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# Developing the Coeliac Disease Assessment Questionnaire (CDAQ): An assessment of translatability

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## Introduction

The Coeliac Disease Assessment Questionnaire (CDAQ) is a new patient-reported outcome (PRO) measure being developed by researchers at the University of Oxford to assess health-related quality of life in adults with coeliac disease. The objective of this study was to carry out a translatability assessment of the CDAQ.

The purpose of a translatability assessment is to identify aspects of a PRO measure which do not have a direct linguistic translation or which may not be culturally appropriate in other languages. By identifying these issues during the development of a PRO measure, revisions can be made to the original wording in an attempt to minimise issues arising during future translation efforts.

It is increasingly common to assess the translatability of new PRO measures during their development as it is often necessary for these measures to be translated into a range of languages and adapted for different cultures, for example, if they are to be used in multi-national research studies.

## Methods

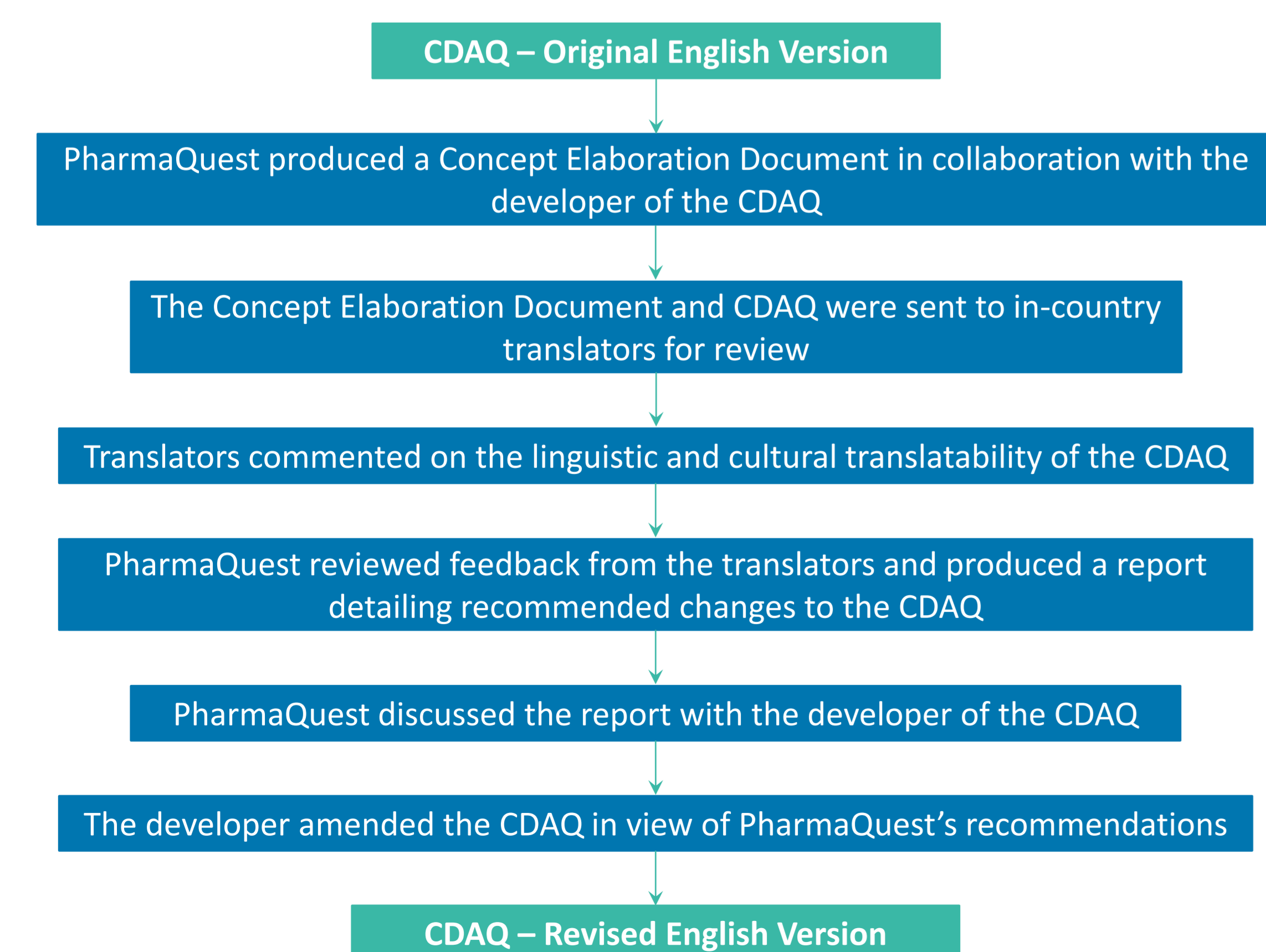
A translatability assessment of the CDAQ was undertaken in collaboration with PharmaQuest, a translation company specialising in the translation and linguistic validation of PRO measures.

