis indicated that 2 higher-order factors among the research data were greater than the 95th percentile random data eigenvalues, indicating that up to 2 factors may be extracted from the research data that may represent substantive, nonspurious factors. However, a one-factor solution was retained for a number of reasons. First, the pre-rotated eigenvalue of the second higher-order factor (H2) was .53. Second, in the pre-rotation solution, no lower-order factor loaded exclusively on the second higher-order factor (H2), nor did any single lower-order factor load significantly more strongly on the second higher-order factor (H2) relative to the first higher-order factor (H1). Third, following the rotation, 3 of the 4 lower-order factors that loaded on H2 were multivocal on H1, and only one lower-order factor (FII Sadness-Depression) loaded primarily on H2. The observed multivocality thus indicated that one second-order factor may as comprehensively and more parsimoniously account for individual differences on the 6 lower-order factor scores. Furthermore, all 6 lower-order factors loaded significantly on the single higher-order factor (.38–.84), and the single higher-order factor (H1) accounted for 42.3 % of variance in the lower-order factor scores. Furthermore, the single higher-order factor was also consistent with prediction and was theoretically interpretable (Bernstein et al. 2009, 2011; Leyro et al. 2010)—consistent with theorizing that a higher-order individual difference factor encompassing Tolerance of Negative Emotion may drive tolerance of multiple negatively-valenced emotion states. Please see Table 3 for the retained higher-order factor solution.

Table 3 Exploratory factor analysis: lower-order factor loadings and communalities on higher-order tolerance of negative affect factor

	Higher-order factor loadings H1 Tolerance of negative affect factor	H2
FI Tolerance of Fear-Distress	.67	.45
FII Tolerance of Sadness-Depression	−.37	.14
FIII Tolerance of Anger	.62	.40
FIV Tolerance of Disgust	−.60	.36
FV Tolerance of Anxious-Apprehension	.80	.71
FVI Tolerance of Negative Social Emotions	.68	.46

Internal Reliability

Cronbach's alpha was computed for the total and TNASS sub-scale scores based on the EFA-derived first-order and second-order factors (see Table 2). Observed alpha coefficients for the TNASS total score (higher-order factor) was .92; and the alpha coefficients for the six lower-order factor sub-scales ranged between .76 and .86.

Confirmatory Factor Analysis

The CFA was conducted among Sample B. First, we tested the fit of the higher-order 6-factor model derived via EFA. Specifically, we analyzed the variance–covariance matrix of the 22-item TNASS via ML estimation using Structural Equation Modeling in AMOS 20.0 (Arbuckle 2009). In addition, measurement errors were initially forced to be independent, though post hoc modification index-based error-term covariation was subsequently evaluated (Byrne 2009). Second, item-factor loadings were evaluated. Third, in addition to examination of the overall model χ^2 (Bollen 1989), Goodness-of-fit was evaluated using a comprehensive set of fit indices (i.e., absolute fit, fit adjusting for

model parsimony, fit relative to a null model (Hooper et al. 2008; Hu and Bentler 1999), including the following: $\chi 2$ (CMIN; Bollen 1989), Standardized Root Mean Square Residual (SRMR <.08; Hu and Bentler 1995), Root Mean Square Error of Approximation (RMSEA <.08 and upper-$CI_{90\ \%}$ <.10; Browne and Cudeck 1993), the Comparative Fit Index (CFI >.90; Bentler 1990), the Tucker-Lewis Index (TLI >.90; Bentler and Bonett 1980), and the Parsimony Normed Fit Index (PNFI >.60; James et al. 1982; Schumacker and Lomax 2004). Above noted cut-off values reflect *adequate or acceptable* fit (Hu and Bentler 1999; Hooper et al. 2008). Evaluated together, fit indices provide a conservative, reliable evaluation of the tested models (Jaccard and Wan 1996). Fourth, Cronbach's alpha was used to test the internal consistency of the (best-fitting) derived scale score(s). Fifth, loadings of the lower-order factors on the higher-order factor were evaluated. Finally, distributional normality of the TNASS indicators was evaluated.

