Anxiety Sensitivity in Relation to Anxiety Symptoms Among Serbian Youth

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Abstract: *Background*: Accumulating evidence shows that anxiety sensitivity is associated with anxiety symptoms in children and adolescents. Factor analytic studies showed that anxiety sensitivity has hierarchical structure with a single higher-order factor of global anxiety sensitivity represented by two to four underlying facets. There has been little research on the relationship between certain facets (concerns) and anxiety symptoms. This study evaluated the relationships between anxiety sensitivity and anxiety symptoms in Serbian youth.

Methods: In the study participated 456 non-referred youth, aged 8-18 years. The Child Anxiety Sensitivity Index (CASI) and the Screen for Child Anxiety Related Emotional Disorders (SCARED) questionnaire were used. Data was analyzed using hierarchical regression analysis.

Results: In regression models, the CASI was a significant predictor of all SCARED scales ($p < 0.01$), accounting for up to 28% of additional variance in particular anxiety symptoms. Moreover, a set of two to four facets accounted for significant additional variance. One CASI facet within the sets accounted for the most significant additional variance. Disease concerns accounted for the most of the variance of symptoms of panic disorder (22.1%), mental concerns of symptoms of GAD (12%) and school avoidance (7.3%), social concerns of symptoms of social phobia (11.9%), and unsteady concerns of symptoms of separation anxiety disorder (18.2%).

Conclusions: Anxiety sensitivity is strongly related to anxiety symptoms in Serbian youth. However, different sets of two to four anxiety sensitivity facets predicted particular anxiety symptoms; with at least one facet within the set being the most predictive.

Keywords: Child, adolescent, anxiety sensitivity, anxiety.

INTRODUCTION

The belief that anxiety-related sensations, such as increased heart rate, trembling, and derealization, will have negative physical, psychological, or social consequences indicates anxiety sensitivity [1, 2]. Accumulating evidence shows that anxiety sensitivity is associated with various anxiety symptoms in children and adolescents (hereinafter referred to as “children”) [3, 4, for a detailed review see ref. 5]. For example, anxiety sensitivity has been found to be related to general anxiety symptoms [6, 7], panic disorder [8-10], or trauma and PTSD symptoms [11, 12].

Factor analytic studies, mostly using the Child Anxiety Sensitivity Index – CASI [13], suggest that anxiety sensitivity structure is hierarchical with a single higher-order factor of global anxiety sensitivity represented by two to four underlying factors or facets [14-17]. These facets are generally categorized as physical/disease concerns (fear of anxiety-related physical sensations due to beliefs these sensations will lead to a physical illness), psychological/mental (fear of anxiety-related mental sensations due to beliefs these sensations will lead to a mental illness), and social concerns (fear of publicly observable anxiety-related sensations due to beliefs demonstrating anxiety will lead to social censure) [18]. Refinement of anxiety sensitivity theory regarding the number and composition of the facets has the potential to improve empirical research conducted in this area, thereby leading to better understanding of the findings that relate to psychopathology [16]. Adults research, using Anxiety Sensitive Index – ASI [1], demonstrated that the facets underlying anxiety sensitivity substantially relate to particular anxiety symptoms, such as physical concerns to panic disorder or social concerns to social phobia [for a detailed review see ref. 19]. Recent findings also (described briefly below) indicate that after discovering the facets underlying global anxiety sensitivity, it would be possible to demonstrate the relationship between certain facets and particular anxiety symptoms in clinic-referred and non-clinical youth.

Among the first, Chorpita and Daleiden evaluated the CASI in a clinical sample of 228 children with anxiety disorders (age = 7 – 17 years) [14]. They found the hierarchical CASI structure of a single higher-order factor with two lower-order facets – Physical (Autonomic items) Concerns and Non-physical (Non-autonomic items) Concerns. In the study, Physical Concerns correlated significantly with a clinician rating

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E-ISSN: 2310-8231/13 **© 2013 Synergy Publishers**

of youth panic symptoms. Neither Physical nor Non-physical Concerns correlated significantly with a clinician rating of generalized anxiety symptoms or disorders.

