

# Cross-cultural adaptation of the General Self Efficacy Scale-12 into Brazilian Portuguese

*Adaptação transcultural do instrumento General Self Efficacy Scale-12 para o português do Brasil*

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## ABSTRACT

**Objective:** to perform the cross-cultural adaptation of the General Self Efficacy Scale-12 into Brazilian Portuguese. **Method:** this is a methodological study of cross-cultural adaptation of a self-efficacy instrument in which the steps of translation, synthesis, back-translation, semantic evaluation, content validation and pre-test were followed. **Results:** the translation and back-translation showed no changes in relation to the original version. Content and semantic validation were achieved and a content validity coefficient greater than 0.80 was obtained. **Conclusion:** after developing the methodological steps, the scale was duly adapted to the Brazilian culture and presents conceptual, semantic, cultural and operational equivalence in relation to the original version. Therefore, this instrument has potential to be used for measuring self-efficacy.

**Descriptors:** Self Efficacy; Validation Study; Disabled Persons.

## RESUMO

**Objetivo:** realizar a adaptação transcultural do instrumento *General Self Efficacy Scale-12* para o português do Brasil. **Método:** trata-se de um estudo metodológico, de adaptação transcultural de um instrumento de autoeficácia, que seguiu as etapas de tradução, síntese, retrotradução, avaliação semântica, validação de conteúdo e pré-teste. **Resultados:** a tradução e a retrotradução não apresentaram alterações em relação à versão original. Foram alcançadas a validação de conteúdo e a semântica e obteve-se um coeficiente de validade de conteúdo superior a 0,80. **Conclusão:** depois de desenvolver as etapas metodológicas, a escala foi devidamente adaptada à cultura brasileira e apresenta equivalência conceitual, semântica, cultural e operacional em relação à versão original. Portanto, esse instrumento tem potencial para ser utilizado na mensuração da autoeficácia.

**Descritores:** Autoeficácia; Estudo de Validação; Pessoas com Deficiência.

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**How to cite this article:** Madruga KMA, Pagliuca LMF, França ISX, Nóbrega MML, Pimenta CJL, Costa KNFM. Cross-cultural adaptation of the General Self Efficacy Scale-12 into Brazilian Portuguese. Rev. Eletr. Enferm. [Internet]. 2022 [cited \_\_\_\_\_];24:68125. Available from: <https://doi.org/10.5216/ree.v24.68125>.

Received: 03/11/2021. Approved: 02/04/2022. Published: 05/27/2022.

## INTRODUCTION

Self-efficacy is one of the main components of the Social Cognitive Theory (SCT). Beliefs within this concept act as a regulatory mechanism of human action that influences the ability to set goals, execute plans and persevere in the face of challenges and difficult situations throughout life. A high sense of effectiveness facilitates information processing and cognitive performance in different contexts, including decision-making and personal motivation<sup>(1-2)</sup>.

This construct may act as a facilitator of the various pressures put by the environment, some of them hostile and disadvantageous for adaptation, such as changes in aging, economic and social factors (poverty and social exclusion), unexpected life events (death, financial losses, illness and disability), as well as stressors arising from traumatic situations (environmental disasters, attacks and kidnappings)<sup>(3)</sup>.

The concept of self-efficacy has been extensively studied in some disciplines in order to explain behaviors throughout life<sup>(4)</sup>. This construct was investigated in several aspects in studies conducted by nurses, for example, cancer, chronic diseases, physical activity and weight loss. In conceptual analyzes of Nursing with application in sociocultural contexts, self-efficacy has been used in caregivers of people with disabilities, in the treatment of diabetes mellitus, among others<sup>(5-6)</sup>.

Research aimed at assessing self-efficacy has been conducted in many countries and evaluated in different ways. Some general self-efficacy assessment measures were developed to demonstrate it more broadly: General Perceived Self-Efficacy Scale – GPSS, General Self-Efficacy Scale-12 – GSES-12 and New General Self-Efficacy Scale – NGSS.

