HAQ (=Health Assessment Questionnaire) Scores of Out-Patients in a Clinic for Physical Medicine

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SUMMARY

The level of activity was assessed in 334 out-patients who visited the Clinic of Physical Medicine at the Hanuschkrankenhaus. The self-administered Health Assessment Questionnaire (HAQ) was used for that purpose.

The mean HAQ-Score was low 0.56 (25 percentile=0 !) indicating only slight restrictions of personal activity. Older subjects presented with higher scores than younger people. The mean HAQ score was 0.3 in third decades, reached a plateau about 0.55 to 0.57 between 40 to 70 years and rises to 0.69 in the 8th decade and to 0.73 in subjects older than 80 years. Subjects with disease of the central nervous system such as hemiparesis after stroke or M.Parkinson, and patients after amputation ranked highest. Patients after joint surgery, after fractures or contusion and also patients with tendovaginitis followed them in the score rank. The majority of out-patients was not highly restricted in activity.

ZUSAMMENFASSUNG

Bei 334 ambulanten Patienten, die das Institut für Physikalische Medizin im Hanuschkrankenhaus aufsuchten, wurde der Umfang der persönliche Aktivität untersucht. Zu diesem Zweck wurde der vom Patienten eigenständig auszufüllende Aktivitätsfragebogen (=Health Assessment Questionnaire, HAQ) eingesetzt.

Der mittlere HAQ-Score war mit 0,56 (25.Perzentile=0) als Zeichen geringer Aktivitätseinschränkung niedrig. Ältere Patienten erzielten höhere Scores als junge Personen. Der mittlere HAQ Score betrug bei Personen in der 3.Lebensdekade 0,3, bildete ein Plateau mit Scorewerten von 0,55 bis 0,57 bei den vierzig bis siebzig Jährigen, und stieg im 8.Lebensjahrzehnt auf 0,69 bzw. auf 0.73 bei über achtzig jährigen Patienten an. Patienten mit Erkrankungen des Zentralnervensystems wie Halbseitenlähmung nach Schlaganfall oder M.Parkinson sowie Patienten nach Amputationen boten die höchsten Werte. Patienten nach Gelenksoperationen, nach Frakturen oder Prellungen und Personen mit Tendovaginitis folgten in der Reihenfolge hoher Scores. Jedoch zeigte die Mehrzahl der ambulanten Patienten nur einen geringen Grad von Aktivitätseinschränkung.

Introduction

Most of out patients who ask for physiotherapy pres ent with some pain problems located on the locomotor system. However, not only the impairment, also the grade of disability of these patients is often poorly de fined.

The Health Assessment Questionnaire (HAQ), origi nally developed for the assessment of patients suffer ing from rheumatoid arthritis in 1980, is a well evaluated instrument for the assessment of personal activity (1). This self administered questionnaire was evaluated in several languages including American (2) and British English (3), Dutch (4), Swedish (5), Spanish (5), Portu guese (7) and German in Switzerland (8), Austria (9) and Germany (10). Modifications of this question naire have been reported for the use in patients suffer ing from psoriatic arthritis (11) or ankylosing spon dylitis (12) and for rheumatic children (13).

The HAQ score is thought to be a disease specific tool for the assessment of inflammatory joint disorders. Although mostly used in rheumatoid arthritis (9,14, 15,16) , this score was applied in patients with systemic lupus erythematosus (17), ankylosing spondylitis, fibro myalgia (18, 19)), neck pain (19), low back pain (19), osteoarthritis of the knee (19) or of the hand (19). High correlations between the HAQ and non disease specific instruments like the Sickness Impairment Pro file (SIP) (20) might recommend the HAQ to be used for the assessment of the disability in patients with poorly defined pain problems or non rheumatic move ment disorders.

