

QOLOS – BR - Translation And Validation of The Quality of Life for Obesity Surgery Instrument

QOLOS – BR - Tradução e Validação do Instrumento Quality of Life for Obesity Surgery

QOLOS – BR - Traducción y Validación del Instrumento Calidad de Vida para la Cirugía de la Obesidad

RESUMO

Objetivo: Traduzir e validar o questionário QOLOS – Quality of Life for Obesity Surgery. **Método:** Tradução e validação do questionário com 56 itens dividido em 2 seções: pré e pós-operatório com 36 itens e somente pós-operatório com 20 itens. **Resultados:** Realizada tradução, adaptação transcultural e retrotradução do instrumento, o qual foi divulgado em plataformas digitais, sendo respondido por 466 participantes. Realizada a correlação entre o QOLOS e WHOQOL_BREF que foi significativa e positiva. A consistência interna e estimação da confiabilidade demonstraram alfa Cronbach semelhantes a versão original. A análise fatorial confirmatória (AFC) confirmou a dimensionalidade e a estrutura fatorial da escala. **Conclusão:** As análises estatísticas apresentaram evidências de validade e de precisão.

DESCRIPTORES: obesidade, qualidade de vida, tradução, estudo de validação

ABSTRACT

Objective: To translate and validate the QOLOS questionnaire – Quality of Life for Obesity Surgery. **Method:** Translation and validation of the qolos. it is a 56-item questionnaire divided into 2 sections: pre- and postoperative which has 36 items and only for the postoperative period has 20 items. **Results:** we performed the translation, cross-cultural adaptation and back-translation of the instrument, which was released on digital platforms, being answered by 466 participants. The correlation between QOLOS and WHOQOL_BREF was significant and positive. Internal consistency and reliability estimation showed cronbach's alpha similar to the original version. Confirmatory factor analysis (CFA) confirmed the dimensionality and factor structure of the scale. **Conclusion:** statistical analyzes showed evidence of validity and accuracy.

DESCRIPTORS: obesity, quality of life, translating, validation study.

RESUMÉN

Objetivo: Traducir y validar el cuestionario QOLOS – Calidad de Vida para Cirugía de Obesidad. **Método:** Traducción y validación del cuestionario de 56 ítems dividido en dos secciones: pre y postoperatoria con 36 ítems y postoperatoria únicamente con 20 ítems. **Resultados:** Se realizó la traducción, adaptación transcultural y retrotraducción del instrumento, el cual fue difundido en plataformas digitales y completado por 466 participantes. La correlación entre el QOLOS y WHOQOL_BREF fue significativa y

positiva. Las estimaciones de consistencia interna y confiabilidad demostraron valores alfa de Cronbach similares a la versión original. El análisis factorial confirmatorio (AFC) confirmó la dimensionalidad y la estructura factorial de la escala. **Conclusión:** Los análisis estadísticos mostraron evidencia de validez y precisión.

PALABRAS CLAVE: obesidad, calidad de vida, traducción, estudio de validación

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INTRODUCTION

Bariatric surgery promotes weight loss and beneficial factors in individuals' quality of life, such as dietary re-education, lifestyle changes, and psychological, social, and physical improvements, and is therefore an important aspect to consider¹. In Brazil, there are limitations in the instruments available to assess the quality of life of obese patients undergoing bariatric surgery².

The WHOQOL_BREF (Flecek, et al., 2000)³ and SF 36 (Laguardia, et al., 2013)⁴ assess overall quality of life, but are not specific to obese or bariatric patients. The IWQoL-Lite, although it assesses the impact of obesity on quality of life, does not consider the effects of bariatric surgery in this regard (Mattos, et al., 2019)⁵. Finally, BAROS (Oria, & Moorehead, 1998)⁶ enables a comprehensive assessment of surgical treatment for morbid obesity, but has flaws in its design and needs to be updated in terms of its methodological approach (Nicareta, et al., 2015)⁷.

QOLOS (Quality of life for obesity surgery) is a German instrument developed in English. It was developed specifically to comprehensively assess the quality of life of individuals undergoing bariatric surgery (Muller, et al., 2018)⁸, but has not yet been validated in Brazil. This study aimed to translate, adapt, and provide evidence of validation of this instrument for use in patients undergoing bariatric surgery in the Brazilian population.

METHOD**Translation and evaluation**

The translation and back-trans-

lation process (Fortes and Araújo, 2019)⁹ was used to develop a Brazilian version of the QOLOS Questionnaire. In this process, two independent bilingual translators translated the English version into Portuguese. The two translations were synthesized by a third bilingual subject with technical knowledge in the field of study, who aimed to identify inappropriate expressions and concepts in the translations. Based on this, back-translation was performed by a native English speaker. The questionnaire was sent to the author for review, resulting in the complete translation of the questionnaire. This version was administered to six people representative of the study sample. Finally, with the translation and adaptation complete, the questionnaire was entered into the REDCap platform[®], generating a link for public research.

