

BRAZILIAN TRANSLATION AND ADAPTATION OF THE *QUESTIONNAIRE D'ALIMENTATION*

Tradução e adaptação brasileira do Questionnaire D'alimentation

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ABSTRACT

Purpose: to translate the French language instrument "*Questionnaire D'Alimentation*" to Brazilian Portuguese and culturally adapt it for adolescents. **Methods:** the translation was based on a protocol that consisted of translation to Brazilian Portuguese (by a professor with a Literary Arts degree and a Doctor of Dental Surgery, both fluent in French and Brazilian Portuguese); back-translation into French; revision by a Committee of specialists (two translators, one native and one sworn translator, and two university professors, one being a Doctor of Dental Surgery and a Speech Therapist) and cultural equivalence (pre-test). The version used in the pre-test consisted of 26 questions with five possible responses (*5-Likert*), distributed in five domains (Food-Mastication, Habits, Meats, Fruits and Vegetables). The pre-test and test-retest was performed with a sample of 20 adolescents (10 boys/10 girls) from public schools of Piracicaba (Brazil). At this stage, the alternative "I did not understand" was added to each question in order to identify those that were not understood. Test-retest reliability was assessed for each domain using intra-class correlation coefficients (ICCs). **Results:** in the pre-test, an excellent comprehension of the instrument was observed; in test-retest, ICCs ranged from 0.45 to 0.81 (moderate to excellent agreement). **Conclusion:** the Portuguese version of the *Questionnaire D'Alimentation* has shown to be easy to understand by Brazilian adolescents and useful in the evaluation of the masticatory function and feeding or swallowing disorders that may affect food intake.

KEYWORDS: Translating; Mastication; Food; Adolescent

■ INTRODUCTION

Mastication is an essential part of the digestive process, because this is when food is fragmented into smaller particles and mixed with saliva, making it possible to swallow and digest¹. During the mastication process, contraction of various muscle groups occurs, generating pressure between the tooth cusps, which breaks down the food². The condition of the dentition, such as the number of teeth present and in contact, the size of functional areas, and the

degree of malocclusion, as well as the masticatory muscles functioning, may influence the quality of an individual's masticatory function^{3,4}. Moreover, eating behavior may influence the amount of food taken per mouthful, then altering the rate of digestion and absorption⁵.

With the aim of evaluating quality of masticatory function, the majority of studies found in the literature used objective evaluation methods, such as measurements of performance and efficiency^{6,7}. It is believed that one type of method does not exclude the other, and an overall evaluation of the subject is desirable, particularly when it concerns the evaluation of individuals who are undergoing dental and/or orofacial treatment or who present feeding and/or swallowing disorders, as a way of verifying the impact of certain dental conditions or orofacial motricity have on masticatory quality.

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Conflict of interest: non-existent

Previous studies aimed to evaluate masticatory ability by means of questionnaires related to his/her masticatory capacity, food preference and consistency⁸⁻¹⁰. Some have used the Visual Analog Scale (VAS) to make a more generalized evaluation, in which the subject attributes a visual score that varies from 0 to 10 to questions such as “How well do you chew?”, or “Do you feel any discomfort when you chew?”^{6,8,11}. A simple evaluation has also been found, such as “Are you satisfied with your chewing capacity?”, with dichotomous YES/NO responses¹². A questionnaire (*Questionnaire D’Alimentation*) was developed for French speaking subjects who wore partial/complete dentures living in Montreal, Quebec^{13,14}. This questionnaire consists of 38 questions, with 29 questions being specifically related to the frequency of and difficulty chewing different types of foods during the two weeks before the evaluation.

Difficulty with mastication is the most probable mechanism by which poor dental health conditions or feeding/swallowing disorders may affect food intake, particularly foods with greater consistency, thereby leading to inadequate intake and having a negative impact on nutritional status. A previous study has shown that the higher the number of teeth affected by caries, the greater the chance of dissatisfaction with mastication¹². It was also observed that subjects who have masticatory problems also present a higher DMFT (number of decayed, missing and filled teeth), fewer functional teeth, and orthodontic treatment need, both in adults and children^{9,12,15}. To measure chewing ability in relation to diet, it is important to gain an understanding of how the subject prepares and chooses their foods.

