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Translation, Cross-Cultural Adaptation and Linguistic Validation of the FACE-Q Questionnaire for Brazilian Portuguese

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Abstract

Background Patient-reported outcomes measurement instruments (PRO) are a good way to measure results after aesthetic procedures. FACE-Q is a systematized and standardized PRO tool and was not available in Portuguese.

Methods This cross-sectional study included four stages: translation of FACE-Q, backtranslation, testing in patients who underwent facial aesthetic procedures and review of the questionnaires between September and December, 2018. Guidelines merging WHO and ISPOR's rules were followed.

Results Translation was conducted by two translators, resulting in two versions, translation A and translation B, which were reconciled to generate the first Portuguese version. Reconciliation showed inconsistencies between TA and TB in 63% ($n = 222$) of the 353 questions, which were solved by maintaining TA in 25% of cases ($n = 87$), TB in 27% and a new version in 11% ($n = 40$) of the questions. Backtranslation showed written differences with the original FACE-Q in 64 (22.7%) of the 353 question, but only one case of semantic difference, which was corrected resulting in production of the second Portuguese version. Seven patients with a mean age of 35.8 years were interviewed to assess the difficulty in understanding the questionnaires. Four patients had no or minor difficulties understanding the questionnaire, and the other three had difficulties and suggested changes that led to a third Portuguese version. The third version was reviewed for grammar and spelling resulting in the final Portuguese version.

Conclusion A Brazilian Portuguese version of the FACE-Q questionnaire was obtained maintaining equivalency with the source instrument. This will allow cross-cultural research and comparison of results between different studies.

Level of Evidence V This journal requires that authors assign a level of evidence to each article. For a full description of these Evidence-Based Medicine ratings, please refer to the Table of Contents or the online Instructions to Authors www.springer.com/00266.

Keywords Facial cosmetic surgery · Aesthetic surgery · Outcomes · Quality of life · Patient satisfaction · Patient-reported outcomes

Introduction

Facial aesthetic procedures, both surgical and non-surgical, are among plastic surgeons' most frequently performed procedures, and their main indicators of success are patient satisfaction and impact on quality of life [1]. Evaluation of the results of these procedures should consequently consider not only the physician's opinion but also the patient's perspective [1–3].

At the same time, evidence-based medicine has led to the need for validated instruments that permit comparison of results from different authors [4].

The FACE-Q questionnaire is an instrument for recording patient-reported outcomes (PRO), permitting systematized and standardized assessments based on patient statements [2, 5]. This tool was developed in English and consists of several scientifically validated

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independent assessment scales which measure the results of a range of facial procedures [2, 6–9]. The questionnaire can be applied before and after any procedure performed on the face, such as lipofilling, forehead lifting, rhytidoplasty, rhinoplasty and mentoplasty, as well as injections of botulinum toxin and fillers and cosmetic procedures [10–25]. However, it must be applied in patient's native language, and this consequently requires translation, cultural adaptation and linguistic validation [26, 27].

Because Brazil leads the world in the number of aesthetic surgical procedures performed on the face and takes third place for non-surgical procedures [28], the country presents a broad range of possibilities for using this questionnaire as a tool for research and improvement in results.

Objective

The objective of this project was the translation, cultural adaptation and linguistic validation of the FACE-Q questionnaire for Brazilian Portuguese.

Material and Methods

Ethical Considerations

The study was approved by the institutional review board and authorized by the team which developed the FACE-Q questionnaire as well as the association that manages its academic and commercial distribution. All participants provided informed consent in writing.

FACE-Q: The Instrument

FACE-Q is a PRO questionnaire applied in the clinical or research environment to collect responses directly from patients. It quantifies aspects related to quality of life and/or variables of the outcome (for example, satisfaction, symptoms and adverse effects) from the patient's point of view. PRO instruments are one way to quantify how patients perceive their health and the impact of procedures on their quality of life [29].

The entire instrument is comprised of 353 questions, divided into 43 scales within four conceptual frameworks: appearance appraisal scales, process of care scales, quality of life scales and adverse effects checklists, as shown in Table 1 [2].

