

Outcome Measure	Spence Children's Anxiety Scale (SCAS)
Sensitivity to Change	Yes
Population	Paediatrics
Domain	Psychological Status
Type of Measure	Parent-report, self-report
ICF-Code/s	B1
Description	<p>The Spence Children's Anxiety Scale (SCAS) was developed to assess the severity of anxiety symptoms broadly in line with the dimensions of anxiety disorder proposed by the DSM-IV.</p> <p>The scale assesses six domains of anxiety including generalised anxiety, panic / agoraphobia, social phobia, separation anxiety, obsessive compulsive disorder and physical injury fears. It is designed to be relatively easy and quick for children to complete, normally taking only around 10 minutes to answer the questions. Young people are asked to rate the degree to which they experience each symptom on a 4-point frequency scale.</p> <p>This measure consists of 44 items, of which 38 reflect specific symptoms of anxiety and 6 relate to positive, filler items to reduce negative response bias. Of the 38 anxiety items, 6 reflect separation anxiety, 6 social phobia, 6 obsessive compulsive problems, 6 panic / 3 agoraphobia, 6 generalised anxiety / over-anxious symptoms and 5 items concern fears of physical injury. Items are randomly allocated within the questionnaire. Children are asked to rate on a 4 point scale involving never (0), sometimes (1), often (2), and always (3), the frequency with which they experience each symptom. The instructions state "Please put a circle around the word that shows how often each of these things happen to you. There are no right and wrong answers". There are six positively worded filler items.</p> <p>Development of the Scale</p> <p>The items were selected from an initial pool of 80 items generated to reflect a broad spectrum of anxiety symptoms. The items were selected from a review of existing literature, clinical experience of 4 clinical psychologists who specialized in anxiety disorders, existing child anxiety assessment measures, structured clinical interviews, and the <i>DSM</i> diagnostic criteria. Items were deleted if they clearly pertained to a specific trauma event or medical condition. The final 38 items were selected following extensive pilot testing. Greater detail regarding development of the scale is provided in two published papers (Spence, 1997; Spence, 1998 - see articles page).</p>

	<p>Uses of the Scale</p> <p><u>Clinical purposes</u></p> <p>The scale has been widely used in clinical contexts for both assessment and therapy evaluation purposes. The SCAS is not intended as a diagnostic instrument when used in isolation. Rather it is designed to provide an indication of the nature and extent of anxiety symptoms to assist in the diagnostic process. It is recommended that clinicians use the scale in partnership with a structured clinical interview. In addition to normative data, T-Scores have been developed to assist the clinician in determining whether anxiety symptoms are elevated above what would be regarded as normal levels within the community. The scale is sensitive to treatment outcome and may be used to evaluate the impact of therapy on anxiety symptoms in children and adolescents.</p> <p><u>Community screening and prevention</u></p> <p>The scale has also been used for identification of children at risk of developing anxiety problems and for monitoring the outcome of interventions to prevent the development of anxiety.</p> <p><u>Research</u></p> <p>The SCAS has now been used in a significant number of research studies to examine the structure of anxiety symptoms and as an indicator of anxiety in young people.</p>
<p>Properties</p>	<p>ADMINISTRATION</p> <p>The scale is completed by asking the child to read and follow the instructions on the printed form. The child is asked to rate on a 4-point scale: 'never', 'sometimes', 'often', or 'always' to indicate how often each of the items happens to them. There is no set time period over which the judgment has to be made. The response is made by circling the appropriate frequency word.</p> <p>SCORING</p> <p>Only the 38 anxiety items are scored. The responses are scored:</p> <p>Never = 0 Sometimes = 1 Often = 2 Always = 3</p> <p>This yields a maximum possible score of 114.</p> <p><u>Total Score Calculation</u></p> <p>The total score is the sum of items 1 + 2 + 3 + 4 + 5 + 6 + 7 + 8 + 9 + 10 + 12</p>

+ 13 + 14 + 15 + 16 + 18 + 19 + 20 + 21 + 22 + 23 + 24 + 25 + 27 + 28 + 29 + 30 + 32 + 33 + 34 + 35 + 36 + 37 + 39 + 40 + 41 + 42 + 44.

