Cross-cultural adaptation and validation of the Quality of Life in School (QoLS) Questionnaire into Brazilian Portuguese

Adaptação cultural e validação para o Brasil do *Quality of Life School Questionnaire* (QoLS) para análise da qualidade de vida na escola

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Abstract *The school is fundamental for the development of societies and caring for the student is part of the educational process. Reflections on collective health allowed the expansion of the vision of the concept of quality of life considering different social spaces and indicators. Thus, the aim of this study was to assess of some psychometric Properties of the Quality of Life in School instrument into Brazilian Portuguese (QoLS-BR) among elementary school students. The processes of translation, content evaluation, focus group and Confirmatory Factor Analysis (CFA) were carried out. Reproducibility analysis was performed by administering QoLS-BR to 30 students. The sample used for Internal Consistency and CFA comprised 434 students with a mean age of 12.31 years. High indices of language clarity, practical relevance, theoretical relevance, internal consistency, and reproducibility were obtained. In the AFC, adjustments were not necessary in the QoLS-BR model with four factors (RMSEA=0.065; TLI=0.959; CFI=0.962; SRMR=0.080) indicating that the indices were adequate when investigating all four domains. QoLS-BR has adequate psychometric indicators for investigating the quality of life in school.*

Key words *Quality of life, Schoolchildren, Psychometrics*

Resumo *A escola é fundamental para o desenvolvimento das sociedades e o cuidado com o estudante faz parte do processo educativo. As discussões em saúde coletiva permitiram a ampliação da visão do conceito de qualidade de vida considerando diferentes espaços sociais e indicadores. Assim, o objetivo deste estudo foi a avaliação de algumas propriedades psicométricas do questionário de qualidade de vida na escola para o português brasileiro (QoLS-BR) em alunos do ensino fundamental. Foram realizados os processos de tradução, avaliação do conteúdo, grupo focal e Análise Fatorial Confirmatória (AFC). A análise de reprodutibilidade foi realizada por meio da aplicação do QoLS-BR em amostra de 30 estudantes. Para a análise de Consistência Interna e AFC, a amostra foi de 434 estudantes, com média de idade de 12,31 anos. Os resultados revelaram altos índices de clareza de linguagem, pertinência prática, relevância teórica, altos índices de consistência interna e de reprodutibilidade. Na AFC não foram necessários ajustes no modelo do QoLS com quatro fatores (RMSEA=0,065; TLI=0,959; CFI=0,962; SRMR=0,080) indicando que os índices estavam adequados. Assim, o QoLS-BR possui indicadores psicométricos adequados para investigação do construto qualidade de vida na escola.*

Palavras-chave *Qualidade de vida, Escolares, Psicometria*

Introduction

Quality of life in school constitutes an important factor influencing the health and general quality of life of students, especially during childhood and adolescence. It can be conceptualized as the well-being and general satisfaction of children and adolescents resulting from their integration into life and the school environment, as defined from their point of view of their positive and negative experiences, especially in school activities[1]. Quality of life in school can also be understood as a general sense of well-being resulting from the involvement of students in academic life and the school environment[2].

The first researchers to conceptualize and investigate the quality of life in school were Epstein and Mcpartland[3] who developed a scale called *Quality of School Life Scale* (QSL), dividing it into three dimensions, which are: *satisfaction with school,* which assesses the overall well-being with school; *commitment to school work*; which assesses the level of interest in classroom assignments; and *reactions to teachers*, which assesses the quality of the relationship between students and teachers[3]. After that, the QSL was expanded by other researchers[2,4-6]. However, this instrument was mostly applied to high school students, and did not investigate satisfaction with school activities, as well as the physical environment of the school[7].

Thus, based on the concept of Malin and Linnakyla[1], in the biopsychosocial model of functionality from the World's Health Organization[7], and the theoretical model of occupational performance[8], Weintraub and Erez[9] developed the instrument *Quality of Life in School questionnaire* (QoLS).The objective of this instrument is to evaluate the students' overall well-being and satisfaction, in accordance with their positive and negative experiences, specifically in the school context[9-11]. Besides, the Israeli researchers highlighted the importance of the school's physical environment in acting as a facilitator in social participation, well-being, and academic performance of school children[9]. Including, therefore, issues pertaining to school activities and school environment.

In the process of validating the original instrument with students of Israel, Weintraub and Erez[9] found that third grade students had a better perception of the quality of life in school. Nevertheless, there was no significant difference between genders. On the study of Gothra *et al.*[11], which validated the QoLS for Canadian students,

they observed that the female gender, as well as fourth grade students, presented higher means of perceived quality of life than the male gender and fifth and sixth graders.

Quality of life in school appears to be associated with academic motivation and academic achievement, as well as with a sense of school belonging, safety, and future academic and professional relevance[2,6,11-13]. Thus, it is important to understand in great depth the various aspects related to perception of quality of life in school, given its effects on the performance and development of students and society in general. Quality of life in school is still little explored in health and education research in Brazil, mainly due to the lack of objective, easy-to-apply instruments validated for assessing the school context of Brazilian student populations.