Deacon, Valentiner, Gutierrez, and Blacker used the Anxiety Sensitivity Index for Children – ASIC [20], another anxiety sensitivity measure for children, in a non-clinical sample of 308 children (age = 12 – 18 years) [21]. Two ASIC facets were found – Mental and Physical Concerns. The authors evaluated how the ASI facets relate to anxiety symptoms measured by the Spence Children's Anxiety Scale - SCAS [22] and Multidimensional Anxiety Scale for Children [23]. Both facets, Physical and Mental Concerns, significantly correlated with symptoms of panic/agoraphobia, social phobia, physical injury fears, separation anxiety, obsessive- compulsive disorder, and generalized anxiety disorder (GAD). However, when modeled in a multiple regression analysis together with depressive symptoms, Physical and Mental Concerns independently predicted panic symptoms only.

Muris used an extended 31-item CASI version in a non-clinical sample of 518 children (age = 12 – 18 years) and found four different facets; Fear of cardiovascular symptoms, Fear of publicly observable anxiety and reactions, Fear of cognitive dyscontrol, and Fear of respiratory symptoms [24]. He demonstrated all four facets significantly correlated with symptoms of panic/agoraphobia, social phobia, physical injury fears, separation anxiety, obsessive- compulsive disorder, and GAD reported by the SCAS [22]. However, the facet 'Fear of publicly observable anxiety reactions', corresponding to social concerns, most strongly correlated with symptoms of social phobia, while the other three facets most strongly correlated with symptoms of panic disorder and agoraphobia.

Finally, McLaughlin, Stewart, and Taylor found the hierarchical CASI structure of a single higher-order factor with three lower-order facets – Physical, Social, Psychological Concerns, in a sample of 349 non-referred children (age range = 7 – 15 years) [18]. The authors used the SCAS measure to assess anxiety symptoms (Spence, 1997). When modeled in multiple regression analyses together with levels of trait anxiety, it was demonstrated that Physical Concerns predicted symptoms of panic/agoraphobia disorder, GAD, separation anxiety disorder, social phobia, and obsessive- compulsive disorder. Social Concerns predicted social phobia and GAD, while Psychological Concerns predicted symptoms of panic/agoraphobia disorder, separation anxiety, and obsessive-compulsive disorder.

In summary, these studies demonstrated the benefits of measuring anxiety sensitivity facets as related to anxiety symptoms in children. The consistent findings are that anxiety sensitivity facets corresponding to physical and psychological concerns mostly relate to panic disorder symptoms, while a social concerns facet to symptoms of social anxiety disorder. However, a few studies have examined the relationships of anxiety sensitivity facets with other anxiety symptoms to produce consistent findings, such as separation anxiety disorder. Moreover, the CASI, as the most representative and frequently used anxiety sensitivity measure, was developed over 20 years ago [13], but accumulated evidence indicates that the CASI is possible to revise in order to obtain a more representative measure of anxiety sensitivity structure and it relationships to particular symptoms [24-26]. Several studies showed that a shorter version with 13 items has better measurement performances then the original 18-item version [25, 26], but no study up to date evaluated its relationships to anxiety symptoms. Finally, all studies that determined the relationships of anxiety sensitivity facets with anxiety symptoms were from Western societies and data from other societies and cross-cultural research is lacking. This is an important issue because the culture place significant impacts on anxiety symptoms development and expression [27, 28] and probably on anxiety sensitivity.

In order to provide more data about of the anxiety sensitivity structure and it relationships to specific symptoms, the aim of the present study was to evaluate how the CASI relates to specific anxiety symptoms in Serbian youth. In the present study, a 13-item CASI version in Serbian was used that has four facets: Disease (i.e. specific concerns about physical sensations), Unsteady (i.e. nonspecific concerns about physical sensations), Mental Incapacitation (i.e. concerns about cognitive dyscontrol), and Social (i.e. social concerns associated with fear of publicly observable anxiety reactions) [16, 29]. It was hypothesized that global anxiety sensitivity, as measured by the total CASI score, would predict significant variance in different anxiety symptoms. Additionally, it was hypothesized that at least one anxiety sensitivity facet would account for the most of the variance in particular anxiety symptoms.

METHOD

Participants

Data for this study were collected from a non-referred Serbian sample of 456 children from the Belgrade area. Participants were 217 (47.6%) boys and 239 (52.4%) girls. The mean age of the sample was 13.28 (SD = 2.65) years. All participants were Caucasians.

