Portuguese version of the Quality of Life Enjoyment and Satisfaction Questionnaire: a validation study

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Objective. The aim of this study was to demonstrate the validity and reliability of the Portuguese version of the Quality of Life Enjoyment and Satisfaction Questionnaire (Q-LES-Q) among substance users in southern Brazil.

Methods. The original English version of the Q-LES-Q was translated into Portuguese taking into account semantic and conceptual equivalence. The Portuguese versions of the Q-LES-Q and the World Health Organization Quality of Life Instrument (WHOQOL-BREF) were used to assess quality of life among crack cocaine and inhalant users. Factorial and reliability analyses as well as correlation studies were conducted to establish the psychometric properties of the Portuguese version of the Q-LES-Q.

Results. All areas of the Q-LES-Q achieved significant Cronbach’s coefficients. Significant Pearson correlation coefficients were obtained between various subscales of the Q-LES-Q and the four dimensions of the WHOQOL-BREF. Correlations were significant when crack and inhalant users were analyzed separately or conjointly. Inhalant users presented significantly higher scores than crack users in the social ($p = 0.035$) and general ($p = 0.005$) subscales of the Q-LES-Q.

Conclusion. The Portuguese version of the Q-LES-Q possesses sound internal validity. The English version of the Q-LES-Q was adequately adapted to Portuguese. Inhalant users may present lower levels of satisfaction with social life and overall quality of life than crack users. The Portuguese version of the Q-LES-Q is a reliable questionnaire for future research and clinical use with substance users in Brazil.

Key words. Quality of life, reliability and validity, questionnaires, crack cocaine, solvents, Brazil.
quality-of-life scores. It has been advocated that the effort to assess the impact of drug dependence and its treatment on the quality of life of patients has been insufficient (16). Yet, self-reported information obtained from quality-of-life questionnaires provides valuable information about the burden of treatment that drug-addicted persons experience.

In Brazil, only a limited number of studies investigated quality of life among substance users. A pilot study that used the World Health Organization Quality of Life Instrument (WHOQOL-BREF) revealed that users with low to moderate levels of drug dependence show higher scores in all domains of this questionnaire (17). In a similar study with young smokers at two public Brazilian universities, never-smokers presented higher health-related quality-of-life scores than smokers in all domains (18).

The limited number of studies investigating the interplay between drug dependence and quality of life in Brazil may be due to the limited availability of quality-of-life instruments validated to Portuguese. The widely used and recognized Quality of Life Enjoyment and Satisfaction Questionnaire (Q-LES-Q), for instance, has not been tested in Brazil. The Q-LES-Q has been used to investigate different degrees of enjoyment and satisfaction that other instruments cannot detect easily (19). Recently, the Italian version of the Q-LES-Q has been validated in a multicenter study with patients receiving treatment for anxiety disorders (20). The Italian version of the Q-LES-Q proved to be as valid and reliable as the original English version.

Clinicians and policymakers now agree on the importance of measuring quality of life (21). Because of the increment in the number of multinational and multicultural research projects, there has been a proportional increase in the number of studies designed to test and adapt a series of health status instruments to different countries and languages (22). Most questionnaires were originally developed in English-speaking countries. However, the methodological details of translation and adaptation of questionnaires originally developed in English for future use in other countries have received surprisingly little attention. It is now consensus that, when tested across different cultures, measures must not only be well translated linguistically but also be well adapted culturally to guarantee the content validity of the instrument (22, 23).

The main objective of this study is to test in Brazil the Portuguese version of the Q-LES-Q. The original English version of this assessment tool was translated and adapted to Portuguese according to well-established methodologies and then tested among crack and inhalant drug users in southern Brazil in 2005.

MATERIALS AND METHODS

Sample

The study investigated two groups of adult volunteers of equal size (n = 50): a group of crack cocaine users and a group of inhalant users. Both groups of drug users were interviewed as inpatients volunteers under psychiatric treatment in specific psychiatric wards of tertiary care psychiatric treatment facilities and higher education training sites. Drug users fulfilled the diagnostic criteria (24) of one of the drug dependence formulations under scrutiny, according to a psychiatric interview conducted during the admission processes by certified psychiatrists who were unaware of this research protocol. Although patients with polydrug dependence were not excluded from the study, they had to satisfy the inclusion criteria of identifying one of the two drugs as (1) the main addictive substance and (2) the one causing the most salient dependence. In both groups of substance users, variable frequencies of nicotine, alcohol, and cannabis use were also observed. Yet, no diagnosis of withdrawal from any of these substances was established during the admission process of volunteers from both groups.