The study of quality of life in the field of collective health allowed the expansion of this concept beyond the economic field. Today, considering quality of life is a key point in all health actions. Faced with the great challenges facing Brazilian education, health care and student development cannot be left in the second plan. The lack of instruments in Portuguese to specifically assess the quality of life at school stands out. In view of these observations, it is necessary to adapt validated scales, investigate factors associated with a more negative perception of quality of life in school, and understand how this perception develops and changes during school life. This study aimed to assess some psychometric Properties of the Quality of Life in School instrument into Brazilian Portuguese (QoLS-BR) among elementary school students.

Methods

Study participants

A total of 483 students of both genders, from the fifth to ninth grades of elementary school in a public municipal school in Balneário Camboriú, Santa Catarina, Brazil, participated in this research. The sample was selected by convenience and the school was chosen for being one of the largest in the city. Thus, six students from the fifth to ninth grades participated in the focus group; 30 students from the eighth grade participated in the test-retest group, and 434 students from the fifth to ninth grades adequately answered the final version of the translated QoLS instrument. Moreover, bilingual specialists in the fields of

health, education, and physical education participated the content validation step.

Authorization to conduct the research was obtained from the school's management team, and the research objectives were presented to specialists and teachers. After that, students were invited to participate in the study. Assent and informed consent forms were provided for students and their parents/guardians to sign, in accordance with human research ethics guidelines and regulatory standards set by Resolution No. 466/2012 of the Brazilian National Health Council. The questionnaire was then administered. Students who did not want to participate in the research or were not authorized by their parents/guardians were not included in the study. Ethical approval was obtained from the Human Research Ethics Committee (protocol No. 3.588.939).

Instrument

The QoLS questionnaire is a multidimensional instrument developed and validated by Weintraub and Erez[9] in a population of Israeli students from the fourth to sixth year of elementary school (Cronbach's α = 0.88). It is a self-report questionnaire assessing students' quality of life in school. This scale consists of 36 items distributed in 4 domains, as follows: school and classroom physical environment (9 items), positive attitude toward school (9 items), student–teacher relationship (7 items), and psychosocial (10 items). Overall satisfaction with school is measured by an isolated item (item 36). Questionnaire items have four response options on a 4-point Likert scale, where 4 = always true, 3 = normally true, 2 = normally not true, and 1 = never true. Negative items (13, 19, 23, 25, 29, 32, 34, 35) are reverse scored – the greater the score, the lesser is the negative feeling towards school[9]. Mean scores can be calculated per domain and for the questionnaire as a whole. The QoLS instrument was first administered in Hebrew to children and adolescents in the third to sixth years of elementary school, by researchers Weintraub and Erez[9]. In 2016, it was adapted and validated in English in a sample of Canadian children and adolescents by Gothra et al.[11].

Procedures

First, authorization to conduct this research was obtained from the authors of the original QoLS instrument. The process of translation and cross-cultural adaptation was carried out according to the procedures of Herdman et al.[14],

as follows: forward translation, back translation, technical review, analysis by experts in the field, application of the instrument in focus groups, test–retest study, and final application. Each of these steps is detailed below.

Translation, back translation, and technical review

The process of translation and back translation was carried out according to the recommendations of Guillemin et al.[15]. Two independent professional translators performed preliminary translation of QoLS into Brazilian Portuguese. Later, the two versions were synthesized into a preliminary version. This version was back-translated into English by a bilingual translator from the field of Human Movement Sciences. Subsequently, the back translation was reviewed by a technical team, who made cultural and linguistic adaptations.

Expert evaluation

As suggested by Alexandre and Coluci[16] and Cassep-Borges et al.[17], the final version of QoLS-BR was sent to six guest Ph.D. bilingual specialists in the fields of health, education, and physical education, who acting in the field of validation publications. They assessed the content validity of the 36 items of the instrument, in addition to language clarity, practical relevance, and theoretical relevance. Evaluators used a five-point Likert scale to rate these constructs, with 1 = inadequate, 2 = little adequate, 3 = acceptable, 4 = adequate, 5 = very adequate. After expert evaluation, the content validity coefficient (CVC) proposed by Hernandez-Nieto[18] was calculated. In addition to these items, each expert answered three additional questions, developed by the group, related to adaptation of the instrument, including (a) "In your view, is the presented instrument a valid indicator in our language and culture for investigation of quality of life in school in Brazilian students?", (b) "In your view, are questions clear and relevant to the purpose of the instrument?", and (c) "In your view, is the proposed heading adequate for the questionnaire?". The response options were "yes", "no", and "partially". The answers were accounted by the Rule of 3.