Study participants

The study involved participants in the pre- and post-operative stages of bariatric surgery, of both sexes, aged over 18, literate in Portuguese, and able to give their consent to participate.

The survey was completed using an online electronic form (<http://redcap.cardiologia.org.br/surveys/?s=Y-4DRAD3AEH>).

Instruments

QOLOS - Quality of life for obesity surgery. QOLOS consists of two sections. The first section has 36 items addressing aspects of quality of life in the preoperative period, divided into seven domains: eating disorders, physical functioning, body satisfaction, family support, social discrimination, positive activities, and relationships. The second section has 20 items addressing

post-operative concerns, divided into four domains: excess skin, dietary adjustment, dumping, and satisfaction with surgery (Muller, et al., 2018)⁸. The instrument is scored on a 5-point Likert scale, with higher scores indicating better quality of life. There is also coding in reverse order in 12 items according to the original (9-12, 14, 16, 18, 21, 23, 27, 34, and 47).

WHOQOL-BREF : World Health Organization Quality of Life Assessment - World Health Organization quality of life assessment instrument - short version. Twenty-four questions from the instrument were used, covering four domains: physical, psychological, social relationships, and environment (Fleck, et al., 2000)³. The answers follow a Likert scale (from 1 to 5, the higher the score, the better the quality of life). The conversion to percentage was performed according to the WHOQOL GROUP standards (World Health Organization, 1995)¹⁰.

Statistical analysis

Data analysis was performed using Statistical Package for Social Sciences SPSS 28.0 and Excel[®]. Once translated and adapted, the instrument was examined in its internal constitution by Confirmatory Factor Analysis (CFA) to assess whether, after translation and adaptation, it maintained the same structures as the original questionnaire. The factor extraction method was principal component analysis, and the rotation was performed using the orthogonal Varimax method (Hair, et al., 2019)¹¹. For the CFA, the statistical package version R 4.2.2 was used to evaluate the factor structure of the QOLOS scale in sections 1 and 2. To evaluate the fit of the models, LAVAN version 0.6-12 was

used, considering the root mean square error of approximation (RMSEA) with a cutoff point close to or less than 0.06, the Tucker-Lewis index (TLI) greater than 0.90, the comparative fit index (CFI) greater than 0.90, and the standardized residual mean square root (SRMR) with a cutoff point less than 0.08 (Hu, 1999)¹². Cronbach's alpha was used to assess internal consistency and reliability estimation¹³, and the internal consistency of the instrument for the Portuguese language was verified by adopting $\alpha = 0.70$ as the minimum acceptable value¹¹. Evidence of validity was assessed between the scores obtained in QOLOS and WOQOL_BREF using Pearson's correlation. Construct validity was also assessed using the known groups method¹⁴ comparing the QOLOS scores in section 1 between preoperative and postoperative patients (t-tests). We performed the sample calculation using six people to answer each item in section 1 and section 2, resulting in a minimum of 216 participants for the first part of the instrument and 120 for the second part¹¹.

Ethical considerations

The project was accepted by the Institutional Ethics Committee under number CAAE:39188420.1.0000.5333. Written informed consent was included in the electronic form and made available for download.

RESULTS

Independent evaluations by three bilingual Portuguese-English experts indicated that the QOLOS translated and adapted into Brazilian Portuguese retained the meaning of the original English version. Comparing the original English version and the back-translated English version of the instrument, the author of the instrument suggested adjustments to six questions (02,

19, 38, 40, 46, and 49), as there were changes in the meaning of some words in the original questionnaire. After corrections to the summary of the two translations, the back-translation, and the final Portuguese version, all items retained the same meaning as in the original English version. The questions were easily understood by six patients at a large hospital in the state of Rio Grande do Sul. Each respondent took around 5 to 7 minutes to complete the questionnaire, with 2 patients in the preoperative period and 4 patients in the postoperative period of bariatric surgery. Once the questionnaire had been translated, adapted, and tested on the participants, we proceeded to apply it to the sample.

Descriptive Statistics

The research was conducted from February 17 to August 1, 2022, and 503 forms were obtained. Three forms were left blank, in which the participants did not agree to participate, nine were excluded because they were duplicates with all the same information, including the date and time of response, and 25 were incomplete and were excluded, totaling 466 respondents residing in various regions of the country. Of these, 352 (75.5%) patients had already undergone bariatric surgery, answering sections 1 (pre) and 2 (postoperative) of the questionnaire, and 114 (24.5%) were in the preoperative period and therefore did not answer section 2 of the questionnaire. Thus, we concluded the study with 466 respondents in phase 1 and 352 in phase 2. Of the participants who underwent bariatric surgery, 18.2% did so through the public health system and 81.4% through some type of health insurance or private plan, with 76% undergoing bypass surgery and 24% undergoing sleeve gastrectomy.