Alternatively, the Total Score may be computed from adding together all the subscale scores.

Scoring Templates

Because the font sizes and layout tends to change when printed out from different computers a fixed scoring template is not provided. These may be developed by the practitioner using a plain acetate sheet to overlay on top of the printed survey to assist in scoring.

Alternatively scores 0 to 3 may be entered into a spread sheet for computing purposes.

PSYCHOMETRIC PROPERTIES

Normative Sample

The norms for the SCAS are based on a large community sample of Australian school children. The SCAS has been used extensively in several other countries and has been translated into various languages. Information about these studies are provided in the articles section to assist researchers and practitioners who may wish to use the scale in other languages. The scale has been used in a large number of studies that have provided normative data for other countries, including the USA, UK, Netherlands, Japan, Germany, Spain, Portugal, China, and Turkey, to mention just a few. The articles section provides a list of some of these papers.

The Australian community sample used to determine norms and T-scores consisted of 4,916 children including 2386 boys and 2530 girls aged 8-15 years from 45 schools in Queensland Australia. Taken together these schools were selected to represent the socio-demographic profile of the State according to national census information in terms of socio-economic status, ethnic background and metropolitan/non-metropolitan location. The sample was predominantly English speaking and Caucasian in background, but in line with Australian ethnic profiles. Questionnaires were completed in groups within the school setting, under the supervision of teachers and research staff. Children read the scale themselves, but were instructed that they could request assistance with reading any words that they found difficult, but could not request advice on how to answer any item.

Normative Data for Total SCAS Scores

Statistical analyses using ANOVA showed that there are significant differences across genders, $F(1,4912) = 244.86, p < .001$, eta square = .05 and age, $F(1,4912) = 167.29, p < .001$, eta square = .03. Girls scored higher than boys for the total score. For both boys and girls, total scores tended to decrease with age. It is important therefore to use separate norms for the

older (12 – 15 years) compared to the younger age range (8-11 years) and for boys versus girls.

Normative Data for Subscale Score

Mean values, age and gender effects were then examined for the SCAS subscales and are shown below. Given the number of analyses, interaction effects between age and gender were only considered to be statistically significant if p values were less than .01, and are only reported if significant.

1) Separation Anxiety Subscale.

Females reported significantly higher scores for separation anxiety than males, $F(1,4912) = 198.97$, $p < .001$, eta square = .04. Not surprisingly, younger children (both boys and girls) reported much higher scores, in general than older children, $F(1,4912) = 476.81$, $p < .001$, eta square = .09

2) Social Phobia Subscale.

Girls reported significantly higher scores on the social phobia subscale $F(1,4912) = 259.98$, $p < .001$, eta square = .05, but there were no significant differences between age groups.

3) Obsessive Compulsive Subscale.

Females reported only slightly higher scores than males on the Obsessive Compulsive subscale. Although this difference was statistically significant, $F(1,4912) = 15.41$, $p < .001$, eta square = .003, the effect size was extremely small. The difference between age groups was more marked, with younger children reporting significantly higher scores than the older age group, $F(1,4912) = 324.15$, $p < .001$, eta square = .06.

4) Panic / Agoraphobia Subscale.

On this subscale, females tended to report significantly higher scores than boys, $F(1,4912) = 109.91$, $p < .001$, eta square = .02. As with the other subscales, younger children tended to report higher scores than their older peers, $F(1,4912) = 85.74$, $p < .001$, eta square = .02.

5) Physical Injury Fears.

Girls again tended score significantly higher than boys, $F(1,4912) = 278.19$, $p < .001$, eta square = .05. In general, younger children reported slightly lower scores than the older age group, $F(1,4912) = 49.00$, $p < .001$, eta square = .01.

6) Generalised Anxiety.

Finally, girls also tended to report significantly generalised anxiety subscale scores than boys, $F(1,4912) = 228.32$, $p < .001$, eta square = .04. The 8-11 year group showed slightly higher scores, in general, than the 12-15 year group, $F(1,4912) = 40.20$, $p < .001$, eta square = .01, but it should be noted that this was only a small effect size.

