Anxiety disorder specificity of anxiety sensitivity in a community sample of young women

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Abstract

Anxiety sensitivity (AS) was originally proposed as a specific vulnerability factor for panic disorder and anxiety. The specificity of this relationship has been questioned because AS has also been found to be associated with depressive symptomatology. Data from the Dresden Study of Mental Health, which utilized a large community sample ($N = 1867$) of young German women, were used to investigate whether AS possesses specificity to anxiety-related psychopathology versus depression-related psychopathology when specific disorders were utilized as dependent variables. Participants completed a diagnostic interview as well as self-report measures of AS and neuroticism. Logistic regression analyses that statistically adjusted for neuroticism indicated that elevated AS had significant positive associations with several anxiety disorders, but was not significantly associated with major depressive disorder or dysthymia. These findings are generally consistent with those of previous studies that utilized self-reports of psychopathology and they support the hypothesis that AS is a specific vulnerability for panic and anxiety. However, when the lower-order components of AS were considered a more complex pattern of findings emerged, including significant positive associations between depression and both the Physical Concerns and Social Concerns components of AS.
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0. Introduction

Anxiety sensitivity (AS) is an individual difference variable characterized by a fear of anxiety-related sensations arising from beliefs that these sensations have harmful consequences (Reiss, 1991). AS is conceptualized as being comprised of three inter-correlated lower-order components that load on a single higher-order AS factor (see Zinbarg, Mohlman, & Hong, 1999). The lower-order components are commonly referred to as Physical Concerns (e.g., fears of anxiety-related physical sensations such as a racing heart), Psychological Concerns (e.g., fears of cognitive symptoms of anxiety such as difficulty concentrating), and Social Concerns (e.g., fears of publicly-observable anxiety symptoms such as shaking).

AS has received extensive attention as a risk factor for panic disorder. The most convincing evidence that those with elevated levels of AS are at risk for developing panic disorder has come from longitudinal studies by Schmidt and colleagues (Schmidt, Lerew, & Jackson, 1997, 1999) that found baseline scores on the Anxiety Sensitivity Index (ASI; Peterson & Reiss, 1987) were predictive of the occurrence of subsequent panic attacks.

The relationships between AS and other disorders, particularly depression, have received growing attention. For example, Taylor, Koch, Woody, and McLean (1996) found that depressed patients had elevated scores on the ASI relative to published norms. As well, using a sample of patients with either panic disorder, major depression, or both of these disorders, they examined relationships between AS components and both mood and anxiety measures. Overall, the AS components related to Physical and Social Concerns tended to have significant positive associations with anxiety measures, but not with measures of depression. In contrast, the Psychological Concerns, or cognitive dyscontrol, component of AS was strongly associated with measures of depression severity, but not with measures of anxiety. Comparisons across the diagnostic groups (viz., panic disorder, major depression, or major depression and panic disorder) indicated that major depression was associated with the highest scores on the Psychological Concerns component.

Two issues regarding the specific causal relationships between AS and anxiety disorders have been raised. First, Lilienfeld, Turner, and Jacob (1993) suggested that the association between AS and panic may be due to shared variance between AS and trait anxiety. In order to address this possibility, measures of trait anxiety have been used to evaluate whether ASI scores account for unique variance in the outcome of interest beyond that accounted for by trait anxiety. For example, Schmidt et al. (1997) found that ASI scores contributed unique variance in predicting the development of spontaneous panic attacks beyond that accounted for by scores on a measure of trait anxiety. Second, Schmidt, Lerew, and Jackson (1999) noted that the associations between AS and depression described above may preclude AS from being a specific vulnerability for anxiety. To address this issue, they conducted a longitudinal study evaluating the ability of AS to predict subsequent symptoms of anxiety and depression. They utilized regression analyses that accounted for the covariation of changes in anxiety and changes in depression (i.e., controlling for changes in anxiety when examining changes in depression and vice versa). Their findings indicated that AS was uniquely associated with anxiety symptoms or possessed symptom specificity for anxiety.