The participants were 89.7% women, aged 39 ± 9 years, 77.7% were white, 49.9% were married, 70% earned between 2 and 4 minimum wages, and

81.4% had health insurance or private health care. In terms of education, most had a college degree (35%) and a postgraduate degree (31%). Regarding risk factors, 25.5% were hypertensive, 22.5% had dyslipidemia, 13.7% were diabetic, and 9.7% were smokers.

The factor loadings for each question in sections 1 and 2 of the questionnaire can be seen in the path diagram, where the arrows indicate the type of relationship between the variables. In general, confirmatory factor analysis (CFA) revealed adjustment indices in the ranges of cut-off values for an acceptable model fit (Figures 1 and 2). The final questionnaire in the Brazilian version therefore had 34 items in section 1, where the eating disorder domain now had 8 items and the positive activities domain had 3 items, and retained the original 20 items in section 2, resulting in the QOLOS-BR version (Table 1), in which we maintained the numbering order of the original scale.

In the CFA, two questions had factor loadings below the recommended level in section 1, in the eating disorders domain (question 1) and in the positive activities domain (question 16). For this reason, and given the considerable improvement in Cronbach's alpha if these items were removed, we decided to remove these two items from the questionnaire. After exclusion, the results improved significantly. CFA confirmed the dimensionality and factorial structure of the scale through the structural equation model, which presented the following results for RMSEA 0.036, TLI 0.998, CFI 0.998, and SRMR 0.049 in Section 1 of the questionnaire. The factor loadings ranged from 0.50 (Q2) to 0.96 (Q25) as shown in Figure 1. In section 2, the following results were obtained for RMSEA 0.039, TLI 0.993, CFI 0.994, and SRMR 0.070. Both showed good fits for the correlated factors. The factor loadings ranged from 0.54 (Q47) to 0.96 (Q43) as shown in Figure 2.

In assessing the convergent va-

lidity between the QOLOS and WHOQOL_BREF factors, all correlations were positive and significant ($p < 0.001$). Overall, the domains showed a moderate correlation, and there was a strong correlation between the total scores of the instruments, as shown in Table 2.

Tables 3 and 4 show the mean, standard deviation, alpha of the domains, and Cronbach's alpha value that would result if the item were removed.

Comparing the scores of patients in the pre- and postoperative periods, significant differences were observed in all domains in the postoperative period, showing an improvement in all aspects related to quality of life after surgery.

DISCUSSION

The present study translated the QOLOS-BR questionnaire into Portuguese, adapted it to the Brazilian culture, and sought empirical evidence of its validity and accuracy. The comparison of the results of pre- and post-surgical patients demonstrated an improvement in the quality of life of those who underwent bariatric surgery. The structure of the domains was confirmed by confirmatory factor analysis, with an acceptable fit in section 1 and section 2 similar to the data from the original instrument. Internal consistency and reliability estimates were observed by the higher alpha values recommended in the literature^{11,15} for the items and domains in sections 1 and 2 of the QOLOS questionnaire. The reason for the lower alpha in the "Positive activities" domain may be due to question 16: "I enjoy eating," since excluding this item resulted in an increase in the alpha of the domain to 0.81. For the Brazilian population undergoing obesity surgery, enjoying eating may not be considered a positive activity. Also, this question may have generated a double meaning, both negative and positive, since many patients do not associate pleasure with

eating, either pre- or post-surgery. People with obesity tend to overeat, attributing to food a meaning of reward, affection, compensation, or substitution for many everyday situations¹⁶.

We observed a low factor load on item 1, "I almost always eat small snacks," which can be assumed to have occurred due to the ambiguous interpretation of the question, as it can be understood both positively, i.e., eating more often in smaller quantities, and negatively, in the sense of snacking.

When analyzing the data, there was a predominance of women who underwent bariatric surgery, in accordance with studies with Brazilian samples, such as those by Arantes, et al., 2022¹⁷ and Silva, et al., 2022¹⁸ with 85.2% and 84%, respectively. This is due to greater concern with health and aesthetic issues among women, according to the same authors. Welbourn et al. (2019) recorded bariatric surgeries worldwide. They also found that the majority of patients are female, with a variation between 50.9% and 93.4%. Regarding the surgical technique used, we observed that bypass surgery was predominant, according to global statistics for this type of procedure^{19,20}.

In the sample, there was a predominance of patients with health insurance, corroborating the literature in our country, which shows that although surgical procedures of this size through the Unified Health System are increasing, there is still a predominance of procedures through supplementary health care²¹. The present study presented people predominantly with higher education and postgraduate degrees. Chen et al., 2021²² investigated the influence of sociodemographic variables on weight loss and outcomes after bariatric surgery. They pointed out that patients with higher BMIs also tend to have lower levels of education and are more dependent on public health services. So, even though these patients are considered eligible for bariatric surgery, most of those who

undergo it are white, have higher incomes, and are insured.

