

**BLOCK TWO: QUALITY OF LIFE ISSUES****CROSS-CULTURAL FRENCH-CANADIAN ADAPTATION AND METROLOGIC ASSESSMENT OF THE ITALIAN SPINE YOUTH QUALITY OF LIFE (ISYQOL) QUESTIONNAIRE**

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**Introduction**

Idiopathic scoliosis (IS) can significantly alter the quality of life of adolescents. Some questionnaires in French measuring the quality of life in this population show weak metrological properties. The newly developed Italian Spine Youth Quality of Life (ISYQOL) questionnaire promises better properties.

**Research Question**

What are the internal consistency, test-retest reliability, concurrent validity, and ceiling effects of the French-Canadian adaptation of the ISYQOL questionnaire (ISYQOL-F)?

**Methods**

The ISYQOL was translated into French using a forward-backward approach. The understanding of the translated items was then verified with two scoliosis experts and 10 adolescents. Afterwards, 111 consecutive volunteers with IS (Cobb angle  $28^{\circ} \pm 12^{\circ}$ , range: 10-87°;  $13.8 \pm 1.8$  years old) were recruited at the scoliosis clinic. Participants completed the ISYQOL on three occasions (before seeing the specialist, 1 week and 2 weeks after). Cronbach's alpha, intra-class (ICC) and Pearson correlation coefficients were used to respectively determine internal consistency, test-retest reliability, and concurrent validity with the SRS-22r and SF-12. The standard error of measurement (SEM) and 95% confidence minimal detectable change (MDC95) were also calculated. The ceiling effect was quantified as the percentage of participants who scored the maximum on ISYQOL-F, SRS-22r and SF-12.

**Results**

The ISYQOL-F showed good internal consistency with a Cronbach alpha of 0.81 and 0.85, respectively, for items 1 to 13 (n=55 without brace; ISYQOL-F mean score  $\pm$  SD =  $63.9 \pm 13.5$ ) and 1 to 20 (n=56 with brace; ISYQOL-F mean score  $\pm$  SD =  $60.7 \pm 10.3$ ). Test-retest reliability was excellent (ICC<sub>3,1</sub> = 0.94). The SEM is 3.1 and the MDC95 is 8.6. Correlations between ISYQOL-F and SRS-22r and between ISYQOL-F and SF-12 were moderate for total scores (r=0.56 and 0.50 respectively, p<0.001), but low for each domain (between 0.20 and 0.48, p<0.05). No significant ceiling effects were observed for ISYQOL-F ( $\leq 2.5\%$ ) while ceiling effects ranged from 3.6 to 30.6% for SRS-22r and 0 to 68.5% for SF-12 depending on the domains.

**Conclusions**

The internal consistency and reliability of ISYQOL-F are good. The total score correlates moderately with the SRS-22r and SF-12. Unlike the SRS-22r, the ISYQOL-F did not present important ceiling effects. The ISYQOL-F may thus be suitable to assess quality of life in a population of French-Canadian adolescents with IS.

**Discussion**

The test-retest reliability is similar to the one found in the validation study of ISYQOL adapted to Anglo-Canadian culture (ICC 0.90; 95% CI 0.81-0.95). Results for the concurrent validity showed a significant but insufficient correlation between ISYQOL-F and SRS-22r based on the COSMIN standards. Results were also lower than those reported for the Italian and English version of the ISYQOL despite similar scoliosis severity. The large proportion of participants wearing a brace part time or at night only (62.5%) may have affected the validity. The MDC95 value reported should help clinicians to determine improvement of quality of life of their patients with IS beyond measurement error of the instrument (ISYQOL-F score >8.6). Further studies are needed to assess the discriminative capacity and responsiveness of the ISYQOL-F to treatments or scoliosis progression on quality of life.

**Disclosures (any Conflicts of Interest)**

The authors have no conflict of interest. Two co-authors were part of the team proposing the original ISYQOL.