Disability and impairment of the locomotor system show a strong relationship with age (21,22). Mobility has a great influence on the activities of daily living. Loss of mobility leads to dependency meaning that subjects who cannot perform basic activities of daily living become dependent on other subjects (23). When

most activities of daily living have to be supported, the patient become dependent on support. A study per formed in Berlin in the early eighties found a high pro portion of multiple movement impairment in de pendent and support dependent elderly subjects, with increasing numbers in the age class of 80 to 89. In 1979 a health survey in Vienna, a city with similar age struc ture of its citizens as Berlin, found no functional im pairment of the lower extremities in 53 % of 80 year old Viennese citizens (23). 31% had mild disability in walking and 15 % showed a high degree of functional loss of the legs. A functional deficit of the upper ex tremity was only seen in 14% at the age of 80.

The results of the first National Health and Nutrition Examination Survey (NHANES I) in US found an continuous increase of disability in subjects of the 6th decade to subjects older than 70 years, with higher lev els of loss in activity both in female and in non white civilians (24). This study identified also some risk fac tors for the development of disability such as age at baseline, non recreational activity, arthritis history, body mass index at age 40 and education. The occur rence of chronic disorders such as history of stroke, hip or spine fracture, polio, heart failure or rheumatic fever which all affect mobility, were also partly predic tive for a higher loss of activity.

A study from Hong Kong found pain on the locomo tor system in more than 50% of a representative sam ple of 70 to 90 years old Chinese (25). However, only 25% of these subjects showed a pain induced decrease of activities. Knees, ankle/foot and the thoracic re gion of the back were the most frequent localisations of pain. In a swedish sample of 537 people at age 79 (26) symptomatic osteoarthritis of the wrist and fin gers was found only in 1,3%. The percentage for osteo arthritis of the knees was 7.3 and 5.7 for symp tomatic hip osteoarthritis.

A study was performed to assess the grade of disability in out patients attending the clinic for physical medi cine at the Hanuschspital in Vienna. Aim of the inves tigation was to find out patients with high grade of disability and to correlate HAQ scores with impair ment, gender, age and localisation of symptoms. Spe cial focus was put on the comparison of results of patients younger or older than 60 years

Method

All out patients attending the clinic for physical medi cine between November 2nd and December 30th 1994 were included in the study. 280 patients attended for treatment and 54 patients were referred for diagno sis, mainly for electrophysiological testing. All subjects presented with at least slight pain on the locomotor system. The patients were either referred by a general practitioner, orthopaedist, internist or neurologist . About 40% of the patients were self referred and can be regarded as representative patients with rheumatic complaints on the primary care level (27).

The German version of HAQ, evaluated by Brühl mann and coworkers (8), was filled out by each patient. The HAQ consists of 20 questions, which cover 8 cat egories of daily live activities (table 1). Questions can be answered with "possible without any difficulty (0 point)", "possible with some difficulty (1 point)", "possible with much difficulty (2 points)" and " unable to do (3 points)". Use of any aids increases the score by 1 point. The worst score of each category is accepted as representative value for this activity. The total HAQ score is equal to the mean value of all subscores.

Age, gender and the localisation of symptoms on the locomotor system were recorded.

Table 1
Questions and Categories of the Health Assessment Questionnaire (HAQ)

Question: Are you able	Category
Dress yourself, including tying shoelaces and doing buttons ?	Dressing
Shampoo your hair	
Stand up from an armless straight chair ?	Arising
Get in and out of bed ?	
Cut your meat ?	Eating
Lift a full cup or glass to your mouth ?	
Open an new mill carton ?	
Walk outdoors on flat ground ?	Walking
Climb up five steps ?	
Wash and dry your entire body ?	Hygiene
Take a tub bath ?	
Get on and of the toilet ?	
Reach and get down a 5 pound object (such as a bag of sugar) from just above your head ?	Reaching
Bend down to pick up clothing from the floor ?	
Open car doors ?	Gripping
Open jars which have been previously open?	
Turn faucets on and off ?	
Run errands and shop ?	Activities
Get in and out of a car ?	
Do chores such as vacuuming or yardwork ?	