To date, studies utilizing non-clinical samples, such as Schmidt et al.'s (1997, 1999) involving military personnel, have relied on self-report measures to assess the dependent variables (e.g., panic attacks and anxiety symptoms) and have not yet utilized diagnostic measures. Studies with clinical samples, have avoided this methodological issue. However, research with clinical samples can provide biased estimates of association because those seeking treatment generally represent a minority of individuals with the disorder (e.g., Kessler et al., 1999). Recently, Cox and colleagues (e.g., Cox, McWilliams, Enns, & Clara, 2004) have attempted to overcome these limitations by utilizing data from epidemiological surveys to investigate associations between personality variables and psychiatric disorders.

The goal of the present study was to determine whether AS possesses specificity to anxiety-related psychopathology relative to depressive psychopathology when investigated using specific disorders as dependent variables. Similar to the approach used by Cox et al. (2004), the data used were from a large epidemiological survey of psychiatric disorders and a measure of neuroticism was utilized in order to determine whether a potential specific vulnerability (in this case AS) could account for unique variance in depressive and anxiety disorders beyond that contributed by a broader, or higher-order, personality construct. While trait anxiety has typically been used in research related to AS and psychopathology, neuroticism was used because it is related to both depressive and anxiety disorders (e.g., Krueger, Caspi, Moffitt, Silva, & McGee, 1996). However, it is important to note that the use of a measure of neuroticism instead of a measure of trait anxiety would likely not have strongly influenced the findings because such measures are highly correlated with each other and operationalize closely related constructs (see Watson & Clark, 1984). The relationships between the lower-order components of AS and anxiety and depressive disorders were also examined. In order to evaluate the suitability of the ASI subscales employed, a preliminary objective of the study was to evaluate whether the three-factor hierarchical model found by Zinbarg, Barlow, and Brown (1997), which served as the basis for the subscales, provided a good fit to the data.

1. Method

1.1. Participants

The baseline data from the Dresden Study of Mental Health were used. The original study received ethical approval from the Office for Data Protection (in Saxony, Amt für Datenschutz, Staat Sachsen) and the State of Saxony Public Health Association. The sample consisted of German women between the ages of 18 and 24 and was drawn randomly from the Dresden government registry of residents. Of those contacted ($N = 5204$), 2068 completed the diagnostic interview and a subsample ($n = 1877$) completed both the diagnostic interview and a package of self-report measures. Those who did not complete the measures used in the present study were excluded yielding a study sample of 1867. Further methodological details are reported elsewhere (i.e., Becker et al., 2000).

1.2. Diagnostic assessment

Diagnoses were made with the Diagnostisches Interview für Psychische Störungen—Forschungsversion (F-DIPS; Margraf, Schneider, Soeder, Neumer, & Becker, 1996). The F-DIPS is

a structured interview designed to diagnose both current and lifetime axis I disorders according to *Diagnostic and Statistical Manual*—fourth edition (American Psychiatric Association, 1994) criteria. It was based on an earlier version of the same interview as well as on the anxiety disorders interview schedule (DiNardo, Brown, & Barlow, 1995). The F-DIPS has good reliability. For example, Kappa values of .64 and .71 have been reported for anxiety disorders and affective disorders, respectively (Keller, 2000). Interviewers were graduate students in their last years of training or either psychologists or physicians. All interviewers participated in an extensive one-week training session and attended supervision bi-weekly.

Lifetime anxiety disorders and depressive disorders were considered in the present study. Posttraumatic stress disorder was also assessed. However, its relationship with AS would be complicated by the diagnostic requirement that those with the disorder must have experienced a traumatic event. For example, a positive association may be due to those with lower levels of AS being less likely to experience a traumatic event, rather than those with high AS being more prone to PTSD following a traumatic event. In light of this possibility and evidence that those selected on the basis of having a history free of traumatic events may have particularly low levels of AS (see Lang, Kennedy, & Stein, 2002) the relationships between PTSD and AS variables were not investigated. Relatively uncommon disorders (e.g., acute stress disorder) and those that have not previously been investigated in relation to AS (e.g., bipolar spectrum disorders) were also not considered in the present study.