We chose to use the GSES-12 instead of the GPSS in this study, as it has acceptable psychometric properties, especially at medium or low levels of self-efficacy<sup>(7)</sup>. The GSES-12 presents a model with three correlated factors (initiative, persistence and effort), in addition to the higher-order factor (general self-efficacy)<sup>(8)</sup>.

It was originally developed in English<sup>(9)</sup> in the United States of America (USA), and later adapted and validated in other countries, such as Turkey,<sup>(10)</sup> India<sup>(11)</sup> and Spain<sup>(12)</sup>. The original GSES-12 showed evidence of reliability through internal consistency with a value of 0.70<sup>(9)</sup>. One-dimensionality was supported by Confirmatory Factor Analysis (CFA) with indices (GFI=0.98; AGFI=0.97; RMSR=0.04; NFI=0.93; NNFI=0.92, CFI=0.94) indicating a good fit<sup>(8)</sup>.

Although in Brazil there is a validated version of the GPSS<sup>(13)</sup> that assesses general self-efficacy, this instrument is restricted to specific contexts, such as the academic and work environment. Thus, we chose to use the GSES-12 because of its brief measures and easy application. In addition, this scale assesses general self-efficacy within contexts of vulnerability, such as those of people with disabilities, pain and/or chronic

diseases, depression, cancer, older adults, among others. It also represents an important mechanism for measuring changes in therapeutic results in these populations.

Due to linguistic and cultural differences, its translation and cross-cultural adaptation (CCA) would be necessary for use in Brazil, after confirming its psychometric properties. Thus, the study began with the following guiding question: Does the GSES-12, translated and adapted to Brazilian Portuguese, have semantic, idiomatic, cultural and conceptual equivalence? In order to answer this question, the aim of this study was to perform the CCA of the GSES-12 instrument for Brazilian Portuguese.

## METHOD

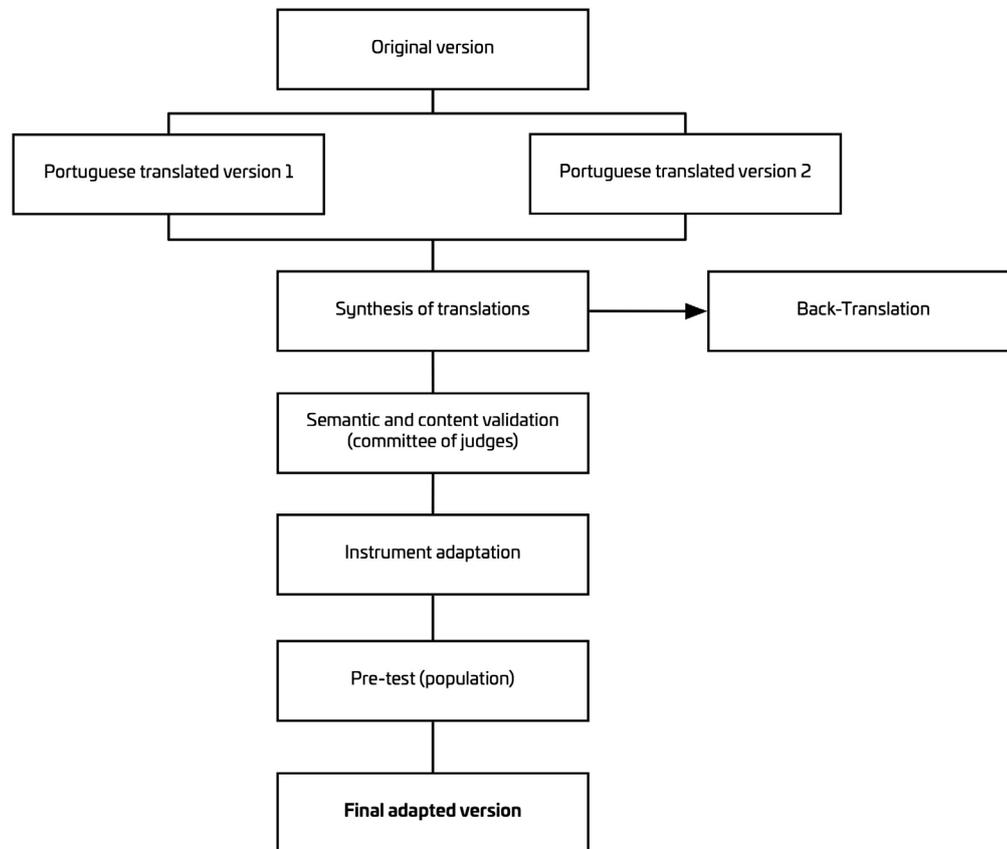
This is a methodological study for the cross-cultural adaptation of the GSES-12. Initially, the authorization of the copyright of the GSES-12 was requested electronically to Dr. James Maddux, one of the main authors of the instrument, for the scale adaptation to Brazilian Portuguese.

