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Translation and Validation of the Multidimensional Dyspnea-12 Questionnaire[☆]



Acerca de la traducción y validación del cuestionario multidimensional Disnea-12

To the Editor,

I read with interest the article recently published in your journal by Armado Diago et al.,¹ in which they discuss the translation and validation of the multidimensional Dyspnea-12 questionnaire. The article outlines the procedures and outcomes of reliability and validity testing of the instrument, and I would like to address some of these points.

Validation involves a sequential evaluation process in which data analysis helps demonstrate the accuracy of an instrument for measuring a theoretical construct or concept. One important factor in this process is the selection of the sample or number of participants. Some authors believe that the sample or number of participants should be between 5 and 20 for each item in the instrument, a factor that does not seem to have been taken into consideration by the authors of this article, since the questionnaire they describe consists of 12 items.^{2,3} Although they state that the sample was selected according to the validation study of the original version, it should be made clear that that process was conducted in 2 consecutive studies; the first was performed in 358 patients and consisted of 4 phases, during which the authors managed to reduce the number of items and perform an exploratory principal component analysis (PCA); the second was performed in 53 patients, and analyzed correlations with demographic variables and scores from the anxiety and depression scales.

Some authors question PCA because it tends to overestimate or spuriously increase factor loadings by ignoring the measurement error.^{2,4} Thus, in this validation study of the translated version, it was commendable that the authors performed the exploratory factor analysis (EFA) again, even though its use is only justified in recently created instruments, or when no psychometric studies are available in other populations, leading to the use of more appropriate procedures (e.g., the non-weighted least squares method).² However, we know that EFA does not determine the number of factors, nor does it define which items correspond to those factors, regardless whether they are related or not,

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since these items may behave differently when the measurement properties of the instrument are evaluated in another sample.^{2,4} Faced with this, confirmatory factor analysis (CFA) is commonly used with the application of structural equation models (SEM), in which the number, significance, associations, and the pattern of parameters are specified before analyzing the data. In this way, absolute, incremental and parsimonious goodness-of-fit indices are obtained (simplicity of the model), and these are used for a more rigorous examination of the factor structure of an instrument. Some studies even suggest the use of exploratory structural equation models (ESEM) that incorporate a cross-loading factor analysis (performed in the EFA) and the analysis of goodness-of-fit models (performed in the CFA) to appropriately explain a theoretical model.⁵

So, then, if a number of factors or dimensions with their respective items was established in the original version of the article in question, it would be appropriate to use more advanced methodologies to validate the instrument.

These comments are not intended to minimize the effort made by the authors in the translation and validation of the instrument. On the contrary, the progress made is admirable, since it sets a precedent for future research into the development and refinement of instruments for use in Spanish-speaking patients with dyspnea.

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