The Factor Structure of the Childhood Anxiety Sensitivity Index in German Children

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Abstract

The factor structure of the Childhood Anxiety Sensitivity Index (CASI) was investigated in four nonclinic German samples (*N* = 1244, 225, 230, and 143) with participants aged 8 to 16 years old. Factor solutions suggested for different CASI versions were tested using confirmatory factor analysis. The best goodness-of-fit indices were found for the 13-item CASI version with 4 factors. Testing for factorial invariance of this model with respect to age and gender revealed noninvariant factor loadings between children and adolescents as well as between boys and girls. The theoretical and clinical implications of these findings for anxiety sensitivity in children and adolescents are discussed.

Keywords: Anxiety sensitivity; Childhood Anxiety Sensitivity Index; Factor structure

1. Introduction

Anxiety sensitivity, as defined by Reiss and McNally (1985), is a stable predisposition toward fearing anxiety-related bodily sensations, arising from beliefs that these sensations have harmful somatic, psychological or social consequences. According to Reiss and McNally (1985), anxiety sensitivity includes different kinds of anxiety symptoms, not only physical symptoms (e.g., rapid heart beat) but also mental symptoms (e.g., racing thoughts) and publicly observable physical symptoms (e.g., stomach growling). Expectancy theory (Reiss, 1991; Reiss & McNally, 1985) conceives anxiety sensitivity as a personality trait increasing a person's vulnerability to fear conditioning. Designed in accordance with expectancy theory, the Anxiety Sensitivity Index (ASI; Reiss, Peterson, Gursky, & McNally, 1986) is a self-report questionnaire assessing adults' fears of different kinds of anxiety symptoms. To assess anxiety sensitivity with school-aged children, the Childhood Anxiety Sensitivity Index (CASI) was developed by Silverman, Fleisig, Rabian, and Peterson (1991). The child version is a modification of the ASI and includes the same 16 items contained in the adult version plus two additional items. Anxiety sensitivity in children is usually investigated with the CASI. It is a widely used and extensively researched self-report questionnaire for use with children in the field of anxiety disorders.

There has been considerable discussion about anxiety sensitivity in adults. Many studies have investigated its factor structure. Some researchers have found support for a unitary construct whereas others have found support for a multidimensional construct (see Zinbarg, Mohlman, & Hong, 1999). Anxiety sensitivity is currently generally accepted by most researchers as a hierarchically organized construct with one general (higher order) factor consisting of several first-order factors (see reviews in Taylor, 1999). In spite of this consensus, there is still controversy about the number and nature of first-order factors loading on a single higher-order factor. The same debate can also be observed in anxiety sensitivity research in children. Table 1 gives an overview of the different results suggested for the factor structures of the CASI as obtained by various studies. Although some findings have suggested a two-factor solution (Laurent, Schmidt, Catanzaro, Joiner, & Kelley, 1998; Chorpita & Daleiden, 2000) hierarchical models with one higher-order factor and three or four first-order factors are now more widely discussed. The two hierarchical models found by Silverman, Ginsburg, and Goedhart (1999) were confirmed by Van Widenfelt, Siebelink, Goedhart, and

Treffers (2002) and also by Muris, Schmidt, Merkelbach, and Schouten (2001), who found a similar hierarchical structure (using a 4-point Likert scale). Silverman, Goedhart, Barrett, and Turner (2003) summarized the different results from factor structure analysis of the CASI as well as the ASI, resulting in a 13-item CASI version. For this version the authors suggested a hierarchical ordering of models with two, three, and four first-order factors (see Table 1).

