

Symptoms Specificity of Anxiety Sensitivity Dimensions in Korean Adults

Young-Jin Lim

ABSTRACT

Context: Relation of three dimensions of anxiety sensitivity (AS) (physical concerns [PC], cognitive concerns [CC] and social concerns [SC]) with anxiety or depression has been inconsistently reported. One possible explanation on the mixed findings is the lack of reliable measurement that assesses AS dimensions. **Aims:** This study was aimed to examine the specificity of dimensions of AS to anxiety and depression in a sample of Korean adults. **Settings and Design:** Participants included 426 Korean adults who were recruited by means of advertisements requesting volunteers for the psychological assessments. **Materials and Methods:** Participants completed measures of AS, anxious symptoms and depressive symptoms. **Statistical Analysis:** Linear regression equations were constructed. **Results:** It was found that PC and SC showed specificity to anxiety after adjusting for depression, while CC showed specificity to depression after controlling for anxiety. **Conclusions:** The findings suggest specificity of PC and SC to anxiety and of CC to depression when their relationship was explored with the more reliable measurement. The present findings clarify the nature of dimensions of AS in Korean adults.

Key words: Anxiety sensitivity, Anxiety Sensitivity Index-3, Korean


INTRODUCTION

Anxiety sensitivity (AS) refers to the fear of anxiety symptoms that are interpreted as having potentially aversive somatic, social, or mental outcome.^[1] AS is a dispositional tendency that functions as an anxiety amplifier and plays an important role in the etiology and maintenance of several anxiety and depressive disorders.^[2]

Researchers have suggested three lower-order domains of AS: Physical concerns (PC), social concerns (SC) and cognitive concerns (CC). Individuals with high

PC are more prone to fear the physical symptoms of AS because they believe that these symptoms are indicators of physical illness. Persons with high SC are more likely to fear having anxiety symptoms that are publicly observable, believing that displaying anxiety will lead to embarrassment, public ridicule and social criticism. People with high CC fear cognitive symptoms of AS, thinking that anxiety symptoms, such as having a headache or difficulty concentrating are signs of mental disorder.

Initially, AS was conceptualized as a specific premorbid vulnerability factor for development of symptoms of anxiety, but not depression.^[2] However, subsequent studies revealed a correlation between AS and depressive symptoms among adults,^[3-5] raising the question of whether AS is specific to anxiety, or instead, is associated with emotional distress in general. The findings related on this issue, however, have not been consistent. Taylor *et al.*^[5] in their study have reported that two dimensions of AS-PC and SC-are specific to anxiety, whereas CC is specific to depression but not

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anxiety. On the contrary, Schmidt *et al.*^[6] demonstrated that non-CC dimensions of AS were predictive of future anxious symptoms controlling for depressive symptoms, but that CC were not specific to depression. One of plausible explanation on these mixed observations may be no usage of measurement that reliably measures three dimensions.

Anxiety sensitivity index (ASI) is the most commonly used inventory for assessment of AS. Although the ASI has shown adequate reliability and validity properties, inconsistencies in its factorial structure have been demonstrated (Peterson and Plehn, 1999).^[7] Some studies have reported a single factor solution,^[8-10] while other researches favored a three or four factor solution.^[11-13] These inconsistencies in factor solutions might be attributable to a small number of items included in the ASI. The majority of its 16 items measure PC, whereas few items are associated with CC or SC. In an effort to solve these problems, the ASI-Revised (ASI-R)^[14] was designed to assess the more comprehensive dimensions of AS. However, the studies revealed inconsistent factor solutions with the ASI-R.^[15-17]

The ASI-3,^[18] which is recently developed measurement of AS, most commonly replicated three dimensions in previous research studies. Factor structure of the ASI-3 was supported by confirmatory factor analyses using diverse samples, which included not only a clinical sample from the United States and Canada, but also nonclinical samples from the United States and Canada, France, Korea, Mexico, the Netherlands and Spain.^[19,20] That is, the ASI-3 is superior to the other two measures, the ASI and the ASI-R, in terms of assessing the three domains of AS reliably. Thus, the use of the ASI-3 could show the exact relationship between AS and anxiety/depression.

In this context, the present study sought to examine whether dimensions are specific to symptoms of anxiety or depression using the ASI-3, which is a reliable measure to evaluate three dimensions of AS. Following the findings from the previous studies, the current study predicted that PC and SC would be specifically related to anxiety, but not depression and that CC would be specifically related to depression, but not anxiety. As the experience and expression of AS may be strongly influenced by culture^[21-25] it is important to examine the relationship between anxiety/depression and AS in Korean culture.