First, evaluation of item-factor loadings revealed that two items which demonstrated potential multi-vocal loadings in the EFA did not demonstrate a sufficieintly robust loading on the second factor (item 22 *Feeling Down*—Factor V = .38; item 18 *Regret*—Factor Sadness-Depression = .22) and thus the model was re-estimated constraining these 2 items to load onto a single (primary) factor (item 22—Factor II; item 18—Factor VI). In addition, item 11 (*Socially Akward*) demonstrated an insufficiently robust item-factor loading (.41) on Factor V (Anxious-Apprehension) and was thus omitted from the item pool yielding a revised, final 21-item pool.

Second, the higher-order two-factor model was then fit to the data, yielding a χ^2 (178, $n = 158$) = 349.1, $p < .01$. However, because the χ^2 is restricted in a variety of ways including sensitivity to sample size and the assumption of multivariate normality, there is a likelihood of an indication of poor fit even when the model is properly specified (Bentler and Bonett 1980; McIntosh 2007). Therefore, goodness-of-fit was further evaluated. Overall, the fit was acceptable: SRMR = .06; RMSEA = .078 ($CI_{90\ \%}$ = .066–.09); CFI = .92, TLI = .90; PNFI = .72. All fit indices fell within the cut-off range for acceptable to good fit. Moreover, a robust pattern of item-factor loadings was observed (see Table 4). Specifically, consistent with good fit, the range of item-factor loadings was .53–.90. Inspection of the standardized residuals and modification indices (MIs) indicated potential areas of strain and shared error variances; specifically, several indicator variables may share error variances and non-discriminantly tap similar facets of the construct. Consequently, based on initial review of MIs, 5 pairs of residual error terms demonstrated theoretically interpretable non-orthogonality and were thus permitted to covary (Byrne 2009).

Third, observed factors demonstrated acceptable levels of internal consistency, including H1 TNAS higher-order factor (total score) ($\alpha = .93$), FI ($\alpha = .86$), FII ($\alpha = .82$), FIII ($\alpha = .87$), FIV ($\alpha = .85$), FV ($\alpha = .69$), and FVI ($\alpha = .86$). Fourth, TNAS lower-order factor loadings on the higher-order TNAS factor were consistent with the putative hierarchical latent structural model (FI (.88), FII (.87), FIII (.77), FIV (.65), FV (.79), FVI (82), respectively). Finally, all 21 indicators (items) demonstrated multivariate normal skew and kurtosis $< \pm 1.5$ (skew range = .05 (item 7) to −.33 (item 1); kurtosis range = −.24 (item 1) to −.89 (item 4))—meeting distributional properties for reliable use of maximum likelihood estimation of ordinal scale data (Schumacker and Lomax 2004).

Convergent and Discriminant Validity

Validation analyses were conducted among Sample A. As hypothesized, we observed a pattern of significant associations between TNASS sub-scale scores and convergent variables (see Table 5). First, H1 Tolerance of Negative Emotion, FI Tolerance of Fear-Distress, FII Tolerance of Sadness-Depression, FIII Tolerance of Anger, and FVI Tolerance of Negative Social Emotions demonstrated a similar significant pattern of small to moderate convergent relations with respect to all DTS sub-scales, DERS Non-Acceptance sub-scale and AAQ scores. However, FII Tolerance of Fear-Distress and FIII Tolerance of Anger were not related to DTS Absorbtion sub-scale scores, and FVI Tolerance of Negative Social Emotions scores were not related to DERS non-acceptance sub-scale scores. Second, FIV Tolerance of Disgust and FV Tolerance of Anxious-Apprehension demonstrated significant, small to moderate relations with multiple convergent variables, though null associations with DTS Appraisal, DTS Aborbtion, and DERS Non-Acceptance sub-scales scores. Overall, correlations of a relatively small magnitude were observed between TNASS scores and DTS Absorbtion as well as DERS Non-Acceptance sub-scales scores.

