Anxiety Sensitivity and Intolerance of Uncertainty: Further Evidence of Construct Independence

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Introduction

Recent interest into intolerance of uncertainty (IU; Carleton, Sharpe, & Asmundson, 2007) has suggested it may represent a fundamental tenet of at least one of the fundamental fears (Reis, 1991; Taylor, 1993), specifically, anxiety sensitivity (AS).

AS – the tendency to catastrophically misinterpret the physiological sensations of anxiety (Taylor, 1999) – likely requires some uncertainty regarding the possible consequences of anxiety sensations (e.g., heart palpitations or may not signal a pending heart attack). People less able to tolerate the uncertainty surrounding such sensations may be more likely to catastrophize and endure exacerbated anxiety.

The only prior study of the relationship between AS and IU used the original Anxiety Sensitivity Index (ASI; Peterson & Reiss, 1992), rather than the revision (ASI-3; Taylor et al., 2007), and the Intolerance of Uncertainty Short Form (IUS-12; Carleton et al., 2007). Moreover, the measures were presented separately, rather than with the items interspersed.

The present investigation explored whether the AS-3 and the IUS-12 do represent independent constructs irrespective of whether the items are presented normatively (i.e., as cohesive measures) or presented in random order and interspersed with other items.

Method

Participants included 307 undergraduates.

- AS: 69 men, ages 18-34 (M = 20.6; SD = 3.3)
- IUS-12: 238 women, ages 18-45 (M = 2.2; SD = 1.3)

Demographics were supplemented with:

AS: Anxiety Sensitivity Index-3 (ASI-3; Taylor et al., 2007)

IUS-12: Intolerance of Uncertainty Scale – Short Form (IUS-12; Carleton et al., 2007)

Participants were randomly assigned such that approximately half (54%; n=141; 77% women) viewed the items presented normally (i.e., as cohesive measures), while the others (46%; n=166; 77% women) viewed the items presented in random order and interspersed with other items (i.e., questions on fear of pain, fear of negative evaluation, and fear of illness/injury).

The random viewing group was older (M=20.7) than the standard group (M=19.8), t(305)=2.35, p<.05, p=.02.

Total and subscale scores were compared using t-tests across each of the two groups. Exploratory Factor Analysis (EFA; Osborne, 2008) was used to assess the inter-item relationships and uncontaminated factor structure of the AS-3 and IUS-12 items from each group. Confirmatory Factor Analysis (CFA) was used to assess the fit indices using the established factor structures for each measure with the data from each group.

Results

The standard group reported significantly (p<.05) higher scores than the random group only on the ASI Fear of Socially Observable Anxiety Reactions subscale, t(305)=3.32, p<.01, M=1.74, t(494)=.04, and the ASI total score, t(305)=2.27, p<.05, M=2.74, t(494)=.02.

The EFA results using principal axes analysis with promax rotation (Osborne, 2008) and the Kaiser rule (Eigenvalues > 1; Kaiser, 1966) and data from the standard group suggested a 30-item 7-factor solution accounting for 58.44% of the variance (Table 1). The results using data from the random group suggested a 30-item 7-factor solution accounting for 52.88% of the variance (Table 1).

CFA fit indices were evaluated using established guidelines (Hu & Bentler, 1999) and item parcels: χ²/df ratio (χ²/df; should be < 2.0); Comparative Fit Index (CFI; should be close to .95); the Standardised Root Mean Square Residual (SRMR; values should close to .08); Root Mean Square Error of Approximation (RMSEA; should be close to .06); Expected Cross Validation Index (ECVI; lower values, better fit).

Discussion

There were some significant differences between the two presentation modalities: endorsement of the ASI Fear of Socially Observable Anxiety Reactions subscale was higher when presented in the standard manner (i.e., as cohesive measures) relative to when they were presented in random order and interspersed with other items. It may be that when socially-related items are asked in close temporal proximity, the responses are inflated due to a priming effect. Future research should further explore these differences.

The EFA and CFAs supported the independent, moderately correlated, association between the two measures irrespective of presentation modality. When constrained, items loaded on the precedent models fit the data well; however, when unconstrained, most items still loaded onto their precedent factors.

Future studies should employ larger samples (n>1000) that allow for CFA evaluations without the use of item parcels. Such studies would provide a more robust investigation of the independence of individual items, rather than an evaluation of the independence of subscales.

Overall, it appears that the two constructs are generally able to maintain their statistical independence, irrespective of the presentation modality. These results support prior research (Carleton et al., 2007) that suggests AS and IU are independent and IU may indeed represent a fundamental tenet of AS and other fundamental fears.