



Semantic equivalence of the Brazilian version of the Patient Satisfaction Questionnaire (B-PSQ)

Luisa Gatti-Reis ¹, Renata Negreiros Alvarenga ¹, Lucas Guimarães Abreu ¹, Saul Martins Paiva ¹.

The Patient Satisfaction Questionnaire (PSQ) is a self-administered instrument to assess adolescent patients' satisfaction with orthodontic treatment. A pre-existing North American instrument was further explored in the Netherlands. Semantic equivalence is part of cross-cultural adaptation and is necessary to achieve a valid and reliable instrument for a specific culture. The present study aimed to evaluate the semantic equivalence of the items, subscales, and overall PSQ between the original English version and the Brazilian Portuguese language version (B-PSQ). The PSQ has 58 items, distributed across 6 subscales: doctor-patient relationship, situational aspects of the clinic, dentofacial improvement, psychosocial improvement, dental function, and a residual category. Semantic equivalence was evaluated according to the following methods: (1) independent translations to Portuguese by two translators, both native in Brazilian Portuguese and fluent in English; (2) an expert committee drafted the first summarized version in Portuguese; (3) two independent back-translations into English by two native English-speaking translators fluent in Portuguese; (4) committee review; (5) committee drafted a summarized version of the back-translations; (6) expert committee drafted the second summarized version in Portuguese; (7) pre-test of the instrument using individual semi-structured interviews with 10 adolescents; (8) review and final version of the B-PSQ. Semantic equivalence between the original and the Brazilian versions of the questionnaire was achieved through diligent and rigorous methods, with effective translation and expert evaluations, incorporating the opinions of the target population.

Introduction

Oral health, as defined by the FDI World Dental Federation, is "multifaceted and includes the ability to speak, smile, smell, taste, touch, chew, swallow, and convey a range of emotions through facial expressions with confidence and without pain, discomfort, and disease of the craniofacial complex" (1). This updated theoretical framework highlights the relevance of patient-centered care and the psychosocial function as one of the core elements of oral health, and as such, should be considered a goal of dental health care (2). In Orthodontics, clinician-centered outcomes have been used extensively (3). One study found that 63% of published orthodontic randomized clinical trials focused on occlusal changes following treatment, ignoring patient values and preferences (3). From a holistic perspective, a better understanding of factors related to patient satisfaction with orthodontic treatment may improve health care delivery (4), which confirms the necessity of evaluating this outcome in different populations.

In this context, an instrument specifically for the assessment of patient satisfaction with orthodontic treatment among adolescents has attracted the attention of scholars and clinicians (5). Adolescents have been the focus of recent studies assessing this outcome (6,7), as appliance therapy has been shown to improve their quality of life significantly (6). The Patient Satisfaction Questionnaire (PSQ) is a self-reported instrument, developed in the Netherlands and adapted from a pre-existing North American instrument that assessed patient satisfaction with orthognathic surgery (5,8). Bos et al (5) translated the North American instrument with 38 items from English into Dutch and added 20 questions about patient satisfaction (5, 8). The psychometric properties have been tested in a sample of 100 individuals with a mean age of 15.81 years (SD 1.81) (5). Since its development, the tool has been used in Canada (9), and Saudi Arabia (10) and recently validated for use in the United Kingdom (11).

The use of a validated instrument is of paramount importance, as it guarantees the reliability of the results of a study (12). Since the PSQ was developed in another country, where different culture and

¹Department of Paediatric Dentistry, Universidade Federal de Minas Gerais (UFMG), Belo Horizonte, Minas Gerais, Brazil.

Correspondence: Saul Martins Paiva; Department of Paediatric Dentistry, Universidade Federal de Minas Gerais (UFMG), Belo Horizonte, MG, Brazil.
Phone number: +55 31 3409 2470
Address: 6627 Av. Antonio Carlos, Belo Horizonte, 31270-901, MG, Brazil
E-mail: smpaiva@uol.com.br

Key Words: Evidence-based dentistry, validation study, patient-centered care, patient satisfaction, malocclusion.

language are in place, a previous validation process including its translation and cross-cultural adaptation is necessary (13) for use in Brazil. This process refers to the development of an instrument capable of measuring a similar phenomenon among culturally different populations, which is a requirement to obtain equivalence between the versions of the instrument in question (13).

To the best of our knowledge, there is no self-reported patient satisfaction instrument specific for orthodontics adapted for use in Brazil. According to the Universalist perspective, six types of equivalence must be obtained for achieving the validity of an instrument under evaluation: conceptual, item, semantic, operational, measurement, and functional equivalence (14). The major concern of semantic equivalence is meaning and the assessment of its translation to different languages; item equivalence refers to the underlying concept and distribution across different domains; operational equivalence refers to methods of administration of a given instrument, such as format and administration; measurement equivalence evaluates psychometric properties and functional equivalence is the sum of all previous equivalences (15). The present study aimed to assess the semantic equivalence of items, subscales, and overall PSQ between the English version and the Brazilian Portuguese language version.

Material and Methods

Study design

The present study was approved by the Institutional Review Board of the Universidade Federal of Minas Gerais (CAAE: 06898519.4.0000.5149). To participate in this study, all adolescents signed a consent form. So did the parents'/caregivers of those who were younger than 18 years. Volunteers received no compensation for their participation.

Semantic equivalence is part of cross-cultural adaptation and is necessary to achieve a valid and reliable instrument for a specific culture (15). This study follows a Universalist approach, in which culture and its possible influence on the expression of concepts in different countries are taken into careful consideration (15). Therefore, before the evaluation of semantic equivalence, an assessment of conceptual equivalence was performed. This was necessary to evaluate whether the core concept of the instrument and its dimensions corresponded to what is expressed in Brazil, a country heavily influenced by cultural differences. This theoretical model approach was proposed by Herdman et al. (14,15).

A preliminary assessment of conceptual equivalence was carried out by one investigator, a native of Brazil who assessed the conceptual model of the original instrument, its domains, and relevance for the targeted population. In addition, an extensive literature review to evaluate theoretical definitions of the satisfaction construct and whether it would be relevant to complement the dimensions of the original PSQ instrument in the validation process were carried out. In the conceptual equivalence assessment, one could conclude that the domains of the original instrument corresponded in relevance to those observed in Brazilian adolescents; hence the semantic equivalence would fit an adequate instrument for future use in Brazil, warranting the necessary process for its evaluation.

To assess the semantic equivalence of the instrument, standard recommendations were followed (13,14). Semantic equivalence was assessed according to the sequence shown in Figure 1.

Instrument

The PSQ is a self-reported condition-specific instrument developed to assess patient satisfaction with orthodontic treatment. It contains 58 items distributed across 6 subscales: doctor-patient relationship (11 items), situational aspects of the clinic (15 items), dentofacial improvement (9 items), psychosocial improvement (9 items), dental function (4 items), residual category (10 items). In its original version, questionnaire items were answered using a 6-point Likert scale, ranging from completely disagree (score 1) to completely agree (score 6). For items that were written in a negative sentence, the authors inverted the scoring system. In this way, patients who scored higher in the PSQ presented a higher level of satisfaction with orthodontic treatment.

Translation

The translation of the original English version of the instrument into Brazilian Portuguese was carried out independently by two Brazilian native speakers, who were both dentists, fluent in English, and had extensive experience in epidemiological research. One of them had vast experience with the validation of health-related instruments. Before the beginning, they were informed of the nature of the

instrument and also instructed to use language that could be easily understood by Brazilian adolescents of different sociodemographic backgrounds.