In tests of discriminant validity, TNAS and the frequency of those negative affective states were orthogonal, as predicted (e.g., TNASS H1 Tolerance of Negative Emotions (total) and NASS Negative Emotions (total) $r = .08$, *n.s.*) (please see Table 6). These data are not likely explained by psychometric limitations of the NASS. First, the internal consistency of NASS total scale ($\alpha = .84$) and five of the six NASS sub-scales (range of α's = .84 to .86) was acceptable; however, the internal consistency of the (2-item) NASS Anxious-Apprehension sub-scale was more modest ($\alpha = .68$). Furthermore, the null associations between TNASS and NASS scores are not likely a byproduct of the limited validity of NASS scores either. Indeed, NASS scores were strongly correlated with levels

Table 4 Confirmatory factor analysis: item-factor loadings

	FI Tolerance of Fear-Distress	Factor II Tolerance of Sadness-Depression	Factor III Tolerance of Anger	Factor IV Tolerance of Disgust	Factor V Tolerance Anxious-Apprehension	Factor VI Tolerance of Negative Social Emotions
8. Anxious	.83					
9. Distressed	.82					
3. Fearful	.72					
24. Afraid	.74					
17. Depressed		.77				
1. Sad		.72				
22. Feeling down		.85				
18. Regret						.70
2. Angry			.73			
16. Mad			.84			
23. Furious			.90			
12. Grossed out				.79		
25. Repulsed				.90		
4. Disgusted				.75		
10. Nervous					.66	
11. Socially awkward[a]						
21. Tense					.79	
5. Guilty						.82
6. Ashamed						.73
13. Feeling at fault						.66
19. Feeling disgraced						.76
7. Embarrassed						.53

[a] Item 11 omitted based on poor factor loading

of negative affectivity (e.g., PANAS Negative Affectivity and NASS Negative Emotions (total) $r = .74$, $p < .01$). Finally, as predicted, TNAS and present moment attention and awareness were orthogonal (e.g., TNASS H1 Tolerance of Negative Emotion (total) and MAAS total $r = -.02$, $p > .05$).

Discussion

The purpose of the present research was to examine a novel construct and measure of perceived tolerance of negatively-valenced affective states (TNAS), and to begin to illuminate its latent structure and relations. First, we found support for a hierarchical and multi-dimensional factor structure by means of EFA and parallel analysis, followed by CFA in an independent community sample. The six lower-order factors included: FI Tolerance of Fear-Distress (*fearful, anxious, afraid, distressed*), FII Tolerance of Sadness-Depression (*sad, depressed, feeling down*), FIII Tolerance of Anger (*angry, mad, furious*), FIV Tolerance of Disgust (*disgusted, grossed out, repulsed*), FV Tolerance of Anxious-Apprehension (*nervous, tense*), and FVI Tolerance of Negative Social Emotions (*guilty, ashamed, embarrassed, feeling at fault, regret, feeling disgraced*). The higher order factor was labeled H1 Tolerance of Negative Emotions. Thus, a primary contribution of the present research is the model of the latent structure of and nature of individual differences in perceived tolerance of negative affective states and its measurement.