All patients who volunteered to participate in this investigation were assisted via the Brazilian public health system. Taking into account that a substantial fraction of the sample was illiterate or semi-illiterate, all patients com-
completed the questionnaires under minimal guidance from trained examiners, who followed standardized instructional procedures. All volunteers have Portuguese as their mother tongue.

Research volunteers completed a socioeconomic status (SES) scale, which was developed and tested in Brazil (25). This instrument classifies SES into six categories: lower-lower, upper-lower, lower-middle, upper-middle, lower-upper and upper-upper class. The educational background of volunteers was not assessed.

Recruitment

Research volunteers were recruited via word of mouth by members of the research team in the days after their admission process to one of the mental health facilities mentioned above. Patients were invited to participate in this study after achieving a physically and psychologically stable condition as determined by their clinical team in the public mental health facilities. Recruitment announcements did not refer to “healthy” or “normal” controls in order to decrease the potential for underreporting psychiatric and medical illness.

Informed consent

This study was endorsed by the institutional Ethics and Research Committees at the University of Caxias do Sul (UCS), which are regulatory bodies that control all scientific activities developed at different campuses of UCS. All volunteers signed a consent form to declare a voluntary agreement with all procedures implied in this project. A certificate of confidentiality was guaranteed to all research respondents, whose participation was needed for scientific purposes only. All respondents were treated anonymously.

Quality-of-life assessment

Research volunteers completed the long form of the Q-LES-Q (19). The Q-LES-Q is a self-report instrument composed of 93 items, with 91 of them grouped into eight summary subscales reflecting satisfaction with physical health, subjective feelings, work, household duties, school, leisure activities, social relationships, and general activities. Two additional items in the general activities subscale measure satisfaction with medication and overall life satisfaction and contentment.

Each of the 93 items is rated on a 5-point scale, which indicates the degree of enjoyment or satisfaction experienced during the week before the assessment. High scores on the Q-LES-Q indicate greater enjoyment or satisfaction. Raw summary scores are calculated as a percentage of the maximum possible score to facilitate comparisons across different areas of functioning. Some investigators have reported their data in terms of raw mean scores, while others have calculated the maximum percentage scores (26). The general activities subscale is frequently used as a short form of the Q-LES-Q (Q-LES-Q-SF). It is composed of 14 items covering a wide array of life issues in addition to the two other items mentioned above.

Research volunteers also completed the short version of the WHOQOL-BREF as a benchmark against which Q-LES-Q was compared. The WHOQOL-BREF is a cross-culturally valid assessment of well-being and quality of life (27). This tool was developed through an international collaboration of various sites working in their own national language. The WHOQOL-BREF collaboration pooled information throughout the project, which facilitated a high level of semantic and conceptual equivalence in the process of generating multilingual instruments (28). Initial analysis of the WHOQOL-BREF-generated data indicated that a four-factor structure best fitted this tool, and the WHOQOL-BREF was therefore developed in the context of four domains of WHOQOL-BREF: physical, psychological, social, and environment (28). The Portuguese version of the WHOQOL-BREF instrument has already been tested and validated in Brazil (17).

Adaptation and translation procedures

The English version of the Q-LES-Q was translated into Portuguese, taking into account semantic, idiomatic, experimental, cultural, and conceptual equivalence between the source and the target instruments (29). Two investigators proficient in both Portuguese and English developed the final Portuguese version of the Q-LES-Q. Each investigator translated and adapted the questionnaires from one language to the other (translation and back-translation). The final adapted version of the instrument was established by a committee of specialists by comparing the translation and the back-translation of each instrument. This committee consisted of professionals fully cognizant of the subject under investigation. Many of them were versed in both languages. The various drafts of both questionnaires, in each language, were progressively improved by using relevant information obtained from a pilot study conducted with a different subset of health care professionals and patients not included in the current research protocol and analysis (8, 30).

Statistical analysis

The internal consistency of Q-LES-Q subscales was determined via Cronbach’s alpha coefficients. The decrease in Cronbach’s alpha coefficients at item deletion was computed when pertinent. The correlations between the areas of the Q-LES-Q and the WHOQOL-BREF were examined by using Pearson product-moment correlation coefficients. Independent-samples t tests were used to compare the Q-LES-Q scores of crack and inhalant users. A Mann–Whitney U test was used to compare SES of the two groups. Statistical analysis was conducted with SPSS® software.

RESULTS

Sociodemographic characteristics

The mean ages of crack users and inhalant users were 22.8 and 17.3 years, respectively. The group of crack users consisted of 14% female and 86% male volunteers. The gender distribution among female and male inhalant users was 10% and 90%, respectively.

