

Acknowledgements

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Background

Researchers are increasingly describing health anxiety (HA) as a continuum construct, with mild health anxiety occurring commonly at one end (e.g., worry that a mole is indicative of malignant cancer) and extreme HA at the other (e.g., hypochondriasis)



Background

- Cognitive-behavioural models of HA include several features such as
 - 1) Disease-related fear
 - 2) Bodily preoccupation



Background

 There is also a readily apparent association between high HA and obsessive compulsive disorder (OCD)



Background

- Intolerance of Uncertainty (IU) is generally considered to be a substantial and robust cognitive component of OCD
- A similar relationship may exist between IU and HA in addition to more directly related fears (e.g., illness, pain)





Background

- Recent evidence has supported the notion that IU may be a fundamental component of all anxiety disorders, necessary and often sufficient to result in pathology
 - ° Carleton, Sharpe, & Asmundson, 2007



Background

- Intolerance of Uncertainty (IU)
 - The tendency for an individual to consider the possibility of a negative event occurring as unacceptable and threatening irrespective of the probability of its occurrence
 - At least two dimensions
 - · Inhibitory Anxiety
 - · Prospective Anxiety



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Purposes

- Assess the relationship between HA and IU
- Evaluate the unique contribution of IU to HA independent of negative affect, fear of pain, fear of somatic symptoms, and fears of illness and injury



Participants

- Participants (*n*=311) were community volunteers
 - 85 men, 18-54 years (M_{age} = 29.9; SD = 10.9)
 - 222 women, 18-55 years ($M_{age} = 30.4 SD = 10.9$)
- All participants completed several questionnaires as part of a larger study



Measures

- Whiteley Index-Likert Scale
- WI; Welch, Carleton, & Asmundson, 2009
- Positive and Negative Affect Schedule-Expanded
 - PANAS-X; Watson & Clark, 1994; Watson, Clark, & Harkness, 1994
- Illness/Injury Sensitivity Index-Revised
 ISI-R; Carleton et al., 2006
- Pain Anxiety Symptoms Scale-20
 - PASS-20; McCracken and Dhingra, 2002
- Intolerance of Uncertainty-Short Form
 - IUS-12; Carleton, Norton, & Asmundson, 2007



Measures

- Whiteley Index-Likert Version (WI)
 - Two factorially distinct components
 - □ 1) Disease Conviction
 - "Do you often have the symptoms of very serious illnesses?"
 - 2) Disease Worry/Fear
 - "Do you worry a lot about your health?"
 - Total score is considered a valid measure of HA





Measures

- Positive and Negative Affect Schedule-Expanded (PANAS-X)
 - Two factorially distinct subscales
 - □ 1) Negative Affect (Neuroticism)
 - · "nervous"
 - º 2) Positive Affect (Extraversion)
 - · "cheerful"



Measures

- Illness/Injury Sensitivity Index-Revised (ISI-R)
 - Two factorially distinct components
 - □ 1) Fear of Illness
 - "I get scared if I think I am coming down with an illness."
 - 2) Fear of Injury
 - "I am frightened of being injured."



Measures

- Pain Anxiety Symptoms Scale-20 (PASS-20)
 - Four factorially distinct components
 - 1) Cognitive anxiety
 - "I can't think straight when in pain"
 - 2) Pain-related fear
 - · "Pain sensations are terrifying"
 - □ 3) Escape and avoidance
 - "I try to avoid activities that cause pain"
 - 4) Physiological anxiety
 "Pain makes me nauseous"
 - Total score is considered a valid measure of painrelated anxiety



Measures

- Anxiety Sensitivity Index-3 (ASI-3)
 - Three factorially distinct components
 - 1) Fear of somatic sensations; 'somatic'
 - · "It scares me when my heart beats rapidly."
 - $^{\circ}\,$ 2) Fear of cognitive dyscontrol; 'cognitive'
 - "When I cannot keep my mind on a task, I worry that I may be going crazy."
 - 3) Fear of socially observable anxiety reactions; 'social'
 - "It is important to me not to appear nervous."



