

# Brazilian Portuguese version of the Spence Children's Anxiety Scale (SCAS-Brasil)

## Versão em português brasileiro da Escala Spence de Ansiedade Infantil (SCAS-Brasil)

Diogo A. DeSousa,<sup>1</sup> Circe S. Petersen,<sup>2</sup> Rafaela Behs,<sup>3</sup> Gisele G. Manfro,<sup>2</sup> Silvia H. Koller<sup>2</sup>

### Abstract

**Objective:** To describe the cross-cultural adaptation of the Spence Children's Anxiety Scale (SCAS) for use in Brazil.

**Methods:** Cross-cultural adaptation followed a four-step process, based on specialized literature: 1) investigation of conceptual and item equivalence; 2) translation and back-translation; 3) pretest; and 4) investigation of operational equivalence. All these procedures were carried out for both the child and the parent versions of the SCAS.

**Results:** A final Brazilian version of the instrument, named SCAS-Brasil, was defined and is presented.

**Conclusion:** The SCAS-Brasil instrument seems to be very similar to the original SCAS in terms of conceptual and item equivalence, semantics, and operational equivalence, suggesting that future cross-cultural studies may benefit from this early version. As a result, a new instrument is now available for the assessment of childhood anxiety symptoms in community, clinical, and research settings.

**Keywords:** Anxiety, anxiety disorders, cross-cultural adaptation.

### Resumo

**Objetivo:** Descrever a adaptação transcultural da Escala Spence de Ansiedade Infantil (Spence Children's Anxiety Scale, SCAS) para uso no Brasil.

**Método:** A adaptação transcultural seguiu um processo de quatro etapas baseado em literatura especializada: 1) investigação da equivalência conceitual e dos itens; 2) tradução e retrotradução; 3) pré-teste; e 4) investigação da equivalência operacional. Todos os procedimentos foram realizados tanto para a versão da criança quanto para a versão dos pais da SCAS.

**Resultados:** Uma versão final brasileira do instrumento, denominada SCAS-Brasil, foi obtida e é apresentada.

**Conclusão:** A SCAS-Brasil se mostra muito similar à versão original da SCAS no que diz respeito à equivalência conceitual e dos itens, semântica e equivalência operacional, sugerindo que futuros estudos transculturais poderiam se beneficiar desta primeira versão. Como resultado, um novo instrumento está agora disponível para a avaliação de sintomas de ansiedade na infância, em contextos comunitário, clínico e de pesquisa.

**Descritores:** Ansiedade, transtornos de ansiedade, adaptação transcultural.

<sup>1</sup> MSc candidate, Universidade Federal do Rio Grande do Sul (UFRGS), Porto Alegre, RS, Brazil. <sup>2</sup> PhD, UFRGS. <sup>3</sup> PhD candidate, UFRGS.

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## Introduction

Anxiety disorders are among the most frequent psychiatric illnesses in the general population.<sup>1,2</sup> Considering the overall scenario of mental disorders, data from international<sup>3,4</sup> and Brazilian<sup>5-8</sup> studies have shown prevalence rates ranging from 6 to 20% for anxiety disorders during childhood and adolescence.

Pediatric anxiety disorders may severely interfere with the daily functioning of children and adolescents and are associated with chronicity.<sup>9-11</sup> These disorders may also predict difficulties in adulthood, such as anxiety and depressive disorders,<sup>12,13</sup> substance abuse and dependence,<sup>14</sup> and suicidal behavior,<sup>15</sup> especially if inadequately diagnosed and/or left untreated.<sup>5,8,16-18</sup> Hence, it is important to have adequate tools for the assessment of anxiety symptoms, as well as for the screening and diagnosis of anxiety disorders, especially among youth.

