
Why the HAQ-II can be an effective substitute for the HAQ

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ABSTRACT

The HAQ-II is a psychometrically improved 10-item version of the standard HAQ functional questionnaire. It is simpler and faster to administer and score, thereby reducing patient burden. HAQ-II is better correlated with clinical measures than the HAQ and is sensitive to change. The HAQ-II is suitable for use in the clinic and research studies.

Over several decades of use the Health Assessment Questionnaire (HAQ) (1) has demonstrated itself to be an extremely effective tool for measuring functional status and change in functional status in clinical trials and observational studies (2-5). However, use of the HAQ in the clinic has been distinctly uncommon (6). There are a number of reasons for this, including the apparent lack of relevance to clinicians and their unfamiliarity with the scale. However, the most important reason for lack of use appears to reside in the perceived difficulty in administration and scoring of the HAQ. Considering specific question and the use of aids and devices, the HAQ actually has 34 questions, including 20 items and 14 aids and devices, almost as many as the comprehensive SF-36 (7, 8). However, the HAQ collapses questions within categories so that the actual number of items used in scoring is 8.

Pincus proposed the Modified Health Assessment Questionnaire (MHAQ) in 1983 (9). He reduced the number of questions to 8 by choosing one question from each category. Although the MHAQ was used in a minority of clinical trials, it became apparent that it had a significant floor effect – too many values at 0 or too many patients with a normal function score. The MHAQ was then modified by adding two “difficult” questions, and the resultant questionnaire became the 10-item Multi-Dimensional Health Assessment Questionnaire (MDHAQ) (10). After this modification, the MDHAQ floor effect

was reduced. The MDHAQ had the additional advantage of being easier to score by virtue of its 10-item scale.

A number of problems became evident regarding the HAQ, MHAQ and MDHAQ (11, 12). At the simplest level, the questionnaires had different mean scores in the same sample of patients, with the result that one could not compare results from a clinical trial that used one scale with the results from a trial that used a different scale. Besides incommensurability, it was never clear what scores constituted the easy-to-understand categories of mild, moderate and severe.

Several other problems were noted with HAQ, MHAQ and MDHAQ questionnaires that included “bad questions” or questions that were not understood clearly or answered accurately, or were answered differently by patients of different ages (12). Some such questions included “taking a tub bath,” “shampoo your hair” or “participate in sports or games as you would like.” These HAQ questionnaires also had distorted scaling properties. This can be understood analogously by comparing the scales with a 10 cm ruler in which the points on the scale do not fall at 1 cm difference points, but closer or farther away from the 1 cm difference in different areas of the ruler.

In 2004 we described the HAQ-II based on analyses conducted using the National Data Bank for Rheumatic Diseases (12). Using Rasch analysis (and confirmatory clinical knowledge), the shortened 10-item scale had no “bad items,” excellent scaling properties (a good ruler), a reduced floor effect, and mean scores that were very similar to those of the HAQ, thus allowing comparison of group data using the HAQ and HAQ-II. The HAQ-II was at least as strongly, and often more strongly, correlated with clinical variables than the other HAQ scales (12). The HAQ-II questionnaire is shown in Figure 1. The general concordance of the two HAQ scales with the EuroQol

We are interested in learning how your illness affects your ability to function in daily life. Please use X in the box which best describes your usual condition OVER THE PAST WEEK

Are you able to:

	Not at all	A little	Quite a bit	Very much
Stand up from a straight chair?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Walk outdoors on flat ground?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Get on/off toilet?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Reach and get down a 5 pound object (such as a bag of sugar) from just above your head?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Open car doors?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Do yard work (outside work or activities)?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Wait in a line for 15 minutes?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Lift heavy objects?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Move heavy objects?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Go up two or more flights of stairs?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Fig. 1. The HAQ-II questionnaire. The 10-item questionnaire is simple to administer and score.

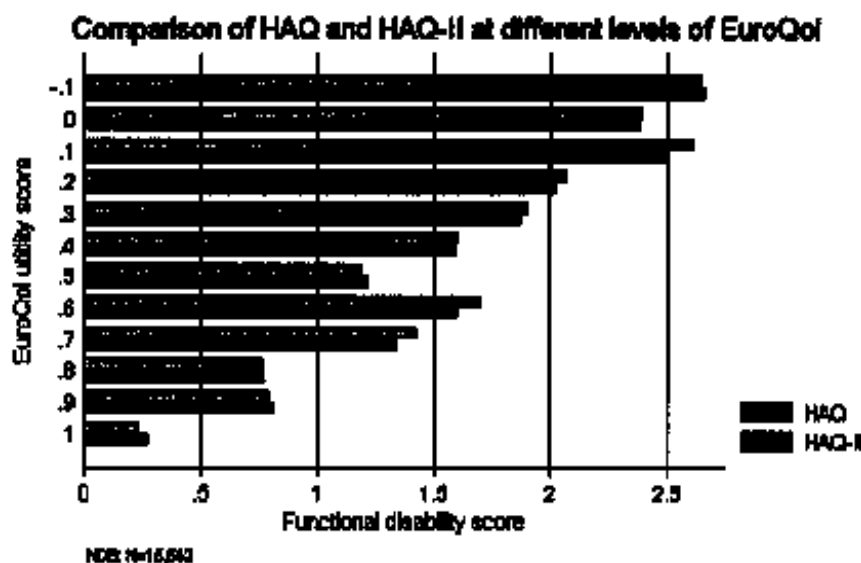


Fig. 2. Concordance of HAQ and HAQ-II with respect to the EuroQol quality of life utility scale.

utility is shown in Figure 2, indicating its overall concordance with the EuroQol (13).

Are there any practical differences between the scales? There are four central questions regarding scales for use in rheumatic disorders. Are they sensitive to change? Are they accurate measures? Are the scores comparable? Are they easy to use (low patient and physician burden)? A scale may be sensitive to change and yet not be a good measure. We have recently shown in a clinical trial that a VAS function scale was more sensitive to change than the

HAQ, HAQ-II and MDHAQ, but that the three HAQ scales performed similarly with regard to sensitivity to change (14). Although the HAQ-II is a “better” measurement scale, its superiority over the other scales is slight. In practical terms, then, any of the three scales will perform well. However, the scores of the HAQ and HAQ-II are similar, allowing the comparison of results between studies that use these two scales. Finally, the HAQ-II and MDHAQ are far easier to use in the clinic. These data suggest a primary role for the HAQ-II, as it has all of the four required qualities noted above.

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