Acceptability of the Self-Administered Computerized (SAC) versions of the Baseline/Transition Dyspnea Indexes (BDI/TDI) for patients with COPD from seven countries

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Introduction

The Baseline Dyspnea Index (BDI) and the Transition Dyspnea Index (TDI) is an interview-based instrument that has been widely used in clinical trials to assess the benefit of pharmacotherapy in patients with chronic obstructive pulmonary disease. However, it has been suggested that the BDI/TDI interviewer process may introduce bias in interpretation by the interviewer leading to more variability in results. As an alternative to the standard interviewer method, the self-administered and computerized (SAC) version of the BDI/TDI was developed and validated to allow the patient to provide direct ratings of breathlessness based on activities of daily living. The use of the SAC-BDI/TDI allows a standardized methodology for COPD patients, and can improve the collection and analysis of results. In addition, the SAC TDI is a continuous measure of any changes in dyspnea as the patient uses a computer mouse to indicate the magnitude of improvement or deterioration along a visual analog scale.[1]

Objectives

The objective of this study is to present the acceptability of the SAC versions of the BDI/TDI to patients with COPD from seven countries including nine different languages [Dutch (The Netherlands), Danish (Denmark) English (Canada, UK), Flemish (Belgium), French (Belgium, Canada), German (Germany), and Spanish (Spain)].

Methods

- A standardized methodology (i.e., MAPI guidelines) was followed to translate the SAC BDI/TDI (i.e., conceptual analysis of source instrument, forward translations, backward translation, clinician's review, and cognitive interviews). Three languages followed an adjusted process, i.e., Flemish, Canadian English, and UK English. In this case, a review of the related version (original version or version established after the backward-translation step) was performed by the in-country consultant to check its suitability in the linguistic and cultural context of the target country and adapt it, if necessary. The US English original was used as a related version for Canadian and UK English, and the Dutch version for Flemish. See Table 1.
- The test on five COPD patients in each language was conducted in the form of in-depth interviews to evaluate (1) comprehension and (2) acceptability using laptop computers. A total of 45 COPD patients participated in the acceptability of the SAC-BDI/TDI.

Results

- Overall, most patients liked the SAC versions, and about half preferred it to an interviewer-administered questionnaire. Only four patients had problems using the mouse to click on the right answer for the BDI (e.g., difficulties of coordination or in using the left button). The items were understood with no difficulties; the main challenging issue was the comprehension of the equivalents of "Baseline" and "Transition."
- At first, 42% of the patients, especially those in Germany (4/5 patients), Spain, and the UK (3/5 patients), had difficulties with the instructions to select answers on the TDI using the up-and-down elevator buttons. These difficulties did not persist after the practice question designed to help the patients to become familiar with clicking in a box (BDI), and using the up-and-down arrows (TDI) (see Figure 1).

Conclusion

- The SAC-BDI/TDI has the potential to be a beneficial tool for assessing breathlessness in COPD patients, by relying on the direct patient-reported ratings of dyspnea.
- Overall, the SAC versions of the BDI/TDI were well accepted by patients from seven different countries. Special attention and supervision should be given to patients not familiar with computer use.

Reference

1. Mahler DA, Ward J, Fierro-Carrion G, Waterman LA, Lentine TF, Mejia-Alfaro R, Baird JC. Development of self-administered versions of modified baseline and transition dyspnea indexes in COPD. COPD. 2004;1(2):165-72.

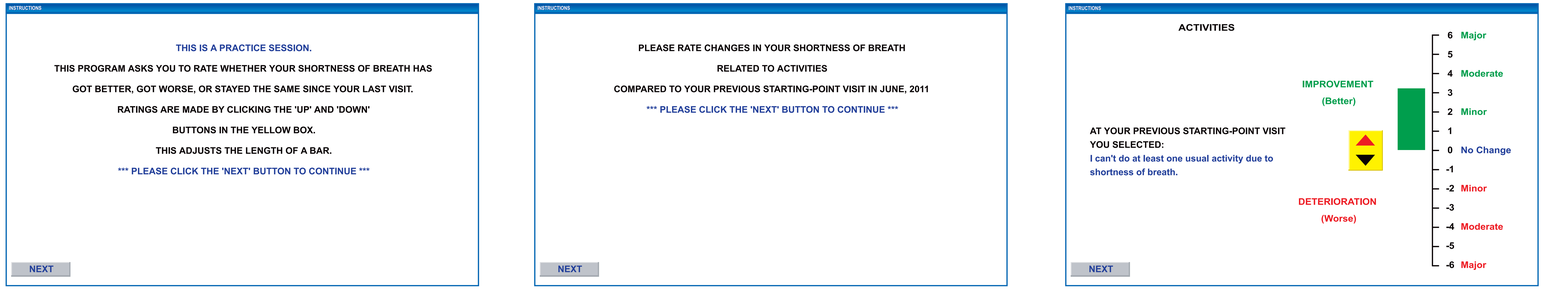
Table 1. Linguistic Validation Process

Country	Language	SAC version of the BDI/TDI		
		Status		Work to the done
		Unavailable	Available	
Belgium	Flemish	✓		A + C / U
Belgium	French	✓		S + C / U
Canada	English	✓		A + C / U
Canada	French	✓		S + C / U
Denmark	Danish	✓		S + C / U
Germany	German	✓		S + C / U
Spain	Spanish	✓		S + C / U
The Netherlands	Dutch	✓		S + C / U
UK	English	✓		A + C / U

S	*Standard linguistic validation process (F/B/DC)*
A	*Adjusted linguistic validation process (Ad/DC)*
C / U	*Checking of the screen shots and update of the versions*

F: Forward-translation step; **Ad**: Adaptation step; **B**: Backward-translation step; **CD**: Cognitive debriefing on **5 individuals with COPD**

Figure 1. Screen shots of TDI practice session (UK English version)



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