To our knowledge, there are very few instruments with the aim of evaluating chewing ability specifically. Thus, the aim of the present study was to translate and cross-culturally adapt the instrument *Questionnaire D’Alimentation* for Brazilian

adolescents, thereby obtaining a questionnaire that can be used to evaluate the quality of masticatory function in Brazilian Portuguese language.

■ METHODS

This study was approved by the Research Ethics Committee of the Piracicaba Dental School, University of Campinas (UNICAMP), Protocol Number 108/2012. Those responsible for the subjects signed the Informed Consent. It is important to point out that before the translation processes began, the authors of *Questionnaire D’Alimentation* were contacted (JF).

The *Questionnaire D’Alimentation* consists of 38 questions, and the domains “Food-Mastication”, “Habits”, “Meats”, “Fruits” and “Vegetables” comprise 29 questions specifically related to the frequency of and difficulty with mastication of foods of different types of consistency, in the two weeks preceding the subject’s evaluation. The remaining nine questions relate to diet specificities (for example, appetite, allergies, reflux, nausea, and other). Each question offers five possible response indicators (*5-Likert*), according to the content of the question, whether it is about the intensity of the difficulty, (domain “Food-Mastication”) or about the frequency of consuming a certain food (other domains). In addition, the domains “Meats”, “Fruits” and “Vegetables” also present an alternative to be checked (not applicable - N/A) if the subject does not usually eat these foods.

Translation and cross-cultural adaptation of the *Questionnaire D’Alimentation* were performed in the following steps, proposed by Guillemin, et al.¹⁶: initial translation, back-translation, revision by a committee of specialists, and cultural adaptation (Figure 1).

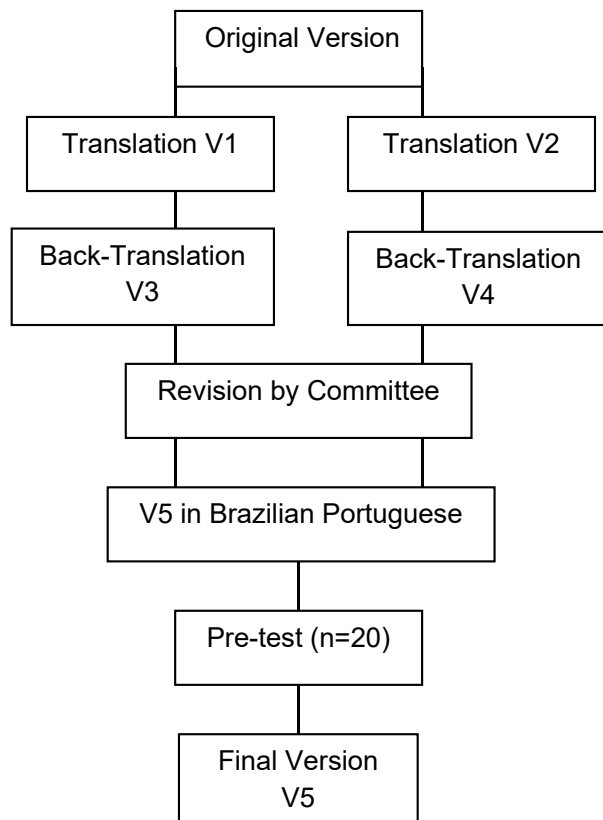


Figure 1 – Stages of the processes of translation and cultural adaptation of the instrument Questionnaire D'Alimentation

Initial Translation

The version in French (original questionnaire) was initially translated to Brazilian Portuguese by a Professor with a degree in Literary Arts, as well as a Doctor of Dental Surgery and University Professor (RIF), both fluent in French and Brazilian Portuguese, and aware of the aim of this study, emphasizing conceptual translation rather than literal translation (versions in Brazilian Portuguese V1 and V2).

Back-translation

The versions in Brazilian Portuguese V1 and V2 went through back-translation into French, done by two native French teachers, who did not participate in the first stage of translation, and who had no access to the original instrument, thus obtaining the translations in French V3 and V4. The purpose of back-translation is to compare the back translated version with the original instrument.

