Assessment of disability caused by rheumatic diseases in general practice

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SUMMARY At present general practitioners lack a tool for defining the level of disability of individual patients and groups of patients with arthritis. An assessment technique (health assessment questionnaire) developed in the United States is described,¹ and its use in general practice evaluated. Sixty two patients agreed to be visited at home to compare their observed abilities when performing the tasks of the health assessment questionnaire. The health assessment questionnaire (HAQ) is easily understood and takes patients only 10-15 minutes to complete. The numerical scores (range 0-3) for disability obtained on the postal questionnaire are close to the observed scores when patients are visited at home.

Rheumatic diseases remain distressingly large contributors to morbidity in the United Kingdom,² and the general practitioner 'has a lynch-pin function of identifying the need for disability services'.³ A tool to measure disability in these patients would provide us with a means of studying their problems individually and as a group. Previous studies of disability in practice have shown that general practitioners have different perceptions of what constitutes disability,⁴ and thus some excellent single practice studies⁵ may not be comparable with results from other practices owing to assessment differences. The ability to measure disability would allow an examination of the effectiveness of different management strategies. Preferably, measurement should be quickly and easily carried out by the patients themselves.^{6,7} Doctors must be able to assimilate the information provided and compare it with previous scores: a numerical score makes this possible. Existing techniques are either crude, e.g., the American Rheumatism Association functional classification, where 70% of patients fall into one of four categories,⁷ or complicated and impractical for use by general practitioners, e.g., Jette's functional status index.⁸ The scales which have been designed to meet required criteria are the McMaster health index questionnaire,⁹ the arthritis impact measurement scale,¹⁰ and the health assessment questionnaire.¹¹

This last scale was derived for use in arthritis and has been described by Fries *et al*, who made major

modifications to a variety of questionnaires being used in the United States in the 1970s to assess disability. Their study tool has been gradually refined in a series of studies to arrive at the current health assessment questionnaire.¹² The assessment covers eight activity areas by two to three questions in each area and provides an overall disability score, an assessment of upper and lower limb function, and an individual score for each activity area; each score ranges from 0 to 3. This has been validated in a number of studies in the United States¹³ and has now been modified for use by British patients.¹⁴ Our interest in the health assessment questionnaire arose from a need to describe the prevalence and patterns of disability of patients with osteoarthritis, rheumatoid arthritis, and gout in a number of practices in the west of Scotland. It seemed to offer a valid measuring tool¹⁵ which might prove practicable for use in general practice.

Patients and methods

Cases of rheumatoid arthritis (RA), osteoarthritis (OA), and gout were identified by a 1:3 random record search (sampling frame=the practice age/

Table 1 Derivation of cases from an inner city practice (total list size 8646, sample size 2962)

	RA	OA	Gout	Others
HAQs sent	15	167	6	4
HAQs returned	9	123	5	2
Patients seen	3	53	4	2

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sex register) of general practitioners' notes in an inner city practice (Table 1). Each patient thus identified was sent a health assessment questionnaire, which 72% returned. Within two weeks of the HAQs being returned we asked all patients with rheumatoid arthritis, gout, and seronegative arthritis and half of those with osteoarthritis if they would participate in observation of their activities at home. Of those approached, 90% agreed to a home visit by two research assistants (RCE, KL), who ascertained whether any difficulties in compiling the HAQ had been experienced. They then observed the patients' abilities in each of the eight activity areas (Table 2) while blind to the previously self completed scores. To detect a mean difference of 0.5 between the total scores reported by the patients and the total scores observed by the research assistants at the 5% significance level with 90% power it was necessary for about 60 subjects to be visited at home.¹⁶ The standard deviation of the differences was estimated to be 0.85 in a pilot study.

Results

Patients took 10–15 minutes to complete the health assessment questionnaire and few experienced much difficulty in doing so. Scores were calculated for each activity area. A score of 0=without difficulty, 1=with slight difficulty, 2=with great difficulty, and 3=virtually unable to do.

Table 2 HAQ activities

Patients were asked to do the following tasks ¹⁴ :	
1. DRESSING AND GROOMING	Tie shoelaces and do up buttons Arms raised to head to simulate shampooing hair
2. RISING	Stand up from an armless straight chair
3. EATING	Cut up some plasticine with a knife and fork
4. WALKING	Climb five steps and walk outdoors
5. HYGIENE	Simulate drying body with towel after bath
6. REACH	Reach up to cupboard to take down 5 lb bag of potatoes
7. GRIP	Open previously opened jar Turn taps on and off
8. HOUSEHOLD ACTIVITIES	Use brush and shovel or vacuum cleaner

Table 3 Eating

		Observed response				
		0	1	2	3	All
Questionnaire response	0	31	7	0	0	38
	1	8	8	1	0	17
	2	1	0	2	0	3
	3	1	0	2	1	4
	All	41	15	5	1	62

Table 4 Reach

		Observed response				
		0	1	2	3	All
Questionnaire response	0	13	2	4	0	19
	1	5	10	4	1	20
	2	0	1	3	0	4
	3	2	3	1	13	19
	All	20	16	12	14	62

Some tasks, e.g., eating (Table 3), were performed with little difficulty, others, e.g., reach (Table 4), were less well performed. These tables also indicate that some activities were correctly reported on the postal HAQ, whereas others, e.g., reach (Table 4), showed some discrepancies. Even in these activity areas, however, most observed responses agreed with the postal responses. The differences between observed and questionnaire scores did not vary much across the range of mean

Fig. 1 Differences in HAQ score between methods across the range of HAQ scores.

Fig. 2

Fig. 2 Correlation of HAQ scores with two measuring techniques.

scores (Fig. 1). Two untypical results were thought to be due to poor comprehension of the questions in the health assessment questionnaire related to low literacy. The overall score is the mean of each of the individual activity areas. For observed scores this was a mean of 0.98 (SD 0.85). For the postal scores this was a mean of 1.1 (SD 0.85). The mean difference between observed and questionnaire scores was 0.18 with a 95% confidence interval of -0.8 to 1.2. The correlation of the scores is shown in Fig. 2 ($r=0.83$).

Discussion

Disability comprises not only physical measures such as those included in this questionnaire but also social and psychological factors, which we hope to investigate (economic assessment,¹⁷ stigma rating¹⁸). Although acceptability was not formally tested, we feel that from our discussions with patients and from the 72% response rate achieved (high for a postal questionnaire)¹⁹ that the health assessment questionnaire is acceptable and quickly performed. This is in agreement with hospital workers where in one study 232 of 245 patients completed the health assessment questionnaire without objection and with few queries.¹⁴ For doctors it has the advantage of a numerical score, providing information in different areas of function and an overall disability score. If further studies confirm its value as a serial measure then it may be considered as an outcome

measure which general practitioners will be able to use when assessing the care provided to individual patients and groups of patients.

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