All participants were drawn from one elementary and two secondary schools from second to grade 12. The principals of the schools approved the study and assessments were organized with the aid of school psychologists. School psychologists contacted parents of 550 children *via* parent meetings, e-mails, or phone to inform them of the study. Parents were told that children and adolescents would complete measures about feelings. Parents were provided sample items from the measures and access to the entire questionnaires, if desired. The 449 children and adolescents for whom parental consent was obtained (82.91% response rate) were told that they would be completing questionnaires about their feelings. After obtaining assent, children were instructed how to complete the measures. Thirty minutes were scheduled with teachers during which children completed the measures in their classrooms. Their classroom teacher and/or school psychologist supervised students to avoid unnecessary discussions and to ensure that all measures were returned. The measures were assembled in a random order and packaged in an envelope. After the completion, the measures were returned sealed in the envelope, thus neither the teachers nor psychologists were aware of individual children's responses. The inability to read and write Serbian served as the only criterion for exclusion. The Ethics Committee from General Hospital Sombor approved the study.

Measures

Child Anxiety Sensitivity Index

The original CASI is a 18-item questionnaire assessing the extent to which children believe the experience of anxiety will result in negative consequences [13, 16, 30]. Items are scored on a 3-point scale (none = 1, some = 2, and a lot = 3) and the total CASI score is a sum of all answered items (possible range = 18 – 54). Sound psychometric properties were reported for the CASI and factor analytic studies provided evidence to suggest that CASI could be represented by one high-order factor involving two to four lower-order factors, but independent scales were not proposed [13-17, 29, 31]. In the present study, the CASI Serbian version with 13 items was used developed in the previous study [29]. This version has four facets: the Disease Concerns (DC), Unsteady Concerns (UC), Mental Incapacitation Concerns (MIC), and Social Concerns (SC) [26]. Coefficient alpha for internal consistency was 0.85 in the present study.

Screen for Child Anxiety Related Emotional Disorder (SCARED)

The SCARED is a 41-item questionnaire assessing different symptoms of childhood anxiety disorders [32]. The childhood anxiety disorders represented are panic/somatic (PD; 13 items), generalized anxiety disorder (GAD; 9 items), separation anxiety disorder (SAD; 8 items), social anxiety/phobia (SPH; 7 items), and school avoidance/phobia (SA; 4 items). Items are scored on a 3-point scale (not true or hardly ever true = 0, somewhat true or sometimes true = 1, and very true or often true = 2). The sum of all answered items in a scale is its total score, where higher scores indicate on higher levels of particular anxiety symptoms. The SCARED scales possess robust psychometric properties across different cross-cultural samples [33] and in a Serbian one [29]. In the present study, coefficient alphas for internal consistency were 0.79, 0.75, 0.67, 0.71, and 0.64 for the PD, GAD, SAD, SPH, SA scale, respectively.

Data Analysis

The primary interest in the current study was the evaluation of how anxiety sensitivity in general and particular facets relate to different anxiety symptoms namely panic symptoms, generalized anxiety disorder symptoms, separation anxiety symptoms, social phobia symptoms, and school avoidance/phobia symptoms. Initially, bivariate correlations between the CASI and SCARED scales were estimated using Superman's rho coefficient. Data were then analyzed in hierarchical multiple regression analyses. In each analysis, the SCARED scales were used as dependent variables, while age, gender, the total CASI and four CASI facets were independent variables. Age and gender were entered both on the first block (using enter method) for controlling effects, considering that previous studies reported that anxiety sensitivity differently relate to anxiety symptoms considering age and gender [5], while the total CASI or four CASI scales on the second (using stepwise method).

RESULTS

The mean values (standard deviation) of the SCARED scales were as following: the PD scale score = 4.85 (3.99), the GAD scale score = 5.37 (3.76), the SAD scale score = 3.31 (2.91), the SPH scale score = 4.23, and the SA scale score = 1.48 (1.67). The mean value (standard deviation) for the CASI total was 19.53 (4.22).

The bivariate correlations between four CASI facets and the SCARED PD, GAD, SA, and SPH scales ranged 0.31 – 0.46 ($p < 0.01$). The correlations between the CASI facets and SCARED scale were ranging 0.10 – 0.23 ($p < 0.03$).

Table **1** presents the results of multiple regression analyses considering the CASI total and the SCARED scales, while Table **2** presents the results of multiple regression analyses considering four CASI facets and the SCARED scales. Age was significant predictor of all SCARED scales in all regression models ($p < 0.01$), while gender only of the PD, GAD, and SAD scale ($p < 0.01$).

