BRAZILIAN–PORTUGUESE VALIDATION OF THE UNIVERSITY OF WASHINGTON QUALITY OF LIFE QUESTIONNAIRE FOR PATIENTS WITH HEAD AND NECK CANCER

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Abstract: Background. The University of Washington Quality of Life (UW-QOL) questionnaire is an English-language survey instrument used worldwide to assess the quality of life of patients with head and neck cancer. To be used in other cultures, such instruments require careful translation and psychometric validation in other languages.

Methods. The translation and cultural adaptation of the questionnaire were performed following accepted international guidelines. The psychometric validation was performed on a consecutive series of patients with at least 1 year of disease-free survival after treatment for squamous cell carcinoma of the upper aerodigestive tract, recruited from October 2004 to January 2005 from a tertiary cancer center hospital. Eligible subjects were invited to complete the Portuguese version of the UW-QOL questionnaire during routine clinical consultation and complete it again within 15 days. They also completed a validated Portuguese version of the Medical Outcomes Study 36-Item Short-Form Health Survey (SF-36) and a questionnaire to evaluate anxiety and depression symptoms (Hospital Anxiety and Depression Scale [HADS]).

Results. A Portuguese version of the questionnaire was developed in iterative fashion. In the psychometric validation process, a total of 109 patients were analyzed. Reliability was excellent, including both internal consistency (Cronbach’s alpha [α] of 0.744) and test retest reliability (intraclass correlation coefficient [ICC] of 0.882). Construct validity was supported by statistically significant relationships between the SF-36 and HAD questionnaires and the translated UW-QOL questionnaire.

Conclusions. The Brazilian–Portuguese version of the UW-QOL questionnaire appears to be culturally appropriate and psychometrically valid. This version is a valuable tool to evaluate accurately the quality of life of Brazilian patients with head and neck cancer. © 2006 Wiley Periodicals, Inc. Head Neck 28: 1115–1121, 2006

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During the past few years, quality of life (QOL) evaluation has been recognized as an important outcome measure in medicine, including oncology.1,2 These measurements have been made with regularity in the head and neck cancer population. QOL is important to assess because the most recent advances in management can lead to different physical and/or functional sequelae.3–5 The anatomic location of head and neck tumors may...
influence vital functions such as chewing, swallowing, and speech and may also impair cosmetic and psychosocial aspects of patients. In this context, evaluation of QOL is an important tool for understanding the impact of the head and neck cancer and its treatment on the patient’s life. It could also be a valuable tool for better planning of treatment strategies.

Health-related QOL is usually measured by application of specific questionnaires. Among all questionnaires designed to evaluate patients with head and neck cancer, the University of Washington Quality of Life (UW-QOL) questionnaire is one of the most frequently used worldwide. It is well validated, concise, and easy to complete and interpret. It has been very suitable for English-speaking populations. To introduce its use in other cultures and countries, it needs to be carefully translated and culturally adapted in the new language, and then psychometrically validated in the new language, to guarantee its accuracy in the new population.

The objective of this study was to perform the translation and psychometric validation of the UW-QOL questionnaire into Brazilian–Portuguese.

MATERIALS AND METHODS

The first step was the translation and adaptation of the UW-QOL questionnaire to the Brazilian–Portuguese language. We followed internationally accepted guidelines. Two bicultural experts translated the original English version of the UW-QOL questionnaire to Brazilian–Portuguese. A third bicultural person performed the comparison of the 2 versions and an iterative consensus was reached. The consensus version of the Brazilian–Portuguese translation was sent to other 2 additional bicultural experts (at the University of Washington, Seattle), who performed a similar back-translation process (from Brazilian–Portuguese to English). This back-translated version was then compared with the original English-language version to ensure that the translations were suitable. Discrepancies between the original and back-translated versions were resolved by repeating the process as needed.

The next step was the psychometric validation. We tested the translated version on a consecutive series of patients seen in the A. C. Camargo Hospital outpatient clinic between October 2004 and January 2005. Inclusion criteria were adult patients with squamous cell carcinoma of the upper aerodigestive tract who had 1 year of disease-free survival. Eligible patients were invited to participate in the study, and participants signed a consent form approved by the Institutional Ethics Committee.

All participants were asked to complete a packet of self-administered questionnaires during the routine outpatient clinic consultation and also received another UW-QOL questionnaire within 15 days, which was returned by mail. The 15-day interval was chosen to measure test–retest reliability, as enough time had elapsed to prevent patients from remembering their responses to the first administration of the scale, but not enough time to allow clinically meaningful change to occur. We emphasize that no patients in the study underwent treatment in this 15-day interim period. The packet included the following questionnaires: Brazilian–Portuguese version of the UW-QOL questionnaire, the Brazilian–Portuguese validated form of the Medical Outcomes Study 36-Item Short-Form Health Survey (SF-36), and the Hospital Anxiety and Depression Scale (HADS).