Revision by a Committee of Specialists and Cultural Adaptation

The versions V1 and V2 in Brazilian Portuguese and the Versions V3 and V4 in French, as well as the original instrument, were submitted to a Reviser Committee formed by two French language professors (one being native and the other a certified translator), a Speech Therapist – University Professor (RCB) and a Doctor of Dental Surgery - University Professor (PMC). This stage consisted of the following aspects¹⁷:

- Semantic equivalence: This refers to the meaning of words; words that do not have a literal translation with a similar meaning were translated into terms in Brazilian Portuguese that had an equivalent meaning;
- Idiomatic equivalence: The formulation of colloquial expressions equivalent to those in the original language;
- Cultural equivalence of each question: experiences undergone within the cultural context of the society.

In this stage, the cultural adaptation was performed, based on the target population of the research; that is, Brazilian adolescents who were not denture wearers. Therefore, three questions related to denture wearing were excluded from the domain "Habits" (questions 19, 23 and 24). Thus version V5 in Brazilian Portuguese was obtained.

Cultural Equivalence of the Instrument

Finally, to evaluate the cultural equivalence of the instrument, the version V5 in Brazilian Portuguese (Quality of Masticatory Function Questionnaire - QMFQ) was self-applied by 20 adolescents¹⁸ from public schools of Piracicaba (SP, Brazil), 13 (n=12) and 14 years of age (n=8), of both genders (10♂/10♀), selected by means of a draw from all authorizations received, under the supervision of two researchers (MHM and TSB). In version V5 the option "I didn't understand" was added as an alternative response to all questions, as a way of identifying questions that had not been adequately understood. The percentage of "I didn't understand" responses had to be lower than 15% so that the instrument could be considered culturally adapted¹⁹. If the established limit was exceeded, the instrument would have to be submitted to a new cultural adaptation process, until the item "I didn't understand" had not been chosen in any question by 85% or more of the adolescents.

For assessment of test-retest reliability, the same volunteers were invited to fill out a second copy of the questionnaire one week later for Intraclass Correlation Coefficient (ICC) determination using the BioEstat 5.3 (Mamirauá, Belém, PA, Brazil) statistical software package.

■ RESULTS

Initial Translation and back-translation

Each version in Brazilian Portuguese (V1 and V2) was independently re-translated into French (*back-translation*) by two native French teachers, who were not aware of the purpose of the work, thereby giving rise to the origin of versions V3 and V4 in French.

Revision by a Committee of Specialists

The versions V1 and V2 in Brazilian Portuguese and the versions V3 and V4 in French, as well as the

original instrument were submitted to a Reviewing Committee. Figure 2 presents the questions in the original version and their translations, as well as a synopsis of the decision making process relative to specification of the first and second version in Portuguese (V1 and V2) made by the committee. For some questions, the translations made by both translators were identical, or practically identical; for others, one or other version was prioritized; moreover, in other questions, the option taken was to combine the two versions, generating a version of consensus, with the purpose of obtaining greater clarity of the item.

Question	Original Version		Version	Committee
	Domain	Terms		
10	Food-mastication	La grosseur d'un dé à coudre	V2	Beef/small pieces
11	Food-mastication	La grosseur d'un dé à coudre	V2	Small pieces
12	Food-mastication	Viande hachée	V1≈V2	
13	Food-mastication	Croquer	V3	Bite
14	Food-mastication	Croquer	V3	Bite
15	Food-mastication	Croquer	V3	Bite
16	Food-mastication	La pelure des fruits	V1≈V2	
17	Food-mastication	Pain croûté	V3	Bread with a hard crust
18	Food-mastication	Noix et des graines	V1	
19	Habits	L'une ou l'autre de vos prothèses	V1	Your denture
20	Habits	Boire en mangeant	V3	Drink while eating
21	Habits	La sauce a vos aliments	V1	
22	Habits	Trempé	V1	
23	Habits	Prothèses	V1	Denture
24	Habits	Prothèses	V1	Denture
25	Habits	Bien mâchés	V1	
26	Meats	La grosseur d'un dé à coudre	V3	Small pieces
27	Meats	Hacher	V3	Shred
28	Meats	La grosseur d'un dé à coudre	V3	Small pieces
29	Meats	Hacher	V3	Shred
30	Meats	Metre la viande em purée	V3	Cook it until it falls apart
31	Fruits	Croqué	V1	Bit
32	Fruits	D'enlever la pelure	V1≈V2	Peel
33	Fruits	Couper em quartiers	V1≈V2	
34	Fruits	La grosseur d'un dé à coudre	V2	Small pieces
35	Fruits	Mettre em purée	V1	Mash or grate
36	Vegetables	Croqué	V3	Bit
37	Vegetables	La grosseur d'un dé à coudre	V2	Small pieces
38	Vegetables	Mettre em purée	V2	Make puré

V1, choice of the first translator's version; V2, choice of the second translator's version; V3, choice of a modified version; V1≈V2, similarity between the two versions with specificity for the first translator; V1≈V2, similarity between the two versions with specificity for the second translator.

