



## Anxiety sensitivity and intolerance of uncertainty: Evidence of incremental specificity in relation to health anxiety

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### ABSTRACT

Anxiety sensitivity (AS) reflects the fear of arousal-related sensations and intolerance of uncertainty (IU) represents the dispositional fear of the unknown. Within cognitive-behavioral models, AS and IU are individual difference variables considered central to the phenomenology of health anxiety. However, prior studies have cast doubt on whether both variables incrementally contribute to our understanding of health anxiety. Addressing limitations of these prior studies, the present study examined the incremental specificity of AS and IU as these two variables relate to health anxiety in a large medically healthy sample of community adults ( $N = 474$ ). Both AS and IU incrementally contributed to the concurrent prediction of health anxiety beyond both negative affect and one another. However, within these analyses, the physical dimension of AS and the inhibitory dimension of IU were the only AS and IU dimensions to evidence incremental specificity in relation to health anxiety.

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### 1. Introduction

Within hierarchical models of emotional disorders there exists a broad, non-specific higher-order factor of negative affect/neuroticism that spans across these disorders (e.g., Watson, 2005). Given that this higher-order factor indiscriminately relates to all emotional disorders, researchers have started to consider the role of lower-order factors that might allow for finer, more precise distinctions to be made among phenomena of interest. Anxiety sensitivity (AS) and intolerance of uncertainty (IU) are two lower-order factors within the broader context of negative affect that have garnered particular interest from researchers (Norton & Mehta, 2007; Norton, Sexton, Walker, & Norton, 2005; Sexton, Norton, Walker, & Norton, 2003). AS reflects the fear of arousal-related sensations (Taylor et al., 2007) and IU represents the dispositional fear of the unknown (Carleton, 2012). AS and IU are independent, albeit strongly related ( $r = 0.68$ ), constructs (Carleton, Sharpe, & Asmundson, 2007). Although it was once thought that AS and IU might be particularly relevant to only certain emotional disorders, these two individual difference variables appear best conceptualized as spanning across multiple mood and anxiety disorders (Norton & Mehta, 2007; Norton et al., 2005; Sexton et al., 2003). Thus, AS and IU may have transdiagnostic importance.

Despite these findings, the extant literature provides equivocal conclusions as to the relevance of AS and IU to health anxiety. Asmundson and Taylor (2005) stated that “most cognitive-behavioral researchers and practitioners use the term *health anxiety* to describe the wide range of worry that people can have about their health” (p. 5, emphasis in original). Within cognitive-behavioral models, health anxiety is conceptualized as arising from misinterpretations of body sensations (e.g., heart palpitations) or symptoms (e.g., sore throat) as being indicative of a medical problem (Abramowitz & Braddock, 2008; Taylor & Asmundson, 2004). AS and IU are both risk factors for health anxiety within cognitive-behavioral models. For example, Abramowitz and Braddock noted that the fear of arousal-related sensations leads individuals to mistakenly believe that innocuous sensations/symptoms indicate a medical problem, thus resulting in health anxiety. Abramowitz and Braddock further noted that individuals with health anxiety often believe that it is possible, and necessary, to gain certainty as to their health status. Difficulty tolerating health status-related uncertainty may also lead to health anxiety.

Extant data broadly support the importance given to both AS and IU within cognitive-behavioral models of health anxiety. For example, both variables significantly positively correlate with health anxiety (Abramowitz, Deacon, & Valentiner, 2007) and individuals with severe health anxiety endorse having especially high levels of AS and IU (Deacon & Abramowitz, 2008). However, there exists conceptual overlap among AS and IU, as both variables pertain to fear or anxiety related to the unknown (Carleton, Sharpe, &

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Asmundson, 2007). Because of this overlap, it is important to examine the independence of AS and IU as these two variables relate to health anxiety. Unfortunately, research examining the incremental specificity of AS and IU in relation to health anxiety has produced discordant findings. In two studies (Norton et al., 2005; Sexton et al., 2003), AS, but not IU, was found to significantly relate to health anxiety after controlling for negative affect and the other variable (i.e., AS or IU). Boelen and Carleton (2012) failed to replicate these results and found that neither AS nor IU was significantly related with health anxiety after controlling for negative affect and the other variable. Based on these results, it appears that cognitive-behavioral models may place too great an emphasis on AS and IU as they relate to health anxiety.