The CASI was significant predictor of all SCARED scales (F value ranged 17.24 – 77.15, $p < 0.01$), accounting for 6.6% - 28.4% of additional variance in particular anxiety symptoms. This confirmed our hypothesis that global anxiety sensitivity is predictive of different anxiety symptoms.

In the models specified with the facets, the DC, MIC, and SC facet were significant predictors of the PD scale score ($F = 46.42$, $p < 0.01$), the GAD scale score ($F = 30.98$, $p < 0.01$), and the SPH scale score ($F = 39.07$, $p < 0.01$). The DC facet accounted for the most of the variance in the PD scale score (22.1%), the MIC accounted for the most of the variance in the GAD scale score (12%), while the SC facet accounted for the most of the variance in the SPH scale score (11.9%). In the last two models, all four CASI facets were significant predictors of the SAD scale score ($F = 24.86$, $p < 0.01$), while the MIC and DC facets were

Table 1: Results of Multiple Regressions with the CASI (the Final Model Presented)

Model	Unstandardized Coefficients		Standardized Coefficients	t	p value	F (p)	Model summery		
	B	Std. Error	Beta				R Square	Adjusted R Square	R Square Change
Panic disorder symptoms									
Gender (female)	0.748	0.313	0.094	2.390	0.017	68.68 (< 0.01)	0.029	0.025	0.029
Age	1.361	0.320	0.167	4.249	0.000				
CASI	0.512	0.037	0.541	13.676	0.000		0.313	0.309	0.284
Generalized anxiety disorder									
Gender (female)	0.812	0.314	0.108	2.585	< 0.01	42.87 (< 0.01)	0.045	0.041	0.045
Age	1.649	0.321	0.215	5.134	< 0.01				
CASI	0.380	0.038	0.426	10.120	< 0.01		0.222	0.216	0.176
Separation anxiety disorder									
Gender (female)	0.681	0.224	0.117	3.038	< 0.01	77.15 (< 0.01)	0.084	0.080	0.084
Age	-0.968	0.229	-0.163	-4.220	< 0.01				
CASI	0.353	0.027	0.512	13.182	< 0.01		0.339	0.334	0.254
Social anxiety disorder									
Gender (female)	0.238	0.243	0.041	0.977	0.329	39.82 (< 0.01)	0.035	0.030	0.035
Age	-0.629	0.249	-0.107	-2.525	< 0.01				
CASI	0.291	0.029	0.424	9.981	< 0.01		0.209	0.204	0.174
School avoidance									
Gender (female)	-0.046	0.149	-0.014	-0.308	0.758	17.24 (< 0.01)	0.036	0.032	0.036
Age	0.770	0.153	0.227	5.036	< 0.01				
CASI	0.103	0.018	0.261	5.780	< 0.01		0.103	0.097	0.066

Table 2: Results of Multiple Regressions with the CASI facets (the Final Model Presented)

Model	Unstandardized Coefficients		Standardized Coefficients	t	p value	F (p)	Model summery		
	B	Std. Error	Beta				R Square	Adjusted R Square	R Square Change
Panic disorder symptoms									
Gender (female)	0.934	0.308	0.117	3.035	< 0.01	46.42 (< 0.01)	0.170	0.029	0.029
Age	1.429	0.315	0.176	4.530	< 0.01				
CASI DC	0.756	0.103	0.320	7.370	< 0.01		0.500	0.250	0.221
CASI MIC	1.001	0.143	0.296	7.006	< 0.01		0.570	0.325	0.075
CASI SC	0.373	0.116	0.129	3.203	< 0.01		0.583	0.340	0.015
Generalized anxiety disorder									
Gender (female)	0.895	0.308	0.119	2.908	< 0.01	30.98 (< 0.01)	0.045	0.041	0.045
Age	1.683	0.315	0.220	5.334	< 0.01				
CASI MIC	0.829	0.143	0.260	5.799	< 0.01		0.165	0.159	0.120
CASI DC	0.703	0.116	0.258	6.033	< 0.01		0.244	0.237	0.079
CASI SC	0.278	0.103	0.125	2.714	< 0.01		0.256	0.248	0.012
Separation anxiety disorder									
Gender (female)	0.694	0.225	0.119	3.079	< 0.01	39.07 (< 0.01)	0.084	0.080	0.084
Age	-0.944	0.230	-0.159	-4.101	< 0.01				
CASI UC	0.418	0.096	0.218	4.351	< 0.01		0.266	0.261	0.182
CASI DC	0.345	0.087	0.200	3.984	< 0.01		0.310	0.304	0.044
CASI MIC	0.417	0.105	0.169	3.978	< 0.01		0.334	0.326	0.024
CASI SC	0.218	0.087	0.103	2.510	< 0.01		0.343	0.334	0.009
Social anxiety disorder									
Gender (female)	0.267	0.243	0.046	1.100	0.272	24.86 (< 0.01)	0.035	0.030	0.035
Age	-0.674	0.249	-0.114	-2.705	< 0.01				
CASI SC	0.574	0.092	0.274	6.245	< 0.01		0.153	0.148	0.119
CASI DC	0.320	0.081	0.187	3.950	< 0.01		0.203	0.196	0.050
CASI MIC	0.310	0.113	0.126	2.745	< 0.01		0.216	0.208	0.013
School avoidance									
Gender (female)	-0.015	0.147	-0.005	-0.102	0.919	16.20 (< 0.01)	0.036	0.032	0.036
Age	0.806	0.151	0.237	5.320	< 0.01				
CASI MIC	0.307	0.069	0.217	4.483	< 0.01		0.109	0.103	0.073
CASI DC	0.138	0.048	0.140	2.891	< 0.01		0.126	0.118	0.016