In the search for evidence of convergent validity between QOLOS and WHOQOL_BREF, we found positive and significant correlations in section 1 in the domains of physical functioning with physical domain and body satisfaction with psychological domain, which showed strong correlations. Thus, the surgical procedure reduces dissatisfaction with body image, which improves quality of life, including social relationships, increasing self-esteem and lifestyle changes²³.

One of the limitations of this study was that we reached a sample with a higher level of education and income, which may have led to a better interpretation of the questionnaire items. We suggest that future studies be conducted on samples with different socioeconomic and educational levels.

The assessment of quality of life is an important aspect for determining the success of the surgical procedure and should be performed using appropriate instruments, identifying the impact of the procedure on weight reduction and quality of life (Mattos, et al., 2022)²⁴. The use of QOLOS-BR in Brazilian clinical practice will be important, since the instrument assesses aspects both before and after bariatric surgery.

CONCLUSION

The Brazilian version of QOLOS-BR is consistent with the original version of the instrument. The present study demonstrated that the instrument has acceptable levels of validity and reliability for assessing quality of life in the pre- and postoperative periods of bariatric surgery in the Brazilian population.

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Figure 1: Confirmatory factor analysis - path diagram of the QOLOS questionnaire in Section 1 - standardized factor weights. D1: Eating disorders, D2: Physical functioning, D3: Body satisfaction, D4: Family support, D5: Social discrimination, D6: Positive activities, D7: Relationships

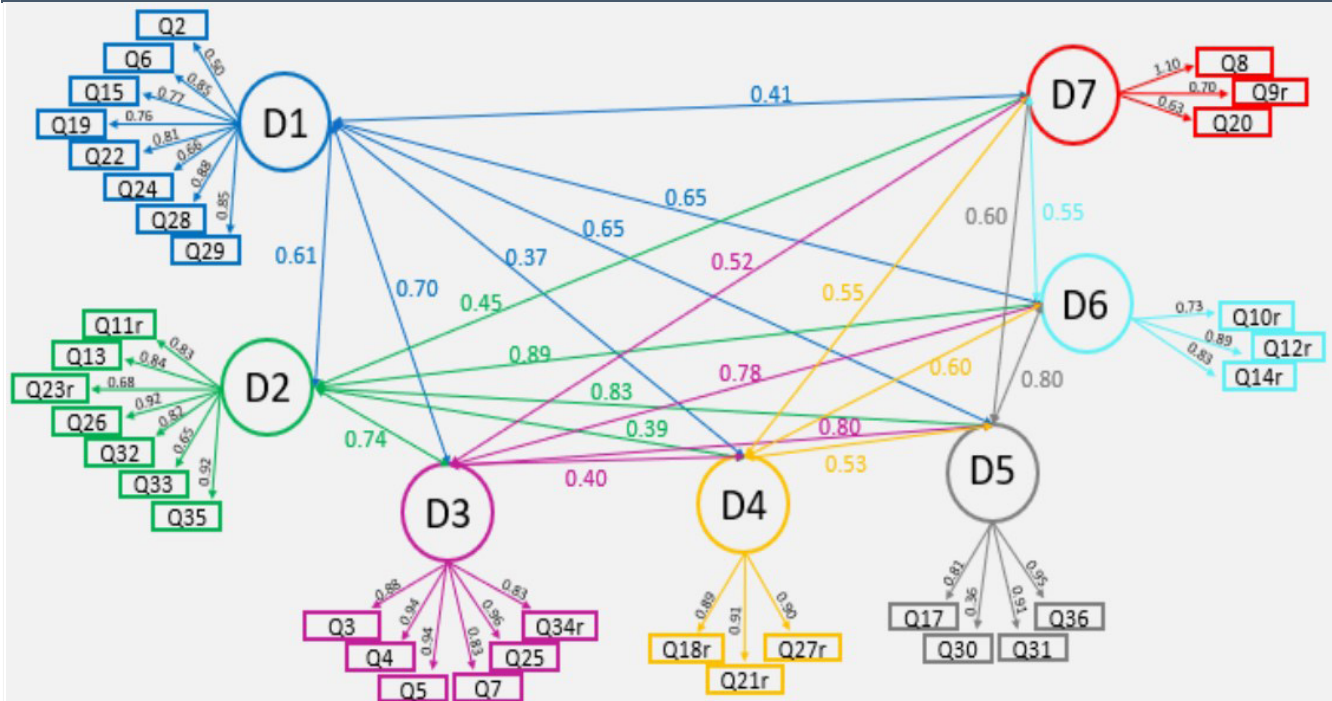


Figure 2: Confirmatory factor analysis - path diagram of the QOLOS questionnaire from Section 2 - standardized factor weights. D1: Excess skin, D2: Diet adjustment, D3: Dumping, D4: Satisfaction with surgery.