Although informative, limitations of these prior studies preclude firm conclusions as to the interrelations among AS, IU, and health anxiety. Specifically, the sample sizes in these studies were relatively small (*Ns* ranging from 91 to 126), which could have reduced the statistical power necessary to detect unique relations among the targeted variables. In addition, the choice of health anxiety measures was not ideal. For example, Boelen and Carleton (2012) used a dichotomously scored version of the Whiteley Index (WI; Pilowsky, 1967) to assess health anxiety. As noted by Welch, Carleton, and Asmundson (2009), the use of a 5-point scale when using the WI to assess for health anxiety is preferred and likely leads to more valid results. Another limitation of these prior studies is the failure to use contemporary operationalizations of both AS and IU. For example, Boelen and Carleton (2012) operationalized IU using Carleton, Norton, and Asmundson's (2007) contemporary two-dimensional conceptualization, but the other two studies used a unidimensional conceptualization of IU (Norton et al., 2005; Sexton et al., 2003). IU consists of prospective (i.e., cognitive) and inhibitory (i.e., behavioral) IU within Carleton, Norton, and Asmundson's conceptualization. It is important to examine these IU dimensions separately, as these two dimensions have distinct correlates (McEvoy & Mahoney, 2011). Along similar lines, AS was treated as a unidimensional construct in all three prior studies. However, research suggests that AS is best conceptualized as consisting of three separate dimensions. The three AS dimensions include the fear of arousal-related sensations as a result of cognitive (i.e., mental incapacitation), physical (i.e., physical calamity), or social (i.e., public embarrassment) concerns (Taylor et al., 2007). Among the AS dimensions, the physical dimension is the only one that uniquely relates to health anxiety (Olatunji et al., 2009; Stewart, Sherry, Watt, Grant, & Hadjistavropoulos, 2008). Based on these findings, it is important to use a multidimensional conceptualization of AS in health anxiety research.

To address these limitations, the present study was completed using a sample ( $N = 474$ ) that was substantially larger than the samples described above (Boelen & Carleton, 2012; Norton et al., 2005; Sexton et al., 2003). We expected that the present sample size would allow for adequate statistical power, as an a-priori power analysis (using Faul, Erdfelder, Buchner, & Lang, 2009) identified a sample of 395 respondents as needed to achieve statistical power of 0.80 when attempting to determine the significance of a single regression coefficient with a small effect size (Cohen's  $f^2 = 0.02$ ) and eight total predictors in a regression model. A small effect size was chosen based on results from Boelen and Carleton (2012).<sup>1</sup> Addressing noted measurement limitations of prior research, we used the WI version recommended by Welch et al. (2009) to assess health anxiety, as well as contemporary multidimensional operationalizations of both AS (Taylor et al., 2007) and IU (Carleton, Norton, & Asmundson, 2007), in the present study.

Consistent with prior research (Boelen & Carleton, 2012; Olatunji et al., 2009; Stewart et al., 2008), we predicted that all AS (cognitive, physical, and social) and IU (prospective and inhibitory) dimensions would significantly correlate with health anxiety. Incremental specificity was investigated by examining whether the AS and IU dimensions shared unique relations with health anxiety after controlling for negative affect and the other set of dimensions (AS or IU). We predicted that physical AS and both IU dimensions (prospective and inhibitory) would demonstrate incremental specificity in relation to health anxiety. This prediction was based on the following considerations. Given that previous research has indicated that physical AS is the AS dimension of particular relevance to health anxiety (Olatunji et al., 2009; Stewart et al., 2008), we expected robust relations between this AS dimension and health anxiety. McEvoy and Mahoney (2011) suggested that prospective IU is particularly relevant to both generalized anxiety and obsessive-compulsive symptoms, whereas inhibitory IU is particularly relevant to panic symptoms. Because health anxiety shares strong conceptual ties with these three symptom types (Abramowitz & Braddock, 2008), we predicted that both IU dimensions would share unique relations with health anxiety.

As described, AS and IU are both prominently featured within cognitive-behavioral models of health anxiety, which has led researchers to develop intervention strategies to target the impact of both variables on health anxiety (Abramowitz & Braddock, 2008). Given that research has cast doubt on the relative importance of AS and IU to health anxiety (Boelen & Carleton, 2012; Norton et al., 2005; Sexton et al., 2003), further exploration of the interrelations among AS, IU, and health anxiety is needed. Results showing that AS and IU fail to evidence incremental specificity in relation to health anxiety even after addressing the limitations of prior studies, would suggest that the importance of these two variables to health anxiety might be overstated within cognitive-behavioral models of health anxiety. If such a pattern of relations emerges, using intervention strategies that seek to reduce the impact of AS and/or IU on health anxiety may have little clinical utility.