MATERIALS AND METHODS

Sample description

A sample of 426 individuals from a Metropolitan

Community participated in this study. These participants were recruited by means of advertisements requesting volunteers for the psychological assessments. Participants ranged in age from 19 to 71 years and 57.5% of participants were female (Mean age = 27.32 years, SD = 10.11). All participants provided written, informed consent prior to participation.

QUESTIONNAIRES

The Korean version of the ASI-3 (K-ASI-3)

ASI-3^[18] is an 18-item self-report questionnaire, which assesses AS. The respondents indicated their level of agreement with each item on a scale ranging from “very little” (coded as 0) to “very much” (coded as 4). In the current study, the author administered the Korean version of the ASI-3^[19] which has a Cronbach’s coefficient of 0.87 for the global scale, with an alpha of 73 (six items) for the PC domain, 0.83 (six items) for the SC subscale and 0.86 (six items) for the CC factor.^[19]

The Korean version of the Beck anxiety inventory (K-BAI)

BAI^[26] is a well performing, 21-item self-report questionnaire designed to measure the frequency of anxiety symptoms over the past week. In the current study, the author administered the Korean version of the BAI (K-BAI),^[27] which has a Cronbach’s coefficient of 0.93,^[27] with a test-retest reliability of 84.^[27]

The Korean version of the Beck depression inventory (K-BDI)

BDI^[28] is a 21-item self-report questionnaire, which evaluates the frequency of depressive symptoms over a 1-week period. The K-BDI,^[29] which has demonstrated good psychometric properties, was administered. The internal consistency coefficient of the K-BDI is 0.92.^[29]

PROCEDURE

Participants were instructed to fill out each measure themselves (paper and pencil). Some participants visited the lab and filled out a battery of questionnaires, while others had it delivered to their home and revisited the lab in order to submit it. Participants took approximately 30 min to complete the battery of questionnaires.

RESULTS

Descriptive data and intercorrelations

Table 1 shows means, standard deviations and intercorrelations of all variables. Correlation between

the K-BDI and the K-BAI was moderate to high and positive ($r = 0.60, P < 0.001$), indicating that it would not be easy to tear them apart. In this study, in preliminary analysis, variables were examined according to gender. Females showed higher scores for anxiety ($t = -5.01, P < 0.001$) and depression ($t = -3.00, P < 0.01$) than males. Furthermore, females showed higher scores on PC ($t = -3.99, P < 0.001$), SC ($t = -4.27, P < 0.001$) and CC ($t = -3.31, P < 0.01$) of AS than males. Thus, gender was included as a potential predictor in all regression analyses. None of the measures varied with age according to Pearson correlation coefficients.

Symptom specificity among AS dimensions

Two regression equations were constructed [Table 2]. For the first equation, with K-BAI scores as the dependent variable, K-BDI scores and gender were inserted into the equation to control for depression levels and gender effect. Second, the three K-ASI first-order domains described by Lim *et al.*^[19] were entered into the equation. This approach allows for examination of the association of AS with symptoms of

anxiety beyond the effects of symptoms of depression and gender. For the second equation, a similar approach was employed, except that K-BDI scores served as the dependent variable, K-BAI scores and gender were entered into the equation first, and the three K-ASI first-order domains were entered next. This allows for assessment of the relationship between AS and depression beyond the effects of anxiety and gender.

PC was found to be a significant predictor of K-BAI scores beyond K-BDI and gender ($\beta = 0.144, P < 0.001$). After controlling for K-BAI scores and gender, PC showed no relationship with K-BDI scores ($\beta = -0.025, P = ns$).

In addition, SC showed a specific relationship with anxiety, but not depression. SC was found to be a significant predictor of K-BAI scores beyond K-BDI and gender ($\beta = 0.316, P < 0.001$). After controlling for K-BAI scores and gender, SC showed a negative correlation with K-BDI scores ($\beta = -0.145, P < 0.05$).

However, CC showed a specific relationship with depression, but not anxiety. CC was found to be a significant predictor of K-BDI scores beyond K-BAI and gender ($\beta = 0.289, P < 0.001$). After controlling for K-BDI scores and gender, CC showed no association with K-BAI scores ($\beta = -0.025, P = ns$).