1.3. Self-report measures

Freiburger Persönlichkeitsinventar revidierte (FPI-R; Fahrenberg, Hampel, & Selg, 1989). The FPI-R is the personality inventory most commonly used in Germany and it has received extensive support for its psychometric properties. A modified version of the 14-item neuroticism scale of the FPI-R was used in the present study. This version of the scale has been used successfully in several unpublished studies (R. Lutz, personal communication, June 6, 2006) and simply involved changing a dichotomous response format to a response scale ranging from 0 (*I do not agree*) to 3 (*I agree*).

Anxiety Sensitivity Index (ASI; Peterson & Reiss, 1992). The ASI is a 16-item measure of fear of anxiety-related signs and symptoms. It utilizes a Likert scale that ranges from 0 (*very little*) to 4 (*very much*). Considerable evidence indicates that ASI has strong psychometric properties (see Peterson & Reiss, 1992). Subscales were created to represent the three lower-order components of AS using item-to-subscale assignments based on the findings of Zinbarg et al. (1997). The Physical Concerns subscale included eight items (3, 4, 6, 8, 9, 10, 11, and 14). The Psychological Concerns subscale included four items (2, 12, 15, and 16). The Social Concerns subscale included the remaining four items (1, 5, 7, and 13).

1.4. Procedures

The interviewers invited interested participants for the interview by telephone, letter, or personal contact. Participants selected the location (Dresden University, the home of the participant, or a neutral location) where the interview took place. The mean duration of the interview for the general sample was 114 min (range: 30–330 min). The self-report questionnaires were filled out directly after the interview. If the interview had been lengthy, participants were given the option of

completing the questionnaires at home and returning them by mail. All participants provided informed consent.

2. Results

Confirmatory factor analysis was used to test whether the three-factor hierarchical model found by Zinbarg et al. (1997) provided a good fit to the data. The indices of model fit used were the goodness-of-fit index (GFI; Jöreskog & Sörbom, 1986), the comparative fit index (CFI; Bentler, 1990), and the root mean square error of approximation (RMSEA; Fan & Wang, 1998). The GFI was .91 and surpassed the criterion denoting good fit (GFI $\geq$ .85; Marsh, Balla, & McDonald, 1988). The RMSEA was .09 and was in the range (RMSEA = .08 to .10) considered indicative of adequate fit (Brown & Cudeck, 1993). The CFI was .84 and did not meet the criterion (CFI $\geq$ .90) considered to be consistent with good model fit (Bentler, 1990). Overall, the confirmatory factor analysis supported the use of the ASI subscales and indicated goodness-of-fit levels consistent with those obtained in previous studies of the ASI (e.g., Rodriquez, Bruce, Pagano, Spencer, & Keller, 2004).

The mean ASI score for the total sample ($M = 13.81$; SD = 8.12) was lower than the norms for non-clinical controls ($M = 17.8$, SD = 8.8; $N = 1013$) provided by Peterson and Reiss (1987). This difference was statistically significant (t (2878) = 12.27, $p < .0001$). The mean scores (standard deviations in parentheses) of the Physical Concerns, Psychological Concerns, and Social Concerns subscales were 6.24 (4.80), 2.42 (2.25), and 5.16 (2.86), respectively. In order to facilitate comparison of the present findings to those of earlier studies, mean ASI scores for each of the diagnostic groups are presented in Table 1. The ASI scores for individuals meeting the criteria for each disorder are generally much lower than those reported in previous studies utilizing clinical samples (e.g., Taylor, Koch, & McNally, 1992). The mean score of the neuroticism measure was 29.15 (SD= 7.54). Since this measure utilized a different response scale than the original measure, there were no relevant norms with which to compare the current sample.

