The Translatability of *Fatigue* Across Languages

Mary C. Gawlicki, MBA; Barbara A. Brandt, MA; Shawn McKown, MA; Matthew Talbert, MA

—— Corporate Translations, Inc. East Hartford, CT, USA ——

OBJECTIVE

The objective of this study was to analyze the translatability of *fatigue* and to explore its interpretation across languages. *Fatigue* may have a profound impact on patient quality of life and ability to carry out work and other daily tasks, deeming it significant for measurement. Past translation projects have indicated that while the term is well understood, some variation in interpretation exists.

BACKGROUND

Previous research shows that *fatigue* is a versatile concept of measurement in patient questionnaires. As stated in a study by Varni and Limbers, *fatigue* can be a general or global symptom, in addition to being used to measure several domains, such as physical, mental and emotional *fatigue*. This study strongly recommends designing questionnaires so that it can be determined whether a patient's *fatigue* is the result of physical ailments or emotional stress [1].

Fatigue was a main concept used by Hann et al when developing a questionnaire to assess the adverse effects of cancer treatment. They found that *fatigue* is so subjective a concept, that it was difficult to use when aggregating patient data. Similar to the Varni and Limbers study, *fatigue* was considered to be a general or global symptom, very much like pain. To resolve this, the authors recommended assessing physical and mental *fatigue* separately from overall *fatigue*. This study also found a correlation between *fatigue* and *interference*, as patients reported *interference* with concentration, routine activities and leisure, as a result of their *fatigue*. This finding suggests that patients should be asked how *fatigue* specifically interferes with activities of daily living [2].

While developing a questionnaire to assess the impact of Parkinson's Disease, Martinez-Martin et al. felt *fatigue* should be measured in several dimensions. In addition to global *fatigue*, the dimensions included bodily *fatigue*, mental *fatigue*, and loss in motivation for activities. According to this study, it is inadvisable to use only single item global *fatigue* scales, as *fatigue* impacts many dimensions in a variety of ways [3].

Because *fatigue* is a significant symptom to patients suffering from many diseases, it is important to understand the translatability of *fatigue* and how it can be interpreted between different languages or even different disease sufferers. The Critical Path Institute focuses on the impact of *fatigue* for those who suffer from Rheumatoid Arthritis (RA). They state that *fatigue* may impact RA patients across many domains, whether physical, emotional or social [4].

METHODS

The back-translations of a Clinical Outcomes Assessment (COA) questionnaire in nine (9) languages were analyzed to assess the translatability of *fatigue*. The translated questionnaires then underwent cognitive debriefing with five (5) subjects per language. All subjects were asked to paraphrase *fatigue*, to confirm understanding of the concept. After initial paraphrase, subjects were probed specifically on *fatigue* to explain how the term differs from *tired* and *exhausted*.

Additionally, linguists were sent a follow-up questionnaire asking them to define *fatigue* when translated into their native language, in addition to providing some synonyms for *fatigue*.

LINGUISTIC VALIDATION

Linguistic Validation is a process that is conducted to confirm that a 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 could not be reasonably certain that the adapted instrument is both conceptually equivalent to the original and can also be 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. At that point, 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 expert; adaptations to the translation are made as needed. Once the final translation has been approved, it is debriefed among in-country native speakers of the language, with varying demographic and educational backgrounds, to check for conceptual equivalence and clarity.

RESULTS

After further analysis of all back-translated questionnaires, there appeared to be no issues when translating *fatigue*, as the term was translated with conceptual equivalency in all languages. Very few cognitive debriefing subjects misunderstood or incorrectly paraphrased *fatigue* in their language. Without probes or eliciting subjects, several comments were made, some of which are found in Table 1.

Table 1: Subject comments regarding *Fatigue*

Language	Comment
German-Germany	One subject said that the term "Ermüdung" *(fatigue)* should be replaced in almost all the questions by the term "müde" *(exhaustion/tired)*, because it is a different concept that matches the condition of fibromyalgia patients. The change was not made as the translators confirmed the current translation best reflects the source text.
Italian-Italy	One subject suggested rephrasing the phrase "pensando a quanto si è sentito affaticato oggi" (thinking about how *fatigued* you felt today). The change was not implemented as it was deemed to be stylistic preference for one subject only. Another Italian-Italy subject did not understand the Italian version of *fatigue*, and recommended revision to *exhausted or weary*. The change was not made as the translators confirmed the current translation best reflects the source text.
Spanish-US	Subject paraphrased "fatiga" *(fatigue)* as "ansias" *(anxiety)*. After clarification, the subject suggested using "agotamiento" *(exhaustion)*. The change was not made as the translators confirmed the current translation best reflects the source text.

