

# LINGUISTIC VALIDATION OF THE DTSQ: CHALLENGES WITH ARABIC AND FRENCH FOR ALGERIA

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**OBJECTIVES:** The Diabetes Treatment Satisfaction Questionnaire (DTSQ), developed in UK English by Professor Clare Bradley, is a reliable, valid and widely used 8-item measure of treatment satisfaction (6 items) and perceived frequency of hyper-/hypoglycaemia (2 items), validated in >100 languages. Arabic and French versions for Algeria were required for multinational clinical trials, necessitating linguistic validation of both languages.

**METHODS:** FDA- and ISPOR-compliant methodology was applied to the following steps: 1) Review of developer-provided materials including concept definitions; 2) Adaptation for Algeria from existing Arabic and French versions of the DTSQ (already validated for use elsewhere); 3) Back translations into English and review by TransPerfect; 4) Developer's team (HPR) review and agreement on interim version; 5) Diabetes clinician review; 6) Further HPR review; 7) Cognitive interviewing with 5 patients with diabetes (Type 1 and 2) for each of the two languages; 8) Final HPR review; 9) Final proofreading / formatting by native-language linguists.

**RESULTS:** Adaptation of the Arabic and French language versions for Algeria presented interesting challenges. These included variable literacy levels, multiple dialects, as well as the complex relationships between vernacular Algerian Arabic and Modern Standard Arabic. Various changes to the standard French were required for comprehension to be ensured in Algeria.

**CONCLUSIONS:** Modern Standard Arabic was judged to be the most appropriate form of Arabic for Algeria. While some minor changes were implemented to adjust for the local population, the wide variability throughout Algeria made full adaptation to a specific dialect inappropriate. Standard French without adaptation was found to be unsuitable for Algeria. Also notable is the importance of interviewing different respondents for the different languages (given many Algerians are fluent in both languages). Linguistically validated Arabic and French versions of the DTSQ for Algeria are now available for use.

## OBJECTIVES

To adapt existing Arabic and French versions of the DTSQ (validated for use elsewhere) for use in Algeria, in a collaboration between TransPerfect and Health Psychology Research (HPR).

## METHODS

FDA<sup>1</sup>- and ISPOR<sup>2</sup>-compliant methodology included the following stages:



## RESULTS

Algerian history and the resulting diversity of language is an important part of the Algerian people's identity. Through review of the linguistic makeup of the country, we found that in order for the questionnaire to be accessible to as much of the population as possible, both French and Arabic translations were necessary.

### Arabic:

While Arabic is the official language of Algeria, there are two distinct types: Algerian Arabic and Modern Standard Arabic (MSA)<sup>3</sup>. Algerian Arabic is a spoken language and is considered a national working language, but is not expressed in writing. Conversely, MSA can be spoken, but is primarily used only as a written language in Algeria. Many native Algerian Arabic speakers cannot read or write MSA and there is no written form of Algerian Arabic. Therefore, translation was in MSA, and cognitive interviews were conducted by a native Algerian fluent in Algerian Arabic, in order to evaluate comprehension and, where needed, improve the MSA translation.

Examples of changes made to ensure comprehension in Algeria are detailed below:

ENGLISH	ARABIC (TUNISIA)	ARABIC (ALGERIA)	EXPLANATION OF CHANGE
How satisfied are you with your current treatment?	كم أنت راض عن علاجك الحالي؟	إلى أي حد أنت راض عن علاجك الحالي؟	The majority of cognitive interviewing respondents had difficulty understanding "ما مدى رضاك" ("How satisfied?"). Respondent 1 suggested substituting this question with: "To what extent are you satisfied?" The suggested revision is implemented to ensure comprehension.
How flexible have you been finding your treatment to be recently?	كيف وجدت علاجك مرنا مؤخرا؟	إلى أي حد وجدت مؤخرا أن علاجك قابل للتغيير؟	During cognitive interviewing, the five respondents did not understand the term "مرن" ("flexible") and suggested replacing it with "قابل للتغيير". The item can be understood as: "To what extent have you recently found that your treatment could be adjusted?"