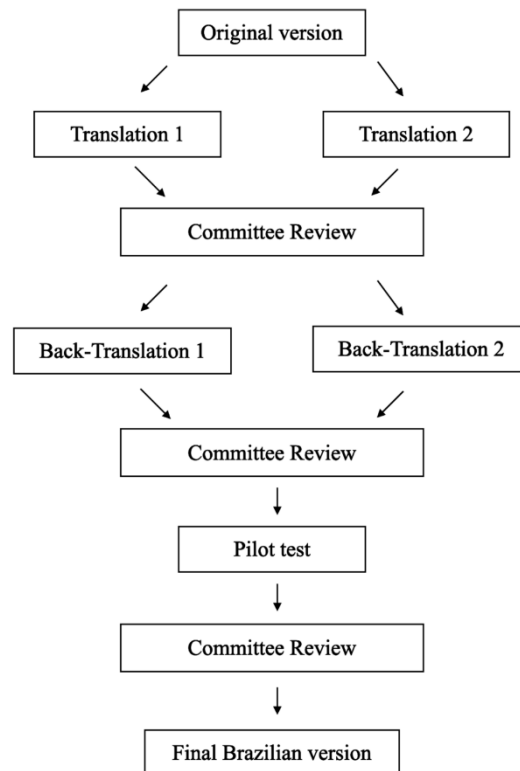


Figure 1. Flowchart of the semantic equivalence assessment of the Brazilian version of the Patient Satisfaction Questionnaire (B-PSQ).

Committee Review: 1st Summarized version

Once the two translations had been completed, there was a subsequent meeting of an expert committee. This committee was composed of three researchers with experience in instrument development and validation, being one of them an orthodontist with vast clinical and research experience. The purpose was to review the two translated versions of the questionnaire with careful attention to its items, focused on improving comprehension by the targeted population. Shortly afterward, the committee drafted the first summarized Brazilian version of the PSQ (B-PSQ).

Back-translation

The first summarized version of the B-PSQ was independently back-translated into English by two translators, both of whom were English native speakers and fluent in Brazilian Portuguese. Following previously established guidelines (13,16), the two translators were unaware of the purpose of the questionnaire and the back-translation was their only contribution to this study. This was carried out in an attempt to minimize the odds of the introduction of information bias, in addition, to allowing for the possibility of new meanings to arise, based on different points of view (13,16).

Committee Review: Summarized version

When the two back-translations had been completed, the expert committee met once again to discuss the instrument. All items were reviewed, comparing the original PSQ to the two back-translated versions of the B-PSQ. A summarized version of the back-translations was drafted and compared with the original version of the PSQ, giving rise to a second summarized version in Brazilian Portuguese. This version of the B-PSQ was subsequently pilot-tested.

Pilot test

The pilot test was carried out entirely online, in a week of November/2021 with 10 adolescents. All participants were chosen based on convenience and were from different age groups and sex, in an attempt to maintain sample representativeness. The pilot test included a survey based exclusively on the internet, followed by individual online semi-structured cognitive interviews, which were also carried out online. This summarized version in Brazilian Portuguese was tested in a convenience sample of 10 individuals representing the Brazilian population. Inclusion criteria were as follows: individuals native to Brazilian Portuguese native speakers, between 11 to 18 years, who had already completed the active phase of orthodontic treatment with fixed appliances in private orthodontic clinics. The orthodontists provided the researcher with the contact information from all the included patients, after obtaining the consent from the adolescents and their parents/guardians. Individuals with cognitive disorders reported by parents/caregivers, previous diagnosis of craniofacial anomalies, and those who had undergone orthodontic treatment associated with orthognathic surgery were excluded. Individuals with different social status were recruited. This strategy allowed one to evaluate the understanding and impact of questionnaire items across different age groups of adolescents, in addition to their different socioeconomic backgrounds. Family income was assessed according to the monthly minimum wage (MMW) nationally adopted in Brazil at the time of data collection, which corresponded approximately to US\$ 220.00.

Parents/caregivers were contacted first by phone to inform about our study and ask for permission to contact their children who were invited to participate. Adolescents were contacted via text message using WhatsApp® Messenger Technology, which is a platform freely available, easy to use, and widely popular in Brazil (17). All volunteers were given information on how to participate. Agreeing to participate, adolescents signed an online consent form, in which a detailed description of the study was provided, as follows: study goals, data collection and storage, investigator identification, and length of the survey. Then, adolescents were invited to answer an online survey, hosted on the Google Forms® platform. The B-PSQ is a self-assessment questionnaire and participants were instructed to answer on their own. Subsequently, they were invited to take part in an individual interview with one of the researchers.

All semi-structured cognitive interviews were carried out online with one investigator who had been previously trained and were performed individually in Portuguese within the same week when volunteers answered the questionnaire. Each interview lasted between 15 to 30 minutes. Before the beginning, the investigator explained in detail the purpose of the investigation and the interview methods. For this online qualitative assessment, the investigator used the method known as thinking out loud (18) and the probe technique (13), discussing with adolescents the meaning of certain words that could be potentially difficult to understand. Volunteers were asked if any words would benefit from being substituted for one that could be more easily understood.

Committee Review and final version of the B-PSQ

Following the pilot test, there was another meeting of the expert committee to discuss the test and the qualitative assessment. All suggestions given by the volunteers regarding the acceptability and understanding of questionnaire items during the interviews were carefully considered by the expert committee. Changes made to the questionnaire items were based on the perceptions of the volunteers and the consensus reached by the committee members. At last, once the committee had carefully discussed all suggestions and reached an agreement on the necessary changes, the final version of the B-PSQ was obtained (Appendix).

Statistical analysis

Data was collected and subsequently organized in a spreadsheet - Microsoft Office Excel® for Mac (version 16.51, Redmond, WA, USA). Data analysis was carried out using the Statistical Package for Social Sciences (SPSS for Mac, version 25.0; SPSS Inc., Chicago, IL, USA), using descriptive statistics. Results were reported in absolute frequencies.

Final Brazilian version

Following the pilot test, the perceptions and suggestions from the volunteers were discussed in a committee meeting. At last, the final version of the B-PSQ was obtained.

Results

We conducted cognitive interviews with 10 adolescents, among whom eight were female individuals and two were male individuals. All parents who were contacted agreed with the study and agreed with the participation of their sons/daughters. The mean age of adolescents was 16.5 years (± 1.7). The monthly income of the families of four adolescents was > 5 minimum wage. For six individuals, the monthly family income was ≤ 5 minimum wage. Table 1 displays the sociodemographic characteristics of the sample. After careful consideration, the expert committee agreed that all items of the original questionnaire should be maintained in the B-PSQ since they were considered relevant for the assessment of patient satisfaction with orthodontic treatment in the target population. However, the committee made a few suggestions that would make the questionnaire more adequate for use in Brazil.

Table 1. Sociodemographic characteristics of the sample

Parents/Caregivers	Frequency (%)
Sex	
Male	1 (10.0)
Female	9 (90.0)
Level of Schooling	
≤ 9 years	3 (30.0)
> 9 years	7 (70.0)
Family income (BMW/month)*	
> 5 minimum wages	4 (40.0)
≤ 5 minimum wages	6 (60.0)
Adolescents	
Sex	
Male	2 (20.0)
Female	8 (80.0)
Age (years)	
13	1 (10.0)
15	2 (20.0)
16	1 (10.0)
17	2 (20.0)
18	4 (40.0)

*BMW Brazilian Minimum Wage

Portuguese Translation

There was a great similarity between the two versions translated into Brazilian Portuguese. For the words that were different, an adverb was placed instead of a noun, as in item 9, careful/carefully (careful/carefully). One difference between them that was relevant to the Portuguese language is the use of the masculine/feminine when we refer to the orthodontist who performed the treatment. The original PSQ refers to "the orthodontist", but in Portuguese, the word itself has gender differences and implies if the practitioner is a woman or a man. To make the understanding of this word easier and avoid bias in data collection, the committee opted for masculine/feminine words and pronouns.

Back-Translation

The two back-translations were very much similar. Occasionally, for the same word, two different synonyms were used; however, in a broader context, the meaning of the words was equal (e.g., performing my treatment/carrying out my treatment). In addition, similar to what was observed in the two Portuguese translations, one version of the back-translation was more gender-inclusive (e.g., the orthodontist always checks his/her work carefully/the orthodontist always checked his work carefully). In one item, one of the back-translations omitted an adverb (e.g., treatment took a long time/ treatment took a very long time). We opted to keep the adverbs to maintain the same idea as the original items.

Pilot-test

Information and opinion provided by volunteers in the interviews regarding the acceptability of the questionnaire items and how easy the understanding of the item was were carefully analyzed.

