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OPINION ARTICLE

Translation and Cross-Cultural Adaptation of Health Assessment Tools☆

Proceso de traducción y adaptación cultural de instrumentos de medición en salud

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The development of new information and communication technology has led to better, properly validated measurement tools. However, such tools are sometimes created in languages other than our own and in countries that are culturally distinct from those of populations we wish to study. This situation creates a need to adapt assessment tools before we can use them in new contexts.

An adapted instrument, rather than an entirely new one, is needed because the indiscriminate creation of questionnaires is unjustified. The development of a new tool takes longer, is more costly, and uses more nonmonetary resources as well; moreover, the result would not be useful for generating knowledge.[1] Consider, for example, the case of a 2010 Cochrane Collaboration systematic review of vitiligo treatments that concluded that trial results could not be compared because the researchers had assessed repigmentation using 48 different scales.[2]

An appropriate process must be followed to ensure that a translated measurement tool uses language in the way it is understood in a cultural context that is different from the original setting yet does not lose its measurement properties.[3]

Herdman et al[5] used an approach they described as universalist to achieve equivalence when adapting an instrument. Their approach contrasted with the previously followed one they called absolutist, which had focused on ensuring that little or no change in the original concepts and organization would be made when producing the adapted version. Language issues were the primary concern of the absolutist approach, which often led to problems with adaptation.[5] The universalist approach recognizes that concepts can vary from one culture to another and can have a different scope of meanings, or might not even exist; even countries that share the same language might have diametrically opposed meanings attached to items or they might not recognize certain associated meanings for cultural or social reasons.[6] Therefore, the universalist approach Herdman and colleagues proposed first selects elements related to a construct that are truly universal and then adapts only those that measure the same concept in both cultures.[5] This focus ensures greater equivalence between different language versions of a measurement tool.

When Epstein et al[4] reviewed guidelines for the cross-cultural adaptation of assessment tools, they identified 31 different approaches. The aim of the present article is to simplify the proposed processes currently on offer and suggest one that leads to a culturally adapted translation that can later be validated for use in the intended setting. We will not lengthen this article by discussing the validation of measurement tools at this time.

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Our proposals are based on the following 3 sources:

- the principles of good practice in the translation and cultural adaptation of patient-reported outcome measures, as set out by the International Society for Pharmacoeconomics and Outcomes Research (ISPOR),[7]
- the guidelines for the translation and adaptation of tests by the International Test Commission,[8] and
- the guidelines for the cross-cultural adaptation of self-report measures published by the journal *Spine*.[9]

Each step of the cultural adaptation process calls for collecting theoretical and empirical evidence to support equivalence between the original and translated versions, thus underpinning the quality of the adaptation (Table 1).

The availability of a research team willing to collaborate throughout the process is important. Each individual on the team should be assigned a specific role. Outsiders, such as translators or a review committee, will be necessary during some steps, and a supervisor should take charge of the process to ensure the proper method is followed.

Clinical measurement tools are usually under copyright and permission is required to produce an adapted version,[1,4,10] although most authors make no mention of this requirement in their reports.

The translators who participate in the second step of the process (Fig. 1) should meet certain criteria. They should be experienced with or have some connection with the concepts to be assessed by the tool in order to decrease the likelihood that they will merely produce a literal translation. Professional translation service providers may be used. Their experience in translation will certainly provide a higher quality product, but professional status is not strictly necessary. It may even be possible for one of the translators to be the supervisor of the adaptation process, provided that person has the necessary language skills. If professional translators are contracted, we suggest they be briefed on the tool's use, target population, and the purpose of the translation—all in the interest of increasing final product quality.[10]

The third step requires the formation of a committee to evaluate and resolve discrepancies between the translations produced in the previous step. Members of the committee should have broad knowledge of the concepts being measured. However, they should not be familiar with the eventual proposed use for the adapted version, mainly because knowledge of the research objectives might cloud their judgment. Thus, the committee will involve persons who are not directly involved in the adaptation process itself. External service providers, such as translators or the developers of the instrument, if the latter are taking part, may join the committee.[7] Approaches to building formal consensus, such as the Delphi method, are used to come to agreement. It must also be mentioned that 2 initial translations are sometimes insufficient. Should that be the case, additional ones might have to be commissioned.[11]

The revision of the back-translation in the fifth step should be undertaken by members of the team involved in the previous steps, although some guidelines mention the formation of a review committee. Deciding to form such a committee increases costs and prolongs the process.

The aim of the sixth step is to detect minor textual problems (such as grammar, typing or spelling mistakes) that might have been overlooked during the previous steps. The participants involved at this point can be the same ones who took part previously, including the translators.

Piloting the proposed adaptation has the purpose of evaluating its comprehensibility and operational equivalence. In this step any previously suggested alternative translations still under consideration can be revisited. Possibly inappropriate conceptual terms might be found in some items. Piloting seeks to identify any aspect that could generate confusion when the instrument is used. It is important to stress that this step focuses exclusively on evaluating the instrument, not analyzing the participants' answers. Thus, the findings of this step are not what the patients or other subjects report in relation to each item, but rather their difficulty in responding and the amount of time they take to complete the questionnaire.

To carry out a useful pilot test of the translated tool, the team should consider and address the following points:

- The eventual target users (inclusion and exclusion criteria)
- Who will administer the questionnaire (if it is not a self-report instrument)
- The context in which the tool will be used
- Detailed instructions for how to register responses to the items
- How the results of piloting will be evaluated (generally with a qualitative approach)

The COSMIN checklist (Consensus-Based Standards for the Selection of Health Measurement Instruments) lists additional criteria, such as describing target users in terms of age, gender, disease characteristics, and source of recruitment.[11]

Once a pilot has been properly planned it must be carried out. Data gathered must be carefully analyzed by the working group so that they can detect specific problems that might require a return to one of the previous steps to review decisions taken earlier.

Any flaws detected should be discussed so that the participants can assess whether or not corrections to the structure or content of the instrument are warranted.

It should be mentioned that this adaptation process does not ensure that the new version will preserve the measurement properties of the original instrument. These properties might prove to have been compromised by changes made. Thus, a study that demonstrates the adapted tool's reliability and validity must still take place before clinical use can begin. Cultural adaptation of a measurement tool is a process that is distinct from its validation, even though the two processes are intimately related and each must carefully follow prescribed methods.[4,10]

The preparation of a final report is important because it reinforces the process that produces the adapted measurement tool and supports the resulting instrument. It will be even more important when it is used to gather research data. In each part of the process (Fig. 1) information is collected and must be analyzed in a step report, which will feed into the final report. In no case should the final report be skipped,