### French:

French, while not an official language, was introduced in Algeria as a result of the French conquest that took place from 1830 - 1847<sup>4</sup>. As Algeria only gained its independence in 1962, a large number of Algerians continue to speak French today. French, like Arabic in Algeria, is considered an "institutional" language that is used beyond "the home and community"<sup>5</sup>. The language is particularly common among older populations that grew up during a period of strong French influence. However, French in Algeria is affected by the host country's culture and language. Separated from the target language's country of origin, French in Algeria is likely to evolve differently from French in France<sup>5</sup>.

Examples of changes made to ensure comprehension in Algeria are detailed below:

ENGLISH	FRENCH (FRANCE)	FRENCH (ALGERIA)	EXPLANATION OF CHANGE
The following questions are concerned with the treatment for your diabetes (including insulin, tablets and/or diet) and your experience over the past few weeks.	Les questions portent sur le mode de traitement que vous suivez actuellement (y compris insuline, comprimés et/ou régime) et sur votre vécu au cours de ces dernières semaines.	Les questions suivantes portent sur le traitement de votre diabète (y compris insuline, comprimés et/ou diététique) et sur votre vécu au cours de ces dernières semaines.	During the clinician review stage, the reviewer suggested implementing the change from "régime" to "diététique" to more closely reflect "diet". The cognitive interviewing respondents had no issues understanding the updated translation.
How often have you felt that your blood sugars have been unacceptably high recently?	Avec quelle fréquence avez-vous eu la sensation que votre glycémie s'est élevée à un niveau inacceptable récemment ?	À quelle fréquence avez-vous eu l'impression que votre glycémie s'est élevée à un niveau inacceptable récemment ?	While "sensation" tends to be associated only with the senses, "impression" includes sensation as well as the concept of having a belief (or impression). As such, "la sensation" was replaced with "eu l'impression" to ensure appropriate understanding of the item.
How convenient have you been finding your treatment to be recently?	Ces derniers temps, dans quelle mesure votre traitement vous convient-il ?	Ces derniers temps, dans quelle mesure votre traitement vous convient-il d'un point de vue pratique ?	As "convenir" could be understood as "being practical" and "being appropriate medically", the translation was revised to indicate "convenient" in a practical sense. Although the majority of respondents understood the original wording, it was not clear whether they would respond to the convenience of the treatment as "medically appropriate" or "practical and realistic". This revision ensures that the concept of "practical" is conveyed.

Due to the particular history of languages in Algeria, an unusual (though probably not unique) issue was encountered during recruitment for cognitive interviewing, as potential respondents were identified as "native" speakers in both French and Arabic. It is important to note that, where this situation applies, such respondents should be debriefed for just one language, in order to avoid the risk of biased feedback from a respondent who is already informed about the instrument, having just completed it in another familiar language.

## CONCLUSIONS

Arabic and French versions of the DTSQ for Algeria can be validated linguistically using standard methodology, but require additional considerations specific to Algeria's history and culture.

**Access to the DTSQ:** [www.healthpsychologyresearch.com](http://www.healthpsychologyresearch.com)

<sup>1</sup>US Food & Drug Administration guidance for industry-patient-reported outcome measures: use in medical product development to support labeling claims. Available from: <http://www.fda.gov/downloads/Drugs/GuidanceComplianceRegulatoryInformation/Guidances/UCM193282.pdf> [Accessed May 1, 2014].

<sup>2</sup>Diane Wild, Alyson Grove, et al. 2005. Principles of Good Practice for the Translation and Cultural Adaptation Process for Patient-Reported Outcomes (PRO) Measures: Report of the ISPOR Task Force for Translation and Cultural Adaptation

<sup>3</sup>Lewis, M. Paul, Gary F. Simons, and Charles D. Fennig (eds.). 2014. Ethnologue: Languages of the World, Seventeenth edition. Dallas, Texas: SIL International. Online version: <http://www.ethnologue.com>.

<sup>4</sup>Country Profile: Algeria. (2008, May). Retrieved May 2014, from <http://lweb2.loc.gov/frd/cs/profiles/Algeria.pdf>

<sup>5</sup>Hergibo P, Plowright R, Bradley C, Weatherley B, Gekkieva M, Unemori E and Conway K (2010) The impact of a host country's culture on immigrant language. Value in Health 13 (3) A18 (PM22).