Self-report questionnaires and scales are frequently used in research and clinical practice for evaluating and measuring anxiety symptoms. Among other advantages, they are easy and fast to administer and focus on symptoms from the point of view of the respondent.<sup>19</sup>

Instruments used to assess childhood anxiety symptoms are mainly downward versions of instruments developed to evaluate anxiety in adults.<sup>20</sup> In Brazil, some examples of instruments that follow this pattern are the State-Trait Anxiety Inventory for Children (STAI-C),<sup>21</sup> rendered as Inventário de Ansiedade Traço-Estado para Crianças (IDATE-C),<sup>22</sup> and the Revised Children's Manifest Anxiety Scale (RCMAS),<sup>23</sup> translated/adapted into Escala de Ansiedade Infantil "O Que Penso e Sinto?"<sup>24</sup> However, it is also important to consider that there are developmental characteristics involved in the evaluation of childhood anxiety symptoms.<sup>20</sup>

Another important aspect to be considered about some instruments used to assess childhood anxiety symptoms, such as the STAI-C and the RCMAS, is that they measure anxiety in general, and not anxiety symptoms related to specific disorders. Nevertheless, when dealing with diagnosis and treatment of anxiety disorders, information about specific clusters of anxiety problems may be useful for practitioners and investigators.<sup>20</sup>

To overcome these limitations, the Spence Children's Anxiety Scale (SCAS)<sup>20,25</sup> was developed with the following objectives: 1) to assess specific symptoms of childhood anxiety, considering the developmental specificities of anxiety symptoms among children; and 2) to assess symptoms according to diagnostic criteria of the Diagnostic and Statistical Manual of Mental Disorders, 4th edition (DSM-IV)<sup>26</sup> for childhood anxiety disorders (e.g., social phobia, generalized anxiety disorder, separation anxiety disorder).

The SCAS 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.<sup>19</sup> The scale has already been cross-culturally adapted to many languages, countries, and cultures after its original Australian version was proposed. Examples include German,<sup>27</sup> Dutch,<sup>28</sup> Hellenic Greek,<sup>29</sup> Japanese,<sup>30</sup> Mexican,<sup>31</sup> Arab Syrian,<sup>32</sup> Cypriot Greek,<sup>33</sup> English, Swedish, and Italian.<sup>34</sup>

The objective of the present study was to describe the cross-cultural adaptation of the SCAS (both child and parent versions) for use in Brazil.

## Method

The study protocol was approved by the Ethics Committee of Hospital de Clínicas de Porto Alegre, Universidade Federal do Rio Grande do Sul (number of the project: 08-017).

### Instruments

#### *Spence Children's Anxiety Scale (SCAS)*

The SCAS contains 44 items. Of these, 38 deal with specific anxiety symptoms, arranged in six factors or subscales: 1) separation anxiety (six items); 2) social phobia (six items); 3) obsessive-compulsive problems (six items); 4) panic (six items) and agoraphobia (three items); 5) generalized anxiety (six items); and 6) physical injury fears (five items). The latter subscale relates to specific phobias. The remaining six items in the SCAS are positive filler questions used to reduce negative response bias. There is also an open question at the end of the questionnaire that provides the respondents with the opportunity to report any additional fears.<sup>20,25</sup>

In each item, respondents are instructed to check the word that best describes how often the behaviors, feelings, and reactions described in the scale (reflecting anxiety symptoms) happen to them. A four-point word scale is used: never, sometimes, often, always. The fact that there are no right or wrong answers is also emphasized during instrument administration.<sup>20,25</sup>

#### *Spence Children's Anxiety Scale – Parent Version (SCAS-P)*

The SCAS also has a version developed to assess children's anxiety symptoms based on their parents report.<sup>28</sup> The items of the parents' version (SCAS-P) are all equivalent to the items included in the original child version, except for the filler items, which are not present in the SCAS-P. In the SCAS-P, parents are asked to evaluate how often their children demonstrate the symptoms described in the 38 items of the scale using a four-point word scale: never, sometimes, often, always.

## Steps of the cross-cultural adaptation process

First of all, the authors of the present study contacted the author of the original SCAS scale via e-mail so that she could authorize the cross-cultural adaptation process. After that, a four-step process was followed, based on specialized literature<sup>35-37</sup> and on the International Test Commission Guidelines for Translating and Adapting Tests.<sup>38</sup> The four steps were: 1) investigation of conceptual and item equivalence; 2) translation and back-translation; 3) pretest; and 4) investigation of operational equivalence. These procedures were applied to both the child and the parent versions of the SCAS.