The charts of enrolled subjects were reviewed, and demographic, tumor, and treatment data were collected. Each domain item on the UW-QOL scale is scored from 0 to 100, with the composite score being the mean of the 12 domains. A higher score is indicative of better QOL. Also, 3 separate global questions on overall QOL are not used in the composite score, and they can be analyzed separately. The HADS is a questionnaire consisting of 14 questions designed to evaluate the presence of anxiety and depression in patients with physical diseases. These 14 questions are divided in 2 subgroups (7 questions to evaluate anxiety and 7 to evaluate depression), each question with scores varying from 0 to 3. The sum of each subscale denotes the category of the patients: 0 to 7, non-cases; 8 to 10, doubtful cases; and 11 to 21 definite cases. In this study, we divided the HADS scores in 2 categories: patients without depression (“noncases”) and those who may or definitely have depression (“doubtful” and “definite” cases). The SF-36 is a multidimensional, 36-item generic instrument to evaluate QOL. Results may be reported in any of 8 subdomains, or as 2 summary scores, termed the physical and mental component summary scales. These 2 component summary scales describe general physical and mental health. They are each scored from 0 to 100; a higher score is indicative of better QOL, and a score of 50 represents the normative value in the US population.

Reliability was established by assuring both internal consistency (Cronbach’s α) and test–retest reliability (intraclass correlation coefficient
(ICC)) at 2 weeks in the absence of interim treatment. Internal consistency is considered good if \( \alpha \) approximates 0.70 but does not exceed 0.90, because values of 0.90 imply the presence of redundant items. Test–retest reliability was measured with the ICC, which is more rigorous than Pearson’s correlation coefficient \( r \) because it considers not just the strength of the correlation but also systematic variations.

There are 3 forms of validity: content, criterion, and construct. Content validity was established with the rigorous approach to item development in the original form. It is maintained by the rigorous process of the translation and back-translation. The criterion validity, which tests scale performance in comparison to a gold standard, is difficult to establish when evaluating QOL scales, mainly in head and neck cancer assessment because there is no instrument considered “gold-standard” in this population. Construct validity is present if the scale behaves according to hypothesized relationships. We hypothesized that the composite score of the UW-QOL should correlate with general questions about overall QOL and the main component summary scales of the SF-36 questionnaire. We also hypothesized that higher depression scores and larger tumors would result in worse UW-QOL scores. The Pearson correlation coefficient and Spearman rho (\( \rho \)) were used to evaluate the correlations between continuous and ordinal variables, respectively. The nonparametric tests of Mann–Whitney or Kruskal–Wallis were used to compare means among the groups studied.

The statistical analysis was performed using version 12.0 of the SPSS statistical program (SPSS, Chicago, IL) for Windows.

RESULTS

The first translation of the UW-QOL to Brazilian–Portuguese was successful, without substantial discrepancies. A minor difficulty was encountered in translating the word “narcotics,” which exists in Portuguese but is not currently used in Brazil. We opted to use the expression “controlled medication,” which is the term more commonly used in Brazil for the designation of such drugs. After other minor adjustments, the back-translation was compared with the original English version and did not show any significant content discrepancies between both versions. The final Brazilian–Portuguese version is contained in the Appendix.

A total of 109 patients were enrolled in the psychometric validation process. Most were male (82.6%) with ages ranging from 34 to 83 years (median, 62 years). The tumor sites were: 37 oral cavity (33.9%), 19 oropharynx (17.4%), 39 larynx (35.8%), 11 hypopharynx (1.1%), and 3 nasopharynx (2.8%). The T classifications were as follows: 51 (46.8%) T1/T2 and 58 (53.2%) T3/T4. Forty (36.7%) patients had surgery and radiotherapy, 30 (27.5%) had surgery alone, 21 (19.3%) had radiotherapy alone, 14 (12.8%) had primary concomitant chemoradiation, and 4 (3.7%) had a combination of surgery, radiation, and chemotherapy. The mean and standard deviation (SD) of the UW-QOL composite score in the test and retest evaluations were 80.2 (SD = 12.6) and 78.9 (SD = 13.9), respectively.

The translated scale had strong internal consistency (Cronbach’s \( \alpha = 0.744 \)) and excellent test–retest reliability (ICC = 0.880) (raw data in Figure 1).