Stages of Translation

The translation, cultural adaptation and linguistic validation of the full questionnaire took place in four stages (Fig. 1) from September 2018 to December 2018,

following the guidelines of good practices [26, 27]. After each stage was completed, a report was produced, highlighting the process, any difficulties encountered and the solutions which were implemented.

The focus of the authors as well as the translators was to maintain equivalence: [26]

(a) Semantic equivalence: ascertain whether the translated words have the same meaning.
(b) Idiomatic equivalence: formulate equivalent expressions in the target version, avoiding difficulties related to translating colloquialisms and idiomatic expressions.
(c) Empirical equivalence: replace words in the questionnaire with other similar terms which are used in our culture of origin.
(d) Conceptual equivalence: observe whether the words have different meanings between cultures, replacing unsuitable terms.

Stage 1: Translation

The questionnaire was translated from English to Brazilian Portuguese by two translators working independently who were native speakers of Portuguese and fluent in English; one had experience translating in the area of health.

The translators were instructed to translate using simple and consistent terminology rather than literal translations and were encouraged to provide feedback about the difficulties they encountered. At the end of the process, two versions were produced: translation A (TA) and translation B (TB) [27].

The two translations were analysed by three of the authors of the project and summarized into a consensus version in Portuguese based on elements of the two initial versions, which produced the V1 version.

Stage 2: Backtranslation

In the backtranslation stage, the consensus V1 version was translated from Portuguese back to English by a third translator native in American English, fluent in Brazilian Portuguese and with experience translating in the area of medicine. This process generated the backtranslation version (BT1).

The authors and one of the developers of the original questionnaire then compared the original version in English with BT1 to identify potential semantic differences between the two versions. This produced some modifications to V1 and generated a second version in Portuguese, V2.

Table 1 FACE-Q scales

| Appearance appraisal scales	Quality of life scales	Adverse effect checklists	Process of care scales
Appraisal of area under chin	Appearance-related psychosocial distress	Recovery early symptoms	Satisfaction with information
Appraisal of lines: between eyebrows	Expectations	Adverse effects: skin	Satisfaction with medical team
Appraisal of lines: crow's feet	Early life impact treatment	Adverse effects: forehead, eyebrows and scalp	Satisfaction with office staff
Appraisal of lines: forehead	Satisfaction with outcome	Adverse effects: eyes	Satisfaction with doctor/surgeon
Appraisal of lines: lips	Psychological function	Adverse effects: nose	Satisfaction with decision
Appraisal of lines: marionette	Social function	Adverse effects: lips	
Appraisal of lines: nasolabial folds		Adverse effects: lower face and neck	
Appraisal of lines: overall			
Appraisal of upper eyelids			
Appraisal of lower eyelids			
Appraisal of the neck			
Satisfaction with cheekbones			
Satisfaction with cheeks			
Satisfaction with chin			
Satisfaction with eyelashes			
Satisfaction with eyes			
Satisfaction with facial appearance			
Satisfaction with forehead and eyebrows			
Satisfaction with lips			
Satisfaction with lower and jawline			
Satisfaction with nose			
Satisfaction with nostrils			
Satisfaction with skin			
Patient-perceived age visual analogue scale			
Ageing appraisal			
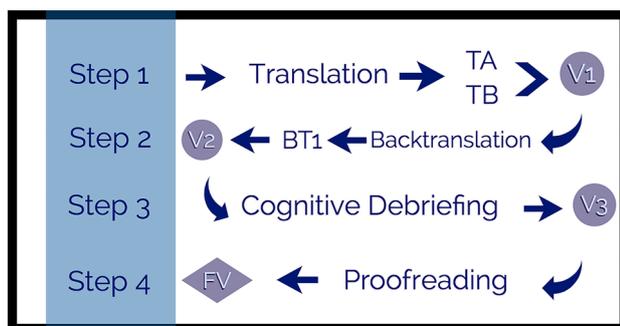
Fig. 1 Flow chart of the process of translation, cultural adaptation and linguistic validation. *TA* translation version A, *TB* translation version B, *V1* first Portuguese version, *BT1* backtranslation version, *V2* s Portuguese version, *V3* third Portuguese version, *FV* final Portuguese version

Stage 3: Patient Testing

The V2 version was used for a cognitive interview and debriefing in seven patients (convenience sample) who had undergone a facial cosmetic procedure (surgical or non-surgical), were between 18 and 60 years of age and were native speakers of the target language (Portuguese).