Risk factors are often dichotomized in epidemiological research in order to maximize the clinical and policy significance of the findings (Kraemer, Stice, Kazdin, Offord, & Kupfer,

Table 1
Mean Anxiety Sensitivity Index scores for each diagnostic group

Lifetime psychiatric disorder[a]	Mean (SD in parentheses)
Panic disorder without agoraphobia (38)	18.97 (9.58)
Panic disorder with agoraphobia (16)	19.22 (8.03)
Agoraphobia without panic (40)	17.68 (11.40)
Social phobia (226)	15.84 (8.82)
Specific phobia (232)	15.60 (8.66)
Generalized anxiety disorder (52)	18.42 (9.11)
Obsessive–compulsive disorder (24)	18.21 (9.51)
Depression (212)	15.88 (9.10)
Dysthymia (31)	17.57 (8.23)

[a] The number of individuals with each disorder are in parentheses.

2001). Consistent with epidemiological research and theory suggesting high AS is a risk factor for anxiety-related psychopathology, dichotomous variables representing either the absence or presence of elevated levels of AS and AS subcomponents were created. Based on previous epidemiological research regarding personality vulnerabilities for depression (Cox et al., 2004) and previous research utilizing high AS groups (e.g., Lefaivre, Watt, Stewart, & Wright, 2006), an elevated level was defined as a score greater than one standard deviation above the mean score. This procedure resulted in 301 (16.1%) individuals being classified as having elevated AS. The number of individuals with elevated scores on the Physical, Psychological, and Social Concerns subscales of the ASI were 278 (14.9%), 331 (17.7%), and 227 (12.2%), respectively. A similar procedure was used with the measure of neuroticism and resulted in 322 (17.2%) being classified as having elevated neuroticism.

A series of bivariate logistic regressions (for details of logistic regression, see Morgan, Vaske, Gliner, & Harmon, 2003) was used to investigate the associations between each of the personality variables and each of the disorders. The odds ratios for these analyses are presented in Table 2. Neuroticism had significant positive associations with all of the disorders. With the exceptions of obsessive–compulsive disorder (OCD) and dysthymia, elevated AS was associated with each disorder. There was no clear pattern regarding the associations involving the ASI subscales, but a majority of these associations (70.37%) were statistically significant.

A second series of logistic regression analyses investigated whether AS and each AS component could account for significant variance in the anxiety and depressive disorders beyond that accounted for by neuroticism. Adjusted odds ratios for each AS variable were calculated by conducting analyses in which neuroticism was entered simultaneously with the AS variable of

Table 2
Associations between personality variables and lifetime anxiety and depressive disorders ($N = 1867$)

Disorder	Bivariate odds ratios					Adjusted odds ratios[a]			
	Neuroticism	ASI Total	ASI Physical	ASI Psychological	ASI Social	ASI Total	ASI Physical	ASI Psychological	ASI Social
Panic disorder without agoraphobia	5.62***	3.94***	2.71**	2.78**	2.65**	2.86**	1.93	2.06*	1.98
Panic disorder with agoraphobia	3.79**	3.17**	2.89**	1.67**	1.47*	3.13***	1.75	1.93**	2.16
Agoraphobia without panic	2.10*	2.89**	2.84**	1.36	2.14*	2.60**	2.55**	1.20	1.92
Social phobia	2.17***	1.67**	1.36	1.59**	1.80**	1.46*	1.18	1.41*	1.61*
Specific phobia	2.37***	1.47*	1.75***	1.32	1.39	1.25	1.51*	1.15	1.21
GAD	12.03***	3.13***	2.39**	2.77***	2.49**	1.91*	1.45	1.79	1.63
OCD	2.93*	1.75	2.91*	.93	1.03	1.41	2.42	.75	.85
Depression	3.20***	1.62**	1.81***	1.29	2.03***	1.30	1.48*	1.05	1.72*
Dysthymia	4.09***	2.16	1.38	2.25*	3.55***	1.62	1.02	1.75	2.85**

