RESEARCH ARTICLE

Does the Health Assessment Questionnaire have Potential as a Monitoring Tool for Cohorts with Arthritis in Quetta, Pakistan?

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Abstract

Background: Arthritis is a common disease that contributes to the poor health of patients. It is the main cause of disability in an individual. Arthritis can affect physical and psychological health, and HRQoL measures provide a broad picture of this impact. Studies on arthritis have not been documented so far by using Generic tool in Pakistan. Objectives: This study aimed to assess HRQoL of patients diagnosed with arthritis in tertiary care hospitals Quetta. Materials and Methods: A Cross sectional descriptive study was conducted for a period from April 2019 to August 2019 in Sandeman Provisional Hospital, Bolan Medical Complex Hospital and other private Orthopedic Clinics in Quetta, Pakistan. Subject were included in the sample if they had diagnosis of Arthritis by using Health assessment Questionnaire. All analyses were done by using SPSSv20. Results: Most of respondents 165 (42.2%) had rheumatoid arthritis (RA) followed by 105 (26.9%) participants who had Osteoarthritis (OA). Majority of patients 140 (35.8%) had disease duration of 7-10 years followed by 109 (27.9%) participants who had 4-6 years of entire disease duration. Average scores that have been reported in a population-based study are 0.49, and in osteoarthritis and rheumatoid arthritis patients are 0.8 and 1.2, respectively which corresponds to Mild to Moderate Disability, Moderates to Severe Disability and Severe to very Severe Disability. Conclusion: It is concluded that RA patients' HRQoL is altered and found to be significantly related to their age, gender, employment, family income, and length of disease and pain and functional ability may have an important impact on QOL in RA patients through restrictions and unpleasant physical sensations they cause.

Keywords: Arthritis, HRQoL, Rheumatoid Arthritis, Osteoarthritis. Quetta.

INTRODUCTION

Arthritis is a common disease that contributes to the poor health of patients. It is the main cause of disability in an individual.^[1] Arthritis can disturb joints and tissues and cause pain and stiffness.^[2] It also disturb patients' capability to complete daily routine work, as well as their mobility, sleep duration, and level of social engagement.^[3] Arthritic pain is usual and is related with poorer functional outcomes and inferior quality of life (QoL) when correlated with a range of other chronic conditions.[4]

QoL is the satisfaction obtained from life, happiness and the way in which human beings perceive their situation within the system of culture and values. Various terms are used interchangeably (for example, quality of life, health status, health-related quality of life) to analyze the effect of diseases such as arthritis, functioning and sense of well-being. The World Health Organization (WHO) describes QoL as 'a broader concept including the person's physical state or health, psychological state, level of independence, social relationships, person's beliefs and their relationship to salient features of the environment'. ^[5] QoL can be measured in various ways, and several generic and specific questionnaires have been used so far.[6-7]

Due to this growing epidemic status of Arthritis, it is important to understand and monitor the impact of arthritis on health outcomes. A health outcome of primary interest in the context of arthritis is the healthrelated quality of life (HRQoL).^[8] It has been reported that several factors have been associated with HRQoL. Health related Quality of Life refers to physical and mental health perceived by an individual over time. This indicator is used to measure the quality of life aspect that is influenced by arthritis.^[9]



Ali, et al.: Health Assessment Questionnaire

Arthritis can affect physical and psychological health, and HRQoL measures provide a broad picture of this impact. Hence, HRQoL is now a standard and widely accepted measure in clinical trials as well as in observational studies. A series of extensive population and community studies have examined the effects of arthritis on disability and physical function. Health-related quality of life is progressively recognized as a effective health indicator in many diseases. HRQoL is pointed to features of an individual's life that is affected by health, disease and/or its drug/medicine therapy. It includes emotional, physical, social and subjective feelings of wellbeing that imitate an individual's subjective evaluation and reaction to his/her ailment.^[10]

The HRQoL assessment provides a way for rheumatology and arthritis researchers to better comprehend the outcome of the chronic disease on general functioning and well-being. Such an understanding provide potentials to influence the quality of care provided to patients with arthritis.^[11] Disease-specific tools are intended to be used for a specific condition/disease, with a scale for arthritis having different questions than a scale for heart failure. Disease-specific scales have characteristically been designed to recognize features of a disease most likely to improve with therapy and thus will maximize a patient's sensitivity to change while receiving a particular therapy.^[12]

Various studies have been conducted on various disease state patient's HRQoL these include: Hepatitis,^[13-14] Cancer,^[15] Dialysis,^[16] TB,^[17] Stroke,^[18] congenital heart disease.^[19] Studies on arthritis have not been documented so far by using Generic tool in Pakistan. Therefore, this study aimed to assess HRQoL of patients diagnosed with arthritis in tertiary care hospitals Quetta.