- TABLE 1 about here -

Despite the different findings underlying the various factor models of the CASI and the ASI, there seems to be a consensus about the distinction between a factor reflecting physical concerns or fear of physiological arousal and factors representing fear or concerns of other facets like mental incapacitation, loss of control, and social concerns, depending on how many factors are distinguished. Recent research has prompted discussion about whether the specific factors are more related to pathological conditions rather than the total anxiety sensitivity construct. More specifically, *Physical Concerns* is strongly related to panic disorder, *Social Concerns* to social phobia, and *Mental Incapacitation Concerns* to depressed mood (Zinbarg, Barlow, & Brown, 1997; Zinbarg, Brown, Barlow, & Rapee, 2001). Silverman et al. (2003) found evidence that the facet *Social Concerns* is related to social phobia, but only for adolescents and not for children. Anxiety sensitivity seems to be more than a risk factor for the development of anxiety disorders in general and panic disorder in particular. These findings allow a more comprehensive understanding of concerns related to specific psychopathology. Therefore, the clarification of the factor structure of the CASI is not only of interest methodologically, but is also important conceptually. This clarification was recently carried out for the English version of the CASI (Silverman et al., 2003). The main objective of our study was to attain a clear factor structure of anxiety sensitivity as represented in the German version. First, we tested pre-existing factor solution (a) the 18-item CASI solution (Silverman et al., 1999), because it was the first suggested and is still widely used for the original CASI, and (b) the 13-item CASI solution (Silverman et al. 2003), because of its wide empirical and theoretical acceptance. Second, we explored the factor structure of the CASI to add new and independent results to the ongoing discussion about the number and composition of the factors of anxiety sensitivity. Finally, we explored the factor stability for the best-fitting model across age and gender.

2. Method

2.1 Participants

Data on four German-speaking samples were investigated. Table 2 gives an overview of the four independent nonclinic samples. The participants from samples 1, 2, and 3 were schoolchildren from Germany, whereas the participants from sample 4 were schoolchildren from Switzerland. In all samples the children were selected from different schools in different districts. For the selection of the German subjects, statistical information (e.g., sex, family status, size of class, size of school, and educational status of parents) about the total population was consulted to give an indication of the representativeness of these samples. Sample 1 consisted of participants in the Schneider and Hensdiek (2003) study; sample 2 consisted of children especially recruited for data collection for the CASI; sample 3 consisted of 8-year-olds reported by Federer, Schneider, Margraf, and Herrle (2000); sample 4 consisted of children investigated by Schneider, In-Albon, Rose, and Ehrenreich (2006).

- TABLE 2 about here -

2.2 Procedure

For samples 1, 2, and 4 female researchers went into the children's classroom during regular classes and handed out a questionnaire packet containing the CASI. Instructions about how to answer the questionnaires were read aloud and any questions from the children were answered by the researcher. Assistants were present during the filling out of the questionnaires to provide assistance to the children if necessary and to ensure independent responding.

The 8-year-olds of sample 3 completed the questionnaire individually with an assistant. Each child completed an oral version of the CASI. To ensure that the child understood the questions, the assistant read aloud the questions as well as the possible answers and the child had to choose the answer appropriate to him/her with a nod of the head.

2.3 Measure

The CASI is a self-report questionnaire containing18 items describing reactions to body symptoms. On a 3-point scale ranging from 1 *(none)* to 3 *(a lot)* children indicate for each item the extent to which they believe the experience of anxiety will result in negative consequences. The total score of the CASI ranges from 18 to 54, with higher scores reflecting higher levels of anxiety sensitivity. In American studies the CASI has shown high internal consistency (coefficient α = 0.87) and good test-retest reliabilities of 0.76 and 0.79 for nonclinic and clinic samples, respectively (e.g., Silverman et al., 1991).

In the present study children in all four samples completed the German version of the CASI, translated by Schneider & Hensdiek (1994). To ensure faithfulness to the English version and to correct differences between the English and the German version, a translation back from German into English was made by a native English speaker with German as a second language. The back-translation revealed an accurate translation of the CASI with slight differences in some expressions. In sum, the chosen German formulations sufficiently captured the meaning of the English expressions. Only item 13 was incorrectly translated. For the word "*shaky"* the German expression for "*afraid"* was used, which does not have precisely the same meaning. Nevertheless, this item was included for the present study and will be corrected for future studies.