Note. ASI = Anxiety Sensitivity Index; subscales include Physical Concerns, Psychological Concerns, and Social Concerns.
[a] Adjusted for elevated neuroticism.
* $p \leq .05$.
** $p \leq .01$.
*** $p \leq .001$.

interest. These findings are also presented in Table 2. All of the associations were positive, but the number of statistically significant associations was reduced. Large associations between AS and panic disorder (both with and without agoraphobia) and agoraphobia were found after adjusting for neuroticism. Smaller associations between AS and both social phobia and generalized anxiety disorder (GAD) were also significant.

3. Discussion

Confirmatory factor analysis supported the use of ASI subscales based on Zinbarg et al.'s (1997) three-factor hierarchical model and indicated a goodness-of-fit level consistent with those obtained in previous studies of the ASI (e.g., Rodriquez et al., 2004). Also consistent with previous research, elevated neuroticism had significant positive associations with each disorder.

The main purpose of this study was to evaluate whether AS possesses specificity as a vulnerability to anxiety-related psychopathology versus depressive psychopathology when using diagnostic interviews rather than self-reports of symptoms. The associations between elevated AS and the psychiatric disorders were all positive and in most cases were statistically significant. These findings were consistent with previous studies with clinical samples that indicated elevated AS levels are characteristic of most anxiety disorders and of major depression.

Like earlier research, the present findings also raised the possibility that AS may not be a specific vulnerability for panic and/or anxiety. To address this issue, analyses that adjusted for neuroticism were used to investigate the ability of AS to account for unique variance in the anxiety and depression variables beyond that accounted for by a higher-order personality construct strongly associated with psychopathology. Using this approach, elevated AS was significantly associated with panic disorder (both with and without agoraphobia), agoraphobia, social phobia, and GAD. Elevated AS was not significantly associated with either of the depressive disorders. This overall pattern suggests that: (a) the association between AS and panic/anxiety is not simply due to shared variance between AS and a more general vulnerability for psychopathology, and (b) the associations between AS and depressive forms of psychopathology are likely due to shared variance with a more general vulnerability for psychopathology.

When the global, or higher-order, construct of AS was considered the logistic regression analyses that adjusted for neuroticism indicated AS was not significantly associated with depression. However, when the lower-order components of AS were considered, a more complex pattern of findings emerged. For example, the Physical and Social Concerns components of AS were associated with depression. These findings were notable for their inconsistency with previous research and theoretical considerations. For example, Taylor et al. (1996) suggested that the Psychological Concerns component of AS may be a "depression-specific form of AS" (p. 474). The present findings were not supportive of this hypothesis as Psychological Concerns were not significantly associated with either depression or dysthymia. The largest associations between AS components and the depressive disorders were those involving the Social Concerns component of AS. This pattern of findings was unexpected. Given the development of depression subsequent to a primary social phobia is a common developmental pattern of comorbidity (see Kessler, Stang, Wittchen, Stein, & Walters, 1999), the associations between Social Concerns and the depressive disorders may simply

reflect the covariation of social phobia and mood difficulties rather than a direct causal role for the Social Concerns component of AS in depression and dysthymia.

When the adjusted analyses regarding the lower-order AS components were considered, there were two findings noteworthy for their consistency with previous research. First, social phobia has the strongest conceptual relationship with AS Social Concerns and this component of AS was found to have the largest association with social phobia. Second, Psychological Concerns was the only AS component to be associated with panic disorder. This finding is counterintuitive because Clark's (1988) model posits that catastrophic misinterpretations, both physical (e.g., dying of a heart attack) and psychological (e.g., losing mental control) in nature, are involved in the development of panic. Based on this model, it would be expected that AS Physical Concerns would also be associated with panic disorder. However, these findings are consistent with those of Schmidt et al. (1999) as they found that after controlling for trait anxiety and a history of panic attacks Psychological Concerns was the only AS component predictive of panic attacks. They speculated that Psychological Concerns may have been the most salient AS component in their study because the mental stressors experienced by their subjects (viz., military recruits in basic training) may have been greater and more novel than the physical stressors. The present findings suggest that Psychological Concerns may generally be more salient to the development of panic than the Physical Concerns component of AS.