In its original form, each item of the PSQ was designed to be answered in a 6-point Likert scale, ranging from completely disagree to completely agree (5). The expert committee achieved a consensus on the adoption of a 5-point Likert scale, using the same original endpoints, but with one mid-point "neither agree, nor disagree". In the pilot test, the 5-point scale was used, and overall, adolescents reported that the mid-point option in the scale was helpful, mainly for items they were uncertain about. Based on their feedback, we chose to maintain a 5-point scale in the final version of the B-PSQ.

In the final version of the questionnaire, in all items that directly referred to the practitioner, the noun orthodontist was written in the singular form and the pronouns his/her were used to avoid possible confusion and misunderstanding. The expert committee also reached an agreement on other items (Box 1). The decisions are further described below:

Box 1. Revised items of the Brazilian Version of the Patient Satisfaction Questionnaire (B-PSQ)

Original Patient Satisfaction Questionnaire (PSQ)	Revised items in the final version of the B-PSQ
Factor 2. Situational aspects	
	Factor 2. Situational aspects: <i>Cost, dental office, distance travelled, inconveniences</i>
3. I missed too much school for orthodontic appointments	3. I missed a lot of classes <i>at school</i> to go to orthodontic appointments
41. I had to travel far to reach the orthodontic clinic	41. I took <i>a very long distance</i> to arrive at the orthodontic clinic
Factor 4. Psychosocial improvement	
4. I feel better about myself because of orthodontic treatment	4. I feel better about myself because <i>of the results of my</i> orthodontic treatment
10. I believe I will have better career opportunities because of my orthodontic treatment	10. <i>In the future</i> , I believe I will have better job opportunities because of the <i>results of my</i> orthodontic treatment
16. I believe my school performance is better because of orthodontic treatment	16. I believe my school performance is better because of <i>the results of my</i> orthodontic treatment
22. I feel more outgoing because of orthodontic treatment	22. I feel more outgoing because of <i>the results of my</i> orthodontic treatment
26. I feel more confident because of orthodontic treatment	22. I feel more outgoing because of <i>the results of my</i> orthodontic treatment
30. I think I will be able to get a better job once out of school because of orthodontic treatment	30. I think I will have a better job when I finish school, <i>because of the results of my</i> orthodontic treatment
36. I feel more popular because of orthodontic treatment	36. I feel more popular <i>because of the results of my</i> orthodontic treatment
Factor 6. Residual category	
40. It was difficult for me to wear my headgear or activator (or both)	40. It was difficult for me to use my headgear or activator (or both). <i>If you did not wear these appliances, select the option "do not agree, but do not disagree"</i>

Subscale 2: Situational aspects

a) Amendment to the subscale title. Originally, the title of factor 2 was "situational aspects", but the meaning was unclear when the translation into Portuguese was performed. Thus, the following title was suggested: "Situational aspects: costs, dental office, distance traveled, inconveniences".

b) Item 3. One adolescent reported that the meaning of the phrase "I missed a lot of classes to go to orthodontic appointments" was non-specific and the researchers should be clear in stating what type of classes they were referring to. The original item in PSQ reads: "I missed too much school for orthodontic appointments", but when translated into Portuguese, the expert committee judged "classes" as specific enough information regarding its meaning. For the final version, "classes at school" remained.

c) Item 41. For two adolescents, the meaning of this item was unclear. One of them suggested the inclusion of "a very long distance". The final version was revised to include this suggestion.

Subscale 4: Psychosocial improvement

a) Items 4, 10, 16, 22, 26, 30, 36. All items that directly associated orthodontic treatment with psychosocial improvement were amended to add the statement "because of the results", as in "because of the results of my orthodontic treatment". In the interviews, two adolescents expressed their concerns

about how clear the meanings of these items were (e.g., how could orthodontic treatment make me feel more popular?). Moreover, adolescents reported that it could be considered incoherent, as orthodontic treatment might not be easily accessible to everybody. Based on this, the expert committee decided to make the questions more specific.

b) Item 10. This item is about career opportunities. The committee agreed that, since this questionnaire is specific for adolescents, this might not be a concern for all age groups. The expression "In the future" was added to the first summarized version tested and maintained in the final version of the B-PSQ.

Subscale 6: Residual category

a) Item 40. This item refers to two treatment modalities: treatment with a headgear and treatment with an activator. In the pilot test, only one adolescent was familiar with them since he had previously worn a headgear. Because of this, the members of the committee agreed that, although this item would be maintained in the B-PSQ, a further explanation should be provided. If the adolescent had never worn such appliances, he/she would have the opportunity of choosing the mid-point option of the Likert scale.

Discussion

To validate a pre-existing questionnaire, equivalence between the original and the target instrument must be reached (14,15). This study aimed to assess the semantic equivalence of the items, subscales, and overall PSQ in its original English version and the Brazilian Portuguese version. Before the adaptation process began, it must be highlighted that the original instrument was carefully assessed with respect to its conceptual equivalence to the Brazilian culture, allowing one to evaluate in what the items and the dimensions of the questionnaire corresponded to the values and beliefs of Brazilian adolescents undergoing orthodontic treatment.

The pilot test was a crucial stage in the process, as it allowed for a thorough assessment of how the culture of the target population could influence the cross-cultural adaptation of the original instrument. During development of the original instrument, a printed questionnaire was mailed to participants, who answered the questionnaire (5). In the present study, the same strategy would have been adopted. However, taking the epidemiological situation of Brazil in 2021, a country vastly impacted by the COVID-19 pandemic (19), the authors chose to carry out the pilot-test entirely online, using two easily accessible and free platforms (Google Forms[®] and WhatsApp[®] Messenger Technology). In this way, there was less chance of exposure and possible infection with SARS-CoV-2 in dental offices, a safer option for adolescents, dentists and researchers. When the world was hit by the pandemic, WhatsApp[®] demonstrated the potential to become a valuable resource for telediagnosis, patient screening, and provision of recommendations for urgent care (17). Although this approach was an adaptation in the face of the challenges in place at the time of data collection, semantic equivalence between the original and the Brazilian version of the PSQ was successfully obtained.

One interesting decision of the expert committee was the adoption of a 5-point Likert scale with a mid-point, instead of the 6-point Likert scale of the original instrument (5). The use of a mid-point response on a rating scale has been the subject of discussion, seen both as a way for respondents to avoid social undesirability by not disclosing their true opinions; while also possibly leading them to choose an option that may not correspond to the truth (20). We highlight that for some items of the instrument, such as item 1 which mentions "Orthodontic treatment was good value for money", not all adolescents would have a definitive opinion to answer yes or no. In items like this, the absence of a mid-point might introduce bias in data collection (21). This type of bias has been previously referred to as "forced choice bias", in reference to a faulty scale that may lead respondents to choose an answer, which may not be truthful (21). Indeed, in the pilot study adolescents indicated that the mid-point "neither agree, nor disagree" was helpful to facilitate the reasoning that guided their answer. In addition, the PSQ with a 5-point answer scale with a mid-point had already been used elsewhere (22). The authors of a Dutch study (22) rescored the answers of the original study (5), which used a 6-point scale, to compare with the results of their study, obtained using a 5-point scale with a mid-point (22). Future studies assessing the psychometric properties of the B-PSQ should follow the scoring system proposed by Bos and Keles (22) to compare results across studies.

Although all items of the original questionnaire were maintained in the B-PSQ, some items needed minor modifications for confirmation of their semantic validity regarding item equivalence, acceptability, and relevance (14). In subscale 4, items associating orthodontic treatment with

psychosocial improvement needed a revision to improve their acceptability. For instance, one adolescent reported that to judge someone's appearance based on the chance of undergoing orthodontic treatment could be unfair, as fixed appliance therapy might not be easily available to everyone. One way to make the item clearer and more acceptable was to associate the psychosocial benefits with the results of the treatment instead. Item 40 needed a revision to maintain its relevance since the type of appliances (headgear/activator) would not be relevant to those who had not worn the orthodontic devices previously.