The German version of the CASI showed good reliability and validity. For schoolchildren, internal consistencies (coefficient α) were between 0.76 and 0.86; test-retest reliability was 0.80 (e.g., Schneider & Hensdiek, 2003).

3. Statistical analyses and results

For descriptive statistics, item analysis, and exploratory factor analysis (EFA) we used the Statistical Package for Social Sciences (SPSS); for confirmatory factor analysis (CFA) we used the software package AMOS (Arbuckle & Wothke, 1999). Because of its large size, we used only sample 1 for the item analysis as well as for the establishment of the factor structure using exploratory factor analysis (see Table 2). Children whose responses had missing values in one of their CASI items were omitted from further analyses. This resulted in a sample size reduction of 1244 to 1226 in sample 1 whereas in samples 2 to 4 no missing values were observed. Item values were log-transformed to get less skewed frequency distributions as a result of the 3-point Likert scale. We also checked for univariate or multivariate outliers and for multicollinearity of log-transformed item values. No outliers were detected and multicollinearity proved to be no problem.

3.1 Replication of pre-existing factor solutions

CFA was conducted to test how well the two-, three-, and four-factor models of two different versions of the CASI fitted to our four samples. Thus, the 18-item CASI (Silverman et al., 1999) and the 13-item CASI (Silverman et al., 2003) were used. The goodness of fit indices of the resulting factor models were evaluated by using the chi-square/degrees of freedom (χ^2/df) ratio, the Goodness of Fit Index (GFI), the Comparative Fit Index (CFI), the root mean square residual (RMR), the root mean square error of approximation (RMSEA), and the Akaike's information criterion (AIC). The value of χ^2/df should be lower than 4 in large samples like sample 1. For the other three samples the stronger criterion suggested by Mueller (1996) was used: $\chi^2/df <$ 2.00. Values of GFI and CFI higher than 0.90 and of RMSEA and RMR lower than 0.05 indicate a good fit. The AIC is a relative measure where lower values imply better fit (for more information and discussion of the goodness-of-fit indices, see e.g., Gerbing & Anderson, 1993).

For all four samples the goodness-of-fit indices of both CASI versions and their factor solutions based on the number of factors and the degree of hierarchy are presented in Table 3. The results of the two-factor solution are not presented here as they showed a bad fit for all four samples and both CASI versions. Because the results of the three-correlated-factor solution and the three-first-order factor solution were almost identical, only the model with three correlated factors is presented here.

The 13-item version performed consistently better than the 18-item version as shown by the better fit indices across all three factor solutions and all four samples (see Table 3). Comparing the different factor solutions, the four-factor solution showed a better fit than the three-factor solution across all samples and CASI versions independently of whether the four factors correlated or not. The fit indices for both four-factor solutions were almost identical across all samples and CASI versions. Samples 1 (N = 1226) and 3 (N = 230) provided fits that were mostly good across both CASI versions and their associated factor solutions. Sample 4

(N = 143) in contrast provided fits that were in general not satisfactory. Fit indices of sample 2 (N = 225) lay between samples 1, 3, and 4.

- TABLE 3 about here -

3.2 Item analysis

In Table 4 the items of the CASI are listed and the results of the item analysis of sample 1 (N = 1226) are presented. Items with a corrected item-total correlation less than 0.30 were considered questionable (Nunnally & Bernstein, 1994). The results indicated that items 1, 5, 7, and 17 fell below this critical value. The internal consistency measured by Cronbach's coefficient alpha for all 18 items was 0.79.

- TABLE 4 about here -

3.3 Own factor analysis

The data of sample 1 were used to reveal the factor structure of the German version of the CASI. Exploratory factor analysis (EFA) with varimax and oblimin rotation was conducted to define two-, three-, and four-factor models. Both rotation methods resulted in a similar pattern of factor loadings. Therefore, only the results of the varimax rotation will subsequently be reported.