DISCUSSION

The findings showed that the CC domain had a unique association with depression and accounted for the general association between AS and depression, while PC and SC dimensions had a specific relationship with anxiety and accounted for the general association between AS and anxiety. These findings support the

Table 1: Zero-correlations among and descriptive statistics for the study measures (n = 426)

Measures	1	2	3	4	5	6
K-ASI-3	—					
Physical concerns	0.89	—				
Social concerns	0.90	0.71	—			
Cognitive concerns	0.89	0.69	0.73	—		
K-BAI	0.59	0.52	0.57	0.50	—	
K-BDI	0.43	0.35	0.36	0.44	0.60	—
Mean	15.42	5.16	5.21	5.03	12.58	9.38
SD	9.67	3.75	3.64	3.34	8.51	7.40

For all correlations; $P < 0.001$; K-ASI-3 – The Korean version of the anxiety sensitivity index-3; K-BAI – The Korean version of the Beck anxiety inventory; K-BDI – The Korean version of the Beck depression inventory; SD – Standard deviation

Table 2: Regression analysis for K-ASI-3 dimension scores predicting K-BAI and K-BDI (n = 426)

Dependent variable	Predictor set	Predictors	ΔR^2 for set	B	SE B	β	pr
K-BAI	1	Gender	0.056***	-4.077	0.812	-0.237***	-0.237
	2	K-BDI	0.327***	0.666	0.044	0.578***	0.589
		K-ASI-3-P	0.138***	0.326	0.118	0.144***	0.134
	3	K-ASI-3-S		0.738	0.129	0.316***	0.269
		K-ASI-3-C		-0.008	0.140	-0.032	-0.028
	K-BDI	1	Gender	0.021**	-2.157	0.719	-0.144**
2		K-BAI	0.340***	0.521	0.035	0.600***	0.589
		K-ASI-3-P	0.036***	-0.004	0.116	-0.025	-0.020
3		K-ASI-3-S		-0.293	0.130	-0.145*	-0.110
		K-ASI-3-C		0.641	0.133	0.289***	0.229

SE – Standard error; K-ASI-3 – The Korean version of the anxiety sensitivity index-3 (P – Physical concerns; S – Social concerns; C – Cognitive concerns); K-BAI – The Korean version of the Beck anxiety inventory; K-BDI – The Korean version of the Beck depression inventory; *** $P < 0.001$; ** $P < 0.01$; * $P < 0.05$; pr – partial correlation coefficient

discriminative validity of the separate AS domains in Koreans and suggest that the distinction between these three types of AS is meaningful for Korean adults.

These results, indicating a unique relationship between the CC domain and depression, are consistent with the theory proposed by Taylor *et al.*^[5] These results were inconsistent with findings reported by Schmidt *et al.*,^[6] who reported that CC showed not only depression specificity but also anxiety specificity. The differences in the results of the current study and the findings reported by Schmidt *et al.*^[6] can be explained by two ways. The first one is the difference in participants. Adults participated in the current study while military recruits undergoing a 5 week basic training period at a service academy participated in the study of Schmidt *et al.*^[6] The second one is the difference in study design. The design of the current study was cross-sectional design while the design of study of Schmidt *et al.*^[6] was longitudinal design.

The results of the present study could also be explained by the finding that fear of becoming mentally incapacitated appears not to be associated with symptoms characteristic of anxiety but the experience of a general negative affect and depressed mood. In considering why CC may be related to depression, Taylor *et al.*^[5] suggested that experiencing symptoms such as poor concentration and difficulty in making decisions (commonly regarded as being indicative of an overall negative affect or sad/depressed mood) could amplify agony in people with high CC, thereby degenerating depressive symptoms and fostering anguish.

A number of caveats should be noted with regard to the present study. First, a cross-sectional design was employed; thus, it was difficult to determine how AS in the present is related to anxiety and depression in the future. Second, because the present study included only self-reporting data, relationships between variables may have been inflated by questionnaire-specific method variance. Finally, due to the absence of a clinical interview, examination of how AS and its factors relate to anxiety and mood disorders was not possible.

The present research highlighted the value of examining relations between dimensions of AS and symptoms of anxiety and depression in a sample of Korean adults. A subsequent study with Korean clinical samples is required in order to elucidate the association between domains of AS and emotional disorders in the clinical population. Replication of the present findings indicating links between AS and anxiety and depression in a Korean sample using a longitudinal design would provide strong support for the model.

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