## 2. Method

### 2.1. Participants

The sample consisted of 474 medically healthy adults. The mean age of the sample was 33.3 years ( $SD = 12.2$ ). The majority of participants self-identified as female (55.5%), received at least a two-year college degree (59.5%), and worked at least part-time (71.0%). In terms of racial/ethnic identification, 78.5% of respondents self-identified as Caucasian, 6.5% as African American, 6.3% as Asian, 3.8% as Hispanic, and 4.9% endorsed "Other."

### 2.2. Measures

#### 2.2.1. Anxiety Sensitivity Index-3 (Taylor et al., 2007)

The ASI-3 is an 18-item measure that assesses cognitive (e.g., *When I feel "spacey" or spaced out I worry that I may be mentally ill*), physical (e.g., *When I notice that my heart is beating rapidly, I worry that I might have a heart attack*), and social (e.g., *When I tremble in the presence of others, I fear what people might think of me*) dimensions of AS using a 5-point scale (ranging from 0 to 4). The ASI-3 has shown strong convergent correlations ( $r_s$  ranging from 0.83 to 0.99) with other measures of AS (Taylor et al., 2007).

#### 2.2.2. Intolerance of Uncertainty Scale-12 item version (IUS-12; Carleton, Norton, & Asmundson, 2007)

The IUS-12 is a 12-item short-form of the original 27-item IUS (Freeston, Rheaume, Letarte, Dugas, & Ladouceur, 1994). The

<sup>1</sup> A post-hoc power analysis indicated that we achieved adequate statistical power (i.e., .87) for the detection of small effects in the present study.

IUS-12 assesses prospective IU (e.g., *I always want to know what the future has in store for me*) and inhibitory IU (e.g., *When I am uncertain I can't function very well*) using a 5-point scale (ranging from 1 to 5). The IUS-12 has shown a near-perfect correlation ( $r = 0.96$ ) with the full-length IUS (Carleton, Norton, & Asmundson, 2007).

### 2.2.3. Positive and Negative Affect Schedule (PANAS; Watson, Clark, & Tellegen, 1988)

The PANAS asks respondents to indicate to what extent single-word descriptors (e.g., *distressed, scared*) capture how they felt over the past week on a 5-point scale (ranging from 1 to 5). The negative affect scale of the PANAS – the PANAS scale of interest in the present study – consists of 10 items. PANAS-Negative Affect has shown moderate to strong convergent correlations ( $r$ s ranging from 0.51 to 0.74) with other measures of negative affect (Watson et al., 1988).

### 2.2.4. Whiteley Index (WI; Pilowsky, 1967)

The WI is a 14-item measure that assesses health anxiety (e.g., *Do you worry a lot about your health?*). Following the recommendations of Welch et al. (2009), items were rated using a 5-point scale (ranging from 1 to 5). Asmundson, Carleton, Bovell, and Taylor's (2008) revised 6-item WI was used in the present study, which is the most factorially stable version of the WI (Welch et al., 2009). Presently, no known study has examined relations between this 6-item version of the WI and other measures of health anxiety. However, the full-length WI has shown a strong convergent correlation ( $r = 0.80$ ) with another measure of health anxiety (Hiller, Rief, & Fichter, 2002).

### 2.3. Procedure

Participants were recruited using Amazon's Mechanical Turk (MTurk), an internet-based platform through which researchers can recruit adults from the general public to complete online surveys in exchange for monetary compensation. Respondents completing surveys through MTurk have been found to produce high quality data (Buhrmester, Kwang, & Gosling, 2011). In addition, MTurk samples tend to be more demographically diverse than standard Internet samples, as well as American undergraduate samples (Buhrmester et al., 2011). This study was approved by the local institutional review board. Recruitment was limited to MTurk workers over 18 years of age and located in the United States. All participants reported that they had *not* been diagnosed with a medical condition by a doctor. This methodology was used to ensure that physical health minimally contributed to observed levels of health anxiety. Participants were required to provide electronic consent and there was no penalty for withdrawing from the study. Upon completion of the study, participants were debriefed and paid in full. Compensation was \$1, an amount consistent with the compensation given to MTurk workers completing prior studies of similar length (Buhrmester et al., 2011).