- Cognitive interview: individual interviews were conducted to assess the patient's understanding of the questionnaire and to confirm his or her interpretation of each of the 353 items.
- Debriefing: During the interview, each item that the patient expressed doubt about (with regard to the question or the answer) was reviewed. All of these items were noted, as well as the patients' suggestions

for terms that were more understandable within the context of the question.

The authors evaluated all items that generated questions among the patients, along with their suggestions, and produced a new version entitled V3.

Stage 4: Review

The V3 version was reviewed for writing and agreement by a native Portuguese-speaking editor with proficiency in English to eliminate any misspellings and to align any possible errors of concordance between terms. The adjustments were reviewed by the authors and produced the final version (VF).

Results

The translation stage was conducted by two professional translators without knowledge of the purpose of the study; one of these was a healthcare professional (nurse). The translators reported no difficulties translating any of the items in the questionnaire. Versions TA and TB were reconciled while preserving idiomatic, semantic, cultural and conceptual equivalence to generate version V1. This version utilized colloquial language and was easy for the target population to understand.

This process indicated inconsistencies between TA and TB in 63% (*n* = 222) of the 353 questions (Table 2), for example, the original question "How angry your marionette lines make you look?" was translated in version TA as "*Suas linhas de marionete fazem você parecer raivosa/brava?*", while TB was "*Quão bravo suas linhas de marionete fazem você parecer?*" During the conciliation process, 25% (*n* = 87) of these questions from TA were maintained and 27% from the TB version were maintained or changed minimally. In 11% (*n* = 40) of the questions, a new version of the translation was chosen. For example, TA translated the original question "How your neck looks when you grimace?" as "*Qual a aparência do seu pescoço quando você franze o rosto?*", while TB produced "*Como seu pescoço parece quando você faz careta?*" The new version of the text was "*Qual a aparência do seu pescoço quando você faz caretas?*".

The titles, statements and options for responses were also examined for inconsistencies in wording between the two translations and to reach a consensus on the best version for each case.

The V1 consensus version in Portuguese was back-translated into English to produce the BT1 version, which was reviewed by the team of three plastic surgeons and the team that created the original questionnaire to identify errors in understanding, translation or inaccuracy when compared with the source instrument. Of the 43 questionnaire titles, 16 were written differently, while seven of the 43 statements were also written differently, but none of these cases involved a semantic difference.

There were written differences in 64 (22.7%) of the 353 questions, but all retained the same meaning except in one item which contained a lack of semantic equivalence in recovery early symptoms questionnaire; in this case, the original word "stinging" was translated in V1 as "*ardour*" and backtranslated as "heat". After analysis by the team and the translator, a new translation was provided: "*sensação de picadas (pontadas)*", which led to a new version of the questionnaire in Portuguese, V2 (Table 3).

During the patient testing stage, seven individual interviews were conducted with patients who underwent facial procedures to assess difficulty in understanding the questionnaire and to confirm the participants' interpretations of all items, registering all questions, alternatives and suggestions proposed by the interviewee in writing. The interviews lasted between 43 and 60 min (mean: 51 min). The mean patient age was 35.8 years; three patients had no difficulty understanding or interpreting the questionnaire, one of the participants expressed difficulty understanding one item but this was easily clarified and did not lead to changes, and three patients had difficulty understanding one or more questions and suggested alternatives or changes which are presented in Table 4.

The authors analysed the results from the interviews as well as the alternatives proposed by the patients. These were used to adjust the V2 version and led to a third version of the questionnaire (V3).

After checking grammar and spelling, the questions were adapted to include correct verb conjugations and for gender/number of adjectives, since in Portuguese these may be singular or plural ("*Quão jovem sua testa se parece?*" or "*Quão bonitos seus lábios ficam quando você sorri?*") or masculine or feminine (ex. "*quão velho (a)…*").

A final version (VF) in Brazilian Portuguese was produced which preserved equivalent concepts and was easy for the target population to understand. This version can be obtained for academic purposes, free of charge, at http://qportfolio.org/face-q/aesthetics/.