As demonstrated in Table 1, in terms of SES, most volunteers in the crack (56%) and inhalant (58%) user groups were in the lower-middle category.

Internal structure information

The internal consistency (correlation of the items to the total score) of the Portuguese version of the Q-LES-Q, considering crack and inhalant users jointly, is shown in Table 2. The reliability analysis of each subscale, including
Pearson product-moment correlation coefficients

Correlation coefficients were computed among the scores of each subscale of the Q-LES-Q and the four dimensions of the WHOQOL-BREF in the groups of crack and inhalant users taken conjointly. Table 3 illustrates Pearson correlations achieved between various subscales of the Q-LES-Q and the areas of WHOQOL-BREF. Significant \( (p < 0.01) \) correlations among all areas of the WHOQOL-BREF and four subscales of the Q-LES-Q were detected: physical \((n = 99)\), psychological \((n = 100)\), social \((n = 100)\), and environment \((Q-LES-Q-SF; n = 100)\). The leisure subscale also attained significant correlations with WHOQOL-BREF areas related to physical health \( (p < 0.01) \), psychological factors \( (p < 0.01) \), and social relationships \( (p < 0.05) \). The WHOQOL-BREF area entitled “environment” attained significant \( (p < 0.01) \) correlation with the Q-LES-Q area related to household duties.

Independent-samples tests

A Mann–Whitney U test was conducted to investigate a hypothesis of distinct SES between the two groups of substance users. This nonparametric test revealed no significant difference between crack and inhalant users according to different SES categories \((z = -1.10, p = 0.27)\).

Independent-samples t tests were conducted to evaluate the hypothesis of differential means of quality-of-life maximum percentage scores between crack and inhalant users in the different Q-LES-Q areas. Inhalant users presented significantly higher scores than crack users in the social \((t(98) = 1.88; p = 0.035)\) and general \((t(98) = 1.74; p = 0.005)\) subscales of the Q-LES-Q. No significant difference was detected between inhalant and crack users in any other areas of the Q-LES-Q.

DISCUSSION

The Portuguese version of the Q-LES-Q proved to have sound psychometric properties. Internal consistency data revealed significant Cronbach’s alpha coefficients for all eight areas of the Q-LES-Q. Likewise, the short form of the Portuguese version of the Q-LES-Q presented significant Cronbach’s alpha coefficients, which attests to the substantial uniformity of the abbreviated version as well. The internal consistency of each dimension assessed by the Portuguese version of the Q-LES-Q reflects the accuracy of the measurement process. The reliability analysis of data generated in this research was conducted according to parameters described in similar studies developed by other investigators (20, 26).

Various significant correlations among distinct WHOQOL-BREF and Q-LES-Q areas were observed, which demonstrated that both quality-of-life questionnaires are conceptually congruent or equivalent, as expected. The short form of the Portuguese version of the Q-LES-Q presented significant Pearson correlation scores with all areas of the WHOQOL, which indicates constructural congruency between the two quality-of-life assessment instruments. The Q-LES-Q coherently investigates the construct of quality of life as measured uniformly by its items.

The validation study of the Italian version of the Q-LES-Q demonstrated similar results. In that study, a significant correlation was observed between the Italian version of the Q-LES-Q and the work and social adjustment scale (20). Although our study also found significant correlations among specific areas of the Q-LES-Q and the WHOQOL-BREF, the magnitude of the overall correlation between the two instruments may have been limited by a reduced number of respondents, particularly in the areas related to school and work, which indicates a substantial impact of substance use on the specific areas encompassed under the broader concept of quality of life. In the group...
of crack users, 72% and 96% of participants did not work and did not attend any school-related activities, respectively, whereas in the group of inhalant users the percentages were 82% and 74%, respectively.

The reduced number of responders in the latter two subscales is an identifiable limitation in the current study. Yet, in our study, raw summary scores were expressed as a percentage of the maximum possible score to facilitate comparisons across different areas of functioning. Since the minimum score for a given item is 1 rather than 0, the maximum percentage score is calculated as follows: (raw score – minimum possible score)/ (maximum possible score – minimum possible score) (26). Although the impact of crack and inhalant use on educational performance has been well documented (31), crack and inhalant use with a less severe form of addictive disorders (non-inpatient samples) could present a smaller impact of substance use on the work and the school subscales.

In addition, there is an unequal gender distribution, with a higher number of male volunteers. Yet, this discrepancy was evenly distributed in both groups. Additional studies encompassing different areas in the country might be necessary to generate a more representative picture of both regional and national health standards among distinct samples of patients and the general population.