EFA led to four factors with eigenvalues greater than one, the unrotated factors accounting for 22.4, 8.0, 6.9, and 6.1% of the total item variance. However, the scree test rather suggested a one-factor solution. The first factor labelled *Unsteady Concerns* consisted of the items 4, 8, 10, 13, 14, and 18, the second factor labelled *Disease Concerns* of the items 3, 6, 9, and 16, the third factor labelled *Mental Illness Concerns* of the items 2, 12, and 15, and the fourth factor labelled *Social Concerns* of the items 1, 5, and 17. Only items 7 and 11 had a loading below 0.40.

Based on the results of the item analysis and the exploratory factor analysis item 7 was excluded from further analyses, resulting in a 17-item CASI version. Item 7 was the only item showing a low item-total correlation combined with a low factor loading and an unclear factor affiliation. Although items 5 and 17 showed poor item-total correlations their factor loadings were sufficiently high to keep them in the model.

Based on the 17-item CASI we ran the EFA again constraining the number of factors to two, three, or four. For the two-factor solution items 2, 3, 6, 9, 11, 12, 15, and 16 loaded on one factor labelled *Fear of Physiological Arousal*, items 1, 4, 5, 8, 10, 13, 14, 17, and 18 on the other factor labelled *Fear of Losing Control*. For the three-factor solution the distribution of the items was as follows: Factor 1 (*Physical Concerns*) with items 3, 4, 6, 8, 9, 11, 14, and 18; Factor 2 (*Mental Illness Concerns*) with items 2, 12, 15, and 16; Factor 3 (*Social Concerns*) with items 1, 5, 10, 13, and 17. The four-factor solution contained two factors that were almost identical with two factors of the three-factor solution. The distribution of the items was as follows: Factor 1 (*Disease Concerns*) with items 3, 6, 9, 11, and 16; Factor 2 (*Mental Illness Concerns*) with items 2, 12, and 15; Factor 3 (*Social Concerns*) with items 1, 5, and 17; Factor 4 (*Unsteady Concerns*) with items 4, 8, 10, 13, 14, and 18.

In a next step, CFA was conducted to test how well the two-, three-, and four-factor models of the 17-item version fitted to all four samples (see Table 5). Again, the results of the two-factor solution are not presented and for the three-factor solutions only the solution with correlated factors is presented, for the same reasons as mentioned in 3.1. The fit indices showed a slightly but consistently better fit than the original version with 18 items and a clearly poorer fit than the 13-item version across all factor solutions and all four samples (see Table 3).

- TABLE 5 about here -

3.4 Factorial invariance of the 13-item CASI version

To test for factorial invariance of the German CASI with respect to age and gender we used the four-correlated-factor model of the 13-item CASI version, which – together with the four-first-order factor model – showed the best fit. We only tested for the factorial invariances of the factor loadings and not for the factor variances and covariances, or the error variances or covariances.

Constraining all factor loadings to be equal across the four samples resulted in a significantly worse model compared with the model in which loadings were freely estimated ($\Delta\chi^2_{27} = 46.5$, $p = .011$). We were therefore unable to combine the four samples to test for factorial invariance as they were too heterogenous with respect to their factor loadings. Instead, we used sample 1 to test for invariance of loadings between boys and girls as this sample was the largest (see Table 2). The model fits were reasonable for all three data sets, i.e. for boys only, for girls only, and for girls and boys combined without constraints on their loadings (see Table 6). The chi-square difference test rejected invariance of factor loadings for gender ($\Delta\chi^2_9 = 27.3$, $p = .001$) thus pointing to differences among at least some factor loadings between boys and girls in sample 1.

To test for invariance of factor loadings for age we defined two age groups, 8 to <12 years ("children"), and ≥12 to 16 years ("adolescents"). Because only samples 2 and 4 contained students of both age groups (see Table 2) and these two samples were rather small we decided to combine them, in view of the factorial invariance between these two samples ($\Delta\chi^2_9 = 12.7$, $p = .18$). The model fits for age were reasonable for all three data sets, i.e. for children only, for adolescents only, and for both children and adolescents combined without constraints on their loadings (see Table 6). Again the chi-square difference test rejected factorial invariance for age ($\Delta\chi^2_9 = 18.8$, $p = .027$) thus pointing to different factor loadings between age groups in the combined samples 2 and 4.

