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# Arabic translation, cultural adaptation, and validation of the Bristol Impact of Hypermobility questionnaire

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## Abstract

**Background** The Bristol Impact of Hypermobility questionnaire (BloH) is the first condition-specific patient reported outcome measure for people with hypermobility-related conditions. The BloH original version is in English, which limits its use for patients who speak other languages. The study aimed to translate and culturally adapt the BloH into Arabic and determine its concurrent validity, reliability, internal consistency and smallest detectable change.

**Methods** Forward-backward translation and cross-sectional designs were used. The Ethics Committee of Kuwait Ministry of Health approved the study. Spearman correlation coefficient, intraclass correlation coefficient (ICC), and Cronbach's  $\alpha$  were used for statistical analysis. Patients with hypermobility spectrum disorders (HSD) were included, diagnosed using the 2017 classification framework.

**Results** 55 HSD patients were included, aged 26.0 (18.0) years old; median (IQR), and 85.5% were women. The BloH showed very good concurrent validity when correlated with the SF-12 total and physical component scores;  $r = -0.743$  and  $-0.740$ , respectively ( $p < 0.05$ ). Good correlation was identified between the BloH and the SF-12 mental component score;  $r = -0.496$  ( $p < 0.05$ ). The BloH demonstrated excellent test-retest reliability; ICC = 0.934 (0.749–0.983 95% CI) ( $p < 0.05$ ), and high internal consistency (Cronbach's  $\alpha = 0.933$ ). The smallest detectable change was 30.90 points, representing 19.8% of the mean baseline score.

**Conclusions** The study successfully translated the BloH into Arabic and demonstrated high psychometric properties. The translated score can help Arabic patients with HSD in their clinical evaluation process. Future research needs to determine the responsiveness of the Arabic version and translate the BloH to other languages.

## Key-points

- The Bristol Impact of Hypermobility questionnaire has been successfully translated into Arabic.
- This study demonstrated high psychometric properties of the translated questionnaire.
- The translated score can help Arabic patients with Hypermobility Spectrum Disorders in their clinical evaluation process.

**Keywords** Hypermobility, Ehlers-Danlos syndrome, Connective tissue disorders, Laxity

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