

## Appraisal

## 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.<sup>1</sup> It is an abbreviated version of its parent, the Western Ontario Rotator Cuff Index (WORC).<sup>2</sup> 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.<sup>3</sup> Therefore, the Short-WORC mainly focuses on the activity limitations that arise from rotator cuff disorders.<sup>4</sup>

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.<sup>1,3</sup>

**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 =  $0.89$ ).<sup>1</sup> 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.<sup>1,4,5</sup> In addition, compared with the WORC, the agreement parameters demonstrated the SEM =  $8.8$ , MDC<sub>90 individual</sub> =  $20.3$  and MDC<sub>90 group</sub> =  $5.1$ , indicating a higher variability with the Short-WORC.<sup>1</sup> 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.<sup>1</sup> The responsiveness of the Short-WORC compared with the WORC was equal ( $RE_{\text{Short-WORC/WORC}} = 1$ ) at 0 to 6 months.<sup>3,4</sup> Therefore, the Short-WORC indicates good reliability, relative efficiency, and sensitivity to change when compared with the WORC.<sup>4,5</sup>

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).<sup>1,3</sup>

### 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.<sup>1,3,4</sup> 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.<sup>1,3</sup> Therefore, clinicians should be aware of the Short-WORC as the better option for evaluating activity limitation in rotator cuff pathology.

**Provenance:** Invited. Not peer reviewed.

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### References

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