This study demonstrates that the original English version of the Q-LES-Q was successfully adapted to Portuguese as methodologically demonstrated here. This study demonstrates that the two questionnaires, both conceptually designed to assess quality of life, present significant structural correlations and are therefore congruent. The internal consistency of the Portuguese version of the Q-LES-Q, as indicated by the results of the Cronbach’s alpha coefficients, was satisfactory, which demonstrates that the instrument coherently investigates the quality of life as measured uniformly by its items. The Portuguese version of the Q-LES-Q was well accepted by all volunteers. They answered the questions with relative ease and rapidity, which demonstrates the ease of use of the instrument. The Portuguese version of the Q-LES-Q constitutes a reliable research instrument for evaluating quality of life among substance users in Brazil.

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REFERENCES

14. Martinez JAB, Mota GA, Vianna ESO, Filho 25.00/03-8 from the Secretaria de Ciência e Tecnologia do Estado do Rio Grande do Sul, Brazil.

Original research

TABLE 3. Pearson correlations (r) between scores of the Portuguese version of the Q-LES-Q and the four areas of the Portuguese version of the WHOQOL of crack and inhalant users taken conjointly, Brazil, 2005

<table>
<thead>
<tr>
<th></th>
<th>n</th>
<th>Physical</th>
<th>Psychological</th>
<th>Social</th>
<th>Environment</th>
</tr>
</thead>
<tbody>
<tr>
<td>Physical health</td>
<td>99</td>
<td>0.46</td>
<td>0.4</td>
<td>0.37</td>
<td>0.58</td>
</tr>
<tr>
<td>Feelings</td>
<td>100</td>
<td>0.54</td>
<td>0.4</td>
<td>0.5</td>
<td>0.39</td>
</tr>
<tr>
<td>Work</td>
<td>23</td>
<td>0.27</td>
<td>0.38</td>
<td>0.44</td>
<td>0.55</td>
</tr>
<tr>
<td>Household duties</td>
<td>79</td>
<td>0.19</td>
<td>0.21</td>
<td>0.44</td>
<td>0.57</td>
</tr>
<tr>
<td>School/course</td>
<td>15</td>
<td>0.33</td>
<td>0.4</td>
<td>0.59</td>
<td>0.57</td>
</tr>
<tr>
<td>Leisure time</td>
<td>99</td>
<td>0.28</td>
<td>0.34</td>
<td>0.22</td>
<td>0.18</td>
</tr>
<tr>
<td>Social relationships</td>
<td>100</td>
<td>0.42</td>
<td>0.49</td>
<td>0.44</td>
<td>0.49</td>
</tr>
<tr>
<td>General activities</td>
<td>100</td>
<td>0.85</td>
<td>0.61</td>
<td>0.48</td>
<td>0.55</td>
</tr>
</tbody>
</table>

a Correlation is significant at the 0.01 level (two-tailed).
b Correlation is significant at the 0.05 level (two-tailed).
Objetivo. Demostrar la validez y consistencia de la versión en portugués del cuestionario sobre calidad de vida: satisfacción y placer (Q-LES-Q) en consumidores de drogas del sur de Brasil.

Métodos. Se tradujo la versión original en inglés del Q-LES-Q al portugués tomando en cuenta las equivalencias semántica y conceptual. Se utilizaron la versión en portugués del Q-LES-Q y la escala de calidad de vida de la Organización Mundial de la Salud (WHOQOL-BREF) para evaluar la calidad de vida de personas que consumían baseco (crack) e inhalantes. Se realizaron análisis factoriales y de consistencia y estudios de correlación para establecer las propiedades psicométricas de la versión en portugués del Q-LES-Q.

Resultados. Todas las áreas del Q-LES-Q alcanzaron valores significativos del coeficiente de Cronbach. Se obtuvieron coeficientes de correlación de Pearson significativos entre varias subescalas del Q-LES-Q y las cuatro dimensiones de la WHOQOL-BREF. La correlación fue significativa para los consumidores de basuco (crack) e inhalantes. Se realizaron análisis factoriales y de consistencia y estudios de correlación para establecer las propiedades psicométricas de la versión en portugués del Q-LES-Q.

Conclusiones. La versión en portugués del Q-LES-Q posee una sólida validez interna. La versión en inglés del Q-LES-Q se adaptó adecuadamente al portugués. Los consumidores de inhalantes pueden presentar niveles más bajos de satisfacción con la vida social y la calidad general de vida que los consumidores de basuco. La versión en portugués del Q-LES-Q es un instrumento confiable tanto para investigaciones futuras como para uso clínico en consumidores de drogas en Brasil.

Palabras clave Calidad de vida, reproducibilidad de resultados, cuestionario, cocaína crocante, solventes, Brasil.