Reiss's (1991) expectancy theory posits that those with high AS are prone to developing fears of situations that could potentially be anxiety provoking. Accordingly, Taylor et al. (1992) indicated that elevated levels of AS would be expected amongst those with specific phobia. However, a relationship between AS and specific phobia has not been consistently demonstrated. Taylor et al. (1992) suggested that the type of specific phobia may be important when considering associations with AS. In the present study, it was not possible to distinguish between the different types of specific phobias. However, unlike the earlier studies (e.g., Taylor et al., 1992) the lower-order components of AS were considered. The adjusted associations between the AS components and specific phobia indicated that the Physical Concerns component of AS accounted for unique variance in specific phobia. It may be that this component of AS has the greatest potential to amplify anxiety, and as a result, it is the AS component most strongly associated with specific phobias.

AS has been found to be elevated in samples of patients with agoraphobia (McNally, 1987), but the relationships between agoraphobia and AS components has not been discussed extensively or previously evaluated. Agoraphobia and panic disorder often overlap (i.e., panic disorder with agoraphobia), so it was anticipated that they would have similar patterns of association with the AS components. This expectation was not met as the Physical Concerns component was the only one significantly associated with agoraphobia without panic disorder after adjusting for neuroticism; whereas the Psychological Concerns component was the only one significantly associated with the panic disorder variables after adjusting for neuroticism. While very preliminary, the present findings suggest that attention to the lower-order components of AS may assist in differentiating pure agoraphobia from panic with agoraphobia and they may provide direction in terms of developing models regarding the development of pure agoraphobia.

Analyses that adjust for trait anxiety or neuroticism have frequently been employed because of concerns that AS may not be distinguishable from these constructs and because of concerns that AS may not possess incremental validity relative to such constructs (see Lilienfeld, 1996). While much of the AS literature has conceptualized trait anxiety and neuroticism as general vulnerability

factors for psychopathology, it is also important to note that the value of neuroticism as an explanatory concept in the etiology of psychopathology has been questioned for a variety of reasons (see Ormel, Rosmalen, & Farmer, 2004). Most notably, neuroticism scores likely predict psychopathology because they are essentially measures of past symptoms. This issue is relevant to the present study of anxiety and depressive disorders as the neuroticism measure used included items related to anxiety (e.g., "I often feel stressed.") and depression (e.g., "There are times when I feel sad and blue."). Viewed from this perspective, the findings outlined above could alternatively be described as having adjusted for the general tendency to experience mood and anxiety symptoms rather than as having adjusted for a trait vulnerability for psychopathology.

The cross-sectional nature of this study was its main limitation and prevented conclusions regarding causal relationships between AS and psychopathology from being made. The use of an entirely female sample limits the generalizability of the findings. However, there is no compelling evidence indicating that the relationships between AS and various forms of psychopathology differ substantially across genders. The other methodological feature that should be noted was the use of lifetime assessments of psychiatric disorders. This method was chosen in order to be consistent with the methodology of Cox et al. (2004) and because current diagnoses of psychiatric disorders are not common even in large epidemiological samples. This methodological feature and the non-clinical nature of the sample were both factors that could have been responsible for the much lower mean AS scores amongst the diagnostic groups relative to the mean AS scores obtained from specific diagnostic groups drawn from clinical settings (e.g., those provided by Taylor et al., 1992).

References

American Psychiatric Association. (1994). Diagnostic and statistical manual of mental disorders, 4th ed., revised. Washington, DC: Author.