significant predictors of the SC scale score (F = 16.20, p < 0.01). The UC facet accounted for the most of the variance in the SAD scale score (18.2%), while the MIC accounted for the most of the variance in the SA scale score (7.3%). These results confirmed the hypothesis that one anxiety sensitivity facet is the most predictive of particular anxiety symptoms.

DISCUSSION

The present study reports on how anxiety sensitivity measured by the CASI relates to anxiety symptoms in non-referred Serbian youth. The main finding is that the CASI and its facets predicted anxiety symptoms substantially, what strongly agrees with the findings from the previous studies. However, there is new

evidence on the relationships between anxiety sensitivity facets and anxiety symptoms provided by our results.

The results indicate that the CASI, as a measure of global anxiety sensitivity, significantly predicts all anxiety symptoms, but being the most predicative of symptoms of panic disorder and separation anxiety disorder, as it was suggested before [3, 4, 6, 7, 18]. Additional analyses showed that a set of two to four anxiety sensitivity facets accounted for significant additional variance in particular anxiety symptoms when controlled for age and gender, indicating that probably not all four CASI facets are responsible for predicting specific anxiety symptoms. Moreover, it was found that one CASI facet within the sets accounted for the most significant additional variance. Disease concerns were the most predicative only of symptoms of panic disorder; mental incapacitating concerns were the most predicative of symptoms of GAD and school avoidance; social concerns were the most predicative of symptoms of social phobia; unsteady concerns were the most predicative of symptoms of separation anxiety disorder.

The consistent findings from the past studies are that a physical and psychological anxiety sensitivity facet mostly relate to panic disorder symptoms, while the other facets were of lower importance for these symptoms [14, 18, 21, 24]. The data of the present study are consistent with the previous one, considering that it was demonstrated that disease concerns, as specific concerns about physical sensations, were far more predictive of symptoms of panic/somatic disorder than other types of concerns in the anxiety sensitivity hierarchy. Additionally, mental concerns accounted for most of additional variance besides disease concerns in these symptoms. Considered as a separate facet, nonspecific physical concerns were not predicative of these symptoms. In the line with the previous data, there is sound evidence that symptoms of panic/somatic disorder are strongly predicted by concerns about physical sensations, most likely specific ones such as about the hearth and stomach, and concerns about cognitive dyscontrol.

Besides symptoms of panic disorder, as global anxiety sensitivity measured by the CASI and all four CASI factors were also found as strongly predicative of separation anxiety symptoms in our sample. Of all, a facet reporting unsteady concerns was far more predicative than the others were. Muris also demonstrated that different CASI factors correlated to separation anxiety symptoms [24], while McLaughlin *et al*. found that both physical and psychological facets predicted levels of symptoms of separation anxiety disorder [18]. Considering some evidence, separation anxiety disorder is frequently in comorbidity with panic disorder or to proceed to it [34], therefore it is possible to explain the relationships between the two disorders in relation to anxiety sensitivity and specifically the physical facet of anxiety sensitivity.

