

**Y. Prior<sup>1</sup>, A. Hammond<sup>1</sup>, S. Tyson<sup>2</sup>, A. Tennant<sup>3</sup> (2015) Development and Psychometric Testing of the British English Measure of Activity Performance of the Hand (MAP-HAND) Questionnaire in Rheumatoid Arthritis. *Annals of the Rheumatic Diseases* 74 (Suppl 2): 1324**

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## **Abstract**

**Background** The Measure of Activity Performance of the Hand (MAP-HAND) evaluates 18 daily activities performed using the hands. It was developed in Norway for people with rheumatoid arthritis (RA) using patient generated items and is the product of extensive development and testing. Items are scored on a 0-3 scale (no difficulty to not able to do)<sup>1</sup>.

**Objectives** To develop a British English version of the MAP-HAND and psychometrically test it in a UK population of people with rheumatoid arthritis (RA).

**Methods** Development involved (i) Phase1 (cross-cultural adaptation): forward translation to British English; synthesis; expert panel review to ensure uniformity; cognitive debriefing interviews, and (ii) Phase 2 (psychometric testing): through measuring internal consistency (Cronbach's alpha); test-retest reliability (linear weighted kappa and Intra-Class Correlations (ICC (2,1) based on Rasch transformed data); concurrent validity (Spearman's correlations) and Minimal Detectable Difference (MDC<sup>95</sup>). The internal construct validity, measured using exploratory factor analysis, Mokken Scaling and Rasch analysis was previously reported<sup>2</sup>. Participants from 17 Rheumatology clinics completed postal questionnaires of demographic questions, including the MAP-HAND (twice 3 weeks apart), Health Assessment Questionnaire (HAQ), ULHAQ (7 upper limb HAQ items), SF-36v2 Physical Function (PF), and Disability Arm Shoulder Hand (DASH) scale.

**Results** In Phase1, cultural adaptations included e.g. opening a can, instead of opening hermetic cans. Cognitive debriefing interviews (n=31) were conducted with participants: age=63.42 (SD12.04) years; female: 26 (84%); RA duration=15.71 (SD12.61) years. All items were considered relevant by participants. In Phase2, 340 people completed the Test 1 questionnaire (age: 61.96 years (SD 12.09); RA duration: 14.44 years (SD 11.73); female: 251 (74%); Combination therapy: 190 (56%); Monotherapy: 91 (27%); no DMARDS: 34 (10%); Biologics: 25 (7.4%)). Of these 108 (32%) were employed, 245 (78%) lived with family/ spouse or significant others and 36 (10%) had children living at home. 273 (80%) completed the Test 2 MAP-HAND. Internal consistency ( $\alpha=.96$ ) was excellent. Test-retest reliability was good: at item-level linear weighted kappa scores were good (range 0.61-0.75)); at scale level, the ICC (2,1) score was 0.96 (95% CI 0.94, 0.97)). MAP-HAND correlated strongly with HAQ20 ( $r_s=.88$ ), ULHAQ ( $r_s=.91$ ), SF-36v2 (PF) Score ( $r_s=.80$ ) and DASH ( $r_s=.93$ ), indicating strong concurrent validity. The MDC<sub>95</sub> MAP-HAND score=3.99.

**Conclusions** The British English version of the MAP-HAND has good validity and reliability in people with RA and can be used in both research and clinical practice.

## **References**

1. Paulsen T et al (2010) Development and psychometric testing of the patient-reported MAP-HAND in RA. *Journal of Rehabilitation Medicine* 42:636-644

2. Prior Y et al (2015) Psychometric testing of MAP-HAND in RA: Rasch Analysis. Rheumatology (Suppl) In press.

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