### **Investigation of conceptual and item equivalence**

In the first step, the scale was analyzed in terms of conceptual and item equivalence between the original and target contexts.<sup>35-37</sup> Equivalence was assessed through a literature review about childhood anxiety and the instruments available for the assessment of anxiety in Brazil. The objectives were: 1) to investigate if the relationship between the scale and its underlying concept (i.e., childhood anxiety) in the original setting would be the same in Brazil; and 2) to investigate if the items comprising the original scale would remain relevant and acceptable in the Brazilian context. Literature review and instrument analysis results were also discussed with two experts in the field: a PhD psychologist specialized in childhood psychopathology and a PhD psychologist specialized in cross-cultural adaptation of instruments.

### **Translation and back-translation**

In the second step, the scale was translated from English into Brazilian Portuguese and then back-translated into English. Two independent translators produced forward-translations of the SCAS, and a third one synthesized both translations into a single version in Brazilian Portuguese. This synthesized version was then back-translated independently by two other translators, and again a third one synthesized both back-translations into a single version in English.<sup>35,39-41</sup> All translators involved in this step were fluent in both languages, English and Brazilian Portuguese.

The original version of the SCAS, the synthesized forward-translation version, and the synthesized back-translation version were all evaluated by an expert committee,<sup>35,39-41</sup> including a PhD psychologist specialized in methodology, a PhD psychologist specialized in childhood anxiety, a translator, and a back-translator. The committee assessed whether the items included in the three versions reflected the same ideas regarding the target construct (i.e., childhood anxiety). The objective was to make sure that the translation process

was adequately conducted and that the translated items were relevant to the Brazilian context. Adjustment of instrument items was performed after a consensus was reached among all members of the committee.

### **Pretest**

The third step of the cross-cultural adaptation process consisted of a pilot study.<sup>35,39</sup> The aim of this step was to evaluate the understanding of the scale by the target population (i.e., Brazilian children aged 7 to 12 and their parents). Eight children (four boys and four girls) and their parents (four mothers, one father and three couples) were requested to read and then rephrase the sentences contained in the child and parent versions of the scale, respectively.<sup>37</sup> These children were recruited from an anxiety disorders treatment program and were from families with different socioeconomic statuses. Answers were analyzed in an attempt to identify any problems in the wording of the items, as well as any confusing or misleading items. All children and parents involved in this step of the process signed an informed consent form prior to their participation.

### **Investigation of operational equivalence**

In the fourth step, the scale was analyzed in terms of the operational equivalence between the original and target contexts.<sup>35-37</sup> The following aspects were evaluated considering the use of the instrument in Brazil: instructions, method of administration, questionnaire format, and measurement methods used in the original SCAS. Operational equivalence was analyzed through a literature review focusing on operational models of other childhood anxiety instruments available in Brazil. The results of this review were also discussed with two experts in the field: a PhD psychologist specialized in childhood psychopathology and a PhD psychologist specialized in cross-cultural adaptation of instruments.

## Results

Results obtained in each step of the adaptation process for both versions of the SCAS (child and parent) are described below. The aspects or areas where differences emerged over the cross-cultural adaptation process are discussed.

### **Investigation of conceptual and item equivalence**

As suggested by Herdman et al.,<sup>36</sup> analyzing literature reviews and studies that employ the basic concept of the original instrument in the assessment of the target

population is a useful approach to investigate conceptual and item equivalence of an instrument across cultures. Silva & Figueiredo<sup>7</sup> conducted a systematic review of the literature about instruments that evaluate anxiety in children and adolescents and found that, among the 118 instruments analyzed, there was a whole category of instruments emerging as a result of a series of studies based on the DSM-IV diagnostic criteria. One example of instrument that fell into this category and has recently been adapted to Brazilian Portuguese is the Screen for Child Anxiety-Related Emotional Disorders (SCARED).<sup>42,43</sup>

In addition to the literature review, we also discussed our results with experts in the fields of childhood psychopathology and cross-cultural adaptation of instruments.<sup>35</sup> The results of this discussion pointed to evidence of equivalence between SCAS items in both the original and the Brazilian contexts. Both experts agreed that the domains and theoretical rationale that served as the basis for the original SCAS, as well as the items representing them, were equally relevant and important in the target context, and that the construct itself was likely to be equally valid in Brazil.