Measures

Study Design, Setting and Duration

A Cross sectional descriptive study was conducted for a period from April 2019 to August 2019 in Sandeman Provisional Hospital, Bolan Medical Complex Hospital and other private Orthopedic Clinics in Quetta, Pakistan.

Participants

Inclusion Criteria

Subject were included in the sample if they had diagnosis of Arthritis (Osteoarthritis, Rheumatoid Arthritis, Psoriatic Arthritis, Gout, and Lupus) or rheumatic disease established by a rheumatologist and willing to participate in this study, having age ≥ 16 years and able to understand national language of Pakistan (Urdu) and local languages (Pashto, Balochi) were included in the study.

Exclusion Criteria

Patients who have been diagnosed with more than two comorbidities, pregnant female and those who were not willing and not able to understand the local language of Pakistan were excluded.

Study Tool

The current study utilized the HAQ Questionnaire by taking prior approval from the authority. The HAQ is one of the first measures purposefully intended to capture the long-term impact of many chronic conditions prospectively and by protocol, as well as to allow supplementing by other measures for specific research. The Health Assessment Questionnaire (HAQ) was originally developed in 1978 by James F. Fries, MD, and colleagues at Stanford University. It was one of the first self-report functional status (disability) measures and has become the dominant instrument in many disease areas, including arthritis. It is widely used throughout the world and has become a mandated outcome measure for clinical trials in rheumatoid arthritis and some other diseases.^[20]

Scoring

Total score of HAQ is between 0–3.0. Increasing scores indicate worse functioning with 0 indicating no functional impairment and 3 indicating complete impairment. Scores of 0 to 1 are generally considered to represent mild to moderate difficulty, 1 to 2 moderates to severe disability, and 2 to 3 severe to very severe disability.^[20]

Ethical Approval

The study has been approved by the ethical committee of Faculty of pharmacy and Health Sciences, University of Baluchistan Quetta as per guideline of National bioethical committee of Pakistan.^[21] All the participants were informed by the consent form that their participation is voluntary.

Statistical Analysis

All analyses were done by using SPSSv20. The descriptive statistics done for the demographic details. Continuous data was expressed as mean and standard deviation while categorical data was expressed as frequency and percentage. Inferential statistics Normality of data, Chi square test was used to evaluate the association or difference between variables. The result of these tests are described and tabulated in results section.

RESULTS

Demographic Characteristic

The demographic characteristics are shown in Table 4.1. the mean age of the participants was 42.31 ± 16.43 and most of respondents 154 (39.4%) belong to age group of 45-64 years. Majority of patients 286 (73.1%) were male. Most of the respondents 205 (52.6%) were Pakistani of Urban locality. Education wise maximum participants 150 (38.4%) were uneducated. Occupation wise maximum participants 104 (26.6%) had a private job. Most of the participants 207 (52.9%) had no any income. Caste wise maximum participants 215 (55.0%) were Pashtun. Marital status showed that maximum 324 (82.9%) were married.

Patient Characteristic

The patient characteristics are shown in Table 4.2 most of respondents 165 (42.2%) had rheumatoid arthritis (RA) followed by 105 (26.9%) participants who had Osteoarthritis (OA). Majority of patients 140 (35.8%)

Descriptive		Frequency	Percentage
	Osteoarthritis (OA)	105	26.9
	Rheumatoid arthritis (RA)	165	42.2
Disease Type	Psoriatic Arthritis	27	6.9
	Gout	76	19.4
	Lupus	18	4.6
Disease Duration	Less than 1 years	27	6.9
	1-3 years	60	15.3
	4-6 years	109	27.9
	7-10 years	140	35.8
	> 10 years	55	14.1
Hospitals	Sandeman Provincial Hospital	134	34.3
	Bolan Medical College Hospital	166	42.5
	Private Orthopedic Clinics	91	23.3