The present findings also provided initial evidence with respect to TNASS convergent and discriminant validity. First, as theorized, we observed significant associations of a predominantly moderate magnitude between TNASS total and multiple convergent factors, including perceived distress tolerance (DTS), experiential avoidance or psychological flexibility (AAQ), and emotional non-acceptance (DERS). Second, central to establishing its discriminant validity, we observed that TNASS sub-scale scores reflect individual differences in a construct(s) unique from, and therefore not alternatively accounted for by, the levels (frequency) of these negative affective states (e.g., orthogonality between tolerance of sadness and the frequency with which one experiences sadness). Moreover, we observed that TNASS scores were orthogonal from dispositional attention and awareness of one's present moment experiences (e.g., thoughts, emotions,

Table 5 TNAS convergent validity

	DTS Total	DTS Tolerance	DTS Appraisal	DTS Absorb	DTS Regulation	DERS Non-Accept	AAQ
H1 Tolerance of Negative Emotions (TNASS total)	.34**	.32**	.24**	.20**	.39**	−.17*	.30**
TNASS FI Tolerance of Fear-Distress	.30**	.30**	.20**	.22**	.36**	−.15*	.24**
TNASS FII Tolerance of Sadness-Depression	.27**	.30**	.21**	.09	.37**	−.16*	.24**
TNASS FIII Tolerance of Anger	.27**	.26**	.25**	.12	.28**	−.25**	.27**
TNASS FIV Tolerance of Disgust	.18*	.20**	.09	.11	.23**	−.02	.19**
TNASS FV Tolerance of Anxious-Apprehension	.21**	.20**	.14*	.11	.26**	.00	.18*
TNASS FVI Tolerance of Negative Social Emotions	.24**	.20**	.18*	.18*	.24**	−.10	.23**

* $p < .05$, ** $p < .01$

Table 6 TNAS discriminant validity: perceived tolerance of negative affective states and levels (frequency) of those states

	Negative Emotions (NASS total)	Fear-Distress	Sadness-Depression	Anger	Disgust	Anxious-Apprehension	Negative Social Emotions
H1 Tolerance of Negative Emotions (TNASS total)	.08	.06	−.02	−.10	.05	.08	.13
FI Tolerance of Fear-Distress	−.01	.03	−.14	−.15	.11	.00	.01
FII Tolerance of Sadness-Depression	.11	.06	.17	−.04	.06	.15	.08
FIII Tolerance of Anger	.01	−.04	.09	.02	−.05	.03	−.01
FIV Tolerance of Disgust	.09	.15	−.05	−.04	−.03	.05	.16
FV Tolerance of Anxious-Apprehension	.08	.09	.01	−.09	.08	.17	.10
FVI Tolerance of Negative Social Emotions	.06	.02	−.07	−.05	.00	.02	.14

All effects nonsignificant ($p > .01$). Columns represent self-reported levels (frequency) of each negative affective state measured by means of the Negative Affective States Scale (NASS). Rows represent self-reported levels of tolerance of each affective state by means of the Tolerance of Negative Affective States Scale (TNASS)

physical sensations; MAAS; Brown and Ryan 2003). These novel findings illustrate that neither the levels of negatively-valenced emotions nor the degree to which a person attends to or is aware of her/his emotions account for individual differences in tolerance to them or vice versa.

It may be useful to distinguish the TNASS from the Distress Tolerance Scale (DTS, Simons and Gaher 2005)—the central measure of emotional or psychological distress tolerance in the extant DT literature (Leyro et al. 2010). First, as noted, measurement of tolerance for emotional or psychological distress in extant research and assessment has involved a broad conceptual and operational definition of subjective "distress", without delineating the specific negatively-valenced affective states or emotions that may be distressing and to which a person may be more or less tolerant (Bernstein et al. 2011; Simons and Gaher 2005). Accordingly, the TNASS measures perceived tolerance to a number of specific and distinct affective states. Second, the DTS entails and distinguishes between four variables that the authors theorized underlie DT, including subjective appraisal of distress (e.g., "My feelings of distress or being upset are not acceptable"), attention absorbed by negative emotions (e.g., "When I feel distressed or upset, I cannot help but concentrate on how bad the distress actually feels"), regulation efforts to alleviate distress (e.g., "When I feel distressed or upset I must do something about it immediately"), as well as perceived ability to tolerate emotional distress (e.g., "I can't handle feeling distressed or upset"). Though clinically important and psychometrically sound, the multiple DTS sub-scales may be conceptualized as reflecting a broader set of emotion regulatory processes beyond the phenomenologically narrower construct of emotional tolerance per se. Accordingly, the TNASS was designed to measure *perceived tolerance* to various emotional states in a more conceptually narrow sense. Third, the DTS measures tolerance indirectly, by means of a variety of questions from which tolerance is inferred (e.g., "my feelings of distress or being upset are not acceptable"). In contrast, the TNASS provides participants with an explicit behavioral definition of tolerance and intolerance, and then asks participants to report how (in)tolerant they are with respect to a list of affective states.