Focus group

The semantics and comprehensibility of translated questions were assessed using a focus group with six adolescents of both sexes, aged between 11 and 14 years old, from the fifth to ninth years of elementary school. All students

participated voluntarily and received consent from their parents/guardians. The selection for the focus group followed the criteria suggested by Westphal *et al.*[19]. All the six students who were invited to join the focus group received a note for parents or guardians' clearance. Thus, all the schoolchildren participated voluntarily and were cleared by their parents or guardians.

The QoLS-BR questionnaire's items reading took place in a classroom authorized by the school. Afterwards, it was requested that the schoolchildren explained their understanding on the items read in classroom. All the application procedure was recorded with the students' authorization. The six students who took part in the focus group also participated in the final application.

Final administration

Final administration of the questionnaire was carried out in April 2022 in a sample of 483 fifth- to ninth-year elementary school students of both sexes. The questionnaire was administered in the classroom under supervision of the researchers and teachers. Students who did not want to answer the questionnaire, did not obtain parental permission to participate in the study, had some type of cognitive impairment, or had severe autism spectrum disorder were excluded from the study. The final sample comprised 434 students.

This questionnaire's items were dictated to schoolchildren of all classrooms. Should the students have any questions on the questionnaire, the researcher would answer it while it was being filled out.

Reproducibility

The test–retest reproducibility study of QoLS-BR was performed in 30 eighth-year students of both sexes, with a mean age of 13.24 years old (SD 0.95 years). To avoid changes in a long period of time, this stage occurred in an interval of 10 days after the first two applications – as recommended by Keszei *et al.*[20]. This class was selected because it contained enough students for the retest. This step followed the same procedures used for administration of the instrument to a large sample in the school environment.

Data analysis

Statistical analyses were conducted using SPSS software version 20.0 for Windows and Jasp software version 0.17. Descriptive analysis was performed using measures of central tendency and dispersion.

Semantic analysis of the items of the QoLS instrument was performed by a validity technique with calculation of CVC for language clarity, practical relevance, and theoretical relevance[14] of the overall instrument. The cut-off adopted for satisfactory language clarity, practical relevance, and theoretical relevance was CVC≥0.80, according to the recommendations of Casepp-Borges *et al.*[17]. Reproducibility was analyzed by calculating the intraclass correlation coefficient (ICC) between test–retest scores, and internal consistency was analyzed using Cronbach's α. Values of ICC≥0.51[21] and Cronbach's α ≥0.70 were considered adequate[22]. Comparison analysis between mean test and retest scores was performed using the paired *t*-test, given that the data were normally distributed.

The total sample (n=434) was used for the construct validation analyses. To evaluate global indicators and the model's fit ("goodness-of-fit"), the confirmatory factor analysis was carried out, which presents information regarding the degree of fit between the data sample and the proposed model; for this, the robust weighted least squares estimation method (DWLS) was used[23]. Furthermore, the plausibility of a model with correlated factors and a model with a second-order confirmatory factor was tested, since previous studies suggest the use of the total score[9,11]. Thus, to verify the fit of the proposed model to the data, the following fit indices were used: Root Mean Square Error of Approximation (RMSEA) – whose values less than 0.08 indicate adequate fit[24] –; Comparative fit index (CFI); Tucker-Lewis index (TLI) – whose values must be equal or greater than 0.90, to indicate an adequate model of fit[25] –; and Standardized Root Mean Squared Residual (SRMR) – whose values under 0.08 are considered adequate[23].

Results

Expert assessment and focus group

After translation and back-translation of the instrument, QoLS-BR was subjected to technical review and analysis by six experts. Items 1, 2, 5, 6, 10, 19, 29, and 35 were modified, respectively, as follows: "*Minha escola é bonita*", "*Eu aproveito as diferentes atividades sociais na escola (como recreio, passeios, cerimônias e festividades)*", "*Os conteúdos que eu aprendo na escola são interessantes*", "*Minha sala de aula é agradável*", "*Os colegas de minha turma zombam de mim*", "*Eu me*

sinto sozinho na escola", and "*Me incomoda não ter as mesmas coisas que os outros estudantes têm (como roupas e tênis de marca, jogos e aparelhos eletrônicos)*".

In focus groups, students suggested changes to items 2, 12, 16, 21, and 32. Item 2 was altered to "*Eu aproveito/participo das diferentes atividades sociais na escola (como recreio, passeios, cerimônias e festividades)*"; item 12 was changed to "*Eu posso pedir para os meus professores me ajudarem com qualquer problema (seja pessoal ou na escola)*"; item 16 was changed to "*Os professores de minha escola são bons no que fazem*"; item 21 was changed to "*Eu vou bem nas atividades escolares*"; and item 32 was changed to "*Tem coisas na minha vida (pessoal ou na escola) que me deixam frustrado*". All modifications are presented in Chart 1.