The recommendations of Cassepp-Borges, Balbinotti and Teodoro<sup>(14)</sup>, which aim to provide a semantic, idiomatic, cultural and conceptual equivalence between the original instrument and the adapted version were followed to culturally adapt the GSES-12. The five steps of the cross-cultural adaptation of an instrument were performed: translation, synthesis of translations, back-translation, evaluation by a committee of judges and pre-test, as shown in Figure 1.

The original GSES is a one-dimensional instrument that assesses overall self-efficacy. It is based on the SCT and was initially developed with 23 items, but only 17 were kept<sup>(9)</sup>. In a new study, five items were excluded as they showed low correlations and ambiguous formulation, therefore, a 12-item version<sup>(8)</sup>, measured on a seven-point response scale (“strongly disagree” =1; up to “strongly agree” =5) was obtained, in which the lower the score, the greater the self-efficacy.

All steps involved in this stage followed the guidelines for cross-cultural adaptation by Cassepp-Borges, Balbinotti and Teodoro<sup>(14)</sup>. Initially, the instrument was given to two Brazilian translators and English teachers with over ten years of experience in the American culture. They were unaware of the research objectives. In this study, the translated instruments were called ‘Portuguese translated version 1’ and ‘Portuguese translated version 2’. After this step, the translations were synthesized by three research nurses with a PhD; one with experience in cross-cultural adaptation of instruments.

In back-translation, the ‘synthesis of translations into Portuguese’ was sent to an American translator residing in Brazil, who back-translated the instrument into the language of origin. This translator did not know the objectives of the study.



Source: Prepared by the authors, 2018.

**Figure 1.** Cross-cultural adaptation process of the General Self-Efficacy Scale-12.

The versions of the instrument - the original, the synthesis of translations into Portuguese and the back-translation - were analyzed by two judges in order to unify the preliminary version. A researcher in the field with knowledge of English and the main researcher participated in this process with the objective of analyzing the convergent and divergent points of the translations, and minimize the possible linguistic, psychological, cultural and comprehension biases found in the translation. After this process, the preliminary version of the GSES-12, called 'Portuguese translated version', was structured. It was sent to the author of the scale so he could make a synthesis and give suggestions. Then, the translated version was submitted to the semantic validation process.

The participation of a minimum of three judges and a maximum of five is recommended in the stage of semantic and content validation of the instrument<sup>(14)</sup>. Five judges were invited to participate, but only three accepted. The selection was made after an assessment of the Lattes Curriculum, which should include academic training, a Doctorate in Nursing and experience in validation. The content validity coefficient (CVC) was used to analyze the degree of agreement between judges-evaluators. Items are evaluated using a Likert-type scale, ranging from 1 to 5, where 1 represents 'very little'; 2

'little'; 3, 'average'; 4, 'a lot'; and 5, 'very much', with four criteria: clarity of language, practical relevance, theoretical adequacy and theoretical dimension<sup>(14)</sup>.