Conclusion

After the translation, adaptation and linguistic validation of the complete FACE-Q questionnaire to Brazilian Portuguese, we obtained a version with the same line of reasoning in the statements and affirmations which maintained equivalency with the source instrument and will permit

Table 2 Reconciliation process between translation A and translation B by questionnaire

Questionnaire	Total number of questions	Total different questions	Maintained TA	Maintained TB	New/mixed solution
Adverse effects: cheeks, lower face and neck	15	10	5	4	1
Adverse effects: eyes	6	3	3	0	0
Adverse effects: forehead, eyebrows and scalp	12	9	6	0	3
Adverse effects: lips	8	5	4	1	0
Adverse effects: nose	4	3	2	1	0
Adverse effects: skin	10	2	0	1	1
Appraisal of area under chin	5	2	1	0	1
Appraisal of lines: between eyebrows	7	5	2	1	2
Appraisal of lines: crow's feet	7	7	3	1	3
Appraisal of lines: forehead	7	2	1	1	0
Appraisal of lines: lips	6	3	3	0	0
Appraisal of lines: marionette	7	4	1	3	0
Appraisal of lines: nasolabial folds	5	2	0	2	0
Appraisal of lines: overall	10	2	1	1	0
Appraisal of lower eyelids	7	3	2	1	0
Appraisal of the neck	10	4	1	1	2
Appraisal of upper eyelids	7	3	1	1	1
Satisfaction with cheekbones	10	7		7	0
Satisfaction with cheeks	5	2	0	2	0
Satisfaction with chin	10	6	2	3	1
Satisfaction with eyelashes	7	7	1	3	3
Satisfaction with eyes	7	6	0	5	1
Satisfaction with facial appearance	10	9	0	9	0
Satisfaction with forehead and eyebrows	6	4	0	4	0
Satisfaction with lips	10	8	2	5	1
Satisfaction with lower face and jawline	5	5	0	3	2
Satisfaction with nose	10	8	0	6	2
Satisfaction with nostrils	5	2	0	2	0
Satisfaction with skin	12	11	0	10	1
Satisfaction with information	10	7	2	5	0
Satisfaction with medical team	10	5	2	0	3
Satisfaction with office staff	10	9	7	1	1
Satisfaction with doctor/surgeon	10	8	5	3	0
Patient-perceived age visual analogue scale	1	1	1	0	0
Ageing appraisal	7	6	3	2	1
Appearance-related psychosocial distress	8	5	3	2	0
Early life impact of treatment	12	2	0	0	2
Expectations	8	7	5	0	2
Psychological function	10	8	7	0	1
Recovery early symptoms	17	8	4	2	2
Satisfaction with decision	6	4	3	0	1
Satisfaction with outcome	6	4	1	1	2
Social function	8	4	3	1	0
Total	353	222	87	95	40
Percentages (%)	100	63	25	27	11

TA translation version A, *TB* translations version B

Table 3 Different meanings in one item of recovery early symptoms scale are shown in backtranslation

Original FACE-Q questionnaire	V1	BT1	V2
Stinging	*Ardour*	Heat	*Sensação de picadas (pontadas)*

V1 first portuguese version, *BT1* backtranslation version, *V2* second portuguese version

Table 4 Difficulties in understanding the questions, suggestions presented by patients during test phase and adopted solution

Patient	Difficulty or suggestion	Changes/solution
Patient 1 (30 years old)	No difficulties	No changes needed
Patient 2 (24 years old)	No difficulties	No changes needed
Patient 3 (25 years old)	Item D in the Adverse Effects: Nose questionnaire—difficulty understanding the question: "*Presença de caroços ou cavidades não naturais no nariz*?"	Easily clarified—No changes needed
Patient 4 (36 years old)	Item E in the Adverse Effects questionnaire: eyes—Suggested replacing "*ocos*" with "*afundados*" in the question "*Seus olhos parecem ocos?*"	An explanation was added: "*Seus olhos parecerem ocos (fundos, encovados)?*"
Patient 5 (37 years old)	Suggested replacing the statement "*Com o seu… em mente*" with "*Pensando em seu…*" in all questionnaires	Change as suggested
	Item F in the adverse effects questionnaire: cheeks, lower part of the face and neck: difficulty understanding "*como suas cicatrizes se sentem*"	Change: "*Como você sente suas cicatrizes*"
	Evaluation of the under-chin area questionnaire. Difficulty understanding the under-chin area described in the statement	Change: an explanation was added: "*(papada)*"
	Item G in the satisfaction with the medical team questionnaire, difficulty understanding the question "*Foram minuciosos?*"	An explanatory synonym was added: "*Foram minuciosos (detalhistas)?*"
Patient 6 (48 years old)	Difficulty understanding the question "*quantos anos…*" in various questionnaires	Change: "*Quão velho(a)…*"
Patient 7 (60 years old)	No difficulties	No changes needed

cross-cultural research and comparison of results between different studies.