Content validity

CVC values of QoLS-BR were 0.840 for language clarity, 1.00 for practical relevance, 1.00 for theoretical relevance. Regarding the additional questions made to experts, 83.33% of experts answered "yes" and 16.70% answered "partially" to question a, which refers to the validity of the instrument in the target language and culture. To question b, related to the clarity and relevance of the instrument, 50% answered "yes" and 50% answered "partially". For question c, referring to the adequacy of the heading, the answers were 83.33% "yes" and 16.70% "partially."

Reproducibility

The test-retest ICC of overall QoLS-BR scores was 0.716 (95%CI=0.415–0.864, p<0.001), considered good. There were no significant differences between test and retest in total QoLS-BR

Chart 1. Description of the stages of translation, back translation, and final version of the Quality of Life in School-Brazilian Portuguese questionnaire.

Item	Original language	Translation	Back translation	Final version
1	My school is aesthetic and attractive	Minha escola é bonita e atrativa	My school is pretty	Minha escola é bonita
2	I enjoy the different social activities at school (such as recess, trips, ceremonies)	Eu desfruto das diferentes atividades sociais na escola (como recreio, passeios, cerimônias)	I enjoy/participate in different social activities at school (such as recess, trips, ceremonies and festivities)	Eu aproveito/participo das diferentes atividades sociais na escola (como recreio, passeios, cerimônias e festividades)
3	The children in my classroom treat me with respect	Os colegas da minha turma me tratam com respeito	My classmates treat me with respect	Os colegas da minha turma me tratam com respeito
4	I like my home-room teacher	Eu gosto do meu professor regente	I like my schoolteacher/home-room teacher	Eu gosto do meu professor regente
5	The subjects I learn in school are interesting	As matérias que eu aprendo na escola são interessantes	The subjects I learn in school are interesting	Os conteúdos que eu aprendo na escola são interessantes
6	The walk/ride to school is nice/comfortable	A caminhada/caminho para a escola é legal/confortável	The walk/ ride to school is nice/comfortable	O caminho para a escola é agradável/confortável
7	The chairs and desks in my classroom are comfortable	As cadeiras e mesas de minha sala de aula são confortáveis	The chairs and desks in my classroom are comfortable	As cadeiras e mesas da minha sala de aula são confortáveis
8	My teachers understand me	Meus professores me entendem	My teachers understand me	Meus professores me entendem
9	I feel safe at school (nothing bad will happen to me)	Eu me sinto seguro na escola (nada de ruim vai acontecer comigo)	I feel safe at school (nothing bad will happen to me)	Eu me sinto seguro na escola (nada de ruim vai acontecer comigo)

Chart 1. Description of the stages of translation, back translation, and final version of the Quality of Life in School-Brazilian Portuguese questionnaire.

Item	Original language	Translation	Back translation	Final version
10	My classroom is aesthetic and attractive	Minha sala de aula é bonita e agradável	My classroom is nice/ pretty	Minha sala de aula é agradável
11	I have friends at school	Eu tenho amigos na escola	I have friends at school	Eu tenho amigos na escola
12	I can go to my teacher with any problem	Eu posso falar com o meu professor sobre qualquer problema	I can ask my teachers to help me with any problem (either personal or at school)	Eu posso pedir para os meus professores me ajudarem com qualquer problema (seja pessoal ou na escola)
13	I feel rejected by the children in my class	Eu me sinto rejeitado pelos colegas da minha turma	I feel rejected by the children in my class	Eu me sinto rejeitado pelos colegas da minha turma
14	My teachers make me feel good in class	Meus professores fazem eu me sentir bem na aula	My teachers make me feel good in class	Meus professores fazem eu me sentir bem na aula
15	My school is clean	Minha escola é limpa	My school is clean	Minha escola é limpa
16	The teachers in my school are good	Os professores de minha escola são bons	Teachers in my school are good in what they do.	Os professores de minha escola são bons no que fazem
17	I am popular in my class	Eu sou popular em minha turma	I am popular in my class	Eu sou popular na minha turma
18	The temperature in the classroom is comfortable (not too hot and not too cold)	A temperatura na minha sala de aula é confortável (nem muito quente e nem muito fria)	The temperature in my classroom is comfortable (not too hot, not too cold)	A temperatura na minha sala de aula é confortável (nem muito quente e nem muito fria)
19	The children in my class make fun of me	As crianças de minha classe zoam de mim	My classmates make fun of me	Os colegas da minha turma zombam de mim
20	My classroom is well lit	Minha sala de aula é bem iluminada	My classroom is well lit	Minha sala de aula tem boa iluminação
21	I am successful in school	Eu sou bem-sucedido na escola	I am successful in school activities	Eu vou bem nas atividades escolares
22	I am satisfied with my grades	Eu estou satisfeito com minhas notas	I am satisfied with my grades	Eu estou satisfeito com minhas notas
23	I feel pain or discomfort during the school-day (such as in my hands, stomach, back)	Eu sinto dor ou desconforto nos dias de aula (por exemplo, dor nas mãos, estômago, costas)	I feel pain or discomfort on school- days (such as ache in my hands, my stomach, my back)	Eu sinto dor ou desconforto nos dias de aula (por exemplo, dor nas mãos, no estômago, nas costas)
24	My classroom is quiet enough, so that I can concentrate on my studies	Minha sala de aula é silenciosa o suficiente, desta forma eu consigo me concentrar nos meus estudos	My classroom is quiet enough, so that I can concentrate on my studies	Minha sala de aula é silenciosa o suficiente, desta forma eu consigo me concentrar nos meus estudos

score (p=0.113), nor in scores for Positive attitude toward school (p=0.666), Student–teacher relationship (p=0.154), and Psychosocial (p=0.235) domains. However, there was a significant difference in School and classroom physical environment (p=0.010) score between test and retest.