The cross-cultural adaptation of pre-existing instruments has indeed certain advantages. First is the availability of a standard measure that can be used in groups from different cultural contexts, allowing for the comparison of data among distinct populations. Moreover, the adaptation of a psychometric instrument is a less costly and less time-consuming process when compared to the development of a new instrument (13). Our study has some limitations that must be recognized. While operational equivalence was achieved between the PSQ and the B-PSQ, there was a change in operationalization: the original instrument was a postal questionnaire (5), and the B-PSQ was web-based administered. Data from web-based surveys should be interpreted with caution since the results produced by this data collection method may be impacted by selection bias, as the population who uses the internet might not represent the general population, having limited generalization power (23). However, a previous recommendation has indicated that studies should use web-based data collection if the topic of interest is suitable for the target population (23). We consider the topic of the current study, patient satisfaction, to be of interest to adolescent patients and, therefore, suitable for a web-based survey, especially in view of the popularity and widespread use of the WhatsApp application among Brazilian adolescents (17). Another point we should consider limitation regards the characteristics of the sample and the susceptibility of web-based surveys to self-selection bias (23). In addition, it must be noted that in the present study, a convenience sample was used with an unequal distribution of the sex of the adolescents, there 2 male and 8 female. Results should be interpreted with caution, as this sample might not be representative of the target population.

The semantic equivalence between the final version of the B-PSQ and the original version in English has been obtained successfully. Future studies investigating the psychometric properties of the B-PSQ in a representative sample of Brazilian adolescents should be encouraged.

Acknowledgements

Funding was provided by Coordenação de Aperfeiçoamento de Pessoal de Nível Superior – Brasil (CAPES). The authors LGA and SMP are awardees of individual research grants provided by Conselho Nacional de Desenvolvimento Científico Tecnológico (CNPq). We thank all adolescents for their availability to take part in this study. We are also grateful to Ivana Meyer Prado and Matheus França Perazzo for their valuable and significant collaboration in instrument translation.

Resumo

O Patient Satisfaction Questionnaire (PSQ) é um instrumento autorrelatado específico para avaliar a satisfação de pacientes adolescentes com o tratamento ortodôntico. Um instrumento norte-americano pré-existente foi mais explorado na Holanda. A equivalência semântica faz parte da adaptação transcultural e é necessária para se obter um instrumento válido e confiável para uma cultura específica. O presente estudo teve como objetivo avaliar a equivalência semântica dos itens, subescalas e escore geral do PSQ entre a versão original em inglês e a versão em português do Brasil (B-PSQ). O PSQ possui 58 itens, distribuídos em 6 subescalas; relação médico-paciente, aspectos situacionais da clínica, melhora dentofacial, melhora psicossocial, função dentária e uma categoria residual. A equivalência semântica foi avaliada de acordo com o seguinte método: 1) traduções independentes para o português por dois tradutores, ambos nativos em português brasileiro e fluentes em inglês; 2) um comitê de experts elaborou a primeira versão síntese em português; 3) duas retro-traduições independentes para o inglês por dois tradutores nativos de língua inglesa fluentes em português; 4) revisão do comitê; 5) o comitê elaborou uma versão síntese das retro-traduições; 6) comitê de experts redigiu a segunda versão síntese em português; 7) pré-teste do instrumento por meio de entrevistas individuais semiestruturadas com 10 adolescentes; 8) revisão e versão final do B-PSQ. A equivalência semântica entre as versões original e brasileira do questionário foi alcançada por meio de métodos cuidadosos e rigorosos, com tradução eficaz e avaliações de experts, incorporando as opiniões da população-alvo.

References

1. Glick M, Williams DM, Kleinman DV, Vujcic M, Watt RG, Weyant RJ. A new definition for oral health developed by the FDI World Dental Federation opens the door to a universal definition of oral health. *J Am Dent Assoc* 2016;147:915-917.
2. Hua F. Increasing the value of orthodontic research through the use of dental patient-reported outcomes. *J Evid Based Dent Pract* 2019;19:99-105.
3. Tschlaki A, O'Brien K. Do orthodontic research outcomes reflect patient values? A systematic review of randomized controlled trials involving children. *Am J Orthod Dentofacial Orthop* 2014;146:279-285.
4. Wong L, Ryan FS, Christensen LR, Cunningham SJ. Factors influencing satisfaction with the process of orthodontic treatment in adult patients. *Am J Orthod Dentofacial Orthop* 2018;153:362-370
5. Bos A, Vosselman N, Hoogstraten J, Prah-Andersen B. Patient compliance: A determinant of patient satisfaction? *Angle Orthod* 2005;75:526-531.
6. Abreu LG, Dos Santos TR, Melgaço CA, Abreu MHN, Lages EMB, Paiva SM. Impact of orthodontic treatment on adolescents' quality of life: A longitudinal evaluation of treated and untreated individuals. *Qual Life Res* 2018;27:2019-2026.
7. Sharma R, Drummond R, Wiltshire W, Schroth R, Lekic M, Bertone M, Tate R. Quality of life in an adolescent orthodontic population. *Angle Orthod* 2021;91:718-724.
8. Phillips C. Patient-centered outcomes in surgical and orthodontic treatment. *Semin Orthod* 1999;5:223-230.
9. Flores-Mir C, Brandelli J, Pachêco-Pereira C. Patient satisfaction and quality of life status after 2 treatment modalities: Invisalign and conventional fixed appliances. *Am J Orthod Dentofacial Orthop* 2018;154:639-644.
10. Alwadei SH, Almotiry K, AlMawash A, Alwadei FH, Alwadei AH. Parental satisfaction with their child'en's rapid palatal expansion treatment provided by orthodontists and pediatric dentists. *Patient Prefer Adherence* 2021;15:251-258.
11. Tidbury K, Sayers M, Andiappan M, Newton JT. Psychometric validation of a pre-existing questionnaire used to measure patient satisfaction following orthodontic treatment in a UK population. *J Orthod* 2021;48:231-240.
12. Pithon MM, Magno MB, da Silva Coqueiro R, de Paiva SM, Marques LS, Paranhos LR, Tanaka OM, Maia LC. Oral health-related quality of life of children before, during, and after anterior open bite correction: A single-blinded randomized controlled trial. *Am J Orthod Dentofacial Orthop* 2019;3:303-311.
13. Guillemin F, Bombardier C, Beaton D. Cross-cultural adaptation of health-related quality of life measures: literature review and proposed guidelines. *J Clin Epidemiol* 1993;46:1417-1432.
14. Herdman M, Fox-Rushby J, Badia X. A model of equivalence in the cultural adaptation of HRQoL instruments: the universalist approach. *Qual Life Res* 1998;7:323-335.
15. Herdman M, Fox-Rushby J, Badia X. 'Equivalence' and the translation and adaptation of health-related quality of life questionnaires. *Qual Life Res* 1997;6:237-247.
16. Beaton DE, Bombardier C, Guillemin F, Ferraz MB. Guidelines for the process of cross-cultural adaptation of self-report measures. *Spine* 2000; 25(24):3186-3191.
17. Gueiros LA, Melo TS, Carrard VC. A simple tool to a complex reality-WhatsApp use in a developing country during COVID-19 pandemic. *Oral Dis* 2021;27:796-797.
18. Park E, Kwon M. Testing the digital health literacy instrument for adolescents: cognitive interviews. *J Med Internet Res* 2021;23:17856.
19. Hallal PC. SOS Brazil: Science under attack. *Lancet* 2021;397:373-374.
20. Cooper ID, Johnson TP. How to use survey results. *J Med Libr Assoc* 2016;104:174-177.
21. Choi BCK, Pak AWP. A catalog of biases in questionnaires. *Prev Chronic Dis* 2005;2:1-1
22. Keles F, Bos A. Satisfaction with orthodontic treatment. *Angle Orthod* 2013;83:507-511
23. Eysenbach G, Wyatt J. Using the Internet for surveys and health research. *J Med Internet Res* 2002;4:1-9.

Received: 02/06/2022
Accepted: 31/10/2022

Appendix. Translation of the *Patient Satisfaction Questionnaire* (PSQ), back translations, and final version in Brazilian Portuguese.