Discussion

The FACE-Q is a questionnaire designed to assess satisfaction with aesthetic procedures (surgical and non-surgical) performed on the face, based on patient-reported outcomes (PRO) [2, 5, 18]. This questionnaire should be applied in the original language in which it was created, or in versions that have already been translated, culturally adapted and linguistically validated, as has been done for Italian, French and Chinese [24, 30, 31].

The translation followed the guidelines (qportifolio.org) that merge the WHO's rules [32] with those of ISPOR; [27]

we also utilized Beaton's guidelines [26] for cultural adaptation to Brazilian Portuguese.

Some differences between the WHO and ISPOR guidelines were notable: for example, WHO calls for only one translator in the first stage, while ISPOR requires two. There is also a difference in the number of participants in the cognitive interview during the patient testing stage; ISPOR suggests five–eight patients, while WHO suggests cognitive evaluation of the questionnaire in ten patients [27, 32].

Following the guidelines in stage 1, we obtained two translations (TA and TB) from two different translators. In this process, we noted that one of the translators created a more literal version (TA) with fewer semantic adjustments, while the other translator produced a conceptual translation (TB), adapting terms to Portuguese that retained the

meaning of the original version. Together, three of the authors were able to create a consensus version (V1) that combined the faithfully translated terms from TA with the semantic equivalence of TB.

Our process used the same methodology as other studies that translated the FACE-Q [24, 30, 31, 33], focusing on a translation that maintains the original semantics and idea of the questions while avoiding literal translation to facilitate patient understanding.

In stage 2, differences were found in 22.7% of the 353 questions (n = 64). However, the authors of this article and an author of the original article found the backtranslation to be conceptually accurate for the most part except for one item, which contained a different meaning from the original version (Table 3). This demonstrates the semantic equivalence of the V1 version, with minimal adaptation for the V2 version, as well as the importance of the involvement of authors in the process.

The V2 version was tested in seven patients who were or would be subjected to surgical and non-surgical facial procedures. This version was applied in a face-to-face assessment to evaluate the patients' reaction to questions, as well as possible questions. The cognitive interview stage is an essential part of the cultural adaptation process in which the target population participates in the process, expressing difficulties and suggesting alternatives for simpler understanding. In this phase, technical terms are replaced with more easily understood terms that maintain the same semantic relationship. Some questions were made clearer for the patients after adaptations or adding explanatory synonyms, as in the case of "olhos ocos" becoming "olhos ocos (fundos, encovados)" and "área sob o queixo" being adjusted to "área sob o queixo (papada)".

Finally, this version was revised again to adjust verb tenses in statements and affirmations as well as the number and gender of adjectives, which was essential for proper understanding of some questions, as mentioned in the results section. Other translations and validations of the same questionnaire (FACE-Q) as well as the BODY-Q required similar adaptations to ensure adequate agreement with the original text [30, 33, 34].

The study published by Radulesco et al. [31] only translated the areas related to rhinoplasty, Tan et al. [24] translated the areas related to orthognathic surgery, and an Italian team translated the domains related to rhinoplasty and satisfaction with facial appearance [4, 30, 35]. However, the questionnaire had not yet been translated into Brazilian Portuguese, whose speakers undergo a large number of facial aesthetic procedures each year. We believe this instrument is an important tool for research that will be useful in private practice as well as the academic sphere.

At the end of this process, we perceived that this project is much more involved than a literal translation, since the goal is to adapt the central idea of the questions to the target language, making the adjustments necessary to ensure that any patient speaking that language can interpret the questionnaire alone without questions, even remotely, responding reliably and maintaining reproducibility of the instrument.

Compliance with Ethical Standards

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