

Cultural adaptation of the Virtual Reality Functional Capacity Assessment Tool (VRFCAT) for use in the UK and Canada

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The Methodological Question Being Addressed:

Cross-cultural adaptation of performance-based outcome assessments

Introduction (Aims)

Cultural adaptation of performance-based outcomes can improve the quality of these assessments by ensuring tasks, stimuli and instructions are understood and appropriate for use in populations of interest. Use of culturally appropriate materials is especially important for tests of functional capacity, which assess an individual's potential to function in culturally specific real world environments.

We describe cultural adaptation of the Virtual Reality Functional Capacity Assessment Tool (VRFCAT), a computer-based assessment of functional capacity originally developed for the U.S. Using a realistic virtual reality environment, the VRFCAT assesses a subject's ability to complete instrumental activities associated with a shopping trip, including searching the pantry at home, making a list, taking the correct bus, shopping in a store, paying for the purchases, and returning home. In previous studies, the VRFCAT has demonstrated high test-retest reliability and has shown sensitivity to functional impairment (Keefe et al., 2016).

Methods

Our method for cultural adaptation of the VRFCAT was based on recommendations of the International Society for Pharmacoeconomics and Outcomes Research (ISPOR; Wild et al., 2005, 2009), and included the following steps:

Preparation

- Development of detailed concept sheets for all text seen and heard during the assessment, as well as visual stimuli and task icons, including food ingredients, currency and items present in the task background.
- Due to significant cultural differences in living quarters, bus stops and grocery stores, screen shots of each VRFCAT scene were prepared for distribution with concept sheets.

Translation/Adaptation

- Cultural adaptation was completed independently by two cultural experts using concept sheets, screen shots and additional task materials.
- Discrepancies between cultural experts were reconciled through discussion and ultimate consensus amongst reviewers.
- Culturally specific graphic and audio content was created, including graphic design of virtual environments, objects and icons, and professional recording of audio content (U.K. only)

Finalization

- Final review and approval of adapted test versions by cultural reviewers and in-house content experts.

- Certificate generation for each culturally adapted version.
- Formal computer system validation of each culturally adapted version

Results:

Culturally adapted test versions were created based on thorough review of feedback received from in-country cultural reviewers. Recommended changes included both minor revisions of wording (e.g. apartment to flat- UK; schedule to timetable-UK) and extensive changes to content and graphic design (e.g. currency and pricing- UK/CA; bus design and pricing – UK/CA). Adaptation for the UK version required significantly more customization, including design of culturally appropriate apartment, bus stop and grocery store scenes. Changes in food items and recipes were required to account for differences in item frequency and familiarity across English-speaking cultures.

Conclusions:

Cross-cultural adaptation of a realistic computer-based assessment of functional capacity revealed significant cultural variations across English-speaking cultures, and highlighted the importance of appropriate adaptation of functional assessments used in multinational trials.

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Disclosures:

One of more authors report potential conflicts which are described in the program.