Reliability

Internal Reliability

Internal reliability was examined for the total scale and the subscales. The coefficients are shown in Table 1. The internal consistency (reliability) of the total scale was extremely high (Cronbach alpha = .93) confirming that the items of the scale are clearly measuring the same construct. The internal consistency coefficients for the subscale scores were also adequate, being .74 for separation anxiety, .74 for social phobia, .76 for obsessive compulsive, .82 for Panic/Agoraphobia, and .77 for Generalised Anxiety. The internal consistency was lower for the Physical Injury Fears (alpha = .60) reflecting greater variation in children's responses on this dimension.

The internal reliability of the SCAS total scale and subscales was also examined separately for each age group and gender, to check that the results were equivalent. The internal consistency of the total scale and all subscales, except the physical injury subscale were good, for both genders and both age groups. The weaker internal consistency for the physical injury fears subscale suggests that, although children tend to respond in a similar way to each item within this subscale, this effect is not as strong as for the other subscales. Internal consistency also fell below .70 on the separation anxiety subscale for younger boys and older girls.

The item-total correlations for each item for the total scale and the subscales, using the total population were generally strong, indicating that all items associated with the dimensions that they were supposed to be measuring. The results were very similar for boys and girls, and for the younger and older age groups.

Test-Retest Reliability

Test re-retest reliability was examined and reported by Spence (1998) for a sample of 344 children aged 8-12 years from a community sample. Children were assessed on two occasions over a 6-month period. The analyses showed a 6-month test-retest reliability co-efficient of .60 for the total score on the SCAS. This suggests reasonably high reliability over a 6-month period for the total score. The temporal stability of the subscale scores were lower for the individual subscales, being .57 for separation anxiety; .57 for social phobia; .53 for obsessive-compulsive problems; .45 for panic-agoraphobia; .54 for physical injury fears; and .56 for generalised anxiety. Repeated measures ANOVAS were used to examine changes in scores over time. Significant decreases in scores were found for the SCAS total score and separation anxiety $F(1,342) = 11.41, p < .001$; social phobia $F(1,342) = 5.24, p < .05$; physical injury fears $F(1,342) = 6.90, p < .01$; obsessive-compulsive problems $F(1,342) = 20.43, p < .05$; and generalised anxiety $F(1,342) = 14.50, p < .001$. Only panic-agoraphobia symptoms did not change significantly over the six month period (panic-agoraphobia $F(1,342) = 3.34, p = .07$). These results suggest that children's reports of anxiety symptoms tend to decrease after a six month retest interval. This finding is consistent with the general tendency for children to show reducing scores on the SCAS with age.

	<p>Similar test-retest results were found for 12-14 year old by Spence, Barrett et al (2003) for 362 adolescents who were reassessed 12-weeks after the initial data collection. A 12-week test-retest reliability co-efficient of .63 was found for the total score on the SCAS. The temporal stability of the sub-scale scores were .52 for separation anxiety; .75 for social phobia; .69 for obsessive-compulsive problems; .51 for panic agoraphobia; .59 for physical injury fears; and .66 for generalised anxiety.</p>
Advantages	<ol style="list-style-type: none"> 1) The SCAS assesses specific symptoms of childhood anxiety, considering the developmental specificities of anxiety symptoms among children; 2) It assess symptoms according to diagnostic criteria of the Diagnostic and Statistical Manual of Mental Disorders, 4th edition (DSM-IV) for childhood anxiety disorders (e.g., social phobia, generalised anxiety disorder, separation anxiety disorder). 3) It was introduced as a new childhood anxiety scale with evidence of adequate reliability and validity for international use in the measurement of childhood anxiety symptoms. 4) The scale has already been cross-culturally adapted to many languages, countries, and cultures after its original Australian version was proposed. Examples include German, Dutch, Hellenic Greek, Japanese, Mexican, Arab Syrian, Cypriot Greek, English, Swedish, and Italian.
Disadvantages	<ol style="list-style-type: none"> 1) Self-report 2) Total of 44 items to answer and strong tendency that respondent may miss several items. Therefore, cross checking of all items have been answered is essential.
Additional Information	-
Reviewers	<p>Vicki Anderson Cathy Catroppa</p>

References

Spence, S.H. (1997). Structure of anxiety symptoms among children: A confirmatory factor-analytic study. *Journal of Abnormal Psychology*, 106(2), 280-297.

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