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# CARTAS AL EDITOR

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## **Improving comprehension and accuracy of health questionnaires using pictorial descriptions**

*To the editor:* The study of “Cross-cultural adaptation and health questionnaires validation: revision and methodological recommendations” by Ramada-Rodilla et al.,<sup>1</sup> published recently in your journal, raises an important issue relevant to the health and well being of large groups within the population. Research, screening, and diagnosis of certain health problems rely heavily on written materials that require the patient’s ability to understand and respond to health questionnaires and other written assessment tools. The accuracy and precision of these results might be compromised when low literacy exists, creating communication problems when participants respond to written consents, questionnaires, and/or screening tools.<sup>2</sup> *The majority of these communication problems can be attributed to disparities caused by lower levels of education, lack of language proficiency, low literacy, and cultural differences.*<sup>3,4</sup>

As a result of these disparities, the needs of these groups are not well-understood and inconclusive and somewhat conflicting results exist among a large number of interventions that focused on identifying

and reducing disparity. It is possible that we are missing critical components necessary to substantially reduce the impact of these disparities, due to our inability to obtain accurate responses (e.g., true/false results) when using self-assessment screening tools. This assessment disparity issue likely contributes to evaluation differences obtained between and within ethnic groups, which affect the final results of surveys and interventions, and therefore impact health needs planning and early intervention strategies.

While it is crucial to recognize the importance and need of cross-cultural adaptation in validating questionnaires, as well as adopting systematic processes to improve the assessment, it is also necessary to consider some potential disadvantages. Customizing a previously validated questionnaire requires full testing to determine its validity and reliability, which requires significant time and resources. After the new questionnaire has been created and tested, it is very possible that the results cannot be compared with the original data, thereby missing the opportunity of cross-comparisons. Additionally, customization might work only for a select group of individuals and for other groups validation is still required.

There are a large number of screening tools that have already been translated into Spanish and

have been standardized with available data from Spanish speakers. In these cases, one strategy that might help to keep the original translation without requiring cultural adaptation involves adding pictorial descriptions to the original written questions. In our studies, we found that by adding pictorial descriptions to a screening tool, detection was improved;<sup>5</sup> most importantly, the pictorial questionnaire produced an equivalent assessment when compared to the original questionnaire.<sup>6</sup> The success of these supplemental pictorial descriptions in screening tools is attributed to their flexibility in connecting actions and events to describe or explain procedures.<sup>7</sup>

Our first screening tool included the Pediatric Symptom Checklist (PSC),<sup>8</sup> recommended by the Academy of Pediatrics to detect cognitive, emotional, and behavioral problems in children aged 4-16 years. To solve many of the problems of low detection rates observed when using this screening tool among low-literacy Latinos, researchers have documented the need to read the questions to participants, which achieves a small increase in the detection rate. This strategy changes the method of recollection and can seriously impact study results; it also requires additional resources to collect the information. The two screening tools examined in

our study were the PSC, the original screening tool, and the Pictorial PSC (P+PSC),<sup>9</sup> an adaptation of the PSC that adds pictorial descriptions to the questions. This study indicated the advantage of the pictorial format that was further tested in a population of Mexican children living in the Mexico/US border region<sup>10</sup> Detection rates increased from 1.5% with the PSC to 16% with the P+PSC version.<sup>5</sup> We used the Child Behavior Checklist (CBCL) as the “Gold Standard” for this study.<sup>11</sup> Our next study included creating and validating a pictorial version of the CBCL, and we found that the pictorial (P+CBCL) was equivalent to the written instrument for populations with low literacy levels, both in English and Spanish.<sup>6</sup> The P+CBCL adaptation resulted in an equivalently effective questionnaire without any changes to the original questions and demonstrated good comprehension by groups with prevalent low-literacy rates.

Pictorial descriptions were used because it gave us the best results to facilitate reader understanding of the questions, but without affecting question content. Pictorials are multidimensional images that provide a useful option that reduces time and increases communication with groups that have lower literacy. Development of these pictorial descriptions included physicians, nurses, a health communicator, and a designer. Design was intended to not represent any specific group but instead included graphics that can be understood cross-culturally.

Pictorial adaptations of other validated screening tools may facilitate greater use without requiring much change, and will benefit a large number of subgroups, including minorities. Therefore, while cultural adaptation might be needed in new instruments or in tools not validated in the language employed, adding pictorial description can benefit

instrument utility in populations affected by low literacy. Thus, adding pictorial descriptions to assessments previously validated in the language employed can be an efficient strategy for optimizing the effectiveness of these tools.

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## Improving comprehension and accuracy of health questionnaires using pictorial descriptions (response to the Editor)

*To the Editor:* We want to thank Dr. Marie A Leiner *et al.* for their comments regarding our study entitled “Cross-cultural adaptation and health questionnaires validation: revision and methodological recommendations”.<sup>1</sup> The authors address an important issue related to the use of self-reported health questionnaires.

Adding pictorial descriptions to health questionnaires can be a useful strategy to enhance comprehension and accuracy, especially in populations with lower levels of education, lack of language proficiency or low literacy, reducing the likelihood of their exclusion in studies that use self-reported questionnaires.

However, in our opinion, the option proposed by Leiner and colleagues should not replace the rigorous and systematic process described in the literature as cross-cultural adaptation and validation (CCAV) of questionnaires to other languages and cultures. Otherwise, the validity and reliability of the questionnaire in the target language or culture cannot be guaranteed. Undertaking this process is not a “customization” of the questionnaire, as Leiner *et al.* suggest. Rather, it represents a process to assure that the questionnaire’s properties in its original version are preserved in the new target language or culture.<sup>2-6</sup>

We agree that this is a resource and time-consuming process but, when performed systematically, the result is a measurement tool equivalent to its original version, allowing meaningful comparisons across countries and cultures.<sup>7-11</sup>

The addition of pictorial descriptions to an already adapted and validated questionnaire is an interesting strategy to improve participation among persons with communication problems, but we still believe this would benefit from a rigorous CCAV process to avoid errors or unreliable or misleading results that could limit the exchange of scientific information. Thus, evidence should be provided that adding pictorial descriptions to a directly translated questionnaire, without proceeding to the cultural adaptation and validation of the entire instrument, is reasonably valid to preserve its original psychometric properties.

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