This stage was evaluated by calculating the CVC test, which corresponds to dividing the mean scores for each item ( $M_x$ ) by the maximum value that the item can receive ( $V_{max}$ ). It is also recommended to calculate the error ( $Pe_i$ ) to discount possible biases of the judges evaluators for each item:  $Pe_i = (1/J)^J$ , where J corresponds to the number of judges who evaluated the item<sup>(14)</sup>.

The final CVC of each item ( $CVC_c$ ) was calculated by subtracting the error ( $Pe_i$ ) from the initial CVC value ( $CVC_i$ ). The calculation of the total CVC ( $CVC_c$ ) of the questionnaire for each of the characteristics (clarity of language, practical relevance, theoretical adequacy and theoretical dimension) is evaluated using the formula  $CVC_c = Mcvc_i - Mpe_i$ , where  $Mcvc_i$  represents the mean of coefficients of content validity of the questionnaire items, and  $Mpe_i$  the mean error of the questionnaire items. After calculation, only the questions that obtained  $CVC_c$  greater than or equal to 0.8 were accepted. At the end of this stage, the judges made some suggestions to facilitate the understanding of items. This version was called the 'adapted version'.

Then, the pre-test was performed with the aim to assess if procedures were adequate or if any item remained incomprehensible. At this stage, it was possible to detect and correct errors before conducting the survey. The semantic analysis of the 'adapted version' was performed by ten people who had between low schooling (primary school) and complete higher education. In all cases, respondents were asked if they understood the issues and if the alternatives were clear. Since there were difficulties in understanding some items, participants gave suggestions. This version was called the 'final adapted version' and considered adequate to be applied in the population studied.

The project met all criteria established by Resolution Number 466/2012 of the National Health Council and was approved by the Research Ethics Committee under number CAAE:78302717.8.0000.5188 in accordance with Law No. 9610/98. All participants signed the Informed Consent form to guarantee the confidentiality of information and privacy, criteria for suspending and ending the study, and the details of the stages of the study.

## RESULTS

The GSES-12 translation is presented in Figure 2. In the first column are the items of the original version; in the second and third are the two versions, called 'translated version 1' and 'translated version 2'; and in the fourth column is the synthesis of translations.

Figure 3 shows the original version in the first column, the synthesis of translations in the second and the back-translation in the third column, with few changes observed in the items of the back-translated version.

After being translated, the semantic evaluation of this version was performed by a committee of three judges to assess the content, language clarity, practical relevance and the theoretical adequacy and theoretical dimension. An agreement index of 0.80 or higher was observed for all items (Table 1).

Although a high rate of agreement among judges regarding the clarity of items of the instrument was achieved, some suggestions were made, such as: Item 1 – "*Se alguma coisa parece muito complicado, eu não tento fazer*"; Item 3 – "*Ao tentar aprender algo novo, se eu não for inicialmente bem-sucedido, desisto rapidamente*"; Item 9 – "*Quando estabeleço metas importantes para minha vida, raramente eu as alcanço*"; Item 11 – "*Quando problemas inesperados acontecem, não sei lidar muito bem com eles*". Therefore, we decided to make an adaptation and this version was called 'adapted version'.

As it was difficult to understand some items in the pre-test, participants gave the following suggestions: Item 3 – "*Ao tentar aprender algo novo, se inicialmente eu não conseguir, desisto rapidamente*"; Item 5 – "*Se eu não consigo fazer uma*

*atividade pela primeira vez, continuo tentando até conseguir*"; Item 9 – "*Quando estabeleço metas importantes para minha vida, geralmente eu não as alcanço*"; Item 10 – "*Eu não me sinto capaz de lidar com a maioria das dificuldades que surgem na minha vida*". This version was called the 'final adapted version' and considered adequate to be applied to the Brazilian population.