Language-country combinations were selected to ensure broad coverage across continents and language families in order to maximise the likelihood of identifying and resolving major translation issues prior to the finalisation of the measure. The following language-country combinations were selected for inclusion in the assessment:

- Arabic (Egypt)
- Finnish (Finland)
- French (France)
- German (Germany)
- Simplified Chinese (China)
- Spanish (Argentina)

The key steps involved in the translatability assessment are shown in Figure 1.

Figure 1: Translatability assessment methodology



## Results

PharmaQuest recommended 64 changes to the English version of the CDAQ as a result of the translatability assessment. The changes were recommended to address a range of translatability issues, which can be broadly categorised as cross-cultural issues and grammatical issues. Table 1 shows the number of recommended changes by category. In total, it was recommended that changes were made to 40 of the CDAQ's 51 items.

The majority (97%, n=62) of recommended changes were implemented. Examples of translatability issues identified and revisions made can be found in Table 2. In addition to implementing changes recommended by PharmaQuest, seven additional amendments were made based on a review of the translators' comments, and to improve readability. In total, 69 amendments were made to 43 items.

Table 2: Categories of translatability issues identified, with examples

	Translatability issue category	Example – 'During the past 4 weeks, how often...'			
		Original item	Translators' comments	PharmaQuest's comments	Revised item
CROSS-CULTURAL	<b>Vocabulary issues</b> It was not possible to directly translate certain words into all of the target languages. For example, vocabulary equivalent to 'unwell', 'condition', and 'affected', did not have an equivalent in all of the target languages.	<b>Example: No direct translation for the word 'condition'</b> ...did you feel embarrassed or uncomfortable discussing your condition or dietary needs?	<b>Chinese Translator:</b> '... Direct translation of "condition" can't work in Chinese ... we say "disease condition" <b>Finnish Translator:</b> 'Please explain "condition" because translating it into Finnish is not easy ... there are many possible words'	'It may not be possible to directly translate "condition". In order to avoid any confusion or mistranslation we would suggest replacing "condition" with "coeliac disease".'	...have you felt embarrassed or uncomfortable discussing your coeliac disease or dietary needs?
	<b>Semantic differences</b> Certain words and phrases were identified as problematic as the same word or phrase has a different meaning in some or all of the target languages. For example, translations of 'travelling to work', 'out of the house', and 'struggle financially' would not necessarily be conceptually equivalent to the source version.	<b>Example: 'Travel' has a different meaning in other languages</b> ...have you been unable to travel due to being unwell (for example, travelling to work, the shops, or on holiday)?	<b>Arabic Translator:</b> "'Travel" is not usually used for going to work or going to the shops here' <b>Finnish Translator:</b> 'Travel – difficult to translate naturally, because the normal verb for "travel" in Finnish implies longer trips, not a short bus trip to the workplace/ commuting to work'	'The word "travel" would not normally be used for shorter or more routine trips in many languages, and this could cause confusion at the translation stage. As this would have to be rendered using two verbs it may be best to also use "to go" and "to travel" in the source English in order to have a smoother translation process.'	...have you been unable to travel because you were ill (for example, going to work or the shops, or travelling on holiday)?