Taking into account other symptoms, it was previously demonstrated that a physical and psychological anxiety sensitivity facet strongly predict levels of symptoms of GAD [14, 21, 24], as well as a social facet [18]. Consistently, all three facets were found to be significant predictors of GAD symptoms in our study, but mental concerns were stronger predictor of the symptoms than social or disease concerns were. Furthermore, the present study found that, besides disease and mental concerns, a facet measuring social concerns was found to be the most significant predictor of symptoms of social phobia. Similarly, Muris demonstrated that different CASI factors were in the relationship with social phobia [24], while McLaughlin *et al*. found that a physical and social facet predicted symptoms of social anxiety [18]. Finally, this study reports for that anxiety sensitivity might be related to symptoms of school avoidance. In particular, mental concerns were found to be of significant importance to these symptoms.

As recently reviewed, anxiety sensitivity is a general risk factor for the development of different anxiety symptoms in youth [5]. However, considering the consistency in the findings from the past studies and this one, there is strong evidence that not necessary all aspects of the anxiety sensitivity hierarchy contribute substantially to particular anxiety symptoms. The present study confirms that two to four facets are related to particular anxiety symptoms [18]. Additionally, while specific concerns about physical symptoms and mental concerns are related to all anxiety symptoms, although to a different extent, it was observed that non-specific physical symptoms are only related to separation anxiety symptoms. However, there are strong relations between certain facet and anxiety symptoms, in particular with panic disorder and separation anxiety disorder, as well as a social concerns facet to symptoms of social anxiety disorder, what could be indicative that anxiety sensitivity is more specific to these anxiety disorders then to others. Therefore, refinement of anxiety sensitivity theory regarding the number and composition of the facets is

crucial for future research that will consider specific anxiety sensitivity facets in the development, maintenance, and exacerbation of particular anxiety symptoms in children. Of particular importance would be to evaluate what other predictors contribute to the anxiety sensitivity and anxiety disorders relationship, as well as what other factors, besides a cognitive one such as anxiety sensitivity, contribute to anxiety disorders.

The study has some limitations that should be acknowledged. In the prediction of anxiety symptoms, other general constructs of interests (like trait anxiety, negative affectivity, and autonomic arousal) and depressive symptoms were not considered. Thus, it would be important to evaluate a model that is not straightforward as the one in the study. Then, clinical populations were not considered and it would be important to replicate the study in a clinical sample. Finally, this is a cross-sectional study and although we considered age in the models, it would be important to analyze how particular anxiety sensitivity facets and their relationships with anxiety symptoms change during the childhood – adolescence transition.

Summarizing, anxiety sensitivity is strongly related to anxiety symptoms in Serbian youth, but different sets of two to four anxiety sensitivity facets predicted particular anxiety symptoms, with at least one facet within the set accounting for the most significant symptoms variance. Disease concerns were the most predicative only of symptoms of panic disorder, mental concerns of symptoms of GAD and school avoidance, social concerns of symptoms of social phobia, and unsteady concerns of symptoms of separation anxiety disorder. More studies that will consider other predicators for anxiety symptoms besides anxiety sensitivity are needed that will focus mainly on clinically referred children.

DECLARATION OF INTEREST

Nothing to declare.

REFERENCES

[1] Reiss S, Peterson RA, Gursky DM, McNally RJ. Anxiety sensitivity, anxiety frequency and the prediction of fearfulness. Behav Res Ther 1986; 24: 1-8. http://dx.doi.org/10.1016/0005-7967(86)90143-9

[2] Taylor S. Anxiety sensitivity: Theoretical perspectives and recent findings. Beh Res Ther 1995; 33: 243-58. http://dx.doi.org/10.1016/0005-7967(94)00063-P

[3] Schmidt NB, Keough ME, Mitchell MA, Reynolds EK, Macpherson L, Zvolensky MJ, Lejuez CW. Anxiety sensitivity: prospective prediction of anxiety among early adolescents. J Anxiety Disord 2010; 24: 503-508. http://dx.doi.org/10.1016/j.janxdis.2010.03.007

[4] Weems CF, Costa NM, Watts SE, Taylor LK, Cannon MF. Cognitive errors, anxiety sensitivity, and anxiety control beliefs: their unique and specific associations with childhood anxiety symptoms. Beh Modific 2007; 31: 174-201. http://dx.doi.org/10.1177/0145445506297016