Measures

- Intolerance of Uncertainty Scale, Short Form (IUS-12)
 - Two factorially distinct components
 - 1) Inhibitory Anxiety
 - "The smallest doubt can stop me from acting."
 - □ 2) Prospective Anxiety
 - · "Unforeseen events upset me greatly."



Analyses

- Descriptive Statistics
- $\ {\scriptstyle \blacksquare} \$ Pearson correlations between all variables
- Regressions evaluating contributions of the independent variables to WI scores





Results: Descriptive Stats

	М	SD	S (.14)	K (.28)	t	r ²
Whiteley Total	29.93	11.10	1.05	.80	1.70	<.01
PANAS-X Negative Affect	23.50	9.00	.61	35	1.72	<.01
ISI-R Injury	4.38	4.40	.98	.02	2.11*	.01
ISI-R Illness	6.27	5.39	.81	35	2.12*	.01
PASS-20 Total	25.12	19.19	.84	.07	2.35*	.02
ASI-3 Somatic	5.42	5.41	1.06	.37	.53	<.01
IUS-12 Prospective	19.45	6.60	.26	72	.18	<.01
IUS-12 Inhibitory	11.33	5.40	.71	49	1.20	<.01

*p<.05, women scored higher than men



Results: Correlations

	Whiteley	1	2	3	4	5	6
1. PANAS-X	.52						
Neuroticism	.52						
2. ISI-R Injury	.54	.36					
3. ISI-R Illness	.72	.42	.72				
4. PASS-20 Total	.69	.48	.65	.64			
5. ASI-3 Somatic	.65	.41	.58	.61	.65		
6. IUS-12 Prospective	.51	.52	.34	.42	.48	.44	
7. IUS-12 Inhibitory	.57	.59	.44	.46	.56	.53	.74

All correlations were statistically significant, p<.01



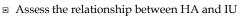
Results: Linear Relationships

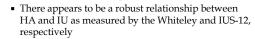
Dependent Variable: Whiteley Total							
	β	t	part r	ΔR^2	ΔF	Tol	VIF
IUS-12 Prospective	.20	2.98**	.14	.34	80.67**	.45	2.21
IUS-12 Inhibitory	.42	6.10**	.28			.45	2.21
PANAS-X Negative Affect	.10	2.41*	.08	.33	59.84**	.60	1.67
ISI-R Injury	.14	-2.75**	09			.41	2.44
ISI-R Illness†	.45	8.47**	.28			.39	2.56
PASS-20 Total	.24	4.69**	.16			.41	2.46
ASI-Somatic	.19	4.03**	.13			.48	2.08

† Despite the strong relationship (i.e., r=.72), there were no problems with multicollinearity



Discussion

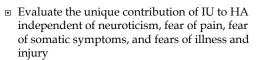




 The relationship appears more heavily weighted to uncertainty causing behavioural inhibition than to worry, but both appear important



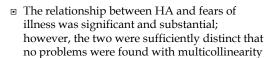
Discussion



 IU accounted for a full third of the variance in HA, which was as much as negative affect, fears of illness, injury, pain, and somatic sensations together



Discussion



 The relationship suggests that HA symptom endorsement requires more than a fear of illness - it seems to also require significant IU





Discussion



- When it comes to health, there is no "certainty" available, suggesting that a key factor in reducing HA is increasing tolerance for the necessary uncertainty
- Seemingly highly related to OCD, at least through IU



Summary



- There appears to be a significant and substantial relationship between HA and IU
- The relationship accounts for as much variance as several other related fears together
- IU may be a key component for HA as indicated by the distinction between fears of illness and symptoms of HA



Implications



 HA appears to be more than a fear of being or becoming ill (or injured) – it involves an inability to tolerate the possibility catastrophic consequences, no matter how improbable



Implications



- People with HA appear to have fears not better accounted for by general negative affect (neuroticism)
- Exposure to feared HA-related stimuli may be further benefited by contingency planning and acceptance of uncertainty or an exploration of the uncertainty that is driving the HA



Limitations & Future Research



- Self-reported symptoms
- Participants were not assessed for diagnostic status
- Cross-sectional data
- A qualitative analysis of the specific feared future consequences may be enlightening



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