Cross-Cultural Adaptation of Pictorial Images in the Free and Cued Selective Reminding Test with Immediate Recall (FCSRT-IR) in 29 Languages for 24 Countries for Use in a Mild Cognitive Impairment (MCI) Population

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AIMS

To describe cross-cultural adaptation of pictorial images in the Free and Cued Selective Reminding Test with Immediate Recall (FCSRT-IR) in 29 languages for 24 countries. The FCSRT-IR is a clinician-administered verbal memory test using visual prompts, an interference exercise, and multiple recall methods used to identify prevalent dementia, predict future dementia, identify those patients with mild cognitive impairment destined to AD, and distinguish AD from non-AD dementia [1].

BACKGROUND

Linguistic Validation (LV) is a method of iterative translation and improvement of the translation based on qualitative data. A feature of LV is that it adapts a translation based on linguistic differences between languages as well as cultural differences. Cross-cultural adaptation allows for conceptual translation of subject matter that does not have a 1-to-1 equivalent. Some aspects are easy and obvious, such as changing measurements from Imperial to metric, or US dollars to local currency [2]. Other adaptations involve the logistics of everyday life, such as local games and sports, divisions within the extended family, system, common types of transportation, or the type of national healthcare system [3].

The steps of LV allow for cross-cultural adaptations that increase experiential and conceptual equivalence [4]. A failure to cross-culturally adapt a Clinical Outcomes Assessment (COA) may result in a loss of validity, while inconsistent adaptation across languages may affect its reliability [5]. Because the FCSRT-IR employs both words and pictures in its verbal memory exercises, if a word is cross-culturally adapted for the target language, its corresponding image also must be rendered.

LINGUISTIC VALIDATION

Linguistic validation is a process conducted to confirm that a Clinical Outcome Assessment (COA) questionnaire is acceptable for use in different languages and in different cultural contexts. Without this careful development of a translation and subsequent cognitive debriefing, one cannot be reasonably certain that the adapted instrument is both conceptually equivalent to the original and clearly understood by the average patient. The linguistic validation process begins with two translators independently translating the instrument into the target language. The translators then exchange drafts and work together to develop one reconciled or “harmonized” version. The harmonized translation is provided to a third translator who translates the text back into English without access to the original English. Both the harmonized translation and the English back translation are reviewed by a project manager and a survey research analyst, and changes to the translation are made as needed. Once the final translation has been approved, it is debriefed with a sample of in-country native speakers of the language, with varying demographic and educational backgrounds, to check for conceptual equivalence and clarity.

Cross-Cultural Adaptations

Cross-cultural adaptations are changes made in consideration of differences between the culture of the people who will be using the translated COA and the culture of those speaking the source text language. Elements requiring adaptation are identified during the following stages: initial analyst review of the source, linguistic review during translation, back-translation review, and/or subject feedback during cognitive debriefing (CD) interviews [2].

METHODS

Corporate Translators translated and harmonized the FCSRT-IR English U.S. source instrument into 29 languages for 24 countries. All word lists change linguistic made while translating were documented in a text file. The harmonized questionnaires were subjected to in-person cognitive debriefing interviews with mild cognitive impairment (MCI) patients. The interviewer administered the FCSRT-IR and a set of probe questions to determine whether recall task failure was due to unfamiliarity with the pictorial image or corresponding term, or cognitive impairment. Word list changes made at the prompting of respondent feedback during CD were documented in a language-specific summary of the CD results. Novel images were rendered if the term and image pair was not applicable for the target language, location or subject demographic. The corresponding category cue was revised, as needed, for consistency with the adapted word list item. Modifications to word list items and images were categorized as cross-cultural adaptations if caused by differences in cultural understanding, social appropriateness, or familiarity with everyday objects, places, and activities [2]. Table 1 details the source words, category cues, and their corresponding adapted word, image, and revised category cue.

RESULTS

CD with pictorial images and harmonized translations was completed with MCI patients (n = 144). Subjects were aged 30-100 years, with an average age of 70.3, and length of formal education ranging from 0-20 years, with an average of 11.2. Cross-cultural adaptations were implemented by linguists during translation and recommended by subjects during CD interviews, as necessitated by cultural appropriateness of images and subjects’ familiarity with the objects depicted. Novel images were rendered for 9 languages. Of those 9, the pretzel image was adapted for 9 languages, dominos in 2 languages and tulip in 2 languages, and rirquet, tooster, and chimney in 1 language each.

DISCUSSION

The majority of image and corresponding terminology revisions occurred during translation and harmonization, with the minority of revisions being made during the cognitive debriefing process, as suggested by subjects. The snack food, pretzel, required the most number of revisions, due to subject unfamiliarity with both the word and the image. A similar issue exists with the source terms and images for dominos and tulip. In all three cases, the source term is not familiar to respondents in a number of languages. Because the FCSRT-IR also employs a corresponding category cue after the interference task (for pretzel), a corresponding term to be recalled must be appropriate for the target language and geographic location, while taking into account how the age and generation of those respondents being assessed for MCI using this tool affects their available vocabulary. If the term and image for recall is not familiar to the respondent, it would not be possible for the assessors to determine whether failure to recall is due to MCI or unfamiliarity with the term and image. Cross-cultural adaptation is an important consideration for the development of MCI assessments for this reason.

CONCLUSIONS

Translation of an MCI recall test should include cross-cultural adaptation of images ensuring cultural appropriateness for the target population. The FCSRT-IR allows the clinician to verify the conclusion that failure on the recall task is related to MCI rather than culturally inaccessible images and words. The FCSRT-IR translations are considered linguistically validated for use in 29 languages for 24 countries.

REFERENCES