- TABLE 6 about here -

4. Discussion

The present study represents a first step in investigating the factor structure of the German version of the CASI and adds new results to the ongoing discussion on number and composition of the factors of anxiety sensitivity in children. First, pre-existing factor solutions that are widely accepted for the English CASI version could be replicated. Fit indices were satisfactory for all samples, independent of the CASI version and the factor solution. Only for the sample of schoolchildren aged 9 to 14 years (sample 4) did the fit indices perform consistently poorly, probably due to the small sample size ($N = 143$) relative to the number of parameters estimated.

Interestingly, although our own item analysis and EFA, using sample 1, postulated a 17-item CASI version cross-validation revealed the best fit for the 13-item CASI version (Silverman et al., 2003) across all samples and factor solutions. More specifically, the 17-item version showed a slightly better fit than the 18-item version, but a clearly poorer fit than the 13-item version, independent of the sample and the factor solution. Comparing the different factor models, the best fit was found for a four-factor solution across all

CASI versions and all samples. However, two different four-factor solutions, a hierarchical model with four first-order factors and a model with four correlated factors showed very similar goodness-of-fit indices. Summing up these results and earlier findings, as summarized by Silverman et al. (2003), it can be assumed that there is clear empirical evidence for the differentiation of four CASI factors that can be labelled as *Disease Concerns*, *Unsteady Concerns, Mental Incapacitation Concerns,* and *Social Concerns*. These consistent results, now allow for further investigations of new aspects in the field of anxiety sensitivity research: a better understanding of specific concerns, measured with the CASI, and their relation with specific psychopathology might provide important additional information on the etiology of the different anxiety disorders. Zinbarg and Barlow (1996) described the relation between anxiety sensitivity and anxiety disorders. as a specific risk factor for the development of anxiety disorders. Their hierarchical model for anxiety disorders contains besides risk factors that are generally accepted for all anxiety disorders (e.g., trait anxiety, behaviour inhibition) more specific risk factors differentiating between anxiety disorders. Thus, specific features are related to specific anxiety disorders (e.g., panic disorder, social phobia). Further investigations on the facets of anxiety sensitivity might have the potential to provide more information on these relations. First studies focusing on this issue could show that there is an association between concerns of bodily symptoms and panic, or between social concerns and social phobia (e.g., Zinbarg et al., 1997; 2001).

Testing for factorial invariance of the 13-item CASI version with respect to factor loadings across age and gender revealed unequal factor loadings between children and adolescents and also between boys and girls. These findings of factor stability of the CASI are not consistent with past findings regarding the 18-item CASI version (e.g., Van Widenfelt et al., 2002; Silverman et al., 2003). Nevertheless, the results of the present study should be interpreted with caution because of two reasons. First, with large sample sizes such as sample 1, null hypotheses will easily be rejected even if effect sizes are small. It remains to be shown that the factorial invariance of the factor loadings between age and gender groups as found here is of any practical value. Second, with respect to the testing of factorial invariance between age groups we must point to a partial confounding between age group and sample in the combined samples 2 and 4. Sample 2 consisted of four times as many adolescents than children whereas sample 4 contained only slightly more adolescents than children. Thus, differences in the factor loadings between the two age groups could be attributed – at least in part – to differences in samples. One potential explanation for the observed factorial invariance between children and adolescents might be that younger children have more difficulties in understanding the questions or that they understand them in a different way that can be explained by developmental aspects like cognitive development or social meaning (e.g., Silverman et al., 1991; 1999). This raises the question of how anxiety sensitivity can be measured in young children. In the present study for 8-year-old children the CASI was implemented by a diagnostician who has read the CASI items to the children. The main advantage of this procedure is that the understanding of each of the items is guaranteed. However, such an implementation may be susceptible to suggestive questions by the diagnostician.