[5] Noël VA, Francis SE. A meta-analytic review of the role of child anxiety sensitivity in child anxiety. J Abnorm Child Psychol 2011; 39: 721-33. http://dx.doi.org/10.1007/s10802-011-9489-3

[6] Lambert SF, Cooley MR, Campbell KD, Benoit MZ, Stansbury R. Assessing anxiety sensitivity in inner-city African American children: psychometric properties of the childhood anxiety sensitivity index. J Clin Child Adolesc Psychol 2004; 33: 248-59. http://dx.doi.org/10.1207/s15374424jccp3302_5

[7] Joiner TE Jr, Schmidt NB, Schmidt KL, Laurent J, Catanzaro SJ, Perez M, Pettit JW. Anxiety sensitivity as a specific and unique marker of anxious symptoms in youth psychiatric inpatients. J Abnorm Child Psychol 2002; 30: 167-75. http://dx.doi.org/10.1023/A:1014757300294

[8] Calamari JE, Hale LR, Heffelfinger SK, Janeck AS, Lau JJ, Weerts MA, *et al*. Relations between anxiety sensitivity and panic symptoms in nonreferred children and adolescents. J Behav Ther Exp Psychiatry 2001; 32: 117-36. http://dx.doi.org/10.1016/S0005-7916(01)00026-X

[9] Kearney CA, Albano AM, Eisen AR, Allan WD, Barlow DH. The phenomenology of panic disorder in youngsters: an empirical study of a clinical sample. J Anxiety Disord 1997; 11: 49-62. http://dx.doi.org/10.1016/S0887-6185(96)00034-5

[10] Lau JJ, Calamari JE, Waraczynski M. Panic attack symptomology and anxiety sensitivity in adolescents. J Anx Dis 1996; 10: 355-64. http://dx.doi.org/10.1016/0887-6185(96)00016-3

[11] Hensley L, Varela RE. PTSD symptoms and somatic complaints following Hurricane Katrina: the roles of trait anxiety and anxiety sensitivity. J Clin Child Adolesc Psychol 2008; 37: 542-52. http://dx.doi.org/10.1080/15374410802148186

[12] Leen-Feldner EW, Feldner MT, Reardon LE, Babson KA, Dixon L. Anxiety sensitivity and posttraumatic stress among traumatic event-exposed youth. Behav Res Ther 2008; 46: 548-56. http://dx.doi.org/10.1016/j.brat.2008.01.014

[13] Silverman WK, Fleisig W, Rabian B, Peterson RA. Childhood anxiety sensitivity index. J Clin Child Psychol 1991; 20: 162-68. http://dx.doi.org/10.1207/s15374424jccp2002_7

[14] Chorpita BE, Deleiden EL. Properties of the Childhood Anxiety Sensitivity Index in children with anxiety disorders: Autonomic and nonautonomic factors. Behav Ther 2000; 31: 327-49. http://dx.doi.org/10.1016/S0005-7894(00)80018-0

[15] Essau CA, Sasagawa S, Ollendick TH. The facets of anxiety sensitivity in adolescents. J Anxiety Disord 2010; 24: 23-29. http://dx.doi.org/10.1016/j.janxdis.2009.08.001

[16] Silverman WK, Goedhart AW, Barrett P, Turner C. The facets of anxiety sensitivity represented in the childhood anxiety sensitivity index: confirmatory analyses of factor models from past studies. J Abnorm Psychol 2003; 112: 364-74. http://dx.doi.org/10.1037/0021-843X.112.3.364

[17] Walsh TM, Stewart SH, McLaughlin E, Comeau N. Gender differences in Childhood Anxiety Sensitivity Index (CASI) dimensions. J Anxiety Disord 2004; 18: 695-706. http://dx.doi.org/10.1016/S0887-6185(03)00043-4

[18] McLaughlin EN, Stewart SH, Taylor S. Childhood anxiety sensitivity index factors predict unique variance in DSM-IV anxiety disorder symptoms. Cogn behav ther 2007; 36: 210-19. http://dx.doi.org/10.1080/16506070701499988

[19] Olatunji BO, Wolitzky-Taylor KB. Anxiety sensitivity and the anxiety disorders: a meta-analytic review and synthesis. Psychol Bull 2009; 135: 974-99. http://dx.doi.org/10.1037/a0017428