Becker, E. S., Turke, V., Neumer, S., Soeder, U., Krause, P., & Margraf, J. (2000). Incidence and prevalence rates of mental disorders in a community sample of young women: results of the Dresden study. In G. Heeß-Erler, R. Manz, & W. Kirch (Eds.), *Public health research and practice: report of the public health research association saxony* (pp. 259–292). Regensburg: Roderer.

Bentler, P. M. (1990). Comparative fit indexes in structural models. *Psychological Bulletin, 107*, 238–246.

Brown, M. W., & Cudeck, R. (1993). Alternative ways of assessing model fit. In K. A. Bollen & J. S. Long (Eds.), *Testing structural equation models* (pp. 136–162). Newbury Park, CA: Sage.

Clark, D. M. (1988). A cognitive model of panic attacks. In S. Rachman & J. D. Maser (Eds.), *Panic: Psychological perspectives* (pp. 71–89). Hillsdale, NJ: Lawrence Erlbaum Associates.

Cox, B. J., McWilliams, L. A., Enns, M. W., & Clara, I. P. (2004). Broad and specific personality dimensions associated with major depression in a nationally representative sample. *Comprehensive Psychiatry, 45*, 246–253.

DiNardo, P. A., Brown, T. A., & Barlow, D. H. (1995). *Anxiety disorders interview schedule for DSM-IV: lifetime version (ADIS-IV-L)*. Albany, New York: Graywind Publications.

Fahrenberg, J., Hampel, R., & Selg, H. (1989). *FPI-R: Freiburger Persönlichkeitsinventar revidierte Fassung, 5th auflage*. Göttigen: Hogrefe.

Fan, X., & Wang, L. (1998). Effects of potential confounding factors on fit indices and parameter estimates for true and misspecified SEM models. *Educational and Psychological Measurement, 58*, 701–735.

Jöreskog, K. G., & Sörbom, D. (1986). *LISREL VI: Analysis of linear structural relationships by maximum likelihood, instrumental variables, and least squares methods*. Scientific Software, Mooresville, IN: Scientific Software.

Keller, A. (2000). Die Klassifikation Psychischer Störungen nach DSM-IV mit Hilfe eines strukturierten Diagnostischen Interviews (F-DIPS). Unpublished doctoral dissertation, Ruprecht-Karls-University of Heidelberg, Germany.

Kessler, R. C., Stang, P., Wittchen, H. U., Stein, M., & Walters, E. E. (1999). Lifetime co-morbidities between social phobia and depressive disorders in the US National Comorbidity Survey. *Psychological Medicine, 29*, 555–567.

Kessler, R. C., Zhao, S., Katz, S. J., Kouzis, A. C., Frank, R. G., Edlund, M., et al. (1999). Past-year use of outpatient services for psychiatric problems in the National Comorbidity Survey. *American Journal of Psychiatry, 156*, 115–123.

Kraemer, H. C., Stice, E., Kazdin, A., Offord, D., & Kupfer, D. (2001). How do risk factors work together? Mediators, moderators, independent, overlapping, and proxy risk factors. *American Journal of Psychiatry, 158*, 848–856.

Krueger, R. F., Caspi, A., Moffitt, T. E., Silva, P. A., & McGee, R. (1996). Personality traits are differentially linked to mental disorders: a multitrait–multidiagnosis study of an adolescent birth cohort. *Journal of Abnormal Psychology, 105*, 299–312.

Lang, A. J., Kennedy, C. M., & Stein, M. B. (2002). Anxiety sensitivity and PTSD among female victims of intimate partner violence. *Depression and Anxiety, 16*, 77–83.

Lefaivre, M., Watt, M. C., Stewart, S. H., & Wright, K. D. (2006). Implicit associations between anxiety-related symptoms and catastrophic consequences in high anxiety sensitive individuals. *Cognition and Emotion, 20*, 295–308.