The acute impairment of the locomotor system was taken as the main diagnosis. Additional diseases like di abetes, haematological disorders, cardiovascular prob lems and also additional impairments of the loco motor system, which contributed less than the main impairment to the pain symptoms, were recorded as side diagnosis. Main and side diagnosis were computed and 35 classes of diagnoses were created.

Symptoms were localized in the following regions: shoulder, elbow, hands, hip, knee, feet, low back, neck and other. When the pain was diffusely spread over one extremity or the whole back or the thorax, the lo calisation was classified as extremity or trunk.

A descriptive statistic was performed including mean, median, standard deviation, minimum and maximum value and the 5th, 25th, 75th and 95th percentile (28). Mann Whitney U Test was used post hoc for the comparison of results of patients younger or older than 60 years.

Results

HAQ-score

Mean HAQ score was 0,56 (25th percentile =0.0, median= 0.375, 75th percentile 0.75, 95th percen tile=1.875). The score in 8 age classes increased from 21 to 30 years old patients to older subjects than 80

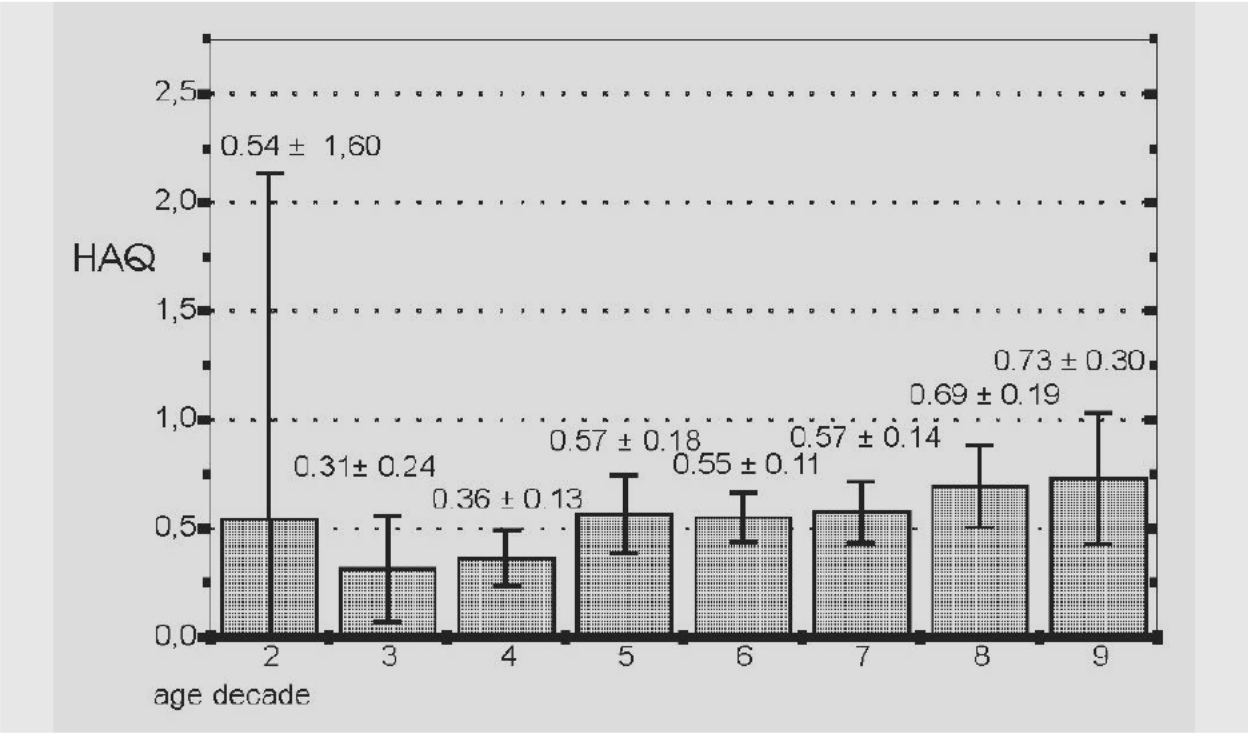
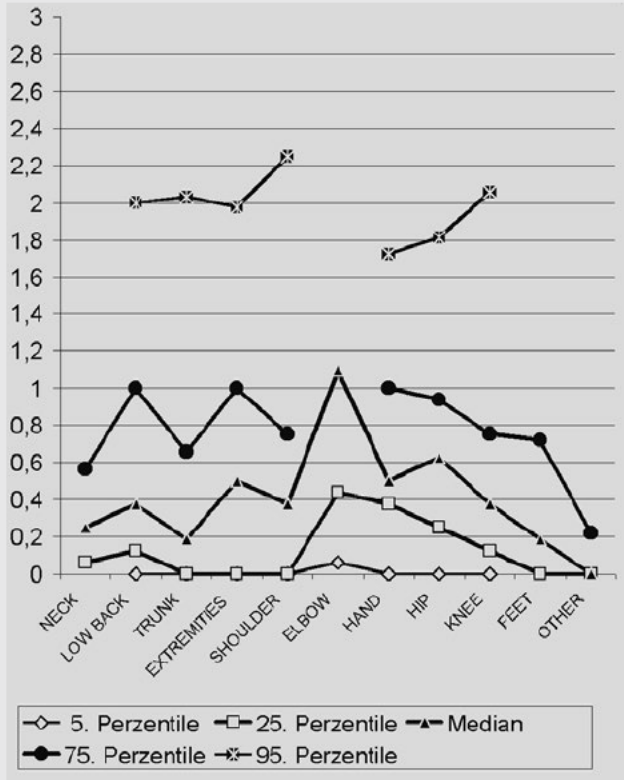