### 2.4. Data analytic strategy

A series of hierarchical multiple linear regressions was used to examine the incremental specificity of AS and IU in relation to health anxiety. Age and gender were treated as additional covariates (following Olatunji et al., 2009) and entered into Step 1 of the models with negative affect. The AS dimensions were entered into Step 2 of the first model and the IU dimensions were entered into Step 3 of the first model. The order of entry of AS and IU was then switched, such that the IU dimensions were entered into Step 2 of the second model and the AS dimensions were entered into Step 3 of the second model. Health anxiety was the criterion in both regression models. The order of entry allowed for an examination of the unique variance (i.e.,  $\Delta R^2$ ) accounted for in health anxiety scores beyond each set of other variables.

## 3. Results

### 3.1. AS, IU, and health anxiety

Descriptive statistics and zero-order correlations among the study variables are presented in Table 1. All of the study measures demonstrated good internal consistency and, as expected, all of the study variables significantly intercorrelated. Results from the regressions examining the incremental specificity of AS and IU are presented in Table 2. Each AS dimension demonstrated incremental specificity beyond age, gender, and negative affect, as well as beyond the other AS dimensions. However, after accounting for the IU dimensions, only physical AS shared a unique relation with health anxiety. Among the IU dimensions, only inhibitory IU shared a unique relation with health anxiety when controlling for age, gender, and negative affect, the other IU dimension, and the AS dimensions. An examination of the unique variance accounted for by each set of variables (i.e.,  $\Delta R^2$ ), indicated that the AS dimensions accounted for a much larger amount of unique variance than did the IU dimensions.

## 4. Discussion

Addressing limitations of prior research (Boelen & Carleton, 2012; Norton et al., 2005; Sexton et al., 2003), results from the present study indicated that both AS and IU evidenced incremental specificity in relation to health anxiety. More precisely, physical AS and inhibitory IU were the only dimensions of AS and IU that shared unique relations with health anxiety in the present tests of incremental specificity. Moreover, larger effect sizes (i.e.,  $\Delta R^2$ ) were found for the incremental specificity of AS, a finding which suggests that this variable might play a more prominent role in the phenomenology of health anxiety than does IU.

Some researchers have raised the possibility that a strong association between AS and health anxiety could be an artifact of either conceptual redundancy or psychometric redundancy between

**Table 1**  
Descriptive statistics and zero-order correlations among the study variables.

| Variable   | Mean  | (SD)   | 1      | 2      | 3      | 4      | 5      | 6      | 7      |
|--|-------|--------|--------|--------|--------|--------|--------|--------|--------|
| 1. Anxiety Sensitivity Index-3-Cognitive                 | 4.51  | (5.19) | (0.91) |        |        |        |        |        |        |
| 2. Anxiety Sensitivity Index-3-Physical                  | 5.60  | (5.44) | 0.73** | (0.91) |        |        |        |        |        |
| 3. Anxiety Sensitivity Index-3-Social                    | 8.69  | (5.51) | 0.64** | 0.58** | (0.83) |        |        |        |        |
| 4. Intolerance of Uncertainty Scale-Prospective          | 21.27 | (5.61) | 0.44** | 0.42** | 0.56** | (0.88) |        |        |        |
| 5. Intolerance of Uncertainty Scale-Inhibitory           | 11.79 | (4.83) | 0.65** | 0.51** | 0.62** | 0.74** | (0.91) |        |        |
| 6. Positive and Negative Affect Schedule-Negative Affect | 18.51 | (7.85) | 0.55** | 0.46** | 0.49** | 0.42** | 0.59** | (0.92) |        |
| 7. Whiteley Index  | 13.21 | (4.92) | 0.59** | 0.64** | 0.51** | 0.44** | 0.58** | 0.48** | (0.90) |

Note:  $N = 474$ . Cronbach's alpha values listed on the diagonal.  
\*\*  $p < 0.01$  (Two-tailed).

