The Multidimensional Health Assessment Questionnaire (MDHAQ) and the Heath Assessment Questionnaire Disability Index (HAQDI): a comparison in patients with psoriatic arthritis

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Background

We compared the Health Assessment Questionnaire Disability Index (HAQDI) and the simpler Multidimensional Health Assessment Questionnaire (MDHAQ) in patients with psoriatic arthritis (PsA), and examined whether either questionnaires are less prone to 'floor effects', whereby patients report normal scores despite experiencing functional impairment.

Methods

Data was collected prospectively across three UK hospital trusts from 2018-2019. All patients completed the MDHAQ, HAQDI and PsA Impact of Disease Questionnaire (PsAID) in a single clinic visit. A subset were given an identical pack to complete one week later. The HAQ questionnaires are scored from 0-3, and the PsAID is scored from 0-10. The PsAID has a validated patient acceptable symptom state (PsAID≤4) to stratify high-impact and low-impact disease.

Mean with standard deviation (S.D.) was calculated and variability was assessed using the Bland-Altman method. Intraclass correlation coefficients (ICC, two-way mixed model absolute agreement) was used to assess test-retest reliability. Using pilot data, we calculated that 210 patients were required to detect non-inferiority between the HAQ questionnaires, with a 0.125 margin at a two-sided 0.025 significance level with > 90% power. All analyses were performed using R. This study was approved by London-Surrey Research Ethics Committee.

Results

210 patients completed the study; one withdrew consent thus 209 were analysed. 62 patients completed the questionnaires one week later. 60.0% were male, mean age was 51.7 years, and median PsA duration was 7.0 years. In clinic, mean (S.D.) scores on the MDHAQ, HAQDI including/excluding aids, and PsAID were 0.58 (0.64), 0.79 (0.78), 0.70 (0.73), and 3.71 (2.70), respectively. The mean HAQDI tends to be higher than the MDHAQ, for both high and low-impact disease. However, the difference between the two mostly lies within 1.96 S.D. of the mean using the Bland-Altman method, suggesting reasonable agreement. Comparing clinic and

1-week scores, the ICCs for the MDHAQ, HAQDI including/excluding aids, and PsAID were 0.97 (95% CI 0.95-0.98), 0.98 (0.97-0.99), 0.98 (0.96-0.99), and 0.96 (0.93-0.97) respectively, suggesting excellent test-retest reliability.

Patients scoring '0' in MDHAQ and HAQDI including/excluding aids were similar (48, 47, 49). Using a score of ≤ 0.5 for low functional impairment, 23 patients had a MDHAQ ≤ 0.5 when their HAQDI including aids > 0.5. This reduced to 17 when using HAQDI excluding aids > 0.5. In contrast, 4 patients had a HAQDI including aids ≤ 0.5 when MDHAQ > 0.5. This increased to 5 patients when using HAQDI excluding aids ≤ 5. Collectively, this suggests the HAQDI is less prone to floor effects compared to the MDHAQ, especially when the score incorporates aids.

Conclusion

The MDHAQ and HAQDI scores show test-retest reliability and reasonable agreement in patients with PsA. Although the MDHAQ is quicker for patients to complete, it appears more prone to floor effects.

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