Original PSQ Instrument	1st Translation to Brazilian Portuguese	2nd Translation to Brazilian Portuguese	1st Summarized Version in Brazilian Portuguese	1st Back-translation to English	2nd Back-translation to English	Summarized Version of the back-translations	Final Summarized Version in Brazilian Portuguese
<i>Factor 1. Doctor-patient relationship</i>	<i>Fator 1. Relação médico-paciente</i>	<i>Fator 1 – Relacionamento Dentista-paciente</i>	<i>Fator 1. Relacionamento Dentista-paciente</i>	<i>Factor 1. Dentist-patient relationship</i>	<i>Factor 1. Dentist-patient relationship</i>	<i>Factor 1. Dentist-patient relationship</i>	<i>Fator 1. Relacionamento Dentista-paciente</i>
7. I personally liked the orthodontist(s) who treated me	7. Eu pessoalmente gostei do(a) ortodontista que realizou meu tratamento	7. Eu gostei do ortodontista que tratou dos meus dentes	7. Eu gostei do(a) ortodontista que realizou meu tratamento	7. I liked the orthodontist who performed my treatment	7. I liked the orthodontist who performed my treatment	7. I liked the orthodontist who performed my treatment	7. Eu gostei do(a) ortodontista que realizou meu tratamento
8. Greater efforts should have been made to reduce the pain from braces (+)	8. Maiores esforços deveriam ter sido tomados para reduzir a dor do aparelho (+)	8. Mais esforços deveriam ter sido feitos para reduzir a dor causada pelo aparelho (+)	8. Mais esforços deveriam ter sido feitos para reduzir a dor provocada pelo aparelho (+)	8. More effort should have been made to reduce the pain caused by the (braces/appliance)	8. More efforts should have been made to reduce the pain caused by the braces	8. More efforts should have been made to reduce the pain caused by the braces	8. Mais esforços deveriam ter sido feitos para reduzir a dor provocada pelo aparelho (+)
9. The orthodontist(s) always checked their work carefully	9. O(A) ortodontista sempre verificou o procedimento cuidadosamente	9. O(s) ortodontista(s) sempre conferiam seu trabalho com cuidado	9. O/A ortodontista sempre conferia seu trabalho com cuidado	9. The orthodontist always checked his/her work carefully	9. The orthodontist always checked his work carefully	9. The orthodontist always checked his/her work carefully	9. O/A ortodontista sempre conferia seu trabalho com cuidado
18. The orthodontic care I received could have been better (+)	18. O atendimento ortodôntico que eu recebi poderia ter sido melhor (+)	18. O tratamento ortodôntico que recebi poderia ter sido melhor (+)	18. O atendimento ortodôntico que eu recebi poderia ter sido melhor (+)	18. The orthodontic treatment that I received could have been better	18. The orthodontic care I received could have been better	18. The orthodontic care I received could have been better	18. O atendimento ortodôntico que eu recebi poderia ter sido melhor (+)
20. The orthodontist(s) was gentle when treating me	20. O(A) ortodontista foi gentil ao realizar o meu tratamento	20. O(s) ortodontista(s) foi(ram) gentil(is) durante meu atendimento	20. O (A) ortodontista foi gentil ao realizar o meu tratamento	20. The orthodontist was kind when performing my treatment	20. The orthodontist was kind when carrying out my treatment	20. The orthodontist was kind when performing my treatment	20. O (A) ortodontista foi gentil ao realizar o meu tratamento
21. Before treatment began, my orthodontist(s) carefully explained what treatment would be like	21. Antes de iniciar o tratamento, meu(minha) ortodontista explicou cuidadosamente o que iria fazer	21. Antes de começar o tratamento, meu(s) ortodontista(s) me explicou(aram) cuidadosamente como ele seria	21. Antes de iniciar o tratamento, meu (minha) ortodontista explicou cuidadosamente o que iria fazer	21. Before beginning treatment, my orthodontist carefully explained what he/she was going to do	21. Before starting the treatment, my orthodontist carefully explained what he was going to do	21. Before beginning treatment, my orthodontist carefully explained what he/she was going to do	21. Antes de iniciar o tratamento, meu (minha) ortodontista explicou cuidadosamente o que iria fazer
25. I liked the orthodontist(s) who treated me	25. Eu gostei do(a) ortodontista que realizou meu tratamento	25. Eu gostei do(s) ortodontista(s) que tratou(aram) de mim	25. Eu gostei do(a) ortodontista que realizou meu tratamento	25. I liked the orthodontist who performed my treatment	25. I liked the orthodontist who performed my treatment	25. I liked the orthodontist who performed my treatment	25. Eu gostei do(a) ortodontista que realizou meu tratamento

29. Questions I had about my treatment were answered promptly	29. As perguntas que eu tinha sobre o meu tratamento foram respondidas rapidamente	29. As perguntas que tinha sobre meu tratamento foram respondidas prontamente	29. As perguntas que eu tinha sobre o meu tratamento foram respondidas rapidamente	29. The questions that I had about my treatment were answered quickly	29. The questions I had about my treatment were quickly answered	29. The questions that I had about my treatment were answered quickly	29. As perguntas que eu tinha sobre o meu tratamento foram respondidas rapidamente
31. The assistants were gentle when treating me	31. O(A) assistente foi gentil durante o tratamento	31. Os auxiliares foram gentis durante meu tratamento	31. O/A auxiliar foi gentil comigo durante meu tratamento	31. The assistant was kind to me during my treatment	31. The assistant was kind to me during my treatment	31. The assistant was kind to me during my treatment	31. O/A auxiliar foi gentil comigo durante meu tratamento
33. The orthodontic staff (assistants and office personnel) treated me with respect	33. A equipe (assistentes e recepcionistas) me trataram com respeito	33. Toda a equipe (auxiliares e secretários(as)) me tratou com respeito	33. A equipe (auxiliar e recepcionista) me tratou com respeito	33. The team (assistant and receptionist) treated me with respect	33. The team (assistant and receptionist) treated me with respect	33. The team (assistant and receptionist) treated me with respect	33. A equipe (auxiliar e recepcionista) me tratou com respeito
38. The orthodontist(s) treated me with respect	38. O(A) ortodontista me tratou com respeito	38. O(s) ortodontista(s) me tratou(aram) com respeito	38. O (A) ortodontista me tratou com respeito	38. The orthodontist treated me with respect	38. The orthodontist treated me with respect	38. The orthodontist treated me with respect	38. O (A) ortodontista me tratou com respeito
<i>Factor 2. Situational aspects</i>	<i>Fator 2. Aspectos situacionais</i>	<i>Fator 2 – Aspectos situacionais</i>	<i>Fator 2. Aspectos situacionais (custo, local de atendimento, deslocamento e inconveniência)</i>	<i>Factor 2. Situational aspects</i>	<i>Factor 2. Situational aspects</i>	<i>Factor 2. Situational aspects</i>	<i>Fator 2. Aspectos situacionais (custo, local de atendimento, deslocamento e inconveniência)</i>
1. Orthodontic treatment was a good value for the money	1. O tratamento ortodôntico teve uma boa relação custo-benefício	1. O tratamento ortodôntico teve um bom custo-benefício	1. O tratamento ortodôntico teve um bom custo-benefício	1. The orthodontic treatment had a good cost-benefit	1. The cost-benefit of the Orthodontic treatment was good	1. The orthodontic treatment had a good cost-benefit	1. O tratamento ortodôntico teve um bom custo-benefício
2. My treatment took about as long as I expected it would	2. Meu tratamento demorou quase o mesmo tempo que eu imaginava	2. Meu tratamento demorou o tempo que eu esperava	2. Meu tratamento demorou o tempo que eu esperava	2. My treatment lasted the time that I expected	2. My treatment lasted the time I expected	2. My treatment lasted the time I expected	2. Meu tratamento demorou o tempo que eu esperava
3. I missed too much school for orthodontic appointments (+)	3. Eu perdi muitas aulas para consultas ortodônticas (+)	3. Eu faltei muitas aulas na escola para ir às consultas ortodônticas (+)	3. Eu faltei muitas aulas para ir às consultas ortodônticas (+)	3. I missed a lot of classes in order to go to the orthodontic appointments	3. I missed a lot of classes to go to orthodontic appointments	3. I missed a lot of classes to go to orthodontic appointments	3. Eu faltei muitas aulas na escola para ir às consultas ortodônticas (+)
5. Even though some appointments were short, each was necessary for my treatment to be successful	5. Mesmo que algumas consultas fossem rápidas, cada uma foi necessária para que meu tratamento fosse bem sucedido	5. Apesar de algumas consultas terem sido breves, cada uma delas foi necessária para o sucesso do meu tratamento	5. Apesar de algumas consultas terem sido rápidas, cada uma delas foi necessária para o sucesso do meu tratamento	5. (Despite some appointments having been fast/Although some appointments were fast), each one of them was necessary to the success of my treatment	5. Although some appointments were quick, each one was necessary for the success of my treatment	5. Although some consultations were quick, each one was necessary for the success of my treatment	5. Apesar de algumas consultas terem sido rápidas, cada uma delas foi necessária para o sucesso do meu tratamento
11. Problems that arose during treatment were quickly taken care of	11. Os problemas que surgiram durante o tratamento foram resolvidos rapidamente	11. Problemas que surgiram durante o tratamento foram resolvidos rapidamente	11. Os problemas que surgiram durante o tratamento foram resolvidos rapidamente	11. The problems that arose during treatment were solved quickly	11. Problems that arose during treatment were quickly solved	11. Problems that arose during treatment were quickly solved	11. Os problemas que surgiram durante o tratamento foram resolvidos rapidamente