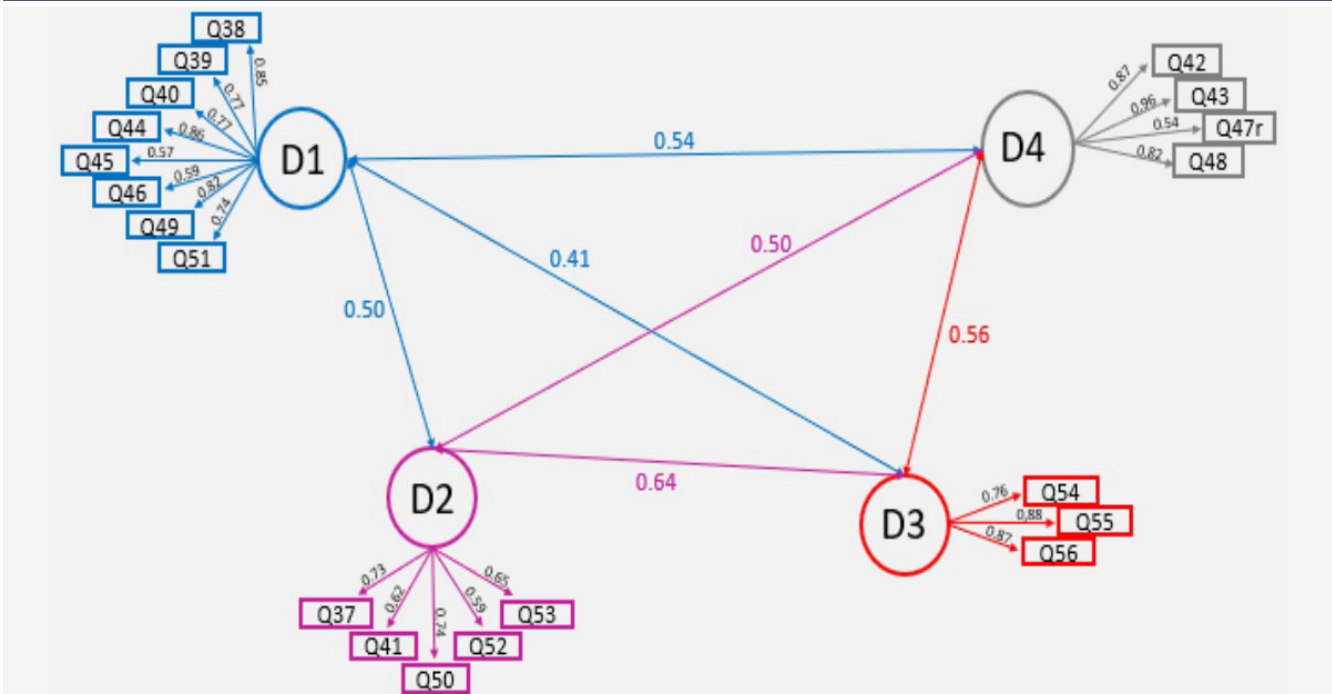


Table 1- Final version in Portuguese QOLOS-BR (Santos & Schmidt, 2025)

QUESTIONÁRIO DE QUALIDADE DE VIDA PARA PACIENTES SUBMETIDOS A CIRURGIA DE OBESIDADE (QUALITY OF LIFE FOR OBESITY SURGERY, QOLOS-BR)

Várias afirmações referentes à sua qualidade de vida relacionada à saúde antes e depois da cirurgia bariátrica são apresentadas a seguir. Leia todas as afirmações com atenção e escolha a resposta que mais se aplica a você nas últimas 4 semanas dentre as cinco opções apresentadas.

