Reliability, Validity and Reproducibility of the WHOQOL-BREF in Six Countries

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BACKGROUND & OBJECTIVES

Six countries (Melbourne, Australia; Porto Alegre, Brazil; Be’er Sheva, Israel; St. Petersburg, Russian Federation; Barcelona, Spain; and Seattle, Washington, USA) have recently been involved in a large international study, Longitudinal Investigation of Depression Outcomes (LIDO), that assesses quality of life and economic aspects of undiagnosed depression among primary care patients.

The WHOQOL-BREF was used as one of the assessment instruments. The WHOQOL-BREF is a generic quality of life measure, which has been developed simultaneously in many cultures and languages. It is a 26 item self-report instrument, developed from a longer instrument, the WHOQOL-100, and measures quality of life on four broad domains:

- Physical
- Psychological
- Social
- Environmental

This report aims at evaluating the validity, reliability and reproducibility of the WHOQOL-BREF in six countries in the LIDO Study:

- Be’er Sheva, Israel (n=382)
- Barcelona, Spain (n=364)
- Seattle, Washington, USA (n=366)
- St. Petersburg, Russian Federation (n=360)

RESULTS

Reliability

Table 2. Internal consistency for the four domain scores and for the total score

<table>
<thead>
<tr>
<th>Country</th>
<th>Physical (7 items)</th>
<th>Psychological (5 items)</th>
<th>Social (3 items)</th>
<th>Environment (8 items)</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Australia</td>
<td>.84</td>
<td>.79</td>
<td>.68</td>
<td>.77</td>
<td>.91</td>
</tr>
<tr>
<td>Brazil</td>
<td>.83</td>
<td>.74</td>
<td>.60</td>
<td>.64</td>
<td>.88</td>
</tr>
<tr>
<td>Israel</td>
<td>.82</td>
<td>.77</td>
<td>.63</td>
<td>.74</td>
<td>.90</td>
</tr>
<tr>
<td>Russia</td>
<td>.80</td>
<td>.70</td>
<td>.55</td>
<td>.64</td>
<td>.86</td>
</tr>
<tr>
<td>Spain</td>
<td>.73</td>
<td>.80</td>
<td>.62</td>
<td>.71</td>
<td>.88</td>
</tr>
<tr>
<td>USA</td>
<td>.80</td>
<td>.83</td>
<td>.68</td>
<td>.79</td>
<td>.90</td>
</tr>
</tbody>
</table>

Discriminant Validity

As expected, the physical domain correlated highly with PCS-12 (0.43 to 0.63 across countries, median 0.57) and less with MHS-5 (0.30 to 0.50, median 0.43). The psychological domain correlated less with the PCS-12 (0.02 to 0.27, median 0.14) than with the MHS-12 (0.51 to 0.70, median 0.62) and the MHS-5 (0.07 to 0.71, median 0.68). As expected the psychological domain correlated highly with all the mental health measures, CES-D (-0.59 to -0.74, median -0.70), QLDS (-0.47 to -0.61, median -0.56).

CONCLUSION

The evaluation of the WHOQOL-Brief psychometric properties demonstrated good internal consistency and reproducibility. As hypothesized, the WHOQOL-Brief physical domain scores were more strongly related to the SF-12 physical scores and psychological domain scores were more strongly correlated to all mental health measures. The psychological and physical domains were able to discriminate between levels of depression and back pain, respectively. Given both the strength and significance of the relationships demonstrated, it was concluded that the WHOQOL-BREF is a reliable and valid measure in a primary care population in the six countries.

METHODS

Instruments:
- The WHOQOL-Brief (The WHOQOL Group, 1998).
- SF-12 (Ware et al., 1996).
- Convergent Validity: - Depression Scale (CES-D) (Radloff, 1977).
- Quality of Life Depression Scale (QLDS) (Hand & McKernan, 1992).

Data Collection:
- The study is cross-sectional with no longitudinal follow-up.
- Eligibility criteria for the study: patients aged 30-70 years old, willing to sign informed consent, and willing to participate in all scheduled study visits.
- Participants were enrolled and invited to a baseline visit.

Features of analysis:
- The analysis of the data included:
  - Descriptive statistics
  - Internal consistency
  - Test-retest reliability
  - Convergent validity
  - Discriminant validity

Population:
Table 1. Baseline demographic characteristics by country and total

<table>
<thead>
<tr>
<th>Country</th>
<th>Mean age in years</th>
<th>Female (%)</th>
<th>Mental or living as a couple (%)</th>
<th>Years of schooling</th>
</tr>
</thead>
<tbody>
<tr>
<td>Australia</td>
<td>43.39</td>
<td>66.0</td>
<td>55</td>
<td>12.4 median</td>
</tr>
<tr>
<td>Brazil</td>
<td>42.25</td>
<td>61.8</td>
<td>68</td>
<td>11.9 median</td>
</tr>
<tr>
<td>Israel</td>
<td>40.25</td>
<td>72.2</td>
<td>43</td>
<td>12.45 median</td>
</tr>
<tr>
<td>Russia</td>
<td>41.54</td>
<td>71.1</td>
<td>50</td>
<td>10.59 median</td>
</tr>
<tr>
<td>Spain</td>
<td>41.53</td>
<td>80.2</td>
<td>66.9</td>
<td>12.20 median</td>
</tr>
<tr>
<td>USA</td>
<td>41.59</td>
<td>89.0</td>
<td>68</td>
<td>11.71 median</td>
</tr>
</tbody>
</table>

Population from chronic back pain with respondents not known to be suffering from such disease. Scores were significantly different (P<0.001) between the two groups in all countries.