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Table 4.1: Demographic Characteristic.					
Descriptive		Frequency	Percentage		
Age	18-44 years	188	48.1		
<i>Mean Age (42.31 +</i>	45–64 years	154	39.4		
16.43)	> 65 years	49	12.5		
Gender	Male	286	73.1		
	Female	105	26.9		
Locality	Rural (Pakistani)	165	42.2		
	Urban (Pakistani)	205	52.4		
	Afghan Refugee	21	5.4		
Education	Uneducated	150	38.4		
	Primary	66	16.9		
	Middle	42	10.7		
	Matric	82	21.0		
	Intermediate	32	8.2		
	BA/BSC	15	3.8		
	Higher	4	1.0		
Occupation	Government Job	24	6.1		
	Self Employed	83	21.2		
	Private Job	104	26.6		
	House Wife	60	15.3		
	Job less	34	8.7		
	Retired	52	13.3		
	Student	34	8.7		
Income	No Income	207	52.9		
	Less than 10,000	83	21.2		
	10,000 - 20,000	64	16.4		
	20,000 - 30,000	26	6.6		
	More than 30,000	11	2.8		
Caste	Pashtun	215	55.0		
	Baloch	132	33.8		
	Urdu Speaking	20	5.1		
	Punjabi	15	3.8		
	Other	9	2.3		
Marital Status	Married	324	82.9		
	Un Married	67	17.1		

had disease duration of 7-10 years followed by 109 (27.9%) participants who had 4-6 years of entire disease duration. Most of the respondents 166 (42.5%) were interviewed from Bolan Medical College Hospital.

Health Assessment Questionnaire (HAQ)

The responses of HAQ is shown in Table 4.2. Maximum of patients 164 (41.9%) Dress their selves, including shoelaces and buttons with much difficulty. Most of patients 180 (46.0%) had much difficulty in shampooing their hairs. Maximum of patients 185 (47.3%) had much difficulty to stand up from a straight chair. Maximum of patients 217 (55.5%) get in and out of bed with much difficulty. Most of patients 138 (35.3%) had some difficulty in cutting their own meat. Majority of patients 198 (50.6%) had some difficulty to lift a full cup or glass to their mouth. Most of patients 155 (39.6%) had much difficulty to open a new milk carton. Maximum number of patients 195 (49.9%) walk outdoors on flat ground with much difficulty. Majority of patients 200 (51.2%) had much difficulty to climb up five steps. Most of patients 149 (38.1%) had some difficulty in washing and drying their body

Health Assessment Questionnaire Disability index of **Arthritis Patients**

Average scores that have been reported in a population-based study are 0.49, and in osteoarthritis and rheumatoid arthritis patients are 0.8 and 1.2, respectively^[20]

Disability Index	Frequency	Percentage
Mild to Moderate Disability Moderates to Severe Disability Severe to very Severe Disability	65 227 99	16.6 58.1 25.3
Mean Disability Index	1.764 <u>+</u> 0.605	

0 to 1 = mild to moderate difficulty,

1 to 2 = moderates to severe disability, and

2 to 3 = severe to very severe disability.