In conclusion, several studies, including the present one, provide strong support for measuring anxiety sensitivity in children and adolescents with the 13-item CASI. Both the age of respondents and the economic aspect may play an important role in opting for a short questionnaire. Therefore, the 13-item CASI may provide new opportunities for investigating anxiety sensitivity in children. It should be mentioned that all four samples were nonclinic samples. Further investigations in clinic-referred children and adolescents should be carried out to illuminate the nature of anxiety sensitivity. Specifically, the next step should be to examine the relation between the different facets of anxiety sensitivity and psychopathological conditions.

References

Arbuckle J. L., & Wothke, W. (1999). *AMOS 4.0 User's Guide*. Chicago, IL: Small Waters Corporation.

Chorpita, B. F., & Daleiden, E. L. (2000). Properties of the childhood anxiety sensitivity index in children with anxiety disorders: Autonomic and nonautonomic factors. *Behavior Therapy, 31*, 327-349.

Federer, M., Schneider, S., Margraf, J., & Herrle, J. (2000). Angstsensitivität und Angststörungen bei Achtjährigen. [Anxiety sensitivity and anxiety disorders in 8-year-olds]. *Kindheit und Entwicklung, 9*, 241-250. Göttingen: Hogrefe-Verlag.

Gerbing, D. W., & Anderson, J. C. (1993). Monte Carlo evaluations of goodness-of-fit indices for structural equation models. In K. A. Bollen & J. S. Long (Eds.), *Testing structural equation models* (pp. 40-65). Newbury Park, CA: Sage.

Laurent, J., Schmidt, N. B., Catanzaro, S. J., Joiner, T. E., Jr., & Kelley, A. M. (1998). Factor structure of a measure of anxiety sensitivity in children. *Journal of Anxiety Disorders, 12*, 307-331.

Mueller, R. O. (1996). *Basic principles of structural equation modelling*. New York: Springer.

Muris, P., Schmidt, H., Merkelbach, H., & Schouten, E. (2001). Anxiety sensitivity in adolescents: factor structure and relationships to trait anxiety and symptoms of anxiety disorders and depression. *Behaviour Research and Therapy, 39,* 89-100.

Nunnally, J. C., & Bernstein, I. H. (1994). *Psychometric theory (3rd ed.)*. New York: McGraw-Hill.

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

Reiss, S., & McNally, R. J. (1985). The expectancy model of fear. In S. Reiss & R. R. Bootzin (Eds.), *Theoretical issues in behavior therapy* (pp. 107-121). New York: Academic Press.

Reiss, S., Peterson, R. A., Gursky, D. M., & McNally, R. J. (1986). Anxiety sensitivity, anxiety frequency and the prediction of fearfulness. *Behaviour Research and Therapy, 24*, 1-8.

Schneider, S., & Hensdiek, M. (1994). *Children anxiety sensitivity index (CASI). German translation*. Unpublished manuscript, Freie Universität Berlin.

Schneider, S., & Hensdiek, M. (2003). Panikanfälle und Angstsensitivität im Jugendalter. [Panic and anxiety sensitivity in youth]. *Zeitschrift für Klinische Psychologie und Psychotherapie, 32*, 219-227. Göttingen: Hogrefe-Verlag.

Schneider, S., In-Albon, T., Rose, U., & Ehrenreich, J. T. (2006). Investigating panic interpretation bias in children: Reliability and validity of a questionnaire. *Journal of Cognitive Psychotherapy, 20*, 485-497.

Silverman, K. W., Fleisig, W., Rabian, B., & Peterson, R. A. (1991). Childhood anxiety sensitivity index. *Journal of Clinical Child Psychology, 20,* 162-168.

Silverman, K. W., Ginsburg, G. S., & Goedhart, A. W. (1999). Factor structure of the childhood anxiety sensitivity index. *Behaviour Research and Therapy, 37*, 903-917.