## DISCUSSION

Although studies have shown several guidelines for the cross-cultural adaptation of measuring instruments, there is still no consensus on which one is the best<sup>(15-16)</sup>. In the GSES-12 cross-cultural adaptation process the steps proposed by the chosen method, which has been used in other studies<sup>(17-18)</sup>, were followed strictly<sup>(14)</sup>. The process of translation and cross-cultural adaptation of an instrument requires a balanced treatment, in which the nuances of the target language are considered, and allows a more cultural adaptation, in which the literal translation of items is avoided, as it often results in incomprehensible sentences<sup>(14)</sup>.

The initial translations showed similar results, and the translators did not point out difficulties. As they are Brazilians who know the English culture and language, semantic deviations were minimized. By acting independently, the translators ensured that interpretation mistakes and particularities in the way of writing were avoided.

The synthesis of translations was back-translated with the objective to identify unclear words in the target language and find inconsistencies or conceptual errors in the final version, when compared to the original version<sup>(14)</sup>. Subsequently, quality assessment was performed by the author of the instrument. When accessing the back-translated version of the instrument, the author can say if the items have, in essence, the same conceptual idea that the original items<sup>(19)</sup>, and a study showed that this process exerted impact on the psychometric properties<sup>(20)</sup>.

After the initial procedures (translation and back-translation) were properly done to adapt the GSES to Brazilian Portuguese, the judges obtained a high level of agreement regarding the clarity of language, practical relevance, theoretical adequacy and theoretical dimension of the 12 items of the instrument. Therefore, a CVC value above 0.80 was obtained, as recommended in the literature<sup>(14)</sup>. Although suggestions of minor changes in some items were made, they did not change the theoretical dimension of the construct and the choice was to keep the maximum proximity to the original instrument for a better understanding of the terms used. This was also observed in the process of cross-cultural adaptation for the population of Spain<sup>(12)</sup>.

The pre-test is a previous application of the instrument to a small sample that reflects the characteristics of the target

**Figure 2.** Original version, Translated versions 1 and 2 and Synthesis of translations (n=120). João Pessoa, PB, Brazil, 2018.

Original	Portuguese translated version 1	Portuguese translated version 2	Synthesis of translations
1. If something looks too complicated I will not even bother to try it	Se alguma coisa parecer complicado demais eu nem me incomodarei em tentar	Se algo parece muito complicado, eu nem vou tentar	Se algo parece muito complicado, eu nem tento fazer
2. I avoid trying to learn new things when they look too difficult	Evito tentar aprender novas coisas quando elas parecem muito difíceis	Eu evito tentar aprender coisas novas quando elas parecem muito difíceis	Evito tentar aprender coisas novas quando elas parecem ser muito difíceis
3. When trying to learn something new, I soon give up if I am not initially successful effort	Ao tentar aprender algo novo, desisto rapidamente se não for um esforço bem-sucedido inicialmente	Ao tentar aprender algo novo, logo desisto se não for um esforço inicialmente bem-sucedido	Ao tentar aprender algo novo, desisto rapidamente se não for bem-sucedido inicialmente
4. When I make plans, I am certain I can make them work	Quando faço planos, certamente posso fazê-los acontecer	Quando faço planos, tenho certeza de que posso fazê-los funcionar	Quando faço planos, tenho certeza de que irão dar certo
5. If I can't do a job the first time, I keep trying until I can	Se eu não conseguir fazer um trabalho de cara, eu continuo tentando até conseguir	Se eu não consigo fazer um trabalho pela primeira vez, eu continuo tentando até que eu consiga	Se eu não consigo fazer um trabalho pela primeira vez, eu continuo tentando até conseguir
6. When I have something unpleasant to do, I stick to it until I finish it	Quando tenho algo desagradável para fazer, me prendo nele até terminá-lo	Quando tenho algo desagradável para fazer, eu tento até terminar	Quando tenho algo desagradável para fazer, eu tento até terminar
7. When I decide to do something, I go right to work on it	Quando decido fazer alguma coisa, vou diretamente trabalhar nela	Quando eu decido fazer alguma coisa, vou imediatamente fazê-la	Quando eu decido fazer alguma coisa, faço imediatamente
8. Failure just makes me try harder persistence	O fracasso apenas me faz ser mais persistente	Falhar só me faz tentar persistir	O fracasso me faz ser mais persistente
9. When I set important goals for myself, I rarely achieve them	Quando determino metas importantes para mim, raramente eu as alcanço	Quando estabeleço metas importantes para mim, raramente as alcanço	Quando estabeleço metas importantes para mim, raramente eu as alcanço
10. I do not seem capable of dealing with most problems that come up in my life	Eu não pareço capaz de lidar a maioria dos problemas que aparecem na minha vida	Eu não me sinto capaz de lidar com a maioria dos problemas que surgem na minha vida	Eu não me sinto capaz de lidar com a maioria dos problemas que surgem na minha vida
11. When unexpected problems occur, I don't handle them very well	Quando problemas inesperados acontecem, não lido com eles muito bem	Quando problemas inesperados ocorrem, eu não os manejo muito bem	Quando problemas inesperados acontecem, não lido muito bem com eles
12. I feel insecure about my ability to do things	Me sinto inseguro quando se diz respeito a minhas capacidades de fazer as coisas	Eu me sinto inseguro sobre minha capacidade de fazer coisas	Eu me sinto inseguro sobre minha capacidade para fazer as coisas