12. The treatment area was modern and up to date	12. A sala que realizei o tratamento era moderna e atualizada	12. O consultório era moderno e atual	12. O consultório era moderno e atual	12. The dental office was modern and up to date	12. The office was modern and up to date	12. The dental office was modern and up to date	12. O consultório era moderno e atual
14. The orthodontic treatment fees were too high (+)	14. Os preços do tratamento ortodôntico foram muito altos (+)	14. As taxas do tratamento ortodôntico eram muito caras (+)	14. O preço do tratamento ortodôntico foi muito alto (+)	14. The price of orthodontic treatment was very high	14. The price of orthodontic treatment was very high	14. The price of orthodontic treatment was very high	14. O preço do tratamento ortodôntico foi muito alto (+)
15. The orthodontist's office was conveniently located	15. O consultório do(a) ortodontista era bem localizado	15. A clínica ortodôntica tinha uma boa localização	15. O consultório do(a) ortodontista era bem localizado	15. The orthodontist's office was well located	15. The orthodontist's office was well located	15. The orthodontist's office was well located	15. O consultório do(a) ortodontista era bem localizado
17. I was satisfied with the selection of days and times when I could be seen for orthodontic appointments	17. Fiquei satisfeito com a seleção de dias e horários em que poderia ser atendido nas consultas ortodônticas	17. Estou satisfeito com a seleção de dias e horários em que pude ser atendido nas consultas ortodônticas	17. Fiquei satisfeito com a seleção de dias e horários em que fui atendido nas consultas ortodônticas	17. I was satisfied with the selection of days and times at which I was seen at the orthodontic appointments	17. I was satisfied with the selection of days and times I was seen at the orthodontic appointments	17. I was satisfied with the selection of days and times I was seen at the orthodontic appointments	17. Fiquei satisfeito com a seleção de dias e horários em que fui atendido nas consultas ortodônticas
24. Plenty of time was spent with me during each appointment	24. Muito tempo foi gasto comigo durante cada consulta	24. Muito tempo foi gasto comigo em cada consulta	24. Muito tempo foi gasto comigo em cada consulta	24. A lot of time was spent on me at each appointment	24. A lot of time was spent with me at each appointment	24. A lot of time was spent with me at each appointment	24. Muito tempo foi gasto comigo em cada consulta
27. I was rarely kept waiting for appointments	27. Eu raramente ficava esperando para ser consultado	27. Eu raramente ficava esperando para ser atendido	27. Eu raramente ficava esperando para ser atendido	27. I rarely sat waiting to be seen	27. I rarely had to wait to be attended	27. I rarely had to wait to be seen	27. Eu raramente ficava esperando para ser atendido
35. The waiting area was comfortable	35. A sala de espera era confortável	35. A sala de espera era confortável	35. A sala de espera era confortável	35. The waiting room was comfortable	35. The waiting room was comfortable	35. The waiting room was comfortable	35. A sala de espera era confortável
37. The treatment area was clean and sanitary	37. A área de tratamento era limpa e higiênica	37. O consultório era limpo e higiênico	37. O consultório era limpo e higiênico	37. The office was clean and hygienic	37. The office was clean and hygienic	37. The office was clean and hygienic	37. O consultório era limpo e higiênico
41. I had to travel far to reach the orthodontic clinic (+)	41. Tive que me deslocar muito para chegar na clínica ortodôntica (+)	41. Eu realizava um longo trajeto para chegar à clínica ortodôntica (+)	41. Eu realizava um longo caminho para chegar à clínica ortodôntica (+)	41. I took a long way to arrive at the orthodontic clinic	41. I went a long way to get to the orthodontic clinic	41. I took a long way to arrive at the orthodontic clinic	41. Eu percorria uma distância muito grande para chegar à clínica ortodôntica (+)
42. The treatment took much too long (+)	42. O tratamento demorou muito (+)	42. O tratamento demorou muito (+)	42. O tratamento demorou muito (+)	42. Treatment took a very long time	42. The treatment took a long time	42. Treatment took a very long time	42. O tratamento demorou muito (+)
<i>Factor 3. Dentofacial improvement</i>	<i>Fator 3. Melhoria dentofacial</i>	<i>Fator 3 – Melhoria dentofacial</i>	<i>Fator 3. Melhoria dentofacial</i>	<i>Factor 3. Dentofacial improvement</i>	<i>Factor 3. Dentofacial improvement</i>	<i>Factor 3. Dentofacial improvement</i>	<i>Fator 3. Melhoria dentofacial</i>
19. Now that orthodontic treatment is complete, my teeth are straighter	19. Agora que o tratamento ortodôntico está completo, meus dentes estão mais retos	19. Agora que finalizei meu tratamento ortodôntico, meus dentes estão alinhados	19. Agora que o tratamento ortodôntico está completo, meus dentes estão alinhados (retos)	19. Now that orthodontic treatment is complete, my teeth are aligned	19. Now that the orthodontic treatment is complete, my teeth are aligned	19. Now that the orthodontic treatment is complete, my teeth are aligned	19. Agora que o tratamento ortodôntico está completo, meus dentes estão alinhados

