Clinimetrics: Short Western Ontario Rotator Cuff Index

Summary

Description: The shorter version of the Western Ontario Rotator Cuff Index (Short-WORC) is a seven-item questionnaire that is specific for patients with rotator cuff disorders. It is an abbreviated version of its parent, the Western Ontario Rotator Cuff Index (WORC). The original WORC contained five domains that assessed health-related quality of life, whereas the Short-WORC contains items from two of those domains: work and lifestyle. Therefore, the Short-WORC mainly focuses on the activity limitations that arise from rotator cuff disorders.

Patients rate their function on a scale from 0, meaning no difficulty, to 10, meaning extreme difficulty. The percentage scores for the Short-WORC are obtained by subtracting the total score from 700, dividing by 700, and multiplying by 100, resulting in a total percentage score varying from 0 to 100. The Short-WORC questionnaire is considered incomplete if items are missing and cannot be used for the analysis.

Validity, reliability and responsiveness: Dewan et al have tested the Short-WORC for internal consistency ($\alpha = 0.84$ to 0.89) and test-retest reliability (ICC = 0.89). This study was based on a large sample size and found high reliability, which was consistent with the larger volume of studies supporting the reliability of the full WORC. In addition, compared with the WORC, the agreement parameters demonstrated the SEM = 8.8, MDC$_{\text{individual}}$ = 20.3 and MDC$_{\text{group}}$ = 5.1, indicating a higher variability with the Short-WORC. When comparing the limits of agreement, both the Short-WORC and WORC showed similar results across the sessions as the scores fell in the range of −11.7 to 13.2 points at test and −14.7 to 14.7 at re-test. The responsiveness of the Short-WORC compared with the WORC was equal (RE$_{\text{Short-WORC/WORC}} = 1$) at 0 to 6 months. Therefore, the Short-WORC indicates good reliability, relative efficiency, and sensitivity to change when compared with the WORC. The Short-WORC demonstrates higher responsiveness at 0 to 3 months (ES = 0.72; SRM = 0.75) and 0 to 6 months (ES = 1.05; SRM = 0.89) than several other measures: the Shoulder Pain and Disability Index; the Simple Shoulder Test; the Disabilities of the Arm, Shoulder and Hand; and the Short-Form 12 item Health Survey (version 2).

Commentary

Compared with the WORC, the Short-WORC eliminates administrative burden and has psychometric equivalence when used to evaluate rotator cuff pathology. However, current studies assessing the Short-WORC were conducted by extracting Short-WORC data from existing datasets of the original WORC. Therefore, the time taken to complete and administrative ease of the Short-WORC were not measured. Future studies need to administer the Short-WORC on a prospective patient population, in order to validate the reproducibility, reliability and responsiveness in samples that represent the spectrum of rotator cuff disorders. However, the Short-WORC does demonstrate results that are consistent with other studies, in which general quality of life measures were least responsive when compared with the region or joint-specific measures for upper extremity disorders. Therefore, clinicians should be aware of the Short-WORC as the better option for evaluating activity limitation in rotator cuff pathology.


References