Lilienfeld, S. O. (1996). Anxiety sensitivity is not distinct from trait anxiety. In R. M. Rapee (Ed.), *Current controversies in the anxiety disorders* (pp. 228–244). New York: The Guilford Press.

Lilienfeld, S. O., Turner, S. M., & Jacob, R. G. (1993). Anxiety sensitivity: An examination of theoretical and methodological issues. *Advances in Behaviour Research and Therapy, 15*, 147–182.

Margraf, J., Schneider, S., Soeder, U., Neumer, S., & Becker, E. S. (1996). *F-DIPS: Diagnostisches interview bei psychischen Störungen (Forschungsverion), Interviewleitfaden, Version 1.1, 7/96*. Dresden: University of Technology Dresden.

Marsh, H. W., Balla, J. R., & McDonald, R. P. (1988). Goodness-of-fit indexes in confirmatory factor analysis: the effect of sample size. *Psychological Bulletin, 103*, 391–410.

McNally, R. J. (1987). Anxiety sensitivity in agoraphobics. *Journal of Behavior Therapy and Experimental Psychiatry, 18*, 3–11.

Morgan, G. A., Vaske, J. J., Gliner, J. A., & Harmon, R. J. (2003). Logistic regression and discriminant analysis: use and interpretation. *Journal of the American Academy of Adolescent Psychiatry, 42*, 994–997.

Ormel, J., Rosmalen, J., & Farmer, A. (2004). Neuroticism: a non-informative marker of vulnerability to psychopathology. *Social Psychiatry and Psychiatric Epidemiology, 39*, 906–912.

Peterson, R. A., & Reiss, S. (1987). *Anxiety Sensitivity Index manual*. Palos Heights, IL: International Diagnostic Systems, Inc.

Peterson, R. A., & Reiss, S. (1992). *Anxiety Sensitivity Index manual* (2nd ed.). Worthington, OH: International Diagnostic Systems.

Reiss, S. (1991). Expectancy theory of fear, anxiety, and panic. *Clinical Psychology Review, 11*, 141–153.

Rodriquez, B. F., Bruce, S. E., Pagano, M. E., Spencer, M. A., & Keller, M. B. (2004). Factor structure and stability of the Anxiety Sensitivity Index in a longitudinal study of anxiety disorder patients. *Behaviour Research and Therapy, 42*, 79–91.

Schmidt, N. B., Lerew, D. R., & Jackson, R. J. (1997). The role of anxiety sensitivity in the pathogenesis of panic: Prospective evaluation of spontaneous panic attacks during acute stress. *Journal of Abnormal Psychology, 106*, 355–364.

Schmidt, N. B., Lerew, D. R., & Jackson, R. J. (1999). Prospective evaluation of anxiety sensitivity in the pathogenesis of panic: replication and extension. *Journal of Abnormal Psychology, 108*, 532–537.

Taylor, S., Koch, W. J., & McNally, R. J. (1992). How does anxiety sensitivity vary across the anxiety disorders? *Journal of Anxiety Disorders, 6*, 249–259.

Taylor, S., Koch, W. J., Woody, S., & McLean, P. (1996). Anxiety sensitivity and depression: how are they related? *Journal of Abnormal Psychology, 105*, 474–479.

Watson, D., & Clark, L. A. (1984). Negative affectivity: the disposition to experience aversive emotional states. *Psychological Bulletin, 98*, 219–235.

Zinbarg, R. E., Barlow, D. H., & Brown, T. A. (1997). Hierarchical structure and general factor saturation of the Anxiety Sensitivity Index: evidence and implications. *Psychological Assessment, 9*, 277–284.

Zinbarg, R. E., Mohlman, J., & Hong, N. N. (1999). Dimensions of anxiety sensitivity. In S. Taylor (Ed.), *Anxiety sensitivity: Theory, research, and treatment of the fear of anxiety* (pp. 83–113). Mahwah, NJ: Erlbaum.