Variable	Question	Without any difficulty	With Some Difficulty	With Much Difficulty	Unable to Do
		F (%)	F (%)	F (%)	F (%)
Dressing and	Dress yourself, including shoelaces and buttons?	30 (7.7%)	122 (31.2%)	164 (41.9%)	75 (19.2%)
Grooming	Shampoo your hair?	36 (9.2%)	105 (26.9%)	180 (46.0%)	70 (17.9%)
Ariaina	Stand up from a straight chair?	30 (7.7%) 122 (31.2%) 36 (9.2%) 105 (26.9%) 34 (8.7%) 82 (21.0%) 9 (2.3%) 65 (16.6%) 54 (13.8%) 138 (35.3%) 33 (8.4%) 198 (50.6%) 31 (7.9%) 120 (30.7%) 14 (3.6%) 100 (25.6%) 8 (2.0%) 85 (21.7%) 41 (10.5%) 149 (38.1%) 36 (9.2%) 105 (26.9%)	82 (21.0%)	185 (47.3%)	90 (23.0%)
Ansing	Get in and out of bed?	9 (2.3%)	65 (16.6%)	217 (55.5%)	100 (25.6%)
	Cut your own meat?	54 (13.8%)	138 (35.3%)	135(34.5%)	64 (16.4%)
Eating	Lift a full cup or glass to your mouth?	33 (8.4%)	198 (50.6%)	117 (29.9%)	43 (11.0%)
	Open a new milk carton?	31 (7.9%)	120 (30.7%)	155 (39.6%)	85 (21.7%)
Wolking	Walk outdoors on flat ground?	14 (3.6%)	100 (25.6%)	195 (49.9%)	82 (21.0%)
waiking	Climb up five steps?	8 (2.0%)	85 (21.7%)	200 (51.2%)	98 (25.1%)
	Wash and dry your body?	41 (10.5%)	149 (38.1%)	142 (36.3%)	59 (15.1%)
Hygiene	Take a tub bath?	36 (9.2%)	105 (26.9%)	180 (46.0%)	70 (17.9%)
	Get on and off the toilet?	34 (8.7%)	82 (21.0%)	185 (47.3%)	90 (23.0%)
Deeeb	Reach and get down a 5-pound object (such as a bag of sugar) from above your head?	36 (9.2%) 105 (26.9%) chair? 34 (8.7%) 82 (21.0%) 9 (2.3%) 65 (16.6%) 54 (13.8%) 138 (35.3%) your mouth? 33 (8.4%) 198 (50.6%) ? 31 (7.9%) 120 (30.7%) pund? 14 (3.6%) 100 (25.6%) ? 8 (2.0%) 85 (21.7%) ? 41 (10.5%) 149 (38.1%) ? 441 (10.5%) 149 (38.1%) ? 34 (8.7%) 82 (21.0%) ? 34 (8.7%) 82 (21.0%) ? 33 (8.4%) 198 (50.6%) ? 33 (8.4%) 120 (30.7%) ? 34 (8.7%) 82 (21.0%) ? 33 (8.4%) 198 (50.6%) ? 33 (8.4%) 198 (50.6%) ? 33 (8.4%) 198 (50.6%) ? 33 (8.4%) 198 (50.6%)	190 (48.6%)	72 (18.6%)	
Reach	Bend down to pick up clothing from the floor?	59 (15.1%)	146 (37.3%)	124 (31.7%)	62 (15.9%)
Grip	Open car doors?	33 (8.4%)	198 (50.6%)	117 (29.9%)	43 (11.0%)
	Open previously opened jars	30 (7.7%)	160 (40.9%)	133 (34.0%)	68 (17.4%)
	Turn faucets on and off?	9 (2.3%)	65 (16.6%)	217 (55.5%)	100 (25.6%)
	Run errands and shop?	12 (3.1%)	90 (23.0%)	193 (49.4%)	96 (24.6%)
Activities	Get in and out of a car?	14 (3.6%)	102 (26.1%)	188 (48.1%)	87 (22.3%)
	Do chores such as vacuuming or yard work?	12 (3.1%)	83 (21.2%)	202 (51.7%)	94 (24.0%)

Descriptive		Mean + SD	P value
Age* Mean Age (42.31 + 16.43)	18-44 years 45–64 years > 65 years	1.5495 + 0.64075 2.0136 + 0.51871 1.8051 + 0.36901	0.001
Gender**	Male Female	1.7149 + 0.61323 1.8990 + 0.56356	0.003
Locality*	Rural (Pakistani) Urban (Pakistani) Afghan Refugee	1.7342 + 0.57580 1.7978 + 0.62309 1.6738 + 0.65890	0.195
Education*	Uneducated Primary Middle Matric Intermediate BA/BSC Higher	$\begin{array}{c} 1.8390 + 0.56799 \\ 1.7909 + 0.60878 \\ 1.6512 + 0.53676 \\ 1.7665 + 0.64046 \\ 1.5078 + 0.67023 \\ 1.8200 + 0.63522 \\ 1.5125 + 0.85866 \end{array}$	0.220
Occupation*	Government Job Self Employed Private Job House Wife Job less Retired Student	$\begin{array}{c} 1.3583 + 0.69324 \\ 1.6934 + 0.64820 \\ 1.7149 + 0.59011 \\ 1.9195 + 0.54423 \\ 1.9426 + 0.67914 \\ 1.7625 + 0.44324 \\ 1.7632 + 0.61266 \end{array}$	0.003
Income*	No Income Less than 10,000 10,000 - 20,000 20,000 - 30,000 More than 30,000	1.8553 + 0.55834 1.8227 + 0.67504 1.5723 + 0.61803 1.7203 + 0.62954 1.7365 + 0.71520	0.005
Caste*	Pashtun Baloch Urdu Speaking Punjabi Other	1.7286 + 0.59739 1.8011 + 0.61067 1.8400 + 0.73692 1.8733 + 0.51543 1.7278 + 0.59061	0.625
Marital Status**	Married Un Married	1.7869 + 0.60475 1.6552 + 0.59950	0.041
Disease Type*	Osteoarthritis (OA) Rheumatoid arthritis (RA) Psoriatic Arthritis Gout Lupus	1.8914 + 0.57740 1.6600 + 0.61783 1.8981 + 0.56338 1.7099 + 0.59251 2.0083 + 0.57809	0.008
Disease Duration*	Less than 1 years 1-3 years 4-6 years 7-10 years > 10 years	1.0259 + 0.41193 1.3583 + 0.48022 1.8005 + 0.64845 2.0289 + 0.51906 1.8245 + 0.36450	0.001