Internal consistency

The internal consistency (Cronbach's α) of the 36 items of the instrument was 0.901. Cronbach's α values of domains were as follows: School and classroom physical environment, α=0.748; Pos-

Chart 1. Description of the stages of translation, back translation, and final version of the Quality of Life in School-Brazilian Portuguese questionnaire.

Item	Original language	Translation	Back translation	Final version
25	I would like to transfer to another school	Eu gostaria de mudar de escola	I would like to transfer to another school	Eu gostaria de mudar de escola
26	I like going to school	Eu gosto de ir para a escola	I like going to school	Eu gosto de ir para a escola
27	My teachers help me succeed	Meus professores me ajudam a me sair bem	My teachers help me to succeed	Meus professores me ajudam a me sair bem
28	It is important for me to go to school	Ir para a escola é importante para mim	It is important for me to go to school	Ir para a escola é importante para mim
29	I feel lonely	Eu me sinto sozinho	I feel lonely at school	Eu me sinto sozinho na escola
30	My school has a place where it is fun to play (such as a yard, a garden)	Minha escola tem um lugar que é divertido brincar/jogar (como pátio, jardim, quadra)	My school has a fun place to play (such as a playground, a garden, a court)	Minha escola tem um lugar divertido para brincar/jogar (como pátio, jardim, quadra)
31	School is interesting for me	A escola é interessante para mim	School is interesting for me	A escola é interessante para mim
32	There are things in my life that make me frustrated	Tem coisas na minha vida que me deixam frustrado	There are things in my life (personal or at school) that make me frustrated	Tem coisas na minha vida (pessoal ou na escola) que me deixam frustrado
33	I am happy when I'm in school	Eu estou feliz quando estou na escola	I am happy when I'm in school	Eu me sinto feliz quando estou na escola
34	I have trouble sleeping at nights because of things that happen to me in school	Eu tenho dificuldades para dormir a noite, por causa das coisas que acontecem comigo na escola	I have trouble sleeping at nights because of the things that happen to me in school	Eu tenho dificuldades para dormir a noite por causa das coisas que acontecem comigo na escola
35	It bothers me that I don't have things like other children (brand-name clothing, games, equipment, etc.)	Me incomoda não ter as mesmas coisas que as outras crianças têm (como roupas de marca, jogos, equipamentos eletrônicos)	It bothers me not to have things like other children (such as brand-name clothing and sneakers, games and electronic equipment)	Me incomoda não ter as mesmas coisas que os outros estudantes têm (como roupas e tênis de marca, jogos, aparelhos eletrônicos)
36	In general, I feel my life at school is good	De maneira geral, eu sinto que minha vida na escola é boa	In general, I feel that my life in school is good	De maneira geral, eu sinto que minha vida na escola é boa

Source: Authors.

itive attitude toward school, α=0.847; Student–teacher relationship, α=0.795; and Psychosocial, α=0.711.

Descriptive analysis

The study included 434 students of both sexes (51.6% girls), with a mean age of 12.31 years (SD=1.59 years). Furthermore, 57.8% of participants attended the morning shift, 27.4% were athletes, 10.3% were employed, and 49.3% had low socioeconomic status. Descriptive values of all items are presented in Table 1.

Construct validity

The confirmatory factor analysis for each domain and overall quality school life are presented in Figure 1. Thus, we observe that the data demonstrated good fit to the proposed model – RMSEA: 0.065 (CI: 0.061-0.069); SRMR: 0.080; CFI: 0.962; TLI: 0.959.

Figure 2 presents the second-order confirmatory factor analysis. Thus, it is observed that a general factor presents significant covariance with the proposed factors. Moreover, a compromise to the fit indices was not observed, when

Table 1. Descriptive scores of the Quality of Life in School-Brazilian Portuguese questionnaire (n=434).