Finally, the TNASS and DTS are conceptually and operationally unique measures; their shared variance in the present study was small to moderate in magnitude. Indeed, we did not design the TNASS as an alternative to the DTS. For research and clinical purposes, the TNASS may be considered a complementary tool to the DTS and related measures of tolerance and emotion regulation.

Furthermore, the lower-order FVI Tolerance of Negative Social Emotions factor may have interesting implications for conceptualizing and operationalizing emotional DT, and for future research. Indeed, perceived tolerance of multiple negatively-valenced social emotions covaried on a single lower-order factor, entailing guilt, shame, and embarrassment. Inclusion of these affective states is arguably a unique contribution of the TNASS to the DT literature. Future research may explore whether and how tolerance of these negative social emotions may function differently from tolerance of other emotions, such as by evaluating their predictors, correlates and outcomes relative to other (non-social) emotions.

The present study is limited in a number of respects. First, the study was modest in scope and conducted in Israel. Future research should adopt larger, more diverse and gender-balanced sampling methods among multiple socio-cultural/language groups. Second, measurement methods were exclusively self-report. Evaluation of TNAS by means of multi-method experimental measures (e.g., multi-modal responding to various emotion states elicited in the lab in real-time) is an important aim for future research (Bernstein et al. 2011; McHugh et al. 2011). Such research may moreover contribute to the ongoing debate regarding the relations between, and means to measure, perceived and behavioral DT (Bernstein et al. 2011; Zvolensky et al. 2011). Third, the conceptual model and sample of content included in the TNASS is focused exclusively on negatively-valenced emotions—tolerance of positively-valenced emotions were not included. Indeed, affective states may be personally distressing as a function of valence and/or arousal. Future work may thus extend the present study to positive emotions. Finally, future work should evaluate the test–retest reliability of TNAS levels, as well as their prospective stability as a function of emotionally-evocative context (Bernstein et al. 2008; Leyro et al. 2010).

In summary, the present research and findings reflect a novel effort to (1) illuminate the nature of tolerance of negatively-valenced affective states or emotional distress (TNAS); (2) develop and evaluate a conceptual model and measure of this construct; and (3) begin to map and delimit its relations. In light of the relevance of tolerance of emotions to a range of interventions, the proposed construct, measure and present findings make a unique contribution to this clinical literature.

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Appendix 1: TNASS

Below, you will be asked to rate how tolerant you are of a number of emotions.

First, please read the following description of tolerance and intolerance of emotions until it is clear to you.

Tolerance is the ability to withstand or endure feeling an emotion. For example, a person who is tolerant of an emotion is able to feel that emotion without trying to avoid, stop, or replace it.

In contrast, intolerance is the inability to withstand or endure feeling an emotion. For example, a person who is intolerant of an emotion may try to avoid, stop, or replace it.

Now, please think about instances in the past year in which you felt each emotion listed below. Then, please **rate how tolerant you typically were of feeling each emotion** over the past year.

Please check only one box per emotion item below. Please complete all items. Remember, there are no right or wrong answers.