Comparison of Mean and SD of HAQ associated with Demographics and Patient Characteristics

P (<0.05)

* Kruskal Wallis Test

** Mann Whitney U Test

DISCUSSION

The goal of this study was to look at the impact of RA on HRQoL. The studies performed using the HAQ, referring to everyday functioning that includes activities such as dressing, getting up, eating, walking, hygiene, gripping, reaching, and errands and chores, that were comparable in different tertiary care hospitals of Quetta. This was consistent with other study findings^[22]

Our findings revealed that RA has a negative influence on HRQoL; RA has a greater impact on the physical component. The study also showed Moderates to Severe Disability in most of the cohorts these findings were consistent with other studies.^[23-25] The ability to continue physical activities and exercise was contingent on present physical functionality. In this study, being independent meant being physically active and functional. In other research, these elements have also been proven to be particularly essential for QoL.^[26]

The HAQ mean score was shown to be associated with age, gender, occupation, family income, and illness duration. As a result, it is obvious that the physical component of HRQoL is influenced by a variety of sociodemographic and clinical variables. This was consistent with other study findings.^[25] The argument was also supported in other study findings that There was no significant difference in areas of life such as paid job, housekeeping, social life, family life, sex life, hobbies, and holidays among patients with RA depending on the kind of medication used. This might indicate that combining biological medications with traditional therapy did not have a substantial impact on the quality of life of RA patients.^[22]

The findings of this study are not consistent with those of previous investigations. Patients with RA, they found, rated their quality of life worse than the general population. For example, Yacooub *et al.* looked at the disease-related factors that impact QOL in a group of 250 Moroccans with RA. Their findings revealed that the quality of life of RA patients has drastically changed. The primary factors connected to interruption of QOL were disease duration, pain severity, disease activity, immunological state, and functional impairment.^[27] Haroon *et al.*^[28] did a similar study and found that the quality of life in people with RA was much poorer than in healthy people, and that functional impairment was the most important factor impacting their quality of life. Salaffi *et al.*^[29] compared the QOL of patients with RA, psoriatic arthritis, and ankylosing spondylitis, and discovered that functional impairment, limitations due to physical functioning, and physical pain had a greater impact on QOL in patients with RA than mental health, emotional health restrictions, social functioning, and vitality.

Roma *et al.*^[30] compared and examined the quality of life of 99 adults and elderly RA patients. Adults were defined as individuals between the ages of 18 and 59, while those beyond the age of 60 were deemed old. Physical functioning, social functioning, and emotional elements of the SF-36 were shown to have lower mean values in elderly RA patients than in adults. Elderly individuals performed better in terms of pain, physical appearance, overall health, energy, and mental elements.

Strength and Limitation

To the best of our knowledge, this is the first cross-sectional study in Quetta that has looked at and reported HRQoL among RA patients. A sample of all hospitals in Quetta's leading tertiary care facilities was used in this study. Face-to-face interviews were used to obtain the data, ensuring completeness. The most significant drawback is that we only used samples from tertiary care facilities. Furthermore, the sample size is modest, limiting generalizability.

CONCLUSION

It is concluded that RA patients' HRQoL is altered and found to be significantly related to their age, gender, employment, family income, and length of disease and pain and functional ability may have an important impact on QOL in RA patients through restrictions and unpleasant physical sensations they cause. This study, on the other hand, demonstrates the value of including RA patients in decision-making by providing them with more information on the disease, drugs, and side effects. Furthermore, we pay special attention to the elderly and the illiterate, who will most likely suffer. The importance of the multidisciplinary team's involvement in teaching patients about their condition, treatments, and side effects is highlighted by these findings. It's also critical to use a multidisciplinary strategy that attempts to enhance the patient's physical and mental wellbeing. Individualized management will be provided by rheumatologists, clinical pharmacists, psychologists, and physiotherapists, among others.

CONFLICT OF INTEREST

The authors declare that there is no conflict of interest.

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