population in order to assess the adequacy of items in relation to their meaning and difficulty in understanding<sup>(21)</sup>. In this study, this step was performed with people of different educational levels, so the instrument could be understood in a comprehensive way. The request was to read questions aloud

and discuss the understanding of each item. Participants suggested some modifications that were incorporated into the final version of the instrument. These changes in the preliminary versions were also performed in other studies of cross-cultural adaptation of scales<sup>(22-23)</sup>.

**Figure 3.** Synthesis of translations and Back-translation of the General Self Efficacy Scale-12 (n=120). João Pessoa, PB, Brazil, 2018.

Original version	Synthesis of versions translated into Portuguese	Back-translation
1. If something looks too complicated I will not even bother to try it	Se algo parece muito complicado, eu nem tento fazer	If something seems too complicated, I don't even try to do it
2. I avoid trying to learn new things when they look too difficult	Evito tentar aprender coisas novas quando elas parecem ser muito difíceis	I avoid trying to learn new things when they seem to be very difficult
3. When trying to learn something new, I soon give up if I am not initially successful effort	Ao tentar aprender algo novo, desisto rapidamente se não for bem-sucedido inicialmente	When I try to learn something new, I give up quickly if I didn't succeed initially
4. When I make plans, I am certain I can make them work	Quando faço planos, tenho certeza de que irão dar certo	When I make plans, I'm sure they will work out.
5. If I can't do a job the first time, I keep trying until I can	Se eu não consigo fazer um trabalho pela primeira vez, eu continuo tentando até conseguir	If I can not do a job for the first time, I keep trying until I can
6. When I have something unpleasant to do, I stick to it until I finish it	Quando tenho algo desagradável para fazer, eu tento até terminar	When I have something unpleasant to do, I still try to finish it
7. When I decide to do something, I go right to work on it	Quando eu decido fazer alguma coisa, faço imediatamente	When I decide to do something, I do it immediately.
8. Failure just makes me try harder persistence	O fracasso me faz ser mais persistente	Failure makes me more persistent
9. When I set important goals for myself, I rarely achieve them	Quando estabeleço metas importantes para mim, raramente eu as alcanço	When I set goals that are important to me, I rarely achieve those goals
10. I do not seem capable of dealing with most problems that come up in my life	Eu não me sinto capaz de lidar com a maioria dos problemas que surgem na minha vida	I do not feel able to deal with most of the problems that arise in my life
11. When unexpected problems occur, I don't handle them very well	Quando problemas inesperados acontecem, não lido muito bem com eles	When unexpected problems happen, I don't deal well with them
12. I feel insecure about my ability to do things	Eu me sinto inseguro sobre minha capacidade para fazer as coisas	I feel insecure about my ability to do things

The GSES translation and cross-cultural adaptation procedures were performed systematically, and the 12 items were adapted in terms of semantic, idiomatic, cultural and conceptual equivalence by the Committee of Judges. In the pre-test, modifications involving exemplifications and substitutions of terms and expressions were adopted with the main objective of an easier understanding of the instrument items within the Brazilian context.