Item	Mean (SD)
School and classroom physical environment domain	**2.86 (0.51)**
1 *Minha escola é bonita* | My school is aesthetic and attractive	3.06 (0.80)
2 *Eu aproveito/participo das atividades escolares* | I enjoy the different social activities at school (such as recess, trips, ceremonies)	3.27 (0.83)
7 *As cadeiras e mesas da minha sala de aula são confortáveis* | The chairs and desks in my classroom are comfortable	2.32 (1.00)
10 *Minha sala de aula é agradável* | My classroom is aesthetic and attractive	2.96 (0.95)
15 *Minha escola é limpa* | My school is clean	2.88 (0.83)
18 *A temperatura da minha sala de aula confortável (nem muito quente e nem muito fria)* | The temperature in the classroom is comfortable (not too hot and not too cold)	2.78 (1.03)
20 *Minha sala de aula tem boa iluminação* | My classroom is well lit	3.41 (0.75)
24 *Minha sala de aula é silenciosa o suficiente, desta forma eu consigo me concentrar nos meus estudos* | My classroom is quiet enough, so that I can concentrate on my studies	1.76 (0.96)
30 *Minha escola tem um lugar divertido para brincar/jogar (como pátio, jardim, quadra)* | My school has a place where it is fun to play (such as a yard, a garden)	3.32 (0.85)
Positive attitude toward school domain	**3.06 (0.63)**
5 *Os conteúdos que eu aprendo na escola são interessantes* | The subjects I learn in school are interesting	3.06 (0.85)
6 *O caminho para a escola é agradável/confortável* | The walk/ride to school is nice/comfortable	3.07 (0.95)
9 *Eu me sinto seguro na escola (nada de ruim vai acontecer comigo)* | I feel safe at school (nothing bad will happen to me)	2.96 (1.02)
21 *Eu vou bem nas atividades escolares* | I am successful in school	3.01 (0.84)
22 *Eu estou satisfeito com as minhas notas* | I am satisfied with my grades	2.87 (0.99)
26 *Eu gosto de ir para a escola* | I like going to school	2.95 (1.03)
28 *Ir para a escola é importante para mim* | It is important for me to go to school	3.45 (0.82)
31 *A escola é interessante para mim* | School is interesting for me	3.15 (0.95)
33 *Eu me sinto feliz quando estou na escola* | I am happy when I'm in school	3.06 (0.95)
Student-teacher relationship domain	**3.26 (0.56)**
4 *Eu gosto do meu professor regente* | I like my home-room teacher	3.47 (0.88)
8 *Meus professores me entendem* | My teachers understand me	2.91 (0.90)
11 *Eu tenho amigos na escola* | I have friends at school	3.53 (0.72)
12 *Eu posso pedir para os meus professores me ajudarem com qualquer problema (seja pessoal ou na escola)* | I can go to my teacher with any problem	2.97 (0.99)
14 *Meus professores fazem eu me sentir bem na aula* | My teachers make me feel good in class	3.20 (0.86)
16 *Os professores da minha escola são bons no que fazem* | The teachers in my school are good	3.54 (0.60)
27 *Meus professores me ajudam a me sair bem* | My teachers help me succeed	3.17 (0.86)

it continues

compared to those of the model with correlated factors, thus maintaining an adequate fit to the data – RMSEA: 0.065 (CI: 0.061-0.068); SRMR: 0.080; CFI: 0.962; TLI: 0.960. It is important to stand out that a model with second-order factor may be interesting for providing parameters for the correct usage of an overall scale score.

Discussion

The present study aimed to translate QoLS to Brazilian Portuguese and adapt and validate QoLS-BR in a sample of Brazilian students in years 5 to 9 of elementary school. After translation and back translation, the instrument was assessed for content validity, reliability, and construct validity. CVCs for language clarity, practical relevance, and theoretical relevance were above the cut-off of 0.80, being considered satisfactory according to criteria defined by Casepp-Borges *et al.*[17].

Table 1. Descriptive scores of the Quality of Life in School-Brazilian Portuguese questionnaire (n=434).

| Item		Mean (SD)
Psychosocial domain		**2.92 (0.55)**
3	*Os colegas da minha turma me tratam com respeito* | The children in my classroom treat me with respect	3.05 (0.79)
13	*Eu me sinto rejeitado pelos colegas da minha turma* | I feel rejected by the children in my class	3.05 (1.01)
17	*Eu sou popular na minha turma* | I am popular in my class	2.17 (1.03)
19	*Os colegas da minha turma zombam de mim* | The children in my class make fun of me	3.18 (0.98)
23	*Eu sinto dor ou desconforto nos dias de aula (por exemplo, dor nas mãos, no estômago, nas costas)* | I feel pain or discomfort during the school-day (such as in my hands, stomach, back)	2.55 (1.13)
25	*Eu gostaria de mudar de escola* | I would like to transfer to another school	3.12 (1.14)
29	*Eu me sinto sozinho na escola* | I feel lonely	3.06 (1.08)
32	*Tem coisas na minha vida (pessoal ou na escola) que me deixam frustrado* | There are things in my life that make me frustrated	2.41 (1.17)
34	*Eu tenho dificuldades para dormir a noite por causa das coisas que acontecem comigo na escola* | I have trouble sleeping at nights because of things that happen to me in school	3.24 (0.99)
35	*Me incomoda não ter as mesmas coisas que os outros estudantes têm (como roupas e tênis de marca, jogos, aparelhos eletrônicos* | It bothers me that I don't have things like other children (brand-name clothing, games, equipment, etc.)	3.39 (1.01)
Overall satisfaction with school		
36	*De maneira geral, eu sinto que minha vida na escola é boa* | In general, I feel my life at school is good	3.23 (0.88)
Total		**3.01 (0.21)**

Source: Authors.

