

Reliably Scared?

Initial Assessment of Test-Retest Reliability for the Fundamental Fears

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Introduction

- Three fundamental fears – anxiety sensitivity, fear of negative evaluation, and injury/illness sensitivity – have been posited as key individual difference variables that contribute substantially to anxiety-related psychopathologies (Reiss, 1991).
- Recent interest in Reiss' (1991) fundamental fears – suggested to be trait-like – has prompted revisions of precedent self-report measures, along with the notion that the list of fears itself may require updating (Carleton et al., 2008).
- A novel test of construct independence for the fundamental fears used two presentation modalities and demonstrated relatively robust construct independence based on each of the revised measures (Carleton et al., 2007).
- The first modality presented items as coherent measures, whereas the second presented items randomly interspersed.
- Despite the increased interest and revisions of the measures, no test-retest studies have been performed on the new measures. Accordingly, there have also been no test-retest studies comparing presentation modalities.
- The current investigation explored test-retest reliability for each of these measures, evaluating differences across presentation modalities (i.e., coherent, interspersed).

Method

- Participants included 187 undergraduates:
 - 44 Men, ages 18-30 ($M = 20.39$; $SD = 2.86$)
 - 143 Women, ages 18-45 ($M = 20.18$; $SD = 3.40$)
- Demographics were supplemented with:
 - Anxiety Sensitivity Index-3 (ASI-3; Taylor et al., 2007)
 - Brief Fear of Negative Evaluation Scale-II (BFNE-II; Carleton et al., 2007)
 - Illness/Injury Sensitivity Index (ISI-R; Carleton et al., 2006)
- Participants were randomly assigned such that approximately half (50%; $n = 93$; 77% women) viewed the items presented normally (i.e., as cohesive measures; the Standard group), while the others (50%; $n = 94$; 75% women) viewed the items presented in random order and interspersed with other items (i.e., questions on fear of pain, intolerance of uncertainty; the Random group).
- Participants were measured initially (Time 1) and then again two weeks later (Time 2). Total and subscale scores were compared using independent t -tests between men and women. The Standard ($M=19.97$) and Random ($M=20.49$) groups were comparable in age, $t(185)=1.09$, $p>.10$, $r^2<.01$. Repeated measures t -tests were used to compare total and subscale scores across presentation modalities.
- A repeated measures analysis of variance was used to assess for any interactions between presentation modality and each of Time 1 and Time 2. Inter-correlations between each of the measures at Time 1 and Time 2 were also assessed.

Results

- There were no significant differences (all $ps>.05$) between men and women on any of the measures at either Time 1 or Time 2.
- The Standard group reported significantly higher scores than the random group on the ASI Fear of Socially Observable Anxiety Reactions subscale, $t(185) = 2.96$, $p < .01$, $M_D = 2.02$, $r^2 = .05$, and the ASI total score, $t(185) = 2.62$, $p < .05$, $M_D = 4.00$, $r^2 = .04$, but only at Time 1. There were no other significant differences on the dependent variables across presentation modalities (all $ps>.10$).
- There were no significant differences found between the presentation modalities at Time 2 on any of the dependent variables (all $ps>.10$).
- The results of the repeated measures t -tests suggested that scores reported at Time 1 were significantly greater than scores at Time 2 on most of the subscales (see Table 1).
- The repeated measures ANOVA confirmed the results of the repeated measures t -tests; however, there were no significant Time x Presentation Modality interactions.
- Consistent with the previous research, the correlation analyses revealed strong positive inter-correlations between each of the dependent variables, all of which were generally comparable at Time 1 and Time 2 (see Table 2).

Discussion

- There were some significant differences between the two presentation modalities. Specifically, endorsement of items related to fearing socially observable symptoms was higher when the items were presented in the standard manner (i.e., as cohesive measures) relative to when they were presented in random order and interspersed with other items.
- The results suggest that when items related to social anxiety are asked sequentially (or in close temporal proximity), the rates of endorsement may be inflated due to a priming effect.
- Given the particularly high rates of social anxiety item endorsement in undergraduate and community samples (Kessler et al., 2005), future research should further explore these differences based on presentation modality.
- The reduction in scores from Time 1 to Time 2 on the subscale and total scores suggest there may be problems treating fundamental fears measured using the current scales solely as traits. In contrast, it may be that the changes in scores represent a regression toward the mean rather than an actual change.
- Future research should evaluate the test-retest reliability using more than two time periods as well as counterbalancing the presentation modality for each participant. Moreover, the results of this study remain to be replicated in community and clinical samples, both of which may demonstrate significant response pattern differences across times and modalities.

Table 1. Repeated Measures Statistics

Subscales and Totals	Time 1 <i>M</i> (<i>SD</i>)	Time 2 <i>M</i> (<i>SD</i>)	Paired <i>r</i>		<i>t</i>	<i>df</i>	<i>p</i> (2-tailed)	<i>r</i> ²
			(all $ps<.01$)	<i>M_D</i> (<i>SD</i>)				
ASI – Fear of Somatic Sensations	3.78 (4.26)	3.38 (4.31)	.71	.40 (3.25)	1.67	186	>.10	.01
ASI – Fear of Cognitive Dyscontrol	2.98 (3.78)	2.87 (4.06)	.71	.12 (2.99)	.54	186	>.10	<.01
ASI – Fear of Socially Observable Anxiety Reactions	7.96 (4.76)	7.10 (5.22)	.75	.87 (3.58)	3.31	186	<.01	.06
ASI - Total	14.72 (10.61)	13.34 (11.76)	.76	1.38 (7.77)	2.43	186	<.05	.03
ISI-R Fear of Illness	6.21 (4.78)	5.39 (4.58)	.72	.83 (3.49)	3.25	186	<.01	.05
ISI-R Fear of Injury	4.06 (4.27)	3.66 (3.95)	.79	.41 (2.70)	2.06	186	<.05	.02
ISI-R Total	10.28 (8.44)	9.04 (8.04)	.78	1.24 (5.49)	3.08	186	<.01	.05
BFNE-II	22.50 (12.57)	19.81 (12.77)	.85	2.68 (7.02)	5.23	186	<.01	.13

Table 2. Time 1 (Time 2) Correlations

	ASI – Somatic					
	1	2	3	4	5	6
1. ASI – Cognitive	.59 (.74)					
2. ASI – Social	.49 (.60)	.53 (.54)				
3. ASI – Total	.83 (.89)	.83 (.86)	.83 (.85)			
4. ISI-R Illness	.52 (.63)	.43 (.50)	.35 (.47)	.52 (.61)		
5. ISI-R Injury	.61 (.69)	.50 (.58)	.42 (.56)	.61 (.70)	.73 (.77)	
6. ISI-R Total	.61 (.70)	.50 (.57)	.42 (.55)	.61 (.70)	.92 (.93)	.94 (.95)
7. BFNE-II	.37 (.49)	.40 (.47)	.62 (.72)	.57 (.66)	.35 (.48)	.44 (.56)

Somatic – Fear of Somatic Sensations
Cognitive – Fear of Cognitive Dyscontrol
Social – Fear of Socially Observable Anxiety Reactions