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Rasch Analysis of the Health Assessment Questionnaire Disability Index in Psoriatic Arthritis

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Background

The cross-cultural validity of the Health Assessment Questionnaire Disability Index (HAQ-DI) in psoriatic arthritis (PsA) has not been well studied.

Objective

To assess the validity of the HAQ-DI in PsA and determine its invariance to different patient characteristics including culture.

Patients

We included patients diagnosed with PsA recruited into GRACE project, carried out over 15 countries in Europe, N America, S America and Asia. The HAQ-DI data from baseline visit was used, including: age, gender, disease duration, disease type and the degree of skin involvement.

Methods

Analysis

We undertook Rasch analysis to determine the scale’s validity, person separation index (PSI) reliability, unidimensionality, targeting and the invariance of the scale across patient subgroups based on culture, age, gender, disease duration, disease type and extent of skin involvement.

Given fit to the model and unidimensionality, we calibrated an interval-level scale to enable transformation of raw HAQ-DI scores into Rasch-transformed values which can be used in parametric analyses (given a normal distribution and adequate sample sizes) alongside other outcome measures.

Results

Analysis of the Health Assessment Questionnaire Disability Index (HAQ-DI) in Psoriatic Arthritis

The Rasch-transformed values need to be divided by 8 to get a total HAQ score which ranges from 0 to 3.

Patient characteristics

Total of 503 patients with PsA (diagnosed by a physician)
- Male = 287, female = 217
- Mean age = 50.8 years, SD = 13.1
- Psoriatic arthritis duration, mean = 9.8 years, SD = 9.9
- Psoriasis duration, mean = 18.4 years, SD = 13.7

Targeting

In Europe and N America, HAQ-DI is a cross-culturally valid and reliable measure of disability in PsA. Rasch-transformed values can be used with confidence alongside other outcome measures in parametric analyses.

References


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