32. Now that orthodontic treatment is complete, I have a better bite	32. Agora que o tratamento ortodôntico está completo, eu tenho uma mordida melhor	32. Agora que finalizei meu tratamento ortodôntico, tenho uma mordida melhor	32. Agora que o tratamento ortodôntico está completo, eu tenho uma mordida melhor	32. Now that orthodontic treatment is complete, I have a better bite	32. Now that the orthodontic treatment is complete, I have a better bite	32. Now that the orthodontic treatment is complete, I have a better bite	32. Agora que o tratamento ortodôntico está completo, eu tenho uma mordida melhor
34. Now that orthodontic treatment is complete, I think I have a more attractive face	34. Agora que o tratamento ortodôntico está completo, acho que tenho um rosto mais atraente	34. Agora que finalizei meu tratamento ortodôntico, penso ter um rosto mais atraente	34. Agora que o tratamento ortodôntico está completo, acho que tenho um rosto mais atraente	34. Now that orthodontic treatment is complete, I think that I have a more attractive face	34. Now that the orthodontic treatment is complete, I think I have a more attractive face	34. Now that the orthodontic treatment is complete, I think I have a more attractive face	34. Agora que o tratamento ortodôntico está completo, acho que tenho um rosto mais atraente
45. I really thought that my appearance would improve better than it actually did	45. Eu realmente acreditei que minha aparência iria melhorar mais do que realmente melhorou	45. Eu achava que minha aparência melhoraria mais do que realmente melhorou	45. Eu achava que minha aparência melhoraria mais do que realmente melhorou	45. I thought that my appearance would improve more than it actually did	45. I thought my appearance would improve more than it actually did	45. I thought my appearance would improve more than it actually did	45. Eu achava que minha aparência melhoraria mais do que realmente melhorou
48. My appearance has changed exactly like I expected	48. Minha aparência mudou exatamente como eu esperava	48. Minha aparência mudou exatamente como eu esperava	48. Minha aparência mudou exatamente como eu esperava	48. My appearance changed exactly as I expected	48. My appearance changed exactly as I expected	48. My appearance changed exactly as I expected	48. Minha aparência mudou exatamente como eu esperava
50. My teeth fit very well since I have been treated	50. Meus dentes se encaixam muito bem desde que realizei o tratamento	50. Meus dentes se encaixam muito bem desde o tratamento	50. Meus dentes se encaixam muito bem desde o tratamento	50. My teeth fit together very well since the treatment	50. My teeth fit very well since I had the treatment	50. My teeth fit very well since I had the treatment	50. Meus dentes se encaixam muito bem desde o tratamento
51. When I look in the mirror, I feel very satisfied about the way my appearance is improved since orthodontic treatment	51. Quando me olho no espelho, fico muito satisfeito(a) com a forma como minha aparência melhorou desde que realizei o tratamento ortodôntico	51. Quando me olho no espelho, me sinto muito satisfeito com a melhora em minha aparência desde o tratamento ortodôntico	51. Quando me olho no espelho, me sinto muito satisfeito com a melhora da minha aparência com o tratamento ortodôntico	51. When I look at myself in the mirror, I feel very satisfied with the improvement in my appearance with orthodontic treatment	51. When I look at myself in the mirror, I feel very satisfied with the improvement in my appearance with the orthodontic treatment	51. When I look at myself in the mirror, I feel very satisfied with the improvement in my appearance with the orthodontic treatment	51. Quando me olho no espelho, me sinto muito satisfeito com a melhora da minha aparência com o tratamento ortodôntico
56. After my orthodontic treatment, I feel really happy when I look in the mirror	56. Depois do meu tratamento ortodôntico, fico muito feliz quando me olho no espelho	56. Depois do tratamento ortodôntico, me sinto muito feliz quando me olho no espelho	56. Depois do meu tratamento ortodôntico, fico muito feliz quando me olho no espelho	56. After my orthodontic treatment, I am very happy when I look at myself in the mirror	56. After my orthodontic treatment, I feel very happy when I look at myself in the mirror	56. After my orthodontic treatment, I feel very happy when I look at myself in the mirror	56. Depois do meu tratamento ortodôntico, fico muito feliz quando me olho no espelho
58. I feel very happy because I look so much better since I have been treated	58. Sinto muito feliz porque pareço muito melhor desde que realizei o tratamento	58. Me sinto muito feliz, porque minha aparência melhorou muito com o tratamento	58. Me sinto muito feliz, porque minha aparência melhorou muito com o tratamento	58. I feel very happy, because my appearance improved a lot with treatment	58. I feel very happy, because my appearance has improved a lot with the treatment	58. I feel very happy, because my appearance has improved a lot with the treatment	58. Me sinto muito feliz, porque minha aparência melhorou muito com o tratamento
<i>Factor 4. Psychosocial improvement</i>	<i>Fator 4. Melhoria psicossocial</i>	<i>Fator 4 – Melhora psicossocial</i>	<i>Fator 4. Melhora psicossocial</i>	<i>Factor 4. Psychosocial improvement</i>	<i>Factor 4. Psychosocial improvement</i>	<i>Factor 4. Psychosocial improvement</i>	<i>Fator 4. Melhora psicossocial</i>

4. I feel better about myself because of orthodontic treatment	4. Eu me sinto melhor comigo mesmo(a) por causa do tratamento ortodôntico	4. Me sinto melhor comigo mesmo por causa do tratamento ortodôntico	4. Eu me sinto melhor comigo mesmo(a) por causa do tratamento ortodôntico	4. I feel better about myself because of orthodontic treatment	4. I feel better about myself because of the orthodontic treatment	4. I feel better about myself because of the orthodontic treatment	4. Eu me sinto melhor comigo mesmo(a) por causa do resultado do meu tratamento ortodôntico
10. I believe I will have better career opportunities because of my orthodontic treatment	10. Acredito que terei melhores oportunidades de carreira por causa do meu tratamento ortodôntico	10. Eu acredito que terei melhores oportunidades de carreira por causa do tratamento ortodôntico	10. (No futuro) Eu acredito que terei melhores oportunidades de trabalho por causa do tratamento ortodôntico	10. I believe that I will have better work opportunities because of orthodontic treatment	10. I believe I will have better job opportunities because of the orthodontic treatment	10. I believe I will have better job opportunities because of the orthodontic treatment	10. No futuro, eu acredito que terei melhores oportunidades de trabalho por causa do resultado do meu tratamento ortodôntico
16. I believe my school performance is better because of orthodontic treatment	16. Acredito que meu desempenho escolar é melhor por causa do tratamento ortodôntico	16. Eu acredito que minha performance escolar melhorou por causa do tratamento ortodôntico	16. Eu acredito que meu desempenho escolar é melhor por causa do meu tratamento ortodôntico	16. I believe that my school performance is better because of my orthodontic treatment	16. I believe my school performance is better because of my orthodontic treatment	16. I believe my school performance is better because of my orthodontic treatment+D48	16. Eu acredito que meu desempenho escolar é melhor por causa do resultado do meu tratamento ortodôntico
22. I feel more outgoing because of orthodontic treatment	22. Eu me sinto mais extrovertido por causa do tratamento ortodôntico	22. Me sinto mais extrovertido por causa do tratamento ortodôntico	22. Eu me sinto mais extrovertido(a) por causa do meu tratamento ortodôntico	22. I feel more outgoing because of my orthodontic treatment	22. I feel more outgoing because of my orthodontic treatment	22. I feel more outgoing because of my orthodontic treatment	22. Eu me sinto mais extrovertido(a) por causa do resultado do meu tratamento ortodôntico
26. I feel more confident because of orthodontic treatment	26. Me sinto mais confiante por causa do tratamento ortodôntico	26. Eu me sinto mais confiante por causa do tratamento ortodôntico	26. Eu me sinto mais confiante por causa do tratamento ortodôntico	26. I feel more confident because of orthodontic treatment	26. I feel more confident because of the orthodontic treatment	26. I feel more confident because of the orthodontic treatment	26. Eu me sinto mais confiante por causa do resultado do meu tratamento ortodôntico
30. I think I will be able to get a better job once out of school because of orthodontic treatment	30. Acho que vou conseguir um emprego melhor depois de sair da escola por causa do tratamento ortodôntico	30. Eu acho que terei um emprego melhor quando terminar a escola, por causa do tratamento ortodôntico	30. Eu acho que terei um trabalho melhor quando terminar a escola, por causa do meu tratamento ortodôntico	30. I think that I will have a better job when I finish school, because of my orthodontic treatment	30. I think I will have a better job when I finish school, because of my orthodontic treatment	30. I think I will have a better job when I finish school, because of my orthodontic treatment	30. Eu acho que terei um trabalho melhor quando terminar a escola, por causa do resultado do meu tratamento ortodôntico
36. I feel more popular because of orthodontic treatment	36. Me sinto mais popular por causa do tratamento ortodôntico+B53	36. Eu me sinto mais popular por causa do tratamento ortodôntico	36. Eu me sinto mais popular por causa do tratamento ortodôntico	36. I feel more popular because of orthodontic treatment	36. I feel more popular because of the orthodontic treatment	36. I feel more popular because of the orthodontic treatment	36. Eu me sinto mais popular por causa do resultado do meu tratamento ortodôntico
44. Even people who do not know me very well have made positive remarks	44. Mesmo pessoas que não me conhecem muito bem fizeram comentários positivos	44. Até pessoas que não me conhecem muito bem fizeram elogios à minha	44. Até pessoas que não me conhecem muito bem elogiaram	44. Even people who do not know me very well compliment my appearance after my treatment	44. After my treatment, even people who don't know me very well have	44. After my treatment, even people who don't know me very well have	44. Até pessoas que não me conhecem muito bem elogiaram

