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Cross-cultural adaptation and psychometric properties testing of the Arabic version of the upper limb functional index

Abstract:

Background: The upper limb functional index (ULFI) is a widely used self-report outcome measure questionnaire with robust psychometric properties to assess the upper limb musculoskeletal disorders (ULMSDs). This study aimed to adapt and investigate the psychometric properties of the Arabic version of ULFI (ULFI-Ar).

Methods: This is a two-stage observational study. First, the English ULFI was cross-culturally adapted to the Arabic language through double forward and backward translation. Then, the psychometric properties were investigated in 139 patients with various UL-MSD's, who completed the ULFI-Ar, Disability of Arm, Shoulder, and Hand questionnaire (DASH-Arabic), and numeric pain rating scale (NPRS-Arabic). The participant's data utilized to detect validity, reliability, responsiveness, and interpretability.

Results: There were no major language barriers or difficulties in completing the ULFI-Ar. The ULFI-Ar demonstrated excellent content validity (content validity index = 0.81 – 1.00 for each item and 0.96 for the scale), construct validity obtained by the exploratory factor analysis as one-factor structure, high internal consistency ($\alpha = 0.88$), excellent test-retest reliability [intra-class correlation coefficient (ICC2:1) = 0.95], measurement error [standard error of measurement (SEM) = 4.43%; minimal detectable change at 90% confidence interval (MDC90) = 10.34%], construct validity obtained by the one-factor structure, moderate criterion validity (DASH-Arabic: $r = 0.74$; $p < 0.001$), medium internal responsiveness [Cohen's $d = 0.62$ and standard response of mean (SRM) = 0.67], strong external responsiveness DASH-Arabic ($r = -0.90$; $p < 0.001$), and negative strong correlation with NPRS-Arabic ($r = -0.75$, $p < 0.001$).

Conclusions: The ULFI-Ar is a valid, reliable, and responsive self-report questionnaire to assess UL-MSDs in Arabic speaking patients.

Biography

Yousef A. Albahrani is currently the deputy of physical therapy department at Riyadh second health cluster, Prince Mohammed bin Abdulaziz Hospital in Riyadh. A proudly graduate of Imam Abdulrahman bin Faisal University, they were inspired to pursue a career in Neuromusculoskeletal physical therapy. Albahrani is a certified manual therapist since 2014 from mulligan concept and Curtin University.