**Table 2**  
Incremental specificity of anxiety sensitivity and intolerance of uncertainty.

| Variable                                     | Whiteley Index |                               |                               |                               |
|--|----------------|-------------------------------|-------------------------------|-------------------------------|
|  | $\Delta R^2$   | Step 1<br>Partial<br><i>r</i> | Step 2<br>Partial<br><i>r</i> | Step 3<br>Partial<br><i>r</i> |
| Step 1                                       | 0.24**         |                               |                               |                               |
| Age  |                | −0.05                         | 0.00                          | −0.01                         |
| Gender                                       |                | 0.13**                        | 0.10*                         | 0.07                          |
| PANAS-Negative Affect                        |                | 0.46**                        | 0.16**                        | 0.10*                         |
| Step 2                                       | 0.23**         |                               |                               |                               |
| Anxiety Sensitivity Index-3-Cognitive        |                | –                             | 0.12**                        | 0.05                          |
| Anxiety Sensitivity Index-3-Physical         |                | –                             | 0.34**                        | 0.35**                        |
| Anxiety Sensitivity Index-3-Social           |                | –                             | 0.10*                         | 0.03                          |
| Step 3                                       | 0.03**         |                               |                               |                               |
| Intolerance of Uncertainty Scale-Prospective |                | –                             | –                             | −0.02                         |
| Intolerance of Uncertainty Scale-Inhibitory  |                | –                             | –                             | 0.20**                        |
| Step 1                                       | 0.24**         |                               |                               |                               |
| Age  |                | −0.05                         | −0.03                         | −0.01                         |
| Gender                                       |                | 0.13**                        | 0.08                          | 0.07                          |
| PANAS-Negative Affect                        |                | 0.46**                        | 0.21**                        | 0.10*                         |
| Step 2                                       | 0.13**         |                               |                               |                               |
| Intolerance of Uncertainty Scale-Prospective |                | –                             | 0.02                          | −0.02                         |
| Intolerance of Uncertainty Scale-Inhibitory  |                | –                             | 0.31**                        | 0.20**                        |
| Step 3                                       | 0.14**         |                               |                               |                               |
| Anxiety Sensitivity Index-3-Cognitive        |                | –                             | –                             | 0.05                          |
| Anxiety Sensitivity Index-3-Physical         |                | –                             | –                             | 0.35**                        |
| Anxiety Sensitivity Index-3-Social           |                | –                             | –                             | 0.03                          |

Note:  $N = 474$ . Gender (dummy-coded: Male = 0, Female = 1); PANAS = Positive and Negative Affect Schedule.

\*  $p < 0.05$  (Two-tailed).

\*\*  $p < 0.01$  (Two-tailed).

measures used to assess these two constructs (Stewart & Watt, 2000). For example, in regard to psychometric redundancy, Taylor (1994) noted that measures of AS and health anxiety assess similar concerns (e.g., fears of symptoms, beliefs about health-related consequences). Pursuant to the present study, the ASI-3 assesses worry about health in response to anxiety symptoms (e.g., *When my stomach is upset, I worry that I might be seriously ill*; Taylor et al., 2007). Despite this content overlap across measures, Stewart et al. (2008) found that the ASI-3 and a measure of health anxiety were factorially distinct. Stewart et al.'s findings indicate that measures of AS and health anxiety are psychometrically independent. However, the argument could be made that psychometric redundancy might only be evidenced when examining the distinctiveness of the ASI-3-Physical scale from a measure of health anxiety. We completed supplemental analyses using structural equation modeling (SEM) to ensure that ASI-3-Physical was distinct from the WI in the present study. Results showed that a one-factor model, in which the ASI-3-Physical items and the WI items loaded on a single latent construct, provided a significant decrement in model fit relative to a correlated two-factor model in which ASI-3-Physical items and the WI items loaded on two separate correlated latent constructs ( $\chi^2_{D(1)} = 664.41, p < 0.01$ ). Based on these results, ASI-3-Physical and the WI were psychometrically distinct in the present study.<sup>2</sup>

<sup>2</sup> Further information about these supplemental SEM analyses can be obtained from the first author.