		Totalmente verdadeiro	Verdadeiro em grande parte	Nem verdadeiro nem falso	Falso em grande parte	Totalmente falso
2	Sempre tenho medo de não ficar cheio.	☐ ₁	☐ ₂	☐ ₃	☐ ₄	☐ ₅
3	Sinto-me desconfortável em mostrar meu corpo.	☐ ₁	☐ ₂	☐ ₃	☐ ₄	☐ ₅
4	Não estou satisfeito(a) com minha aparência.	☐ ₁	☐ ₂	☐ ₃	☐ ₄	☐ ₅
5	Não aceito meu corpo.	☐ ₁	☐ ₂	☐ ₃	☐ ₄	☐ ₅
6	Frequentemente, perco o controle sobre o meu comportamento alimentar.	☐ ₁	☐ ₂	☐ ₃	☐ ₄	☐ ₅
7	Evito muitas atividades, por causa do medo dos olhares ou comentários das outras pessoas.	☐ ₁	☐ ₂	☐ ₃	☐ ₄	☐ ₅
8	Tenho dificuldade em encontrar um companheiro(a), por causa da minha aparência.	☐ ₁	☐ ₂	☐ ₃	☐ ₄	☐ ₅
9	Recebo suficiente apoio do(a) meu(minha) companheiro(a).	☐ ₁	☐ ₂	☐ ₃	☐ ₄	☐ ₅
10	Tenho <u>suficiente</u> atividades positivas em minha vida cotidiana.	☐ ₁	☐ ₂	☐ ₃	☐ ₄	☐ ₅
11	Consigo me levantar do chão ou de um assento sem nenhum problema.	☐ ₁	☐ ₂	☐ ₃	☐ ₄	☐ ₅
12	Sinto que <u>participo</u> ativamente da vida.	☐ ₁	☐ ₂	☐ ₃	☐ ₄	☐ ₅
13	Minhas doenças físicas me limitam em minha vida diária.	☐ ₁	☐ ₂	☐ ₃	☐ ₄	☐ ₅
14	Tenho energia suficiente para administrar minha vida diária.	☐ ₁	☐ ₂	☐ ₃	☐ ₄	☐ ₅
15	Às vezes, como muito mais do que o normal para mim durante um curto período.	☐ ₁	☐ ₂	☐ ₃	☐ ₄	☐ ₅
17	Não consigo achar um emprego, por causa da minha aparência.	☐ ₁	☐ ₂	☐ ₃	☐ ₄	☐ ₅
18	Me sinto amado(a) por minha família.	☐ ₁	☐ ₂	☐ ₃	☐ ₄	☐ ₅
19	Meus pensamentos sempre giram em torno de <u>assuntos comer e peso</u> .	☐ ₁	☐ ₂	☐ ₃	☐ ₄	☐ ₅
20	Me incomoda não ter um(a) companheiro(a) fixo(a).	☐ ₁	☐ ₂	☐ ₃	☐ ₄	☐ ₅
21	Recebo apoio suficiente da minha família.	☐ ₁	☐ ₂	☐ ₃	☐ ₄	☐ ₅
22	Como demais quando tenho problemas ou fico estressado(a)	☐ ₁	☐ ₂	☐ ₃	☐ ₄	☐ ₅
23	Consigo me vestir e despir sozinho(a) sem problemas.	☐ ₁	☐ ₂	☐ ₃	☐ ₄	☐ ₅
24	Costumo comer escondido(a).	☐ ₁	☐ ₂	☐ ₃	☐ ₄	☐ ₅
25	Tenho vergonha do meu corpo.	☐ ₁	☐ ₂	☐ ₃	☐ ₄	☐ ₅
26	Minha dor me limita em muitas atividades.	☐ ₁	☐ ₂	☐ ₃	☐ ₄	☐ ₅
27	A minha família me valoriza bastante.	☐ ₁	☐ ₂	☐ ₃	☐ ₄	☐ ₅
28	A única coisa que me conforta é a comida.	☐ ₁	☐ ₂	☐ ₃	☐ ₄	☐ ₅
29	Costumo continuar comendo apesar de sentir que meu estômago está cheio.	☐ ₁	☐ ₂	☐ ₃	☐ ₄	☐ ₅
30	Estou preocupado(a) com minha situação financeira.	☐ ₁	☐ ₂	☐ ₃	☐ ₄	☐ ₅
31	Minha aparência atrapalha meu desenvolvimento profissional.	☐ ₁	☐ ₂	☐ ₃	☐ ₄	☐ ₅
32	Tenho dificuldades com a higiene pessoal.	☐ ₁	☐ ₂	☐ ₃	☐ ₄	☐ ₅

33	Dependo de ajuda para administrar minha casa.	☐ ₁	☐ ₂	☐ ₃	☐ ₄	☐ ₅
34	Sinto-me confortável em meu corpo.	☐ ₁	☐ ₂	☐ ₃	☐ ₄	☐ ₅
35	Não sou suficientemente produtivo(a), por causa da minha dor.	☐ ₁	☐ ₂	☐ ₃	☐ ₄	☐ ₅
36	Tenho muitas desvantagens em minha vida diária, por causa da minha aparência.	☐ ₁	☐ ₂	☐ ₃	☐ ₄	☐ ₅

Responda às perguntas a seguir apenas se você já tiver se submetido à cirurgia bariátrica.