Figure 2 – Synopsis of the decision-making processes regards specification of the versions V1 and V2 in Portuguese for construction of the final instrument

At this stage, replacements were made of terms presented in V1 and V2 by synonyms, so that the terms would be better understood by the target population. Questions that sought to specify the size of the food (meats, fruits and vegetables) were those that generated the greatest difficulty. For example, the literal translation of the expression "la grosseur d'un dé à coudre" would be "the thickness of a thumb". The second translator had also suggested the term "inch", which is commonly used by the Brazilian adult population. However, the target population (adolescents) may not know the size of an "inch" and so the Committee suggested the use of the expression "small pieces".

In questions 13, 14, 15, 31, and 36 the term "croquer" was used, which was translated as "grind" in V1 and as "chew" in V2. The Committee therefore suggested the use of "bite", because this would linguistically be more accept and easier to understand, since "chew" would be translated into French as "mastiquer".

Question 17 asks whether the subject has difficult with chewing "pain croûté". This expression was translated by both translators as "toasted bread"; whereas for the Committee this translation was not acceptable, and it was replaced by "bread with a hard crust". The term "hacher" (questions 27 and 29) was translated as "chop" (V1) and "mince" (V2), and it was afterwards changed by the Committee, which proposed the term "shred" (the meat). Question 30 also generated doubts because of the expression "mettre la viande en purée", and it was translated as "Boiling the meat till it was tender".

As regards the alternative scales to be chosen, there were two to be translated: the scale of intensity

of the difficulty (extreme, very, moderate, hardly, no difficulty) and frequency (never, rarely, sometimes, frequently, always, not applicable). For the first item, the option was to choose the modified version (V3). For the frequency scale, the option was for the V1; however, the term "à l'occasion", which was translated as "occasionally", was changed to "sometimes" by the Committee, which is the word more routinely used.

After conclusion of the process of translation and revision by the Committee, three questions related to denture wearing were excluded from the domain "Habits" (questions 19, 23 and 24).

Cultural Equivalence of the Instrument

The use of the "Quality of Masticatory Function Questionnaire" was considered easy, fast and the questions were well understood by the subjects, since the alternative "I didn't understand" was not checked by any of the participants. On the other hand, of the 20 adolescents who participated in pre-test, six checked the alternative response N/A (not applicable) to at least one question in the domains "Meats", "Fruits" or "Vegetables" (Figure 3). Of these six participants, only one handed in the questionnaire with the responses left blank, being one question with reference to the domain "Fruits" (19: Bite into whole raw apples) and three questions of the domain "Vegetables".

The test-retest reliability of the questionnaire was assessed for each domain, and the ICCs found were: 0.79 (Food-mastication), 0.45 (Habits), 0.62 (Meats), 0.74 (Fruits) and 0.81 (Vegetables), showing moderate to excellent agreement ($p < 0.01$)²⁰. The final version of the instrument is shown in Figure 4.

Domain Question	Individual (gender, age)					
	4 (♀,13)	7 (♀,13)	8 (♂,13)	9 (♂,13)	10 (♂,13)	16 (♂,14)
<i>Meats</i>						
15. Shred beef before eating it				N/A		
16. Cut chicken into small pieces				N/A		
17. Shred chicken before eating it				N/A		
18. Cook meat until it was tender before eating it				N/A		
<i>Fruits</i>						
19. Bite into whole raw apples	N/A	N/A	X			N/A
20. Peel apples before eating them	N/A	N/A	N/A			
21. Cut apples into quarters to chew them	N/A	N/A	N/A			
22. Cut apples into small pieces to chew them	N/A	N/A	N/A			
23. Mash or grate hard raw fruits to eat them	N/A		N/A			
<i>Vegetables</i>						
24. Bite into whole raw carrots			X			
25. Cut raw carrots into small pieces to chew them			X		N/A	
26. Make a puré of hard vegetables to eat them			X		N/A	

Figure 3 – Pre-Test Synopsis: Description of the questions with alternative responses “not applicable” (N/A) or left blank (X) checked by six subjects

Este questionário visa avaliar sua escolha por alimentos em função de sua capacidade de mastigar nas duas últimas semanas.