Semantic analysis of the content was also performed, and adjustments were made to the translated version, contributing to the adaptation, relevance, and applicability of the final instrument to Brazilian elementary school students.

QoLS-BR had adequate ICC and internal consistency indices, both above the reference cut-off[21,22]. Analysis of the internal consistency of the four domains revealed indices above the cut-off recommended by Terwee *et al.*[22], corroborating the analysis of internal consistency performed by Gothra *et al.*[11] (total QoLS, α=0.93; Psychosocial, α=0.85; Positive attitude toward school, α=0.87; School and classroom physical environment, α=0.0.75; Teacher-student relationship, α=0.87). Test-retest comparisons showed that all domains had no differences between the first and second tests, except for School and classroom physical environment. The difference in test-retest scores might have been due to the fact that, in the retest, students already knew the instrument and, therefore, might have been more critical in their answers. Studies validating QoLS in Israeli and Canadian students did not perform test-retest analysis[9,11], precluding comparison.

As shown by descriptive analysis, Student–teacher relationship had the highest mean scores,

whereas School and classroom physical environment had the lowest. These results are in line with those of Erez *et al.*[12], who investigated the perception of quality of life in school of Canadian and Israeli students using QoLS. For Canadian students, however, Positive attitude toward school had the lowest mean score. Brazilian students reported higher total QoLS scores than Israeli students, but values were lower than those of Canadian students[12].