Construct validity was evaluated based on the hypotheses described. Patients with higher scores on the depression scale had lower scores on the UW-QOL questionnaire, which showed a statistically significant Spearman’s \( \rho \) correlation of –0.342 (\( p < .001 \)). This association was also significant with dichotomous categorization of HADS scores as proposed by the authors (\( p < .001 \) [Figure 2]). The UW-QOL composite scores behaved as predicted when patients were categorized by T classification, as patients with larger tumors had worse UW-QOL scores (\( p < .001 \)) (Figure 3). The UW-QOL composite scores also correlated well with global questions.

![Figure 1](image1.png)

**Figure 1.** Test–retest data of UW-QOL (ICC = 0.880). ICC, intraclass correlation coefficient.
There was also moderately strong concordance between the UW-QOL composite score and the Physical Component Summary (PCS) and Mental Component Summary (MCS) scores of the SF-36 (Table 1).

DISCUSSION
QOL evaluation has become an important outcome measure in the head and neck cancer population during the past few decades. This importance is highlighted by the potential impact of such tumors and their treatment on functional, emotional, social, and professional aspects of affected individuals.

Typically, QOL is measured by the application of specific questionnaires. Most instruments have been designed in developed and English-speaking countries. To be of use in other countries and cultures, these scales require rigorous translation and revalidation. The UW-QOL questionnaire is a well-validated, concise, and minimally burdensome scale, and also happens to be one of the most frequently used head and neck scales in the world. We have successfully translated and adapted this scale for the Brazilian population.

In addition, we have demonstrated that our translation has excellent reliability and construct validity (Figure 4).
validity. We observed strong correlations between the Brazilian–Portuguese UW-QOL composite scores with T classification, global QOL, and HADS scores. Patients with poor overall QOL and larger tumors, as well as patients with higher depressive scores, had lower UW-QOL score, confirming that the hypothesized variables that could affect the QOL were directly related to the UW-QOL scoring.

An important consideration in the application of QOL scales is to understand what kind of change represents a minimally clinically important difference. As yet unpublished data from the University of Washington suggest that a 6- to 8-point difference in the composite score is the range for a low to a high clinically important difference (B.Y., 2003). Our Brazilian data suggest that these values may be similar, as we observed standard deviations on the order of 10 to 12. In T1 disease, the mean composite score in the Brazilian population was 88.6 (standard deviation, 9.6). In T2, T3, and T4 disease, the mean scores were 83.4 (10.6), 75.5 (12.5), and 75.2 (13.1), respectively. Therefore, a minimally clinically important difference of 6 to 8 would have an effect size of roughly .5, which is considered an intermediate effect.

Despite the recognition that disease-specific measures differ from general health measures, we found moderately strong correlations between the physical and mental component summary scores of the SF-36 with the translated UW-QOL scale. Nonetheless, a comprehensive evaluation of QOL in patients with head and neck cancer should include both measures.

In conclusion, the Brazilian–Portuguese version of the UW-QOL questionnaire appears to be culturally appropriate and psychometrically valid. This version is a valuable tool to accurately evaluate the QOL of Brazilian patients with head and neck cancer, and it can be reliably used in Brazil.

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APPENDIX: BRAZILIAN–PORTUGUESE VERSION OF THE UW-QOL SCALE

Questionário de qualidade de vida da Universidade de Washington

Este questionário pergunta sobre sua saúde e qualidade de vida durante os últimos sete dias. Por favor responda a todas as questões marcando uma alternativa para cada questão.

1. Dor (marque uma alternativa [C])
   100 [ ] Eu não tenho dor
   75 [ ] Há dor leve não necessitando de medicação
   50 [ ] Eu tenho dor moderada, requerendo uso de medicação regularmente
   25 [ ] Eu tenho dor severa controlada somente com medicamentos controlados
   0 [ ] Eu tenho dor severa, não controlada por medicação

2. Aparência (marque uma alternativa [C])
   100 [ ] Não há mudança na minha aparência
   75 [ ] A mudança na minha aparência é mínima
   50 [ ] Minha aparência me incomoda, mas eu permaneço ativo
   25 [ ] Eu me sinto desfigurado significativamente e limito minhas atividades devido a minha aparência
   0 [ ] Eu não posso estar com outras pessoas devido a minha aparência

3. Atividade (marque uma alternativa [C])
   100 [ ] Eu estou tão ativo quanto sempre estive
   75 [ ] Existem vezes em que não posso manter meu ritmo antigo, mas não frequentemente
   50 [ ] Eu estou frequentemente cansado e tenho diminuído minhas atividades embora eu ainda saia de casa
   25 [ ] Eu não saio de casa porque eu não tenho força
   0 [ ] Eu geralmente fico na cama ou na cadeira e não saio de casa