ALIMENTAÇÃO-MASTIGAÇÃO

	Extrema	Muita	Moderada	Pouca	Nenhuma dificuldade
1. Você tem dificuldade para mastigar carne de vaca cortada em pedaços pequenos? <input type="checkbox"/> (Assinale aqui se você não come carne de vaca)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
2. Você tem dificuldade para mastigar frango cortado em pedaços pequenos? <input type="checkbox"/> (Assinale aqui se você não come frango)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
3. Você tem dificuldade para mastigar carne moída? <input type="checkbox"/> (Assinale aqui se você não come carne moída)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
4. Você tem dificuldade para morder legumes duros, crus, inteiros (exemplo: cenouras)?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
5. Você tem dificuldade para morder frutas duras, cruas, inteiras (exemplo: maçãs)?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
6. Você tem dificuldade para morder frutas duras, cruas, cortadas em quatro (exemplo: maçãs)?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
7. Você tem dificuldade para comer a casca de frutas duras, cruas?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
8. Você tem dificuldade de mastigar pão com casca dura?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
9. Você tem dificuldade de mastigar nozes e grãos?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

HÁBITOS

Nas duas últimas semanas:

	Nunca	Raramente	Às vezes	Frequentemente	Sempre
10. Você teve que beber enquanto comia para engolir melhor?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

	Nunca	Raramente	Às vezes	Frequentemente	Sempre
11. Você adicionou molho aos seus alimentos para engolir melhor?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
12. Você molhou os alimentos em líquidos para mastigar e engolir melhor?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
13. Em geral, os alimentos que você engole são bem mastigados?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

CARNES**Nas duas últimas semanas:****Nota: Se você não comeu carne, assinale a alternativa N/A (não aplicável).**

	Nunca	Raramente	Às vezes	Frequentemente	Sempre	N/A
14. Foi necessário cortar a carne de vaca em pedaços pequenos?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
15. Foi necessário desfiar a carne de vaca antes de comê-la?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
16. Foi necessário cortar o frango em pedaços pequenos?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
17. Foi necessário desfiar o frango antes de comê-lo?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
18. Foi necessário cozinhar a carne até desmanchar antes de comê-la?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

FRUTAS**Nas duas últimas semanas:****Nota: Se você não comeu essa fruta, assinale a alternativa N/A (não aplicável).**

	Nunca	Raramente	Às vezes	Frequentemente	Sempre	N/A
19. Você mordeu maçãs cruas, inteiras?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
20. Foi necessário descascar as maçãs antes de comê-las?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
21. Foi necessário cortar as maçãs em quatro para mastigá-las?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
22. Foi necessário cortar as maçãs em pedaços pequenos para mastigá-las?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
23. Foi necessário amassar ou ralar as frutas duras cruas para comê-las?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

LEGUMES**Nas duas últimas semanas:****Nota: Se você não comeu esse legume, assinale a alternativa N/A (não aplicável).**

	Nunca	Raramente	Às vezes	Frequentemente	Sempre	N/A
24. Você mordeu cenouras cruas inteiras?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
25. Foi necessário cortar as cenouras cruas em pedaços pequenos para mastigá-las?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
26. Foi necessário fazer purê com os legumes duros para comê-los?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

OBRIGADO POR SUA COLABORAÇÃO!

The English-version of this questionnaire is available at: Muller K, Morais J, Feine J. Nutritional and anthropometric analysis of edentulous patients wearing implant overdentures or conventional dentures. Braz Dent J. 2008;19:145-50.

Figure 4 – QUESTIONÁRIO DE AVALIAÇÃO DA QUALIDADE DA MASTIGAÇÃO (QAQM)

■ DISCUSSION

An instrument may only be considered valid if it is capable of accurately capturing a certain concept²¹. Furthermore, in the culture for which it is being adapted, a translated instrument must be capable of obtaining the same effect as the original instrument has in the context in which it was created. The lack of cultural equivalence compromises the validity of the information collected, making it impossible to use the instrument to study a concept correctly²². This is why there are standardized instructions that are intended to minimize the loss of the original instrument characteristics that could result from the change in language^{16,22-24}. Therefore, the methodology of the present study followed the protocol suggested by Guillemim, et al.¹⁶, by which mistakes and misinterpretations in the initial translations are revealed. During these stages, semantic equivalence was appreciated, and not the literal interpretation, between the terms, since the literal interpretation is not always shown to be more advantageous to express concepts or situations of the new population one wishes to study^{16,24-26}.

