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Predicting anxious response to a social challenge and hyperventilation: Comparison of the ASI and ASI-3

Michele M. Carter [a,*], Tracy Sbrocco [b], Firouzeh Ayati [a]

[a] American University, United States
[b] Uniformed Services University of the Health Sciences[1], United States

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ABSTRACT

This study compared the predictive ability of the original ASI to the ASI-3 and measures of trait and social anxiety in two challenge conditions; hyperventilation or a social challenge. During hyperventilation, the ASI-3 social concerns subscale was a better predictor than the subscales of the original ASI and measures of general trait and social anxiety. During the social manipulation, results indicated the ASI-3 social concerns subscale and the social anxiety measure were significant predictors of anxious response. Results provide evidence that the ASI-3 is an improvement over the original ASI and is a sound overall measure of response to challenge procedures.

1. Introduction

According to expectancy theory (Reiss, 1991; Reiss & McNally, 1985) Anxiety Sensitivity (AS) is an individual difference variable based on the belief that anxiety related symptoms (increased heart rate, trembling, dizziness) have harmful if not catastrophic consequences. Individuals with high AS are said to associate their physical symptoms with harmful psychological, social and physical consequences. Furthermore, some research (Reiss, 1991) has found that those with high AS are at greater risk for developing anxiety disorders, in particular Panic Disorder (Cox, Endler, & Swinson, 1991; Donnell &

* Corresponding author. Department of Psychology, American University, 4400 Massachusetts Ave, 321 Asbury Building, Washington, DC 20016-8062, United States. Tel.: +1 202 885 1712; fax: +1 202 885 1023.
E-mail address: mcart@american.edu (M.M. Carter).

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McNally, 1989; Schmidt, Zvolensky, & Maner, 2006). While the importance of the AS construct is clear and commonly agreed upon, the measurement of AS is less straight forward. In fact, the chief instrument used to measure AS, the Anxiety Sensitivity Index (ASI – Reiss, Peterson, Gursky, & McNally, 1986) has been revised twice in the last ten years in an effort to improve its psychometric properties (Taylor & Cox, 1998a; Taylor et al., 2007). Although evidence exists concerning the predictive ability of the original ASI, no studies have compared it to the newest ASI-3. The purpose of this investigation is to compare the ability of the ASI and the ASI-3 to predict anxious response to social and hyperventilation challenge procedures.

1.1. Measuring anxiety sensitivity

Several factor analytic studies have indicated the ASI is a multidimensional measure (Peterson & Reiss 1992; Taylor & Cox, 1998b), consisting of three lower-order factors (physical concerns, mental incapacitation concerns, and social concerns) and one higher-order factor (anxiety sensitivity). Zinbarg and Barlow (1996), Zinbarg, Barlow, and Brown (1997), for example, examined the factor structure of the ASI among a large sample of consecutively presenting outpatients and reported the presence of three distinguishable lower-order factors that loaded on one general, higher-order factor. Furthermore, confirmatory factor analysis revealed that a hierarchical model provided a better fit to the data than a single-factor model, and, that the general higher-order factor accounted for approximately 60% of the variance in total ASI scores. In these investigations, it was also reported that the social concerns factor was relatively weak.

In addition, there is evidence indicating that the ASI and its subscales are good predictors of anxious response. For example, Carter, Suchday, and Gore (2001) investigated the ability of the ASI to predict anxious response to 90 s of voluntary hyperventilation. It was found that the strongest predictor of anxious and somatic response was the physical concerns subscale of the ASI. The remaining factors (social concerns, mental incapacitation concerns) were not significant predictors of participants' response to the challenge procedure. Similar results were found by Donnell and McNally (1989) and Holloway and McNally (1987) who exposed high and low anxiety sensitive college students to 5 m of hyperventilation. In these studies, those with high AS reported more intense and higher levels of discomfort than their low AS counterparts.

Simon et al. (2006) found a relationship between AS and dyspnea. They report that 'Anxiety Sensitivity Index scores predicted more severe subjective dyspnea and greater dyspnea-related avoidance, even after adjustment for anxiety disorders and pulmonary dysfunction'. These finding suggest a strong relationship exists between AS and severity of respiratory discomfort. Taken together, the above results and those from similar investigations (Asmundson, Norton, Wilson, & Sandler, 1994; Schmidt, Trakowski, & Staab, 1997; Whittal, Goetsch, & Suchday, 1994) clearly point to the importance of AS in predicting fearful responses to physiological challenge procedures.

Despite consistent evidence supporting use of the ASI in predicting the development of panic and evidence indicating that a specific subscale of the ASI is a strong predictor of anxious response to challenge procedures, the original version of the ASI has been somewhat limited by the comparatively poor psychometric properties of the social subscale. This subscale contains fewer items and has routinely exhibited low internal consistencies (Zinbarg & Barlow, 1996; Zinbarg et. al., 1997) and poor predictive ability (Grant, Beck, & Davila, 2007). Additional problems with the original ASI include that each subscale contained a different number of items, which may have influenced the reliability of the shorter subscales and that the utility of the mental incapacitation factor had not been determined (Taylor et al., 2007). As such, the original ASI was revised.

1.2. Anxiety Sensitivity Index – 3

To better capture the psychological and cognitive factors of the AS a new measure was developed by Taylor and Cox (1998a), the Anxiety Sensitivity Index-Revised (ASI-R). This newer version contains 36 items and was designed to measure fear of cardiovascular, gastrointestinal, respiratory, public, dissociative, neurological and cognitive dyscontrol anxiety symptoms. However, it is more common for the ASI-R to be comprised of four distinguishable factors. Deacon & Abramowitz (2006) and Deacon,