However, both experts identified problems in one specific item of the SCAS, present in both the child and the parent versions: "I have [My child has] trouble going to school in the mornings because I feel [(s)he feels] nervous or afraid." Differently from the Australian context, in Brazil many children go to school only in the morning or only in the afternoon. Therefore, even though the idea underlying this specific item (separation anxiety symptom) would be equivalent in Brazil, the assumption of "going to school in the mornings" would not work for all children. That consideration was taken into account and this item was edited as follows: "I have [My child has] trouble going to school because I feel [(s)he feels] nervous or afraid."

Also, one of the experts stressed a possible problem in another item of the parent version: "My child is scared of heights (e.g., being at the top of a cliff)." In Brazil, even though being scared of heights may also indicate a symptom of a specific phobia, the example of "being at the top of a cliff" might not be useful due to particular experiences of the Brazilian population with geographical terrains. As the child version of this item only states "I am scared of being in high places," the parent version item was replaced with "My child is scared of heights," by removing the example in parentheses.

Finally, the experts suggested the inclusion of new items to investigate anxiety characteristics that are relevant in Brazilian settings. For instance, they suggested the inclusion of an item specifically referring to phobia symptoms related to burglars and thieves. However, in order to maintain the structure of the SCAS-Brasil as similar as possible to that of the original scale,<sup>25</sup>

consensus was reached that it would be preferable not to add this item. This decision was further justified by the fact that the last item in the SCAS prompts the respondent to refer to anything else the child is afraid of, enabling the respondents to provide more specific information about other relevant symptoms and characteristics.

### **Translation and back-translation**

The forward- and back-translations followed the steps described above, involving six translators throughout the process. Few items showed discrepancies between the versions of the two independent translators and of the two back-translators, which facilitated the task of the translators responsible for synthesizing the versions. The expert committee checked the synthesized forward- and back-translations, comparing them to the original SCAS. The committee noticed that the words "scared" and "afraid," used in many items of the original instrument, were randomly translated into Portuguese as "assustado" and "com medo," not following a standardized pattern. After discussing this issue, adjustments were performed and a decision was reached about the final wording of items in the SCAS-Brasil. Table 1 shows the original items of the SCAS and the final versions of the Brazilian Portuguese correlate items after the forward- and back-translations and review by the expert committee.

### **Pretest**

Parents did not have any problems rephrasing the items of the scale. Out of the eight children selected for this stage, only one had difficulty rephrasing the items: a 7-year boy who did not have problems understanding the items, but rather reading them. When the items were read aloud by a research assistant, he was able to rephrase the sentences without further difficulties.

### **Investigation of operational equivalence**

The results of the pretest stage support the idea that the SCAS can be used even in patients with reading disabilities or difficulties, provided someone can read the sentences to the subjects; this method of administration may also be useful when dealing with illiterate parents. There were no other sources of difficulty regarding the format, instructions, method of assessment, or measurement methods of the SCAS in the Brazilian context. The review of the literature also demonstrated that many of the instruments used for assessing anxiety symptoms in Brazilian children follow operational procedures similar to those of the SCAS, e.g., the SCARED,<sup>42,43</sup> the STAI-C,<sup>21,22</sup> and the RCMAS.<sup>23-24</sup>