Silverman, K. W., Goedhart, A. W., Barrett, P., & Turner, C. (2003). The facets of anxiety sensitivity represented in the childhood anxiety sensitivity index: Confirmatory analyses of factor models from past studies. *Journal of Abnormal Psychology, 112,* 364-374.

Taylor, S. (1999). *Anxiety sensitivity: Theory, research, and treatment of the fear of anxiety*. Mahwah, NJ: Erlbaum.

Van Widenfelt, B. M., Siebelink, B. M., Goedhart, A. W., & Treffers, P. D. A. (2002). The Dutch childhood anxiety sensitivity index: psychometric properties and factor structure. *Journal of Clinical Child and Adolescent Psychology, 31*, 90-100.

Zinbarg, R. E., & Barlow, D. H. (1996). Structure of anxiety and the anxiety disorders: a hierarchical model. *Journal of Abnormal Psychology, 105,* 181-193.

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. 83-114). Mahwah, NJ: Erlbaum.

Zinbarg, R. E., Brown, T. A., Barlow, D. H., & Rapee, R. M. (2001). Anxiety sensitivity, panic, and depressed mood: a reanalysis teasing apart the contributions of the two levels in the hierarchical structure of anxiety sensitivity index. *Journal of Abnormal Psychology, 110,* 372-377.

Table 1

Overview of studies conducting factor analysis of the CASI

Authors	Sample	Factor model	Items	Label
Chorpita et al.	nonclinic sample	2 f.-o. f.	3, 4, 6, 7, 8, 9, 10, 11, 14, 15, 16, 18	CASI-autonomic scale
(2000)	*N* = 228; 7–17 years		1, 2, 5, 12, 13, 17	CASI-nonautonomic scale
Laurent et al.	3 nonclinic samples	2 f.-o. f.	2, 3, 4, 6, 9, 12, 14, 15, 16	Fear of Physiological Arousal
(1998)	*N* = 95; 9–15 years		8, 10, 11	Fear of Mental Catastrophe
	N = 112; 9–14 years			
	N = 144; 11–15 years			
Muris et al.	nonclinic sample	3 f.-o. f.	4, 6, 8, 9, 10, 11, 14	Fear of Physiological Arousal
(2001)	*N* = 819; 13–16 years		1, 5, 7, 13	Fear of Losing Control and Social Evaluation
			2, 3, 12, 15, 16	Fear of Mental Incapacity
		4 f.-o. f.	3, 4, 6, 8, 9, 10, 11, 14	Fear of Physiological Arousal
			1, 5	Fear of Losing Control
			2, 12,1 5, 16	Fear of Mental Incapacity
			7, 13	Fear of Social Evaluation
Silverman et al.	nonclinic sample	3 f.-o. f.	3, 6, 9, 10, 11, 14, 16, 18	Physical Concerns
(1999)	*N* = 249; 7–12 years		2, 12, 13, 15	Mental Incapacitation Concerns

Authors	Sample	Factor model	Items	Label
			1, 4, 5, 7, 8, 17	Concerns about Publicly Observable Symptoms
		4 f.-o. f.	3, 6, 9, 11, 14, 16, 18	Physical Concerns
			2, 12, 13, 15	Mental Incapacitation Concerns
			1, 17	Social Concerns
			4, 5, 7, 8, 10	Control
Silverman et al.	2 nonclinic samples	2 f.-o. f.	3, 4, 6, 8, 9, 10, 11	Physical Concerns
(2003)	*N* = 767; 7–15 years		1, 2, 5, 12, 15, 17	Other Concerns
	N = 249; 7–12 years	3 f.-o. f.	3, 4, 6, 8, 9, 10, 11	Physical Concerns
	clinic sample		2, 12, 15	Mental Illness Concerns
	N = 258; 7–16 years		1, 5, 17	Social Concerns
		4 f.-o. f.	3, 6, 9, 11	Disease Concerns
			4, 8, 10	Unsteady Concerns
			2, 12, 15	Mental Illness Concerns
			1, 5, 17	Social Concerns

Note. f.-o. f. means first-order factors.