		Totalmente verdadeiro	Verdadeiro em grande parte	Nem verdadeiro nem falso	Falso em grande parte	Totalmente falso
37	Sinto-me incomodado(a) que a comida “volte” (ex. regurgitação/vômito) depois de ser engolida.	☐ ₁	☐ ₂	☐ ₃	☐ ₄	☐ ₅
38	Eu sou limitado(a) na minha vida diária por causa do excesso de pele.	☐ ₁	☐ ₂	☐ ₃	☐ ₄	☐ ₅
39	Sinto dor por causa do excesso de pele.	☐ ₁	☐ ₂	☐ ₃	☐ ₄	☐ ₅
40	Eu sou limitado (a) em atividades esportivas por causa do excesso de pele.	☐ ₁	☐ ₂	☐ ₃	☐ ₄	☐ ₅
41	As restrições alimentares ainda são difíceis para mim.	☐ ₁	☐ ₂	☐ ₃	☐ ₄	☐ ₅
42	Minha saúde piorou depois da cirurgia bariátrica.	☐ ₁	☐ ₂	☐ ₃	☐ ₄	☐ ₅
43	Me arrependo de ter feito a cirurgia bariátrica.	☐ ₁	☐ ₂	☐ ₃	☐ ₄	☐ ₅
44	Tenho dificuldades com minha higiene pessoal, por causa do excesso de pele.	☐ ₁	☐ ₂	☐ ₃	☐ ₄	☐ ₅
45	Não gosto quando alguém vê o quanto minha pele está flácida.	☐ ₁	☐ ₂	☐ ₃	☐ ₄	☐ ₅
46	Eu acho meu excesso de pele nada atraente.	☐ ₁	☐ ₂	☐ ₃	☐ ₄	☐ ₅
47	Estou satisfeito(a) com minha perda de peso até agora.	☐ ₁	☐ ₂	☐ ₃	☐ ₄	☐ ₅
48	Tenho problemas de saúde, por causa de complicações da cirurgia bariátrica	☐ ₁	☐ ₂	☐ ₃	☐ ₄	☐ ₅
49	Eu frequentemente tenho infecções ou feridas no corpo, por causa do excesso de pele.	☐ ₁	☐ ₂	☐ ₃	☐ ₄	☐ ₅
50	Me incomoda que a comida “fique presa” (ex. estola) às vezes.	☐ ₁	☐ ₂	☐ ₃	☐ ₄	☐ ₅
51	Sinto-me feio(a) por causa do excesso de pele	☐ ₁	☐ ₂	☐ ₃	☐ ₄	☐ ₅
52	Às vezes, como alimentos que muito provavelmente vão me fazer vomitar depois.	☐ ₁	☐ ₂	☐ ₃	☐ ₄	☐ ₅
53	Tenho dificuldade em mastigar a comida o suficiente.	☐ ₁	☐ ₂	☐ ₃	☐ ₄	☐ ₅

As três perguntas a seguir referem-se a “dumping”, que é o termo usado para vários sintomas físicos que podem aparecer após a ingestão de alimentos com alto teor de açúcar. Esses sintomas incluem suor, náusea, vômito, diarreia, tontura, taquicardia, fraqueza, inquietação, tremores.

		Totalmente verdadeiro	Verdadeiro em grande parte	Nem verdadeiro Nem falso	Falso em grande parte	Totalmente falso
54	Quando tenho <i>dumping</i> , sinto muita dor.	☐ ₁	☐ ₂	☐ ₃	☐ ₄	☐ ₅
55	Tenho dificuldade para lidar com o <i>dumping</i> .	☐ ₁	☐ ₂	☐ ₃	☐ ₄	☐ ₅
56	O <i>dumping</i> limita minha vida diária.	☐ ₁	☐ ₂	☐ ₃	☐ ₄	☐ ₅

QOLOS-BR (Santos & Schmidt, 2025)

The following 12 items are coded in reverse order: 9-12, 14, 16, 18, 21, 23, 27, 34, 47. For all other items, higher scores indicate better quality of life.

Subscales:

QOLOS-BR-1 (pré- e pós-cirurgia)	QOLOS-BR-2 (apenas pós-cirurgia)
1. Distúrbios alimentares: 2, 6, 15, 19, 22, 24, 28, 29	1. Excesso de pele: 38, 39, 40, 44, 45, 46, 49, 51
2. Funcionalidade física: 11r, 13, 23r, 26, 32, 33, 35	2. Ajuste da alimentação: 37, 41, 50, 52, 53
3. Satisfação corporal: 3, 4, 5, 7, 25, 34r	3. <i>Dumping</i> : 54, 55, 56
4. Apoio da família: 18r, 21r, 27r	4. Satisfação com a cirurgia: 42, 43, 47r, 48
5. Discriminação social: 17, 30, 31, 36	
6. Atividades positivas: 10r, 12r, 14r	
7. Relacionamentos: 8, 9r, 20	

Table 2. Assessment of convergent validity by correlations between QOLOS Section 1 and Section 2 domains and overall scores with WHOQOL_BREF domains and total scores