The procedures used to translate and adapt an instrument to a new language consist of different stages that require uniformity, impersonality and obedience to the methodological segment used, so that the values reflected by the instrument and the meanings of its items are equivalent between cultures, as this is essential for the proper performance of the process<sup>(24)</sup>. In addition, the cultural adequacy of a translated instrument enables an equivalent applicability to that of the

original instrument. This aspect improves interaction and communication while searching for information about what is intended to be evaluated<sup>(25)</sup>.

Conceptual and idiomatic equivalence is the first aspect to be achieved in the adaptation process. Although qualitative methods are essential to ensure the adequacy of the adaptation process, they do not provide any information about the psychometric properties of the new instrument. In this sense, in addition to these steps, statistical analyzes must be performed to assess the extent to which the instrument can, in fact, be considered valid in the context for which it was adapted<sup>(16)</sup>.

This study revealed the importance of evaluating self-efficacy beliefs through the GSES-12, which can be used as a tool to guide the conduct of health professionals with the most vulnerable populations and identify their weaknesses

**Table 1.** Content validity coefficient among the judges' committee regarding items of the General Self Efficacy Scale-12 (translated version) (n=120). João Pessoa, PB, Brazil, 2018.

GSES-12 items (Translated version)	Clarity of language	Practical relevance	Theoretical adequacy	Theoretical dimension
1. Se algo parece muito complicado, eu nem tento fazer	0.85	0.85	1.00	1.00
2. Evito tentar aprender coisas novas quando elas parecem ser muito difíceis	0.85	1.00	1.00	0.85
3. Ao tentar aprender algo novo, desisto rapidamente se não for bem-sucedido inicialmente	0.80	0.85	1.00	1.00
4. Quando faço planos, tenho certeza de que irão dar certo	1.00	1.00	1.00	1.00
5. Se eu não consigo fazer um trabalho pela primeira vez, eu continuo tentando até conseguir	1.00	1.00	1.00	0.85
6. Quando tenho algo desagradável para fazer, eu tento até terminar	1.00	0.85	1.00	1.00
7. Quando eu decido fazer alguma coisa, faço imediatamente	1.00	0.80	1.00	0.85
8. O fracasso me faz ser mais persistente	1.00	1.00	1.00	1.00
9. Quando estabeleço metas importantes para mim, raramente eu as alcanço	0.85	0.85	1.00	1.00
10. Eu não me sinto capaz de lidar com a maioria dos problemas que surgem na minha vida	1.00	1.00	1.00	1.00
11. Quando problemas inesperados acontecem, não lido muito bem com eles	0.85	0.85	1.00	1.00
12. Eu me sinto inseguro sobre minha capacidade para fazer as coisas	0.85	1.00	1.00	1.00

and strengths in order to determine and/or encourage self-confidence so they can develop their activities autonomously and effectively, even with limitations.

We suggest the development of other psychometric studies to assess the reliability and validity of the construct and criterion of this instrument in Brazil. This can significantly contribute both to care and the scientific field, as it is a simple, brief scale of easy application.

## CONCLUSION

The GSES-12 is duly adapted to the Brazilian culture after the development of various methodological steps. As this instrument presents conceptual, semantic, cultural and operational equivalence in relation to the original version, it has the potential to measure self-efficacy.

However, the study presented limitations, as in the stage of synthesis of translations, since, only one out of the three researchers had experience in cross-cultural adaptation of instruments and, only three out of the five judges invited to the semantic and content validation took part in the study. They contributed effectively to the study, even though three judges was the minimum number recommended.

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