	1 *Very Intolerant*	2 *Intolerant*	3 *Somewhat Tolerant*	4 *Tolerant*	5 *Very Tolerant*
1. Sad					
2. Angry					
3. Fearful					
4. Disgusted					
5. Guilty					
6. Ashamed					
7. Embarrassed					
8. Anxious					
9. Distressed					
10. Nervous					
11. Socially Awkward					
12. Grossed Out					
13. Feeling At Fault					
14. Scared					
15. Humiliated					
16. Mad					
17. Depressed					
18. Regret					
19. Feeling Disgraced					
20. Feeling Self-Conscious					
21. Tense					
22. Feeling Down					
23. Furious					
24. Afraid					
25. Repulsed					

Note. Items *11, 14, 15, 20* were omitted via factor analysis.

References

American Psychiatric Association. (2000). *Diagnostic and statistical manual of mental disorders* (4th ed., text rev.). Washington, DC: Author.

Barlow, D. H. (2002). *Anxiety and its disorders* (2nd ed.). New York: Guilford.

Barlow, D. H., Allen, L. B., & Choate, M. L. (2004). Toward a unified treatment for emotional disorders. *Behavior Therapy, 35*, 205–230.

Bentler, P. M., & Bonett, D. G. (1980). Significance tests and goodness of fit in the analysis of covariance structures. *Psychological Bulletin*, *88*(3), 588–606. doi:10.1037/0033-2909.88.3.588.

Bentler, P. M. (1990). Comparative fit indexes in structural models. *Psychological Bulletin*, *107*, 238–246.

Bernstein, A., Trafton, J., Ilgen, M., & Zvolensky, M. J. (2008). An evaluation of the role of smoking context on a biobehavioralindex of distress tolerance. *Addictive Behaviors, 33*, 1409–1415.

Bernstein, A., Zvolensky, M. J., Vujanovic, A. A., & Moos, R. (2009). Anxiety sensitivity, distress tolerance, and discomfort intolerance: A hierarchical model of affect sensitivity and Tolerance. *Behavior Therapy, 40*, 291–301.

Bernstein, A., Marshall-Berenz, E. C., & Zvolensky, M. J. (2011a). Multi-method evaluation of distress tolerance measures and construct(s): Concurrent relations to mood and anxiety psychopathology and quality of life. *Journal of Experimental Psychopathology, 2*(3), 386–399.

Bernstein, A., Vujanovic, A. A., Leyro, T., & Zvolensky, M. J. (2011b). Distress tolerance: Research synthesis and future directions. In M. J. Zvolensky, A. Bernstein, & A. A. Vujanovic (Eds.), *Distress tolerance*. New York, NY: Guilford Press.

Bollen, K. A. (1989). *Structural equations with latent variables*. Oxford, UK: John Wiley & Sons.

Brislin, R. W. (1970). Back-translation for cross-cultural research. *Journal of Cross-Cultural Psychology, 1*, 185–216.

Brown, K. W., & Ryan, R. M. (2003). The benefits of being present: Mindfulness and its role in psychological wellbeing. *Journal of*

Personality and Social Psychology, 8, 822–848. doi: 10.1037/0022-3514.84.4.822.

Browne, M. W., & Cudeck, R. (1993). Alternative ways of assessing model fit. In K. A. Bollen & J. S. Long (Eds.), *Testing structural equation models* (pp. 136–162). Newbury Park, CA: Sage.

Byrne, B. M. (2009). *Structural equation modeling with AMOS: Basic concepts, applications, and programming* (2nd ed.). New York: Routledge/Taylor & Francis.

Campbell, D. T., & Fiske, D. W. (1959). Convergent and discriminant validation by the multitrait-multimethod matrix. *Psychological Bulletin, 56*, 81–105.

Ekman, P. (1999). Basic emotions. In T. Dalgleish & M. Power (Eds.), *Handbook of cognition and emotion*. New York: Wiley.

Fabrigar, L. R., Wegener, D. T., MacCallum, R. C., & Strahan, E. J. (1999). Evaluating the use of exploratory factor analysis in psychological research. *Psychological Methods, 4*, 272–299.