Conceptual redundancy could also be an issue, as the physical AS dimension strongly parallels the operational definition of health anxiety. However, based on seminal conceptualizations of AS, we believe that conceptual redundancy between physical AS and health anxiety is unlikely. For example, McNally (1994) asserted that AS reflects dispositional beliefs about the harmfulness of anxiety symptoms, with AS in turn engendering conditioned, episodic, responses to anxiety symptoms. Following from McNally's conceptualization of AS, and the present results, health anxiety (i.e., worry about health; Asmundson & Taylor, 2005) would likely best be viewed as an episodic response to the occurrence of anxiety symptoms as a result of dispositional beliefs about the physical harmfulness of these symptoms (i.e., physical AS). Further evidence for the conceptual distinctiveness of physical AS and health anxiety comes from Reiss's (1991) expectancy theory. Reiss proposed that fundamental fears, like AS, are distinguishable from ordinary fears. Health anxiety is likely best viewed as an ordinary fear because being health anxious is not necessarily a reason for having other fears (e.g., social anxiety). However, as noted by Reiss, AS represents a fundamental fear because an individual might have multiple ordinary fears as a result of fearing anxiety symptoms. Following from Reiss's expectancy theory, AS would be a superordinate fear to health anxiety, which is consistent with how AS is modeled within extant hierarchical models of emotional disorders (Norton & Mehta, 2007; Norton et al., 2005; Sexton et al., 2003). Overall, physical AS does not appear to be an identical construct to health anxiety and, from our viewpoint, is likely best viewed as providing a reason as to why individuals experience health anxiety. With this viewpoint in mind, it will be important for future research to extend existing research examining the longitudinal AS-health anxiety relationship using an AS total scale score (Olatunji et al., 2009) by specifically focusing on the prospective prediction of health anxiety by physical AS.

Nonetheless, given the noted overlap between AS and health anxiety, it is particularly noteworthy that inhibitory IU evidenced incrementally explanatory power beyond AS in the concurrent prediction of health anxiety in the present study. Inhibitory IU pertains to the inability to act in the face of uncertainty (Carleton, Norton, & Asmundson, 2007). As described earlier, AS and IU both pertain to fear or anxiety related to the unknown. Carleton, Sharpe, and Asmundson (2007) suggested that individuals high in AS might fear uncertainty in relation to specific anxiety symptoms. The present results indicate that, when faced with uncertainty about the underlying nature of feared anxiety symptoms, health anxious individuals might be marked by inaction. Although individuals with health anxiety often engage in excessive reassurance-seeking behavior, inaction is an important safety behavior associated with health anxiety (Abramowitz & Braddock, 2008; Taylor & Asmundson, 2004). Individuals who avoid health-related stimuli that provoke feared anxiety symptoms, potentially as a result of inhibitory IU, are unable to gain corrective experiences indicating that the sensations are non-threatening. This avoidance serves to maintain health anxiety (Abramowitz & Braddock, 2008). The avoidance of health-related stimuli can also lead to poorer physical conditioning, which can further exacerbate the frequency and intensity of anxiety symptoms (Taylor & Asmundson, 2004). Future studies should seek to examine relations between inhibitory IU and inaction in the face of health threats.

Based on these considerations, intervention strategies that target physical AS and inhibitory IU may be especially useful in reducing health anxiety. There is reason to believe that the impact of physical AS and inhibitory IU on health anxiety might be reduced via similar intervention strategies. For example, behavioral intervention strategies, such as interoceptive exposures, are recommended to reduce both the fear of arousal-related sensations and avoidance of health-related stimuli (Abramowitz & Braddock,

2008; Taylor & Asmundson, 2004). However, individuals might fear arousal-related sensations and avoid health-related stimuli for distinct reasons (i.e., physical AS versus inhibitory IU). As such, behavioral intervention strategies might be framed as opportunities to challenge specific types of dysfunctional beliefs.

The above considerations should be considered with the following study limitations in mind. In particular, relations among the study variables might have been inflated as a result of our mono-method assessment. Moreover, participants consisted of a sample unselected for levels of health anxiety. Although studies supporting the dimensional (i.e., non-taxonic) nature of health anxiety suggest that using samples unselected on levels of health anxiety is appropriate (Ferguson, 2009; Longley et al., 2010; but see also Asmundson, Taylor, Carleton, Weeks, & Hadjistavropoulos, 2012), it will be important for future research to ensure the present findings generalize to samples marked by individuals who consistently score higher on measures of health anxiety. Finally, these data do not speak to temporal relations among physical AS, inhibitory IU, and health anxiety, and thus, causal inferences cannot be made. It will be important for future research to assess the tenability of causal effects using experimental and longitudinal designs.

Limitations notwithstanding, the present results suggest that cognitive-behavioral models have not overstated the importance of AS and IU to health anxiety. However, results indicating that only certain dimensions of AS and IU evidence incremental specificity in relation to health anxiety highlight the importance of treating AS and IU as multidimensional constructs when examining associations with health anxiety. Gaining greater insight into interrelations among physical AS, inhibitory IU, and health anxiety might ultimately lead to the use of health anxiety intervention strategies that best target the impact of these individual difference variables on health anxiety.

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