about my appearance after I have been treated	sobre a minha aparência depois que realizei o tratamento ortodôntico	aparência após meu tratamento	a minha aparência após meu tratamento		complimented me about my appearance	complimented me about my appearance	a minha aparência após meu tratamento
54. When I meet people for the first time, they react much more positively to me since I have been treated	54. Quando eu encontro alguém pela primeira vez, ela reage muito mais positivamente ao meu respeito desde que realizei o tratamento	54. Quando encontro as pessoas pela primeira vez, elas reagem a mim de forma muito mais positiva desde que fiz o tratamento	54. Quando eu encontro alguém pela primeira vez após o tratamento, ela reage muito mais positivamente sobre mim	54. When I meet someone for the first time after treatment, he/she reacts more positively to me	54. When I meet someone for the first time after treatment, they react much more positively towards me	54. When I meet someone for the first time after treatment, he/she reacts more positively to me	54. Quando eu encontro alguém pela primeira vez após o tratamento, ela reage muito mais positivamente sobre mim do que antes do tratamento.
<i>Factor 5. Dental function</i>	<i>Fator 5. Função dentária</i>	<i>Fator 5 – Função dentária</i>	<i>Fator 5. Função dentária</i>	<i>Factor 5. Dental function</i>	<i>Factor 5. Dental function</i>	<i>Factor 5. Dental function</i>	<i>Fator 5. Função dentária</i>
43. Eating is more easy since I have been treated	43. É mais fácil comer desde que realizei o tratamento	43. É mais fácil comer desde que fiz o tratamento	43. É mais fácil comer desde que fiz o tratamento	43. It is easier to eat since I did treatment	43. It's easier to eat since I had the treatment	43. It's easier to eat since I had the treatment	43. É mais fácil comer desde que fiz o tratamento
47. Chewing is easier since I have been treated	47. É mais fácil mastigar desde que realizei o tratamento	47. É mais fácil mastigar desde que fiz o tratamento	47. É mais fácil mastigar desde que fiz o tratamento	47. It is easier to chew since I did treatment	47. It's easier to chew since I had the treatment	47. It's easier to chew since I had the treatment	47. É mais fácil mastigar desde que fiz o tratamento
53. I can bite food more easily since I have been treated	53. Posso morder com mais facilidade desde que realizei o tratamento	53. Consigo morder os alimentos com mais facilidade desde que fiz o tratamento	53. Eu consigo morder os alimentos com mais facilidade desde que fiz o tratamento	53. I can bite foods more easily since I did treatment	53. I can bite food more easily since I had the treatment	53. I can bite food more easily since I had the treatment	53. Eu consigo morder os alimentos com mais facilidade desde que fiz o tratamento
55. I would recommend orthodontic treatment to everyone who has difficulties chewing food	55. Eu recomendaria o tratamento ortodôntico a todos que têm dificuldade de mastigar	55. Eu recomendaria o tratamento ortodôntico a todos que tenham dificuldade em mastigar os alimentos	55. Eu recomendo o tratamento ortodôntico a todos que tenham dificuldade de mastigar os alimentos	55. I recommend orthodontic treatment to all who have difficulty chewing foods	55. I recommend orthodontic treatment to everyone who has difficulty with chewing food	55. I recommend orthodontic treatment to everyone who has difficulty with chewing food	55. Eu recomendo o tratamento ortodôntico a todos que tenham dificuldade de mastigar os alimentos
<i>Factor 6. Residual category</i>	<i>Fator 6. Categoria residual</i>	<i>Fator 6 – Categorias residuais</i>	<i>Fator 6. Categorias residuais</i>	<i>Factor 6. Residual categories</i>	<i>Factor 6. Residual categories+D61</i>	<i>Factor 6. Residual categories</i>	<i>Fator 6. Categorias residuais</i>
6. My orthodontic treatment was inconvenient for me (+)	6. Meu tratamento ortodôntico foi inconveniente para mim (+)	6. Meu tratamento ortodôntico foi inconveniente para mim (+)	6. Meu tratamento ortodôntico foi inconveniente para mim (+)	6. My orthodontic treatment was inconvenient for me	6. My orthodontic treatment was inconvenient for me	6. My orthodontic treatment was inconvenient for me	6. Meu tratamento ortodôntico foi inconveniente para mim (+)
13. I take better care of my teeth since having braces	13. Eu cuido melhor dos meus dentes desde que usei aparelho	13. Eu cuido melhor dos meus dentes desde que usei aparelho	13. Eu cuido melhor dos meus dentes desde que usei aparelho	13. I take better care of my teeth since I used (braces/an appliance)	13. I take better care of my teeth since I wore braces	13. I take better care of my teeth since I wore braces	13. Eu cuido melhor dos meus dentes desde que usei aparelho
23. I am satisfied with the results of	23. Estou satisfeito(a) com os resultados do meu tratamento ortodôntico	23. Estou satisfeito com os resultados do meu tratamento ortodôntico	23. Estou satisfeito(a) com os resultados do meu tratamento ortodôntico	23. I am satisfied with the (results/outcome) of my orthodontic treatment	23. I am pleased with the results of my orthodontic treatment	23. I am satisfied with the results of my orthodontic treatment	23. Estou satisfeito(a) com os resultados do meu tratamento ortodôntico

my orthodontic treatment							
28. If I had it to do over again, I would still want orthodontic treatment	28. Se eu tivesse que fazer tudo de novo, eu ainda iria querer o tratamento ortodôntico	28. Se tivesse que fazer o tratamento novamente, mesmo assim eu gostaria de fazê-lo	28. Se tivesse que fazer o tratamento novamente, mesmo assim eu gostaria de fazê-lo	28. If I had to do treatment again, I would still like to do it	28. If I had to do the treatment again, I would still like to do it	28. If I had to do the treatment again, I would still like to do it	28. Se tivesse que fazer o tratamento novamente, mesmo assim eu gostaria de fazê-lo
39. My braces gave me a lot of discomfort (+)	39. Meu aparelho me deu muito desconforto (+)	39. Meu aparelho me causou muito desconforto (+)	39. Meu aparelho me causou muito desconforto (+)	39. My (braces/appliance) caused me a lot of discomfort	39. My braces caused me a lot of discomfort	39. My braces caused me a lot of discomfort	39. Meu aparelho me causou muito desconforto (+)
40. It was difficult for me to wear my headgear or activator (or both) (+)	40. Era difícil para mim usar meu aparelho extrabucal ou ativador (ou ambos) (+)	40. Foi difícil para mim usar o aparelho extraoral e/ou o ativador (+)	40. Foi difícil para mim usar meu aparelho extrabucal ou ativador (ou ambos) (+)	40. It was difficult for me to wear my (extraoral appliance/headgear) or activator (or both)	40. It was difficult for me to use my headgear or activator (or both)	40. It was difficult for me to use my headgear or activator (or both)	40. Foi difícil para eu usar meu aparelho extrabucal ou ativador (ou ambos). Se você não usou esses aparelhos, marque a opção "não concordo, nem discordo". (+)
46. If I had to do it all over again, I would do it	46. Se eu tivesse que fazer tudo de novo, eu faria	46. Se tivesse que fazer tudo de novo, eu faria	46. Se eu tivesse que fazer tudo de novo, eu faria	46. If I had to do it all again, I would	46. If I had to do it all over again, I would	46. If I had to do it all over again, I would	46. Se eu tivesse que fazer tudo de novo, eu faria
49. I would recommend orthodontic treatment to others	49. Eu recomendaria tratamento ortodôntico a outras pessoas	49. Eu recomendaria tratamento ortodôntico para outras pessoas	49. Eu recomendo tratamento ortodôntico para outras pessoas	49. I recommend orthodontic treatment to other people	49. I recommend orthodontic treatment to other people	49. I recommend orthodontic treatment to other people	49. Eu recomendo tratamento ortodôntico para outras pessoas
52. I am dissatisfied with the treatment result (+)	52. Estou insatisfeito com o resultado do tratamento (+)	52. Eu não estou satisfeito com o resultado do tratamento (+)	52. Estou insatisfeito com o resultado do tratamento (+)	52. I am dissatisfied with the (result/outcome) of treatment	52. I am not pleased with the results of my orthodontic treatment	52. I am dissatisfied with the (result/outcome) of treatment	52. Estou insatisfeito com o resultado do tratamento (+)
57. Generally speaking, I have bad experiences with orthodontic treatment (+)	57. De modo geral, tive experiências ruins com o tratamento ortodôntico (+)	57. De forma geral, tive uma experiência negativa com o tratamento ortodôntico (+)	57. De modo geral, tive experiências ruins com o tratamento ortodôntico (+)	57. Overall, I had bad experiences with orthodontic treatment	57. Overall, I had bad experiences with orthodontic treatment C69	57. Overall, I had bad experiences with orthodontic treatment	57. De modo geral, tive experiências ruins com o tratamento ortodôntico (+)