



Translation and cultural adaptation of the Sleep Apnea Clinical Score for use in Brazil

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In an article published in the *Jornal Brasileiro de Pneumologia*, Lapas et al.⁽¹⁾ translated the Sleep Apnea Clinical Score (SACS) into Brazilian Portuguese, adapting it to the cultural context and validating it for use as a method of screening for polysomnography in Brazil, and concluded that this tool can be used to assess the risk of obstructive sleep apnea syndrome in individuals in the country.⁽¹⁾

The lack of formal objective measures of assessment not only has an indisputable effect on the diagnosis but also leads to uncertainty in treatment and in intervention plans, which can compromise the effectiveness and efficiency of the treatment offered. Aspects such as culture, semantics, technology, content, standards, and concepts are the foundations that enable equivalent comparison at the different levels mentioned. In addition, it is necessary to determine whether the instrument is truly categorical in its proposal.

Certain aspects of the proposed Brazilian-Portuguese version of the SACS should be discussed. Despite the remarkable argumentation of the authors and the fundamental importance of the SACS, equivalence in cultural adaptation requires determining whether equipollence exists in concepts (assessment of the construct of interest in order to determine whether the concepts are relevant in the context to which they are being adapted), items (assessment of the relevance of the items by instrument domain), semantics (ability to transfer meaning from the concepts contained in the original instrument to the adapted version), and operation

(comparison between aspects of instrument use in the target and source populations), as well as in measurement (investigation of the instrument's psychometric properties), as described by Reichenheim and Moraes.⁽²⁾


Limitations such as the difficulty in comparing results, given the variation of approach in different cultures (which indicates cultural differences and the limited dissemination of the instrument among health care professionals, who, as a rule, work at various health care facilities and have very little time available), and the fact that the methodology used does not mention that examiners need to be trained before using the test can result in biases. The small number of patients ($n = 20$) should also be taken into account. Beaton et al.⁽³⁾ show the need to examine psychometric properties, reliability, and validity in order to determine whether the content of the original tool remains unchanged.

It is considered reckless to apply an instrument that has low accuracy and sensitivity, such as the 57.0% (95% CI: 45.8-67.6%) and 45.3% (95% CI: 32.8-58.2%), respectively, determined by Lapas et al.⁽¹⁾ for the Brazilian-Portuguese version of the SACS, because, in the analyses performed, the number of patients who completed the SACS was small (limited demographic data) and because the text does not mention the need to train professionals to apply the important instrument proposed (with consequent understanding of the semantics, culture, technology, concepts, standards, and content of the instrument, as mentioned above).

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Authors' reply

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Obstructive sleep apnea syndrome (OSAS) is a highly prevalent disease, and its proper diagnosis requires overnight polysomnography.^(1,2) To inform the decision regarding which patients should be prioritized in referrals for polysomnography, several instruments have been widely used.⁽²⁾ Obviously, all such instruments have flaws, because if there were a perfect correlation between one such instrument and polysomnography, the latter would become obsolete and could be replaced by the former. Among the most commonly used of such tools is the SACS,⁽³⁾ which was originally designed to be completed by the patient (without interference from technicians or physicians) and requires the measurement of neck circumference, which should be performed by a trained professional. The SACS consists of three very simple questions: the first aims to determine whether the patient has hypertension; and the other two address whether the patient snores or has respiratory pauses during sleep. The nature and simplicity of the questions facilitated the cultural adaptation. When we tested the translated version in patients, we found that the SACS questions do not involve situations that can be interpreted differently because of cultural peculiarities. The reliability of the SACS was determined through the analysis of internal consistency, and Cronbach's alpha coefficient was calculated to be 0.82 (lower limit of the 95% CI: 0.67), confirming that the translated instrument could be used in patients suspected of having OSAS.

The Brazilian-Portuguese version of the SACS (SACS-BR) that was applied in 86 patients who

subsequently underwent polysomnography in a sleep laboratory showed a sensitivity of 45.3% (95% CI: 32.8-58.2%), a specificity of 90.9% (95% CI: 70.8-98.9%), a positive predictive value of 93.5% (95% CI: 79.0-98.2%), a negative predictive value of 36.4% (95% CI: 30.6-42.5%), and an accuracy of 57.0% (95% CI: 45.8-67.6%). These values are in agreement with those found in the assessments made by the authors of the original tool.⁽³⁾ Neck circumference and the presence of hypertension are independent variables that are highly predictive of the risk of OSAS, and the SACS includes both of those variables in its analysis. Therefore, it is clear that this instrument can have high specificity when the patient has a score ≥ 15 . That characteristic was recognized by the authors of the SACS, who consider it to be a tool with a high positive predictive value for the diagnosis of OSAS.⁽³⁾ However, as mentioned above, of the three questions on the SACS, one asks whether the patient snores and one asks whether the patient has respiratory pauses during sleep. Patients who sleep alone are likely to deny having experienced those symptoms even if they do occur. That contributes to reducing the sensitivity and accuracy of the SACS. That characteristic had been addressed by the authors of the original tool⁽³⁾ and was again evaluated in the SACS-BR, being thought to be inherent to the tool itself rather than to its translation or adaptation. Therefore, we conclude that the SACS-BR, like the original version of the SACS, has high specificity to select patients who should undergo polysomnography but should be interpreted with caution, especially in individuals who sleep alone, and that only polysomnography data currently inform the diagnosis of OSAS.

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