Geisinger, K. F. (1994). Cross-cultural normative assessment: Translation and adaptation issues influencing the normative interpretation of assessment instruments. *Psychological Assessment, 6*, 304–312.

Gorsuch, R. (1983). *Factor Analysis*. London: Lawrence Erlbaum Associates.

Gratz, K. L., & Roemer, L. (2004). Multidimensional assessment of emotion regulation and dysregulation: Development, factor structure, and initial validation of the difficulties in emotion regulation scale. *Journal of Psychopathology and Behavioral Assessment, 26*, 41–54.

Hayes, S. C., Strosahl, K., & Wilson, K. G. (1999). *Acceptance and commitment therapy: An experiential approach to behavior change*. New York: Guilford Press.

Hayes, S. C., Strosahl, K., Wilson, K. G., Bissett, R. T., Pistorello, J., & Toarmino, D. (2004). Measuring experiential avoidance: A preliminary test of a working model. *Psychological Record, 54*, 553–578.

Haynes, S. N., Richard, D. C. S., & Kubany, E. S. (1995). Content validity in psychological assessment: A functional approach to concepts and methods. *Psychological Assessment, 7*, 238–247.

Hayton, J. C., Allen, D. G., & Scarpello, V. (2004). Factor retention decisions in exploratory factor analysis: A tutorial on parallel analysis. *Organizational Research Methods, 7*, 191–205.

Hooper, D., Coughlan, J., & Mullen, M. (2008). Structural equation modeling: guidelines for determining model fit. *Electronic Journal of Business Research Methods*, *6*, 53–60.

Horn, J. L. (1965). A rationale and test for the number of factors in factor analysis. *Psychometrika, 30*, 179–185.

Hu, L.-T., & Bentler, P. (1995). Evaluating model fit. In R. H. Hoyle (Ed.), *Structural Equation Modeling. Concepts, Issues, and Applications* (pp. 76–99). London: Sage.

Hu, L., & Bentler, P. M. (1999). Cutoff criteria for fit indexes in covariance structure analysis: Conventional criteria versus new alternatives. *Structural Equation Modeling: A Multidisciplinary Journal*, *6*(1), 1–55. doi:10.1080/10705519909540118

Izard, C. E. (1977). *Human emotions*. New York: Plenum Press.

Izard. C. E., Dougherty. F. E., Bloxom. B. M. L., and Kotsch, W. E. (1974). *The Differential Emotions Scale: A method of measuring the subjective experience of discrete emotions.* Unpublished manuscript. Vanderbilt University. Nashville. TN.

Jaccard, J., & Wan, C. K. (1996). *LISREL approaches to interaction effects in multiple regression*. Thousand Oaks, CA: Sage Publications, Inc.

James, L. R., Mulaik, S. A., & Brett, J. M. (1982). *Causal analysis: Assumptions, models, and data*. Beverly Hills, CA: Sage.

Kaiser, H. F. (1960). The application of electronic computers to factor analysis. *Educational and Psychological Measurement, 20*, 141–151.

Keltner, D. (1995). The signs of appeasement: Evidence for the distinct displays of embarrassment, amusement and shame. *Journal of Personality and Social Psychology, 68*, 441–454.

Larsen, R. J., & Fredrickson, B. L. (1999). Measurement issues in emotion research. In D. Kahneman, E. Diener, & N. Schwarz (Eds.), *Well-being: The foundations of hedonic psychology* (pp. 40–60). New York: Russell Sage Foundation.

Leyro, T. M., Zvolensky, M. J., & Bernstein, A. (2010). Distress tolerance and psychopathological symptoms and disorders: A review of the empirical literature among adults. *Psychological Bulletin, 136*, 576–600.

Linehan, M. M. (1993). *Cognitive-behavioral treatment of borderline personality disorder*. New York, NY: Guilford Press.