4. Recreação (marque uma alternativa [C])
   100 [ ] Não há limitações para recreação em casa ou fora de casa
   75 [ ] Há poucas coisas que eu não posso fazer, mas eu ainda saio de casa para me divertir
   50 [ ] Há muitas vezes que eu gostaria de sair mais de casa, mas eu não estou bem para isso
   25 [ ] Há limitação severa para o que eu posso fazer, geralmente eu fico em casa e assisto TV
   0 [ ] Eu não posso fazer nada agradável
5. Deglutição (marque uma alternativa [X])
100 [ ] Eu posso engolir tão bem como sempre
67 [ ] Eu não posso engolir algumas comidas sólidas
33 [ ] Eu posso engolir somente comidas líquidas
0 [ ] Eu não posso engolir porque desce errado e me sufoca

6. Mastigação (marque uma alternativa [X])
100 [ ] Eu posso mastigar tão bem como sempre
50 [ ] Eu posso comer alimentos sólidos leves mas não consigo mastigar algumas comidas
0 [ ] Eu não posso mastigar nem mesmo alimentos leves

7. Fala (marque uma alternativa [X])
100 [ ] Minha fala é a mesma de sempre
67 [ ] Eu tenho dificuldade para dizer algumas palavras mas eu posso ser entendido mesmo ao telefone
33 [ ] Somente minha família e amigos podem me entender
0 [ ] Eu não sou entendido pelos outros

8. Ombro (marque uma alternativa [X])
100 [ ] Eu não tenho problemas com meu ombro
67 [ ] Meu ombro é endurecido mas isto não afeta minha atividade ou força
33 [ ] Dor ou fraqueza em meu ombro me fizeram mudar meu trabalho
0 [ ] Eu não posso trabalhar devido problemas com meu ombro

9. Paladar (marque uma alternativa [X])
100 [ ] Eu sinto sabor da comida normalmente
67 [ ] Eu sinto o sabor da maioria das comidas normalmente
33 [ ] Eu posso sentir o sabor de algumas comidas
0 [ ] Eu não sinto o sabor de nenhuma comida

10. Saliva (marque uma alternativa [X])
100 [ ] Minha saliva é de consistência normal
67 [ ] Eu tenho menos saliva que o normal, mas ainda é o suficiente
33 [ ] Eu tenho muito pouca saliva
0 [ ] Eu não tenho saliva

11. Humor (marque uma alternativa [X])
100 [ ] Meu humor é excelente e não foi afetado por causa do meu câncer
75 [ ] Meu humor é geralmente bom e é somente afetado por causa do meu câncer ocasionalmente
50 [ ] Eu não estou nem com bom humor nem deprimido por causa do meu câncer
25 [ ] Eu estou um pouco deprimido por causa do meu câncer
0 [ ] Eu estou extremamente deprimido por causa do meu câncer

12. Ansiedade (marque uma alternativa [X])
100 [ ] Eu não estou ansioso por causa do meu câncer
67 [ ] Eu estou um pouco ansioso por causa do meu câncer
33 [ ] Eu estou ansioso por causa do meu câncer
0 [ ] Eu estou muito ansioso por causa do meu câncer

Quais problemas tem sido os mais importantes para você durante os últimos 7 dias?
Marque [X] em até 3 alternativas
[ ] Dor [ ] Deglutição [ ] Paladar
[ ] Aparência [ ] Mastigação [ ] Saliva
[ ] Atividade [ ] Fala [ ] Humor
[ ] Recreação [ ] Ombro [ ] Ansiedade

Questões gerais
Comparado com o mês antes de você desenvolver o câncer, como você classificaria sua qualidade de vida relacionada à saúde (marque uma alternativa: [X])
[ ] Muito melhor
[ ] Um pouco melhor
[ ] Mais ou menos o mesmo
[ ] Um pouco pior
[ ] Muito pior
Durante os últimos 7 dias.

De um modo geral a qualidade de vida inclui não somente saúde física e mental, mas também muitos outros fatores, tais como família, amigos, espiritualidade, atividades de lazer pessoal que são importantes para sua satisfação com a vida. Considerando tudo em sua vida que contribui para seu bem-estar pessoal, classifique a sua qualidade de vida em geral durante os últimos 7 dias.

Por favor descreva quaisquer outros problemas (médicos ou não médicos) que são importantes para sua qualidade de vida e que não tenham sido adequadamente mencionados pelas nossas perguntas (você pode anexar folhas adicionais se necessário).

**REFERENCES**