	<b>Sociocultural differences</b> One concept referenced within the source version was unfamiliar to all of the target cultures. The concept was referenced in one item and referred to the adoption of a gluten-free diet for weight loss purposes.	<b>Example: An unfamiliar concept</b> ...have you felt that people misunderstood your condition or dietary needs (for example, referring to your gluten-free diet as a personal choice)?	<b>Arabic Translator:</b> '... the fact that some people follow a gluten free diet to lose weight would not be understood from this phrase. This kind of diet is not very common in Egypt...' <b>Finnish Translator:</b> '... if one uses a direct translation of "personal choice" in Finnish it might not imply exactly what you want to say'	'"Personal choice" may be difficult to translate, especially in countries where the concept of using a gluten-free diet to lose weight may not have been considered. It may be better to say "personal preference" or expand on the item and say "referring to your gluten free diet as a personal choice, rather than a health-related decision".'	...have you felt that people misunderstood your coeliac disease or dietary needs (for example, thinking you follow a gluten-free diet as a personal choice rather than for your coeliac disease)?
GRAMMATICAL	<b>Structural issues</b> The structure of several items was problematic due to issues such as missing verbs, redundant words and incomplete sentences.	<b>Example: Item missing a verb</b> ...did you have difficulties with work-related tasks?	<b>French Translator:</b> 'Could "with" be replaced by a verb? (performing, for example)' <b>Simplified Chinese Translator:</b> '... Direct translation of "have difficulties with work-related tasks?" can't work here. It is better to change it to "have difficulties in doing work-related tasks?"...'	'The lack of verb in this question has raised an issue with two different language groups, however this can be resolved easily.'	...have you had difficulties carrying out work-related tasks?
	<b>Tenses</b> Inconsistent tenses were used across items. Some items were written in the completed past tense, e.g. 'did you feel down or in low spirits?', while others were written in the continuous past tense, e.g. 'have you felt annoyed or frustrated about the cost of gluten-free substitute foods?.'	<b>Example: Inconsistent tenses</b> ...did you feel as though you might appear to be making a fuss about your dietary needs?	<b>German Translator:</b> 'Tenses in the English version tend to jump between perfect and past – for consistency perhaps one tense should be applied throughout.'	'The tense used in the questionnaire changes throughout, and for consistency we would recommend that the tense be unified throughout.'	...have you felt as though you might appear to be making a fuss about your dietary needs?
	<b>Wording-concept mismatch</b> Item wording did not accurately or adequately express the underlying concept in the source version for several items. This was due to vague wording or improper use of vocabulary.	<b>Example: Improper use of the phrase 'Eating out'</b> ...did you avoid eating out (for example, at a friend's house, restaurant, or café)?	<b>Finnish Translator:</b> 'The direct translation of "eating out" in Finnish refers only to eating at a restaurant, a bar, or a café etc. (= a public place), not at a friend's house. They include a friend's house, one has to use another expression.'	'Although "eating out" does not include eating at someone else's house, it is included in the examples which will prompt the respondent to consider it. "Eating-out" is quite a complicated term to translate, and to avoid confusion it may be best to say "going out to eat".'	...have you avoided going out to eat (for example, at a friend's house, restaurant, or café)?

Table 1: Recommended changes, by category of translatability issue

Translatability issue	Sub-category	No. of recommended changes
Cross-cultural issues	Vocabulary issues	22
	Semantic differences	4
	Sociocultural differences	1
Grammatical issues	Structural issues	7
	Tenses	28
	Wording-concept mismatch	2
<b>Total no. of recommended changes</b>		<b>64</b>
<b>Total no. of items with changes recommended</b>		<b>40</b>

## Conclusions

Assessing the translatability of the CDAQ as part of the development of the measure has resulted in an improved PRO. When the CDAQ is translated in to other languages, there will be fewer translation issues as a result of the amendments made. As well as reducing the likelihood of translation issues, the English source version has improved as a result of these amendments. Item reduction and scale generation is currently underway.