In this process, using and comparing more than one version is relevant. In addition to making it possible to choose items to incorporate, or to allow the junction of items arising from different versions, this strategy allows to carefully examine the sequence of the procedures, including the translations themselves, their re-translation and the appreciation that follows. The importance of a general criticism made by the committee of specialists must also be pointed out; among the members of the committee there must be individuals who are specialists in the disease investigated, in the measure used and in the concept explored, and they should preferably be bilingual¹⁶.

The differences between definitions, beliefs and behaviors demand that the use of an instrument drawn up in other cultural contexts should, in addition to reliable translation, be preceded by cross-cultural adaptation to the country in which it will be applied, in order to keep the same concepts as those of the original²⁷. At the stage of cross-cultural adaptation, the number and characteristics of volunteers involved in pre-test were chosen in agreement with methodological criteria used for cultural adaptation of questionnaires^{16,18}.

Originally it was proposed that this instrument should be self-applied, being necessary for the respondent to read the instructions carefully before answering the questions; therefore, future studies will be able to show whether there is equivalence. In this study, it was considered feasible for researchers to provide initial instructions to the subjects, with the aim to ensure that the rules for filling out the questionnaire were understood by the studied sample. For responses left blank or for alternative response N/A, the missing value may be replaced by the mean/median scores for each domain or for each subject^{28,29}.

The process of translation and cultural adaptation of health-related questionnaires must keep a conceptual basis and follow standardized methodologies, since differences in subject's habits and culture may lead to misunderstandings, thereby altering the psychometric properties of the instrument. Therefore, in order to fully achieve cultural adaptation, it is also necessary to conduct a study of equivalence measurement, evaluating the reliability and validity of this new version in different populations and conditions (e.g. subjects with dental caries and/or periodontal disease, patients presenting feeding and/or swallowing disorders, denture users, patients undergoing orthognathic or bariatric surgery, and others).

■ CONCLUSION

The Portuguese version of the *Questionnaire D'Alimentation* has shown to be easy to understand by Brazilian adolescents and useful in the evaluation of the masticatory function and feeding or swallowing disorders that may affect food intake.

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RESUMO

Objetivo: traduzir o instrumento em língua francesa “Questionnaire D’Alimentation” para o português brasileiro e realizar a adaptação transcultural em adolescentes brasileiros. **Métodos:** a tradução foi realizada com base em protocolo que consistiu na tradução para o português brasileiro (por um professor formado em Letras e uma Cirurgiã Dentista fluentes em francês), tradução reversa para o francês (realizada por dois professores de francês), revisão por Comitê de especialistas (duas tradutoras, uma nativa e uma juramentada, e duas professoras universitárias, sendo uma Cirurgiã Dentista e uma Fonoaudióloga) e equivalência cultural (pré-teste). A versão utilizada no pré-teste consistiu de 26 questões com cinco respostas possíveis (5-Likert), distribuídas em cinco domínios (Alimentação- mastigação, Hábitos, Carnes, Frutas e Legumes). O pré-teste e teste-reteste foram realizados com uma amostra de 20 adolescentes (10 meninos/10 meninas) de escolas públicas de Piracicaba (Brasil). Nesta fase, a alternativa “não entendi” foi incluída a cada questão, a fim de identificar aquelas não compreendidas. A confiabilidade teste-reteste foi avaliada para cada domínio utilizando os coeficientes de correlação intra-classe (CCI). **Resultados:** no pré-teste, foi observada uma excelente compreensão do instrumento; no teste-reteste, os CCIs variaram entre 0,45-0,81 (moderada a excelente concordância). **Conclusão:** a versão em Português do *Questionnaire D’Alimentation* mostrou ser de fácil compreensão por parte dos adolescentes brasileiros e útil na avaliação da função mastigatória e dos distúrbios de alimentação e deglutição que podem alterar a ingestão de alimentos.

DESCRITORES: Tradução; Mastigação; Alimentos; Adolescente

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