Figure 1
Mean HAQ Scores ± 95% confidence interval of age classes

Table 2
Scores of categories (mean standard deviation

Category	All (n 334)	60 years (n 146)	>60 years(n 188)
dressing	0.50 ± 0.75	0.51 ± 0.82	0.48 ± 0.70
arising	0.40 ± 0.68	0.45 ± 0.70	0.36 ± 0.66
walking	0.51 ± 0.71	0.68 ± 0.79	0.38 ± 0.61
reaching	0.98 ± 0.99	1.06 ± 0.99	0.92 ± 0.98
eating	0.37 ± 0.73	0.40 ± 0.78	0.33 ± 0.70
hygiene	0.44 ± 0.84	0.63 ± 1.02	0.29 ± 0.64
activities	0.92 ± 0.93	1.06 ± 1.04	0.80 ± 0.83
gripping	0.36 ± 0.72	0,33 ± 0.70	0.37 ± 0.73
HAQ	0.56 ± 0.58	0.64 ± 0.58	0.50 ±0.64



years from 0.31 to 0,73, although a second peak was found in 41 to 50 years old subjects with a value of 0,57 (figure 1).

Scores of categories

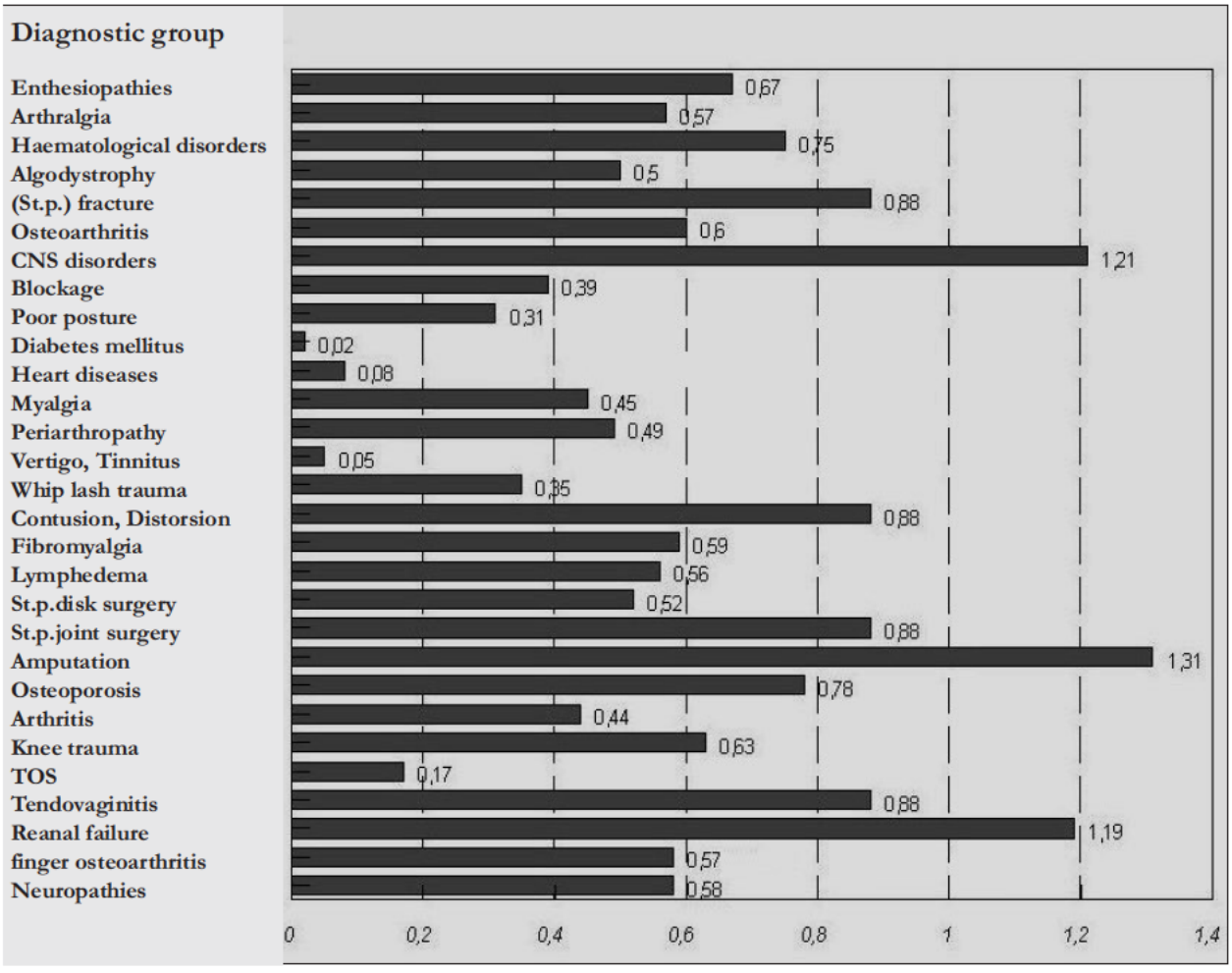
Table 2 shows the category scores of the whole sample. „Grip" was the least affected function and „Reaching" the most restricted activity of daily life.

Localisation of symptoms

Figure 2 shows the 25th, 50th,75th and 95th percen tile of the total score for all localisations of symp toms. 68 subjects presented with symptoms in the extremities, 67 had signs located at the trunk. 56 showed the shoulder disorders, 41 patients had pro blems with the hands, 33 with knees and 23 pre sented with symptoms related to the hip. 20 subjects showed problems with the feet and 17 disorders of the neck. In case that the sample size of subgroups was bigger than 30, 95th percentiles were calculated with highest scores in patients with shoulder problems.

Diagnosis

Figure 3 shows the score of patients with different diagnoses. Subjects with disease of the central ner



vous system like hemiparesis after stroke or M.Parkinson, and patients after amputation ranked highest. Patients after joint surgery, after fractures or contusion and also patients with tendovaginitis follow them in the score rank.

Comparison of results of patients younger or older than 60 years.

