

Fear of Physical Harm: Revising and Confirming the Injury/Illness Sensitivity Index

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Introduction

- The Injury/Illness Sensitivity Index (ISI; Taylor, 1993) measures fears of injury and illness and potentiates understandings of the mechanisms underlying anxiety-associated chronic health conditions.

- While Taylor's (1993) analysis of all the ISI items loaded on a single factor, a recent principle components analysis (PCA; Carleton et al., in press) support a 2-factor solution.

- The two factors – Fear of Illness and Fear of Injury – were suggested to load onto a higher-order factor labeled Fear of Physical Harm.

- Although factorially sound, indications were found that ISI items 7 and 8 might be inappropriate for the ISI.

- Further, there was a substantive gender bias noted wherein women responded more fearfully to injury-related questions than men.

- The primary purpose of this study was to perform a confirmatory factor analysis (CFA) of the ISI, accounting for limitations noted in the exploratory analysis (e.g., sample size, theoretical associations, administration format), while assessing 1- and 2-factor solutions and the findings of Carleton et al. (in press).

Method

Participants were 209 undergraduate student volunteers recruited from classes at the University of Regina.

- 51 men aged 19 to 37 ($M = 23.12$; $SD = 3.83$)
- 158 women aged 18 to 50 ($M = 22.81$; $SD = 5.44$)

Administered measures:

- A revised BFNE (BFNE-R; Carleton et al., submitted; Taylor, 1993)
- Anxiety Sensitivity Index (ASI)
- Illness Attitudes Scale (IAS)
- Tampa Scale of Kinesiophobia (TSK)
- Pain Anxiety Symptoms Scale (PASS)
- Injury/Illness Sensitivity Index (ISI, see Table 1)

Results

- ANOVA revealed no significant gender effect for the ISI Total Score, $F(1,207) = 0.03$, $p = .86$; the proposed Fear of Injury subscale, $F(1,207) = 0.11$, $p = .74$; or the proposed Fear of Illness subscale, $F(1,207) = 0.22$, $p = .64$.

- The two-factor solution without items 7 and 8 provided the best fit to the data, with all factor loadings, residual terms, and latent factor variances statistically significant ($p < .01$).

- Item 9 loaded at 0.63, however the remaining factor loadings ranged from 0.71 to 0.88.

- Internal consistency for both the Fear of Injury factor and the fear of Illness factor was excellent ($\alpha = .86$).

- Table 2 presents correlations between the ISI subscales and other measures.

- The expected correlation between the Fear of Illness factor and the IAS Fear of Illness and Pain factor was very high ($r = .89$) whereas the correlation between the Fear of Injury factor and the TSK Avoidance Factor was quite low ($r = .19$).

- Correlations with measures of other fundamental fears (i.e., BFNER, ASI; Taylor, 1993) were moderate ($r = 0.46-0.66$).

Discussion

- The previous gender difference, with women scoring significantly higher than men on the Fear of Injury factor, was not replicated in this sample.

- The suggestion to remove items 7 and 8 was based on comparatively low factor loadings and a suggestion of ambiguous wording; indeed, the two-factor model without items 7 and 8 presents the best fit for the data.

- Item removal does not change internal consistency and there is an extremely high correlation between the full model and the reduced model, suggesting they are indistinguishable.

- Correlations also revealed a significant association with fear of pain.

- This is reasonable, given that injury and illness are typically associated with pain.

- It may be that the seeming fundamentality of fears regarding injury and illness are actually based on an underlying fear of pain.

- Results suggest using the revised 9-item ISI for assessing the distinct fears of illness and injury.

Table 1: Means and standard deviations of the ISI items (N=252).

ISI Item	M	SD	Skewness	Kurtosis
1. I am frightened of being injured.	0.96	0.94	0.74	-0.01
2. The thought of injury terrifies me.	0.77	0.90	0.99	0.28
3. I worry about becoming physically ill.	1.23	1.09	0.66	-0.20
4. The thought of physical illness scares me.	1.23	1.03	0.71	-0.02
5. I worry about being injured.	1.13	1.00	0.66	-0.10
6. I worry that I might get a serious physical illness in the future.	1.56	1.17	0.29	-0.81
7. It would be awful to be injured in any way.	1.35	1.07	0.68	-0.13
8. It would be awful to have a serious physical illness.	3.27	0.86	-1.10	0.75
9. I worry about my physical health.	1.72	1.18	0.19	-0.82
10. I get scared if I think I am coming down with an illness.	0.69	0.89	1.43	1.78
11. I can't stand the thought of being injured.	1.54	1.07	0.24	-0.57

Table 2. ISI correlations.

	ISI		ASI			BFNER	IAS				TSK		PASS			
	Fear of Injury	Fear of Illness	Som. Fears	Cog. Fears	Social Fears	Total	Fear of Illness and Pain	Symp. Effects	Treat. Exp.	Dis. Conv.	Som. Focus	Act. Avoid.	Cog. Anx.	Escape/ Avoid	Fear of Pain	Psyc. Anx.
Fear of Injury	1.00	0.80	0.56	0.43	0.48	0.46	0.62	0.19	0.23	0.50	0.36	0.19	0.47	0.53	0.65	0.41
Fear of Illness	0.80	1.00	0.66	0.44	0.66	0.54	0.89	0.20	0.31	0.70	0.47	0.20	0.54	0.48	0.70	0.42

Note: All correlations are significant at $\alpha < .01$ (2-tailed), ASI – Anxiety Sensitivity Index, BFNER – Brief Fear of Negative Evaluation, Revised, IAS – Illness Attitudes Scale, TSK – Tampa Scale of Kinesiophobia, PASS – Pain Anxiety Sensitivity Scale