**Table 1** – SCAS original items and corresponding SCAS-Brasil items

<b>Factor/Subscale</b>	<b>Original item</b>	<b>Brazilian Portuguese item</b>
Separation Anxiety (Ansiedade de separação)	I would feel afraid of being on my own at home	Eu ficaria com medo de ficar sozinho(a) em casa
	I worry about being away from my parents	Eu me preocupo em estar longe dos meus pais
	I worry that something awful will happen to someone in my family	Eu me preocupo que algo terrível vá acontecer com alguém da minha família
	I feel scared if I have to sleep on my own	Eu sinto medo se eu tenho que dormir sozinho(a)
	I have trouble going to school in the mornings because I feel nervous or afraid	Eu tenho problemas em ir para a escola porque me sinto nervoso(a) ou assustado(a)
	I would feel scared if I had to stay away from home overnight	Eu ficaria com medo se eu tivesse que passar a noite longe de casa
Social Phobia (Fobia Social)	I feel scared when I have to take a test	Eu fico com medo quando tenho que fazer uma prova
	I feel afraid if I have to use public toilets or bathrooms	Eu fico com medo se eu tenho que usar banheiros públicos
	I feel afraid that I will make a fool of myself in front of people	Eu fico com medo de fazer papel de bobo na frente das pessoas
	I worry that I will do badly at my school work	Eu me preocupo em ir mal no meu trabalho escolar
Generalized Anxiety Disorder (Ansiedade Generalizada)	I worry about things	Eu me preocupo com as coisas
	When I have a problem, I get a funny feeling in my stomach	Quando eu tenho um problema, eu fico com uma sensação esquisita no meu estômago
	I feel afraid	Eu sinto medo
	When I have a problem, my heart beats really fast	Quando eu tenho um problema, meu coração bate muito rápido
Panic Attack (Ataque de Pânico) e Agoraphobia (Agorafobia)	I worry that something bad will happen to me	Eu me preocupo que algo ruim vá acontecer comigo
	When I have a problem, I feel shaky	Quando eu tenho um problema, eu me sinto nervoso(a)
	I suddenly feel as if I can't breathe when there is no reason for this	Eu sinto como se de repente eu não pudesse respirar quando não há razão para isso
	I suddenly start to tremble or shake when there is no reason for this	Eu começo de repente a tremer ou me agitar quando não há razão para isso
	All of a sudden I feel really scared for no reason at all	Eu me sinto muito assustado(a) de repente, sem razão nenhuma
	I suddenly become dizzy or faint when there is no reason for this	Eu fico tonto(a) ou desmaio de repente quando não há razão para isso
	My heart suddenly starts to beat too quickly for no reason	Meu coração começa a bater muito rápido de repente sem nenhuma razão
	I worry that I will suddenly get a scared feeling when there is nothing to be afraid of	Eu me preocupo que vou me sentir assustado(a) de repente quando não há nada do que ter medo
	I feel scared if I have to travel in the car, or on a bus or a train	Eu fico assustado(a) se tenho que viajar em um carro, um ônibus ou um trem
	I am afraid of being in crowded places (like shopping centers, the movies, buses, busy playgrounds)	Eu tenho medo de ficar em lugares cheios de gente (como shoppings, cinemas, ônibus ou parquinhos lotados)
Physical Injury Fears (Medo de Danos Físicos)	I am afraid of being in small closed places, like tunnels or small rooms	Eu tenho medo de estar em locais pequenos fechados, como túneis ou quartos pequenos
	I am scared of the dark	Eu tenho medo do escuro
	I am scared of dogs	Eu tenho medo de cachorros
	I am scared of going to the doctors or dentists	Eu tenho medo de ir a médicos ou dentistas
	I am scared of being in high places or lifts (elevators)	Eu tenho medo de estar em lugares altos ou elevadores
Fillers (Itens Positivos <i>Fillers</i> )	I am scared of insects or spiders	Eu tenho medo de insetos ou aranhas
	I am popular amongst other kids my own age	Eu sou popular entre outras crianças da minha idade
	I am good at sports	Eu sou bom nos esportes
	I am a good person	Eu sou uma pessoa boa
	I feel happy	Eu me sinto feliz
	I like myself	Eu gosto de mim
Obsessive-Compulsive Disorder (Problemas Obsessivo-Compulsivos)	I am proud of my school work	Eu estou orgulhoso(a) das minhas tarefas escolares
	I have to keep checking that I have done things right (like the switch is off, or the door is locked)	Eu tenho que ficar checando se eu fiz as coisas direito (como se apaguei a luz, ou tranquei a porta)
	I can't seem to get bad or silly thoughts out of my head	Parece que eu não consigo tirar pensamentos ruins ou idiotas da minha cabeça
	I have to think of special thoughts to stop bad things from happening (like numbers or words)	Eu tenho que pensar em pensamentos especiais para impedir que coisas ruins aconteçam (como números ou palavras)
	I have to do some things over and over again like washing my hands, cleaning or putting things in a certain order)	Eu tenho que fazer algumas coisas repetidamente (como lavar as mãos, limpar ou colocar as coisas em certa ordem)
Obsessive-Compulsive Disorder (Problemas Obsessivo-Compulsivos)	I get bothered by bad or silly thoughts or pictures in my mind	Eu fico incomodado(a) com pensamentos ou imagens ruins ou idiotas na minha mente
	I have to do some things in just the right way to stop bad things happening	Eu tenho que fazer algumas coisas da forma correta para impedir que coisas ruins aconteçam