The HAQ score of the older group was significantly higher (mean: 0,64 ± 0,64; range: 0 to 2.655) than the score of the younger group (mean:0,50 ± 0,52; range: 0 to 2,25). The older group scored also significantly higher in the subscores „Walking" (Mann Whitney 2 tailed p=0,0006) and „Hygiene" (Mann Whitney 2 tailed p=0,004). If the sample was divided by the localization of symptoms into 11 subgroups, the subgroup „knee" (2 tailed p=0,055) and the subgroup „foot" (2 tailed p=0,086) showed close to significance higher HAQ scores in the group older than 60 years. These elderly patients with knee or foot problems scored also higher than younger patients in categories not related with walking such as „Eating", „Reaching" and „Grip".

Discussion

As reported by others (21,22, 29,30) impairment of walking is related with age and only in patients with extreme changes of the joints correlated with morphological failures. The fact, that older patients with knee or foot problems score also high in other categories not related with walking might be explained by psychological variables (31). In patients with hip and/or knee pain, pain intensity was on a higher level in subjects with chronic than sporadic pain (29). Patients with severe pain showed significantly more restrictions in activity than patients with sporadic pain, patients with episodic pain or healthy controls. Walking and performing heavy household tasks were the most restricted activities of daily living.

Disability in elderly subjects was more related to restriction in the range of shoulder motion than to shoulder pain in one study (32). Patients after polytrauma and gross reduction of shoulder motion showed the highest disability scores in our study.

Ranking the restrictions in activities of daily living found the categories "reaching" and "activities" most affected and "eating" and "gripping" at least disturbed in our patients. A similar profile of decreased activities was reported by Scudds and Robertson (33) in a sample of 887 citizens from London, Ontario, Canada, aged between 65 and 90, in which "chores such as vacuuming or yardwork" could be performed without difficulty only by 46,7% of all participants, but 93.2 % of these elderly Canadians were able to " lift a full cup or glass to the mouth". This study found also a higher odds ratio for disability in subjects reporting musculoskeletal pain than in subjects without pain.

Higher restrictions in activity were seen in older patients than in younger subjects. However, in our study significant differences in HAQ scoring were only found between subjects younger than 40 years and subjects older than 70 years. This finding is in accordance with the fact that the number of rheumatic pains and aches show a regular plateau between 40 and 70 years (34). Furthermore, low prevalence of symptomatic rheumatic diseases was reported in subjects older than 80 years (25,26).

As all subjects presented with symptoms, mostly pain, and the 25th percentile of HAQ scores was equal to zero, this might be interpreted as "floor" effect of the questionnaire. The "floor" effect indicates poor sensitivity in detecting patients with only slight symptoms (35). Rasch analysis of the HAQ supports the floor effect of this instrument which cannot reliably detect differences in patients below a HAQ score of 0.24 (36). It was shown that the relationship between pain and disability varies in different rheumatic diseases (19). Patients suffering from rheumatoid arthritis presented with high HAQ scores, but only moderate pain scores, while patients with neck pain, low back pain or fibromyalgia showed a high pain level at low grades of disability.

We did not quantify pain in or study, but pain severity was at low level in most of the investigated patients. This can explain the lack of finding any restrictions in 25 percent of investigated subjects. A study from India (37) found in in 746 subjects rheumatic musculoskeletal symptoms, which presented with mild, moderate and severe pain in 9, 56 and 25 percent of cases. 5 percent of these subjects scored zero in the HAQ, 74 percent scored between 0 and 1, 15 percent between 1 and 1.5 and only 6 percent more than 1.5. These different rates of musculoskeletal pain and disability indicate a loose relationship between pain and restricted activity.

In conclusion, our study indicates that impairments of the locomotor systems do not always lead to disability despite the fact that the chosen instrument for the assessment of activity levels is not perfect. Age, impaired range of motion and psycho social features contribute at least in the same quantity as pain to loss of activity.

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