MacCallum, R. C., Widaman, K. F., Zhang, S., & Hong, S. (1999). Sample size in factor analysis. *Psychological Methods, 4*, 84–99.

Marlatt, G. A., & Gordon, J. R. (1985). *Relapse prevention: Maintenance strategies in addictive behavior change*. New York: Guilford.

Matthews, G., Deary, I. J., & Whiteman, M. C. (2003). *Personality traits* (2nd ed.). Cambridge: Cambridge University Press.

McHugh, R. K., Daughters, S. B., Lejuez, C. W., Murray, H. W., Hearon, B. A., Gorka, S. M., and Otto, M. W. (2011). Shared variance among self-report and behavioral measures of distress intolerance. *Journal of Cognitive Therapy and Research*, *35*(3), 266–275. doi:10.1007/s10608-010-9295-1.

McIntosh, C. N. (2007). Rethinking fit assessment in structural equation modelling: A commentary and elaboration on barrett (2007). *Personality and Individual Differences*, *42*(5), 859–867.

Messick, S. (1995). Validity of psychological assessment: validation of inferences from persons' responses and performances as scientific inquiry into score meaning. *American Psychologist, 50*, 741–749.

O'Connor, B. P. (2000). SPSS and SAS programs for determining the number of components using parallel analysis and Velicer's MAP test. *Behavior Research Methods, Instruments, and Computer, 32*, 396–402.

Olatunji, B. O., & Wolitzky-Taylor, K. B. (2009). Anxiety sensitivity and the anxiety disorders: A meta-analytic review and synthesis. *Psychological Bulletin, 135*, 974–999.

Orsillo, S. M., & Roemer, L. (2005). *Acceptance and mindfulness-based approaches to anxiety: Conceptualization and treatment*. New York: Springer.

Russell, J. A. (1994). Is there universal recognition of emotion from facial expression? *Psychological Bulletin, 115*, 102–141.

Schumacker, R. E., & Lomax, R. G. (2004). A beginner's guide to structural equation modeling, Second edition. Mahwah, NJ: Lawrence Erlbaum Associates.

Simons, J., & Gaher, R. (2005). The Distress Tolerance Scale: Development and validation of a self report measure. *Motivation and Emotion, 29*, 83–102.

Tangney, J. P., Miller, R. S., Flicker, L., & Barlow, D. H. (1996). Are shame, guilt, and embarrassment distinct emotions? *Journal of Personality and Social Psychology, 70*, 1256–1269.

Van de Vijver, F. J. R., & Hambleton, R. K. (1996). Translating tests: Some practical guidelines. *European Psychologist, 1*, 89–99.

Wagner, H. L. (2000). The accessibility of the term "contempt" and the meaning of the unilateral lip curl. *Cognition and Emotion, 14*, 689–710.

Watson, D., Clark, L. A., & Tellegen, A. (1988). Development and validation of the brief measures of positive and negative affect: The PANAS scales. *Journal of Personality and Social Psychology, 54*, 1063–1070.

Zvolensky, M. J., Arrindell, W. A., Taylor, S., Bouvard, M., Cox, B. J., & Stewart, S. H. (2003). Anxiety sensitivity in six countries. *Behaviour Research and Therapy, 41*, 841–859.

Zvolensky, M. J., Vujanovic, A. A., Bernstein, A., & Leyro, T. (2010). Distress tolerance: Theory, measurement, and relations to psychopathologyy. *Current Directions in Psychological Science, 19*, 406–410.

Zvolensky, M. J., Bernstein, A., & Vujanovic, A. A. (Eds.). (2011a). *Distress tolerance*. New York: Guilford Press.

Zvolensky, M. J., Leyro, T., Bernstein, A., & Vujanovic, A. A. (2011b). Distress tolerance: Historical perspectives, theory, and measurement. In M. J. Zvolensky, A. Bernstein, & A. A. Vujanovic (Eds.), *Distress tolerance*. New York, NY: Guilford Press.