[20] Laurent J, Schmidt NB, Catanzaro SJ, Joiner TE, Kelley AM. Factor structure of a measure of anxiety sensitivity in children. J Anx Dis 1998; 12: 307-31. http://dx.doi.org/10.1016/S0887-6185(98)00017-6

[21] Deacon BJ, Valentiner DP, Gutierrez PM, Blacker D. The Anxiety Sensitivity Index for Children: factor structure and relation to panic symptoms in an adolescent sample. Behav Res Ther 2002; 40: 839-52. http://dx.doi.org/10.1016/S0005-7967(01)00076-6

[22] Spence SH. Structure of anxiety symptoms among children: A confirmatory factor-analytic study. J Abnorm Psychol 1997; 106: 280-97. http://dx.doi.org/10.1037/0021-843X.106.2.280

[23] March JS, Parker JD, Sullivan K, Stallings P, Conners CK. The Multidimensional Anxiety Scale for Children (MASC): factor structure, reliability, and validity. J Am Acad Child Adolesc Psychiatry 1997; 36: 554-65. http://dx.doi.org/10.1097/00004583-199704000-00019

[24] Muris P. An expanded childhood anxiety sensitivity index: its factor structure, reliability, and validity in a non-clinical adolescent sample. Behav Res Ther 2007; 40: 299-11. http://dx.doi.org/10.1016/S0005-7967(00)00112-1

[25] Adornetto C, Hensdiek M, Meyer A, In-Albon T, Federer M, Schneider S. The factor structure of the Childhood Anxiety Sensitivity Index in German children. J Behav Ther Exp Psychiatry 2008; 39 (4): 404-16. http://dx.doi.org/10.1016/j.jbtep.2008.01.001

[26] Stevanovic D, Silverman WK, Nichols-Lopez K, Popovic-Deusic S, Pejovic-Milovancevic M. Facets of the Childhood Anxiety Sensitivity Index among Serbian Youth. Cogn Behav Ther 2013; in press; DOI:10.1080/16506073.2013.773060.

[27] Varela RE, Hensley-Maloney L. The influence of culture on anxiety in Latino youth: a review. Clin Child Fam Psychol Rev 2009; 12: 217-33. http://dx.doi.org/10.1007/s10567-009-0044-5

[28] Marques L, Robinaugh DJ, LeBlanc NJ, Hinton D. Cross-cultural variations in the prevalence and presentation of anxiety disorders. Expert Rev Neurother 2011; 11: 313-22. http://dx.doi.org/10.1586/ern.10.122

[29] Stevanovic D. Childhood depression and anxiety disorders in Serbia: a psychometric study of four screening questionnaires. Epidemiol Psychiatr Sci 2012; 21: 111-6. http://dx.doi.org/10.1017/S2045796011000655

[30] Reiss S, Peterson RA, Taylor SN, Weems CF. Anxiety Sensitivity. Index Consolidated User Manual: ASI, ASI-3, and CASI. Worthington, OH: IDS Publishing 2008.

[31] Van Widenfelt BM, Siebelink BM, Goedhart AW, Treffers PDA. The Dutch Childhood Anxiety Sensitivity Index: Psychometric proprieties and factor structure. J Clin Child Adol Psychol 2002; 31: 90-100.

[32] Birmaher B, Brent DA, Chiappetta L, Bridge J, Monga S, Baugher M. Psychometric properties of the Screen for Child Anxiety Related Emotional Disorders (SCARED): a replication study. J Am Acad Child Adolesc Psychiatry 1999; 38: 1230-36. http://dx.doi.org/10.1097/00004583-199910000-00011

[33] Hale WW 3rd, Crocetti E, Raaijmakers QA, Meeus WH. A meta-analysis of the cross-cultural psychometric properties of the Screen for Child Anxiety Related Emotional Disorders (SCARED). J Child Psychol Psychiatry 2011; 52: 80-90. http://dx.doi.org/10.1111/j.1469-7610.2010.02285.x

[34] Kossowsky J, Pfaltz MC, Schneider S, Taeymans J, Locher C, Gaab J. The separation anxiety hypothesis of panic disorder revisited: a meta-analysis. Am J Psychiatry 2013; 170: 768-81. http://dx.doi.org/10.1176/appi.ajp.2012.12070893

Received on 07-08-2013 Accepted on 23-07-2013 Published on 30-11-2013

DOI: http://dx.doi.org/10.12970/2310-8231.2013.01.01.3

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