Confirmatory factor analysis and Second order factor analysis were carried out. Thus, when the confirmatory analysis was performed for the QoLS construct, there was no need for adjustment, confirming that all four domains simultaneously explain the model. The second order factor analysis demonstrated that the total score reflects the construct of quality of life in school, confirming the plausibility of the usage of a general score. Weintraub and Erez[9] and Gothra *et al.*[11], in validating QoLS, performed exploratory analysis rather than confirmatory analysis. The authors identified which items best explained the domains and QoLS. At first, the following domains were proposed: Student–teacher relationship and school activities, School and classroom physical environment, Negative feelings related
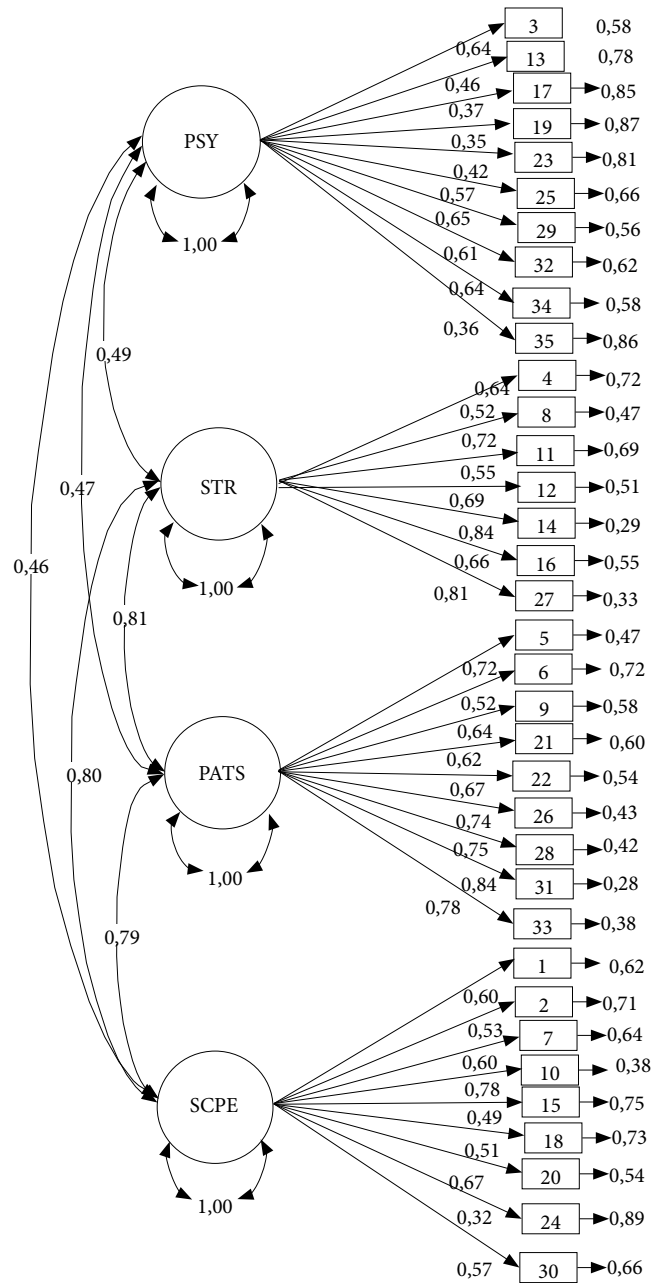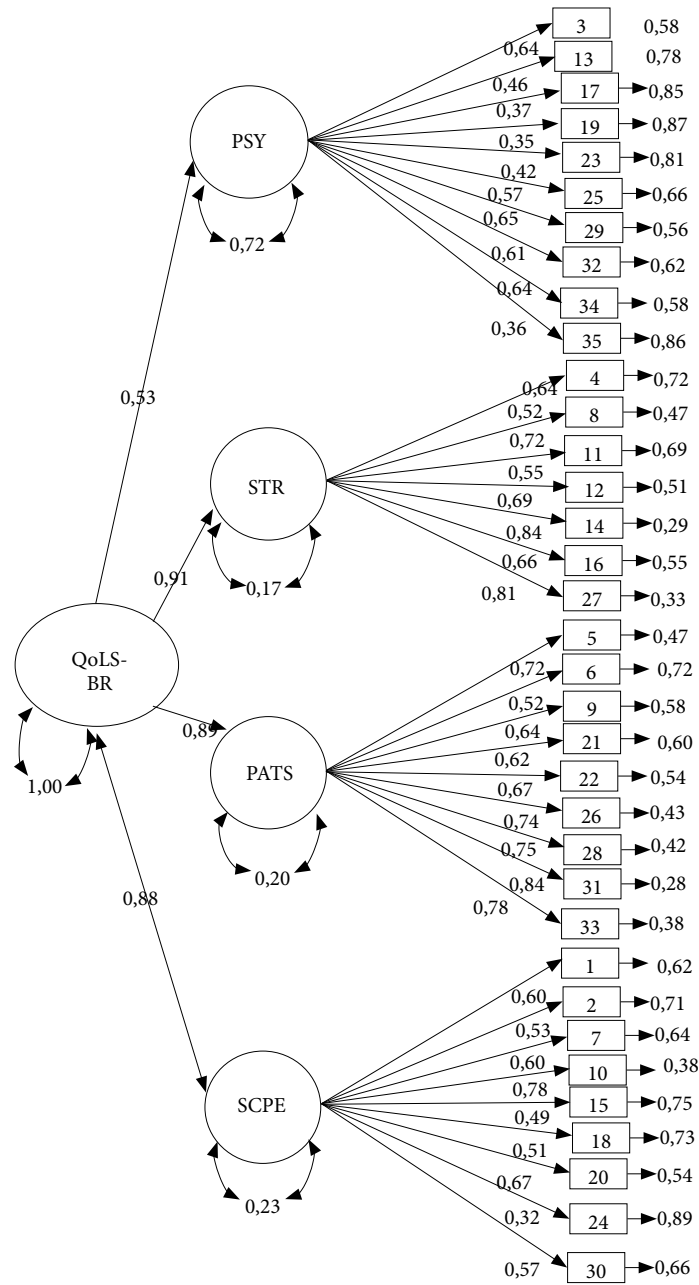
Figure 1. Confirmatory Factor Analysis of the construct QoLS-BR. SCPE, School and classroom physical environment; PATS, Positive attitude toward school; STR, Student-teacher relationship; PSY, Psychosocial.

Source: Authors.

to school, and Positive feelings related to school. On the basis of exploratory factor analysis, Gothra *et al.*[11] proposed the domains Psychosocial, Attitude towards school, School environment, and Teacher–student relationship.

In the current study, we can consider that there was a continuity between the validation studies, for after the exploratory confirmation analyses performed in previous studies[9,11] the confirmatory factor analysis and second-order confirmatory analysis were performed. However, this study used convenience sampling with a population of Santa Catarina's coastline, which does not convey a representative sample of all

Figure 2. Second-order confirmatory analysis. SCPE, School and classroom physical environment; PATS, Positive attitude toward school; STR, Student-teacher relationship; PSY, Psychosocial.

Brazilian students from elementary school. So, other studies from other regions of Brazil are necessary to verify if the instrument's adaptation is adequate to all the populations of Brazilian students from elementary school.

Conclusions

We demonstrated that QoLS-BR is suitable for assessing quality of life in school among elementary school students. The QoLS-BR was found to

be clear, objective, and easy to understand by students, having adequate content validity, reliability, and construct validity. Likewise, to establish the validity of the QoLS-BR, other adaptation studies are necessary for different contexts within the Brazilian population, since there is a cultural diversity in this country.

Collaborations

CR Leite contributed to the manuscript idea, data collection, data analysis and discussions. RD Andrade contributed to data analysis and review of the manuscript. LSE Daronco contributed to review of the manuscript and discussions. ÉPG Felden contributed to the idea of the manuscript, supervision of data collection, data analysis and discussion.

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