Domains	WHOQOL				
QOLOS – Section 1	Physical domain	Psychological domain	Social	Environment	Total
Eating disorders	0.525**	0.575**	0.416**	0.383**	0.560**
Physical Functioning	0.779**	0.662**	0.517**	0.476**	0.586**
Body satisfaction	0.637**	0.745**	0.544**	0.503**	0.535**
Family support	0.310**	0.410**	0.508**	0.467**	0.221**
Social discrimination	0.636**	0.607**	0.545**	0.518**	0.473**
Positive Activities	0.779**	0.761**	0.626**	0.564**	0.800**
Relationships	0.286**	0.335**	0.366**	0.284**	0.252**
Total QOLOS pre- and post- (Section 1)	0.763**	0.786**	0.639**	0.584**	0.811**
QOLOS – Section 2	Physical domain	Psychological domain	Social	Environment	Total
Excess skin	0.617**	0.577**	0.403**	0.384**	0.560**
Dietary adjustment	0.605**	0.572**	0.379**	0.379**	0.600**
Dumping	0.599**	0.552**	0.373**	0.370**	0.575**
Surgery satisfaction	0.620**	0.568**	0.395**	0.364**	0.602**
Total QOLOS post (Section 2)	0.641**	0.597**	0.410**	0.394**	0.608**

Table 3. Mean, standard deviation, and alpha of QOLOS- Section 1

Domains	Mean	SD	Alpha	Cronbach's alpha if the question is removed
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Body satisfaction	2.86	1.28	0.94	
3. I feel uncomfortable showing my body	2.51	1.43		0.92
4. I am not satisfied with my appearance	2.61	1.49		0.91
5. I do not accept my body.	2.87	1.48		0.91
7. I avoid activities because I am afraid of other people's looks or comments.	3.62	1.54		0.94
25. I am ashamed of my body.	2.69	1.53		0.91
34. I feel comfortable in my body.	2.89	1.46		0.93
Family support	4.21	0.96	0.89	
18. I feel loved by my family	4.35	1.00		0.85
21. I receive enough support from my family	4.20	1.08		0.84
27. My family values me highly	4.10	1.09		0.83
Social discrimination	3.62	0.86	0.79	
17. I cannot find a job because of my appearance	4.26	1.24		0.71
30. I am worried about my financial situation	2.21	1.29		0.86
31. My appearance hinders my professional development.	3.70	1.49		0.62
36. I have many disadvantages in my daily life because of my appearance	3.67	1.49		0.66
Positive activities	3.54	1.07	0.81	
10. I have enough positive activities in my daily life	3.52	1.12		0.51
12. I feel that I participate actively in life	3.58	1.29		0.43
14. I have enough energy to manage my daily life	3.52	1.34		0.45
Relationships	4.17	1.08	0.77	
8. I have difficulty finding a partner because of my appearance	4.25	1.24		0.68
9. I receive sufficient support from my partner	4.01	1.31		0.73
20. It bothers me not to have a steady partner.	4.30	1.32		0.66
Total score Pre/post	3.55	0.85		

Table 4. Mean, standard deviation, and alpha of QOLOS-Section 2.

Domains	Mean	SD	Alpha	Cronbach's alpha if the question is removed
Excess skin	2.96	1.86	0.85	
38. I am limited in my daily life because of excess skin	3.94	1.20		0.82
39. I experience pain because of excess skin	4.42	1.01		0.83
40. I am limited in sports activities because of excess skin.	4.30	1.09		0.82
44. I have difficulties with my personal hygiene because of excess skin.	4.72	0.75		0.84
45. I don't like it when someone sees how loose my skin is.	3.18	1.51		0.83
46. I find my excess skin unattractive.	2.66	1.55		0.83
49. I often have infections or sores on my body because of excess skin.	4.76	0.72		0.85
51. I feel ugly because of excess skin.	3.68	1.41		0.81
Adjusting diet	2.61	1.76	0.74	
37. I feel uncomfortable when food comes back up (e.g., regurgitation/vomiting) after swallowing.	3.38	1.50		0.67
41. Food restrictions are still difficult for me.	3.68	1.40		0.72
50. It bothers me that food gets stuck (e.g., gets stuck in my throat) sometimes	3.24	1.55		0.66
52. Sometimes I eat foods that are very likely to make me vomit afterwards	3.95	1.38		0.70
53. I have difficulty chewing food thoroughly	3.17	1.56		0.70
Dumping	2.77	1.88	0.83	
54. When I have dumping, I feel a lot of pain	3.67	1.36		0.79
55. I have difficulty coping with dumping.	3.41	1.38		0.70
56. Dumping limits my life	4.04	1.20		0.77
Satisfaction with surgery	3.43	2.06	0.70	
42. My health worsened after bariatric surgery	4.67	0.79		0.55
43. I regret having bariatric surgery	4.81	0.60		0.59
47. I am satisfied with my weight loss so far	4.22	1.13		0.83
48. I have health problems due to complications from bariatric surgery	4.63	0.81		0.57
Total post score	2.94	1.80		