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Measurement properties of the tests recommended by the Osteoarthritis Research Society International

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Background and aims

The OARSI recommends three performance-based tests: the 30-second chair stand test (30-s CST), the 40 m fast-paced walk test (40 m FPWT), and the stair climb test (SCT). This study aims to evaluate the construct validity and responsiveness of these tests for measuring physical function in KOA patients.

Methods

A prospective cohort study was conducted with KOA patients to evaluate the construct validity and responsiveness of performance-based tests using the COSMIN checklist. Participants met the KOA diagnosis criteria outlined by the American College of Rheumatology (ACR). Baseline data, including functional tests, Knee Injury and Osteoarthritis Outcome Score (KOOS), and Western Ontario and McMaster Universities Osteoarthritis Index (WOMAC) questionnaires, were collected during the initial visit. The activPALTM device was utilized and returned after 7 days. Follow-up assessments took place six months later. The study received approval from the Human Research Ethics Committee of the Federal University of São Carlos (UFSCar) (CAAE: 43321821.90000.5504), and all participants provided written informed consent.

Results

In total, 107 participants were involved, with 80 included in the responsiveness analysis. Construct validity was assessed using Spearman's correlation coefficient. The 40m FPWT and the 11-step SCT confirmed 75% of hypotheses with scores of 7/9 (77.7%) each, while the 30-second CST showed lower validity at 5/9 (55.5%). In terms of responsiveness, the 40m FPWT and the 11-step SCT supported 100% of hypotheses with scores of 6/6 (100%) each, whereas the 30-second CST scored 2/6 (33.3%), indicating limited responsiveness in assessing functional changes.

Relevance for patients care

A test with good measurement properties ensures that the evaluation is carried out accurately and that changes over time are detected.

Conclusions

The 40-m FPWT and the 11-step SCT exhibited robust construct validity and responsiveness, indicating their ability to detect changes over time. In contrast, the 30-s SCT showed limited validity and responsiveness.

References

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