## Discussion

The main concept assessed by the SCAS is childhood anxiety. As mentioned before, this concept is based on diagnostic criteria set forth in the DSM-IV<sup>28</sup> for childhood anxiety disorders. Specifically, the SCAS assesses symptoms related to the following anxiety disorders: separation anxiety disorder, social anxiety disorder or social phobia, obsessive-compulsive disorder, panic disorder and agoraphobia, generalized anxiety disorder, and specific phobias. The symptoms described in the DSM-IV for diagnosing anxiety disorders that are represented by the SCAS items tend to be universal, and are therefore also used by Brazilian practitioners and investigators to study anxiety disorders in Brazilian populations.<sup>5,8,17,18</sup>

A major difficulty in the translation steps of this adaptation process involved the selection of translators and back-translators fluent in both languages. It was necessary to find English or Portuguese native-speaker linguists or translators with excellent fluency and a long experience working with both languages.<sup>39,41</sup> The difficulty was also caused by financial constraints: none of the translators could receive any financial compensation for their work due to budget limitations. As a result, the time spent translating/back-translating the instrument was particularly long (about 5 months), mainly because one of the translators and one of the back-translators had to become members of the expert committee afterwards. This illustrates well how time and financial constraints may impose obstacles to the adoption of adequate cross-cultural adaptation guidelines.<sup>35</sup>

In addition to evaluating the understanding of items,<sup>35,39</sup> another key aspect of the pretest stage in the present study was providing evidence for the need of alternatives to the self-answered mode of administration of the scale. Investigating the operational equivalence of the SCAS thus confirmed that the scale can be used with patients with reading disabilities or difficulties with the help of an interviewer.

## Conclusion

Even though the SCAS is a well-established scale, a careful cross-cultural adaptation process is always recommended when dealing with a foreign instrument in a new cultural context.<sup>35</sup> Therefore, the procedures followed in the present study for the adaptation of the SCAS into Brazilian Portuguese (SCAS-Brasil) were highly important for generating an adequate instrument for the assessment of childhood anxiety in Brazil. According to the International Test Commission Guidelines for

Translating and Adapting Tests,<sup>38</sup> as a general guideline, professionals should always “implement systematic judgmental evidence, both linguistic and psychological, to improve the accuracy of the adaptation process and compile evidence of the equivalence of all language versions” (p. 2).

The SCAS-Brasil here presented seems to be very similar to the original SCAS, suggesting that future cross-cultural studies may benefit from this early version. However, other studies are needed in order to take on further steps in the cross-cultural adaptation process of the SCAS-Brasil. For example, next steps could include administering the scale to Brazilian samples of children and adolescents, so as to collect evidence of instrument validity based on psychometric properties of the SCAS-Brasil through recognized statistical methods.<sup>35,38-40</sup>

The SCAS-Brasil is presented as a new instrument now available for the assessment of childhood anxiety symptoms. The scale can be used in community settings, serving as a screening tool to identify children at risk for developing anxiety disorders, assisting in preventive interventions. It can also be used in academic settings, in studies designed to assess anxiety indicators or symptoms in terms of their frequency, severity, or structure among children and adolescents. Finally, another possible application of the SCAS-Brasil, yet to be tested, is its use in clinical settings, as an auxiliary tool for diagnostic and therapeutic evaluations regarding the structure and severity of anxiety symptoms, as well as treatment response.

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#### Correspondence

Diogo Araújo DeSousa  
 Rua Ramiro Barcelos, 2600/104  
 90035-003 – Porto Alegre, RS – Brazil  
 Tel.: + 55-51-3308-5150  
 E-mail: diogo.a.sousa@gmail.com