RESULTS (Continued)

After initial paraphrase of *fatigue*, the very same subjects were then probed during cognitive debriefing and asked to provide their interpretation of *fatigue* as translated in their languages. Subjects were also asked if the translated word is distinctive from *tired*. Out of the 45 subjects debriefed, 7 described *fatigue* as chronic tiredness. 16 of the 45 subjects interpreted *fatigue* as *extreme tiredness*. Only 5 out of 45 subjects did not see a difference between *fatigue* and *tired* in their language, and 4 more subjects were unsure if *fatigue* was to refer to physical or mental adverse effects.

Results from the questionnaire further verified the observations made from back-translation analysis and cognitive debriefing results. Table 2 shows the results provided by the 13 linguists who responded to the questionnaire.

Table 2: Linguists' responses to the questionnaire

Language	How is fatigue defined in your language?	Please provide synonym(s) for fatigue as translated in your language
Danish	Tiredness	Tiredness
Dutch-1	The medical condition or symptom of being tired, lacking energy, losing interest, physical and mental, sometimes chronic	Tiredness
Dutch-2	A noun to express tiredness	Tiredness, Weariness, Exhaustion
French	State of general tiredness, lack of energy	Tiredness, Weariness
German-1	Fatigue is more than "tiredness", but not as much as "exhaustion." This is not necessarily by a lack of sleep, but rather by other factors, such as pain, stress, mood, worry.	Tiredness, Weariness, Exhaustion, Sleepiness
German-2	Weariness from exertion	Extreme tiredness, Exhaustion
Greek-1	Tiredness	Tiredness, Weariness, Exhaustion
Greek-2	Weariness, Tiredness	Tiredness, Weariness, Exhaustion
Japanese-1	To feel tiredness without remembering any cause to make the body tired.	Tiredness
Japanese-2	Tiredness	Extremely tired
Norwegian	Can be described as tiredness, exhaustion or complete depletion.	Exhaustion, Chronic tiredness
Portuguese	The term fatigue can have more than one definition (e.g. weariness, tiredness, exhaustion, languidness, languor, lassitude, listlessness, etc.)	Tired, Exhausted, Overwhelmed, Drained, Languid
Swedish	Exhaustion or tiredness	Weakness, Weariness, Tiredness

CONCLUSIONS

While translation of the term does not present significant difficulty, *fatigue* may have varied interpretations within and across languages. The results show that, in some languages, respondents questioned whether the term refers to mental or physical *fatigue*, and a number of respondents reported that *fatigue* and *tired* are not clearly distinguished. The results also show that *extreme tiredness* and *chronic tiredness* are not clearly distinguished. The lack of clarity between non-equivalent concepts merits further investigation. Therefore, a follow-up study on *fatigue* will further explore these problematic issues.

REFERENCES

1. Varni, James W., and Christine A. Limbers. "The PedsQL™ Multidimensional Fatigue Scale in Young Adults: Feasibility, Reliability and Validity in a University Student Population." Quality of Life Research 17.1 (2008): 105-14.

2. Hann, Danette M., Maxine M. Denniston, and Frank Baker. "Measurement of Fatigue in Cancer Patients: Further Validation of the Fatigue Symptom Inventory." Quality of Life Research 9 (2000): 847-54

3. Martinez-Martin, Pablo, Maria Jose Catalan, Julian Benito-Leon, Angel Ortega Moreno, Ivana Zamarbide, Esther Cubo, Nadeje Blercon, Victor Campos Arillo, Margarita Pondal, Gurutz Linazasoro, Fernando Alonso, Pedro García Ruiz, and Belen Frades. "Impact of Fatigue in Parkinson's Disease: The Fatigue Impact Scale for Daily Use (D-FIS)." Quality of Life Research 15.4 (2006): 597-606

4. "Critical Path Institute's Patient-Reported Outcome Consortium Rheumatoid Arthritis Working Group." Toward Consensus Development: Qualifying Endpoint Measures for Rheumatoid Arthritis Clinical Trials. Silver Spring, MD. 28 Aug. 2012